శ్రీ వేంకటేశ్వర కళాశాల
श्री वेंकटेश्वर महाविद्यालय
Sri Venkateswara College
(दिल्ली विश्वविद्यालय) (University of Delhi)
NAAC A+ Accredited
Benito Juarez Road, Dhaula Kuan, New Delhi-110021
Ph. : 011-24112196, 24118590
principal@svc.ac.in

CRITERIA I

SUPPORTING DOCUMENT

1.1.1 Teaching Plans of Sri Venkateswara College for 2022-2023

Prof. Swaran Singh
IQAC Coordinator
Coordinator, IQAC
Sri Venkateswara College
(University of Delhi)
Dhaula Kuan, New Delhi-110021

Prof. K. Chandramani Singh
Ag. Principal
PRINCIPAL (Acting)
Sri Venkateswara College
(University of Delhi)
Dhaula Kuan, New Delhi-110021

SRI VENKATESWARA COLLEGE

ODD SEMESTER
2022-2023

TEACHING PLANS

PRINCIPAL (Acting)
Sri Venkateswara College
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Dhaula Kuan, New Delhi-110021

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: I/III/V
(July-Nov 2022)

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
July	Theory	Unit II: Transcription in eukaryotes: Introduction on basal transcription machinery and three classes of eukaryotic RNA polymerases – I, II and III	B Sc (H) Biochemistry III Year Semester V	C 12 Gene Expression and Regulation
		Unit IV: Laws of thermodynamics. Concept of state functions, free energy change, equilibrium constant, coupled reactions, energy charge, ATP cycle, phosphorylation potential	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit I: Electromagnetic radiation, interaction of radiation with biomolecules, principle of UV-visible absorption spectrophotometry, Lambert's Law, Beer's Law	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Unit-1: Spectroscopic Techniques: Introduction to electromagnetic radiation. Principle of UV-visible absorption spectrophotometry.	B Sc (H) Biochemistry I Year Semester I	DSC-3 Biochemical Techniques
	Practical	Exercise1: Determination of absorption maxima of small molecules and macromolecules	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Exercise1: Laboratory safety and standards (precision, accuracy and sensitivity). Preparation of solutions (w/v, v/v, Molar and Normal)	B Sc (H) Biochemistry I Year Semester I	DSC-1 Biomolecules

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: I/III/V

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
August		Unit II: Transcription by RNA polymerase II, features of RNA polymerase II core promoters and general transcription factors: Genetic Code: Salient features of the genetic code, triplet nature, degenerate, wobble in the anticodon	B Sc (H) Biochemistry III Year Semester V	C 12 Gene Expression and Regulation
	Theory	Unit IV: Chemical basis of high standard energy of hydrolysis of ATP, PEP, 1,3 BPG and thioesters. Redox reactions, standard redox potentials and Nernst equation. Universal electron carriers	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit I: Working of a spectrophotometer. Applications of UV-visible absorption spectrophotometry in Biochemistry. Fluorescence spectrophotometry and its applications in biochemistry	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Unit-1: Working, instrumentation and Applications of a spectrophotometer, Lambert's Law, Beer's Law Factors affecting UV-visible absorbtion, bathochromic shift and hypsochromic shift.	B Sc (H) Biochemistry I Year Semester I	DSC-3 Biochemical Techniques
	Practical	Exercise 2: Verification of Beer's Law. Exercise 3: Determination of molar extinction coefficient	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Exercise 2: Concept of buffer, buffering capacity and Handersson-Hasselbach equation. Preparation of acetate buffers/phosphate buffer. Exercise 3:Titration graph of acetic acid and glycine.	B Sc (H) Biochemistry I Year Semester I	DSC-1 Biomolecules

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: I/III/V

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Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
September	Theory	Unit IV: Translation: Experimental approaches used to decipher the genetic code. Suppressor tRNAs. Messenger RNA, transfer RNA, charging of tRNA	B Sc (H) Biochemistry III Year Semester V	C 12 Gene Expression and Regulation
		Unit V: The electron transport chain - its organization and function. Peter Mitchell's chemiosmotic hypothesis. FoF1 ATP synthase, structure and mechanism of ATP synthesis. OS production and antioxidant mechanisms. Thermogenesis Alternative respiratory pathways in plants	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit III: Electrophoresis: Principle of electrophoresis, Polyacrylamide gel electrophoresis (native and denaturing) for proteins and nucleic acids.	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Unit-1: Fluorescence spectrophotometry: Phenomena of flourescence, stokes shift, quantum yield, intrinsic and extrinsic flours with example, working and applications of flourimeter.	B Sc (H) Biochemistry I Year Semester I	DSC-3 Biochemical Techniques
	Practical	Exercise 4:Separation of amino acid acids/sugars by thin layer chromatography Exercise 5: Separation of proteins by gel filtration chromatography	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Exercise 4: Qualitative analysis of amino acids (Ninhydrin, Xanthoprteic, Millons and lead acetate tests). Exercise 5: Qualitative tests for carbohydrates monosaccarides, disaccarides, polysaccarides (Molisch, Fehling/Benedict, Barfoed, Selwinoffs, Osazone and Iodine test)	B Sc (H) Biochemistry I Year Semester I	DSC-1 Biomolecules

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: I/III/V

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Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
October	Theory	Unit IV: Translation: The structure of ribosome. Three stages of translation. Translation in eukaryotes. Regulation of translation. Comparison of prokaryotic and eukaryotic protein synthesis. Inhibitors of translation	B Sc (H) Biochemistry III Year Semester V	C 12 Gene Expression and Regulation
		Unit VI: General features of photo phosphorylation, historical background and Hill's reaction. Role of photosynthetic pigments and light harvesting systems in plants and microbes. Bacterial photophosphorylation in purple bacteria and Green sulfur bacteria. Photophosphorylation in plants	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit III: Agarose gel electrophoresis, Isoelectric focusing of proteins, two-dimensional.	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Unit-4: Electrophoresis: Principle of electrophoresis. Factors affecting the mobility of molecules: Buffer, electrical field strength and charge. Types of electrophoresis: Polyacrylamide gel (native), SDS-PAGE, isoelectric focusing and agarose gel electrophoresis.	B Sc (H) Biochemistry I Year Semester I	DSC-3 Biochemical Techniques
	Practical	Exercise 6: Separation of proteins by ion-exchange chromatography Exercise7: Separation of nucleic acids using agarose gel electrophoresis	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Exercise 6: To determine the iodine number of oil/fat Exercise7: 7. Qualitative test for nucleic acids (orcinol and DPA).	B Sc (H) Biochemistry I Year Semester I	DSC-1 Biomolecules

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: I/III/V

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
November	Theory	Unit III: RNA Processing: Various types of RNA processing-poly adenylation and capping, processing of rRNA and tRNA. Chemistry of RNA splicing, the spliceosome machinery, splicing pathways, group I and group II introns, alternative splicing, exon shuffling and RNA editing	B Sc (H) Biochemistry III Year Semester V	C 12 Gene Expression and Regulation
		Unit VI: Molecular architecture of Photosystem I and Photosystem II. The Z-scheme of photosynthetic electron flow. Cyclic photo phosphorylation and its significance	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit III: Detection and identification of proteins and nucleic acids and determination of molecular weight.	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Unit-4: Continuous and disontinuous buffer system in electrophoresis. Staining, detection, identification and molecular weight determination of molecules.	B Sc (H) Biochemistry I Year Semester I	DSC-3 Biochemical Techniques
	Practical	Exercise 8: Separation of protein by SDS-PAGE	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Mock Practical and Evaluation	B Sc (H) Biochemistry I Year Semester I	DSC-1 Biomolecules

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2022-23

Name of the Faculty: Dr.Nandita Narayanasamy Department: BIOCHEMISTRY

Semester : I/III/V

Month		Topics	Course	Paper Code/Name	Mode of teaching
July 2021	**Theory**	Introduction to Genetics	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics	Chalk and talk, ppt and GCR
	Practicals	Orientation for Practicals in Nutritional Biochemistry Introduction to Methods of Nutritional Assessment.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE -1: Nutritional Biochemistry	Chalk and talk, ppt and GCR
August	**Theory**	Extensions to Mendalian Genetics; Incomplete dominance, Co dominance, Lethal alleles, Multiple alleles. Concept of monogenic and polygenic traits, phenocopy, Peneterance and Variable expressivity. Chromosomal theory of inheritance.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics	Chalk and talk, ppt and GCR
		Functions of hormones and their regulation. Chemical signaling - endocrine, paracrine, autocrine, intracrine and neuroendocrine mechanisms. Hypothalamic - Pituitary axis: anatomy, histology, vasculature and secretions. Physiological and biochemical actions of hypothalamic hormones and anterior pituitary hormones; Hormone feed-back regulatory cascade.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester III	BCH C 7: Hormone Biochemistry and Function.	Chalk and talk, ppt and GCR
		Introduction to Forensic Science Biological evidences	IIYear, Semester III	GE- C-6	Chalk and talk, ppt and GCR
	Practicals:	Understanding Anthropometric measurements. Anthropometric assessment of young adults Anthropometric identifications for Kwashiorkor, Marasmus and Obesity in children	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE -1: Nutritional Biochemistry	Laboratory exercises
		Continuous and discontinuous assays Cell fractionation and identification of organelles using marker enzymes	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE : Advanced cell biology	Laboratory exercises
		Introduction to Forensic Science Crime Scene investigation	GE-III IIYear, Semester III	GE--6	Laboratory exercises
September	**Theory**	Gene interactions: additive gene effect, recessive and dominant epistasis, duplicate dominant and recessive epistasis,	B.Sc. BIOCHEMISTRY (Hons.) III Year,	I BCH C-11: Concepts In	Chalk and talk, ppt and GCR

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		suppressor and modifier gene. Pedigree Analysis. Sex determination: heteromorohic chromosomes, genetic sex determination, temp dependent sex determination. Sex determination in C.elegans, Drosophila and humans. Sex linked, sex influenced inheritance, Drosophila development, maternal effect genes, morphogens and zygotic gene activity in development. Dosage compensation, Genetic imprinting.	Semester V	Genetics	
		Posterior pituitary hormones –structure, physiology and biochemical actions of AVP and Oxytocin; Diabetes insipidus. Thyroid gland- Biosynthesis of thyroid hormone and its regulation: Role of TRH, TSH in T4 synthesis and response. Physiological and biochemical action of Thyroxine. Pathophysiology of thyroxine secretion: Goiter, Graves' disease, cretinism, myxedema.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester III	BCH C7 : Hormone Biochemistry and function.	Chalk and talk, ppt and GCR
		Biochemical analysis of various biological evidences like blood, semen & other biological fluids, viscera, bite marks, hair (animal and human), fibers & fabrics, pollen and soil; Time of death - rigor mortis, liver mortis, algor mortis, forensic entomology. Biochemical basis for determination of cause of death, case studies	GE-III IIYear, Semester III	GE-6	Chalk and talk, ppt and GCR
	Practicals	Evaluation 1 Calculation of BMR and corelating to caloric consumption calculated through maintenance of dietary record. Biochemical assessment. ROS assessment. Determination of oxidative stress: TBARS, antioxidant enzymes in hemolysate. Calculation of GI and Glycemic load of different foods.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE-1 Nutritional biochemistry	Laboratory exercises
		Evaluation 1 Primary Hepatocyte isolation and counting Determination of cell viability Nerve cell histology	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE : Advanced cell biology	Laboratory exercises
		.Evaluation 1 Identification of biological fluids Microscopic examination of hair/fiber/pollen/diatom Examination of blood samples: Blood grouping, DNA finger. Blood splatter analysis.	GE-III IIYear, Semester III	GE-6	Laboratory exercises
October	**Theory**	Dosage compensation, Genetic imprinting, maternal effect, epigenetic mechanisms of transcriptional regulation & genomic imprinting.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics	Chalk and talk, ppt and GCR

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		Regulation of Growth: growth hormone and somatomedin, Endocrine disorders - gigantism, acromegaly, dwarfism, pygmies..	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester III	BCH C 7: Hormone Biochemistry and function	Chalk and talk, ppt and GCR
		Detection of drugs of abuse and narcotics in biological samples; Toxicological examination of viscera, detection of petroleum products, food adulteration; Analysis of inks and their use in questioned document identification, blood splatter analysis, stain analysis, case studies.	GE-III IIYear, Semester III	GE-6	Chalk and talk, ppt and GCR
	Practicals:	Biochemical assessment. Nutritional status, Vitamin E Clinical assessment of Nutritional status, Case studies Evaluation 2	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE -1: Nutritional Biochemistry	Laboratory exercises
		Cellular assay for proliferation, Apoptosis, senescence and necrosis DNA fragmentation in Apoptotic cells	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE: Advanced cell biology	Laboratory exercises
		. Evaluation 2 TLC method for differentiation of ink/drugs Fingerprint development from various surfaces Handwriting identification based on class characteristics and individual characteristics Examination of urine samples: Identification of drugs. .	GE-III IIYear, Semester III	GE -6.	Laboratory exercises
	Test	. Test on Extension to Mendalian genetics, Pedigree Analysis and sex determination.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE -1: Nutritional Biochemistry BCH C-11: Concepts In Genetics	
		Test on Cellular signaling and Hypothalmic and pituitary system	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester III	BCH C7: Hormone Biochemistry and function.	
		Test on Unit II and III of GE-6	GE-III IIYear, Semester III	GE-6	
November	**Theory:**	Linkage and crossing over, genetic mapping in eukaryotes, centromere mapping with ordered tetrads, cytogenetic mapping with deletions and duplications in Drosophila, detection of linked loci by pedigree analysis in humans and somatic cell hybridization for positioning genes on chromosomes.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics	Chalk and talk, ppt and GCR

		Physiology and action of Aldosterone; the Renin Angiotensin System. Physiology and Biochemical actions of Cortisol; Role of POMC and CRH in cortisol synthesis; Adrenal medullary hormones: epinephrine and norepinephrine. The Fight or flight response; Dual receptor hypothesis. General adaptation syndrome: acute and chronic stress response. Pathophysiology – Addison's disease, Conn's syndrome, Cushing syndrome. Male and female sex hormones. Interplay of hormones during	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IIII	BCH C7: Hormone Biochemistry and Function	Chalk and talk, ppt and GCR
		Narco analysis: theory, forensic significance, future prospect; *Brain mapping:* introduction, EEG, P-3000 wave, forensic applications, limitation of technique; *Polygraph*: Principle and technique, polygraph as forensic investigative tool, use of psychoactive drugs in forensic analysis. NHRC guidelines for polygraph test; *Facial reconstruction*: Method and technique, facial reconstruction in forensic identification	GE-III IIYear, Semester III	GE-6	Chalk and talk, ppt and GCR
	Practicals:	Clinical assessment of Nutritional status, Case studies Revision exercises; Evaluation 3 and VIVA	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE 1: Nutritional biochemistry	Laboratory exercises
		Revision exercises Evaluation 2 and VIVA	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester	BCH DSE: Advanced cell biology	Laboratory exercises
		Virtual trip to a forensic laboratory DNA fingerprinting, blood splatter analysis Case studies Evaluation 3 and VIVA.	GE-III IIYear, Semester III	GE-6	Laboratory exercises
DEC	**Theory+ Practicals**	Ayurveda and Indian Food Cultures Nutrition and lifestyle transition over the years	SEM I	VAC Ayurveda and Nutrition	Chalk and talk, ppt and GCR

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SEMESTER WISE TEACHING PLAN (July to November, 2022 and November 2022 to March 2023)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shalini Sen **Department: BIOCHEMISTRY**

B.Sc. (H) Biochemistry, Semester V
B.Sc. (H) Biological Sciences, Semester V

Month		Topics	Course	Paper Code/Name
July	**Theory**	Unit 2. Mendelian principles, molecular basis of genetic information, laws of probability.	BSc.(H) Biological Sciences Semester V	BS C12 Genetics
		Unit 1. Mendelian laws, ratios, laws of probability, binomial expansion.	B.Sc. (H) Biochemistry Semester V	BCH C11 Concepts in Genetics
	Practicals	Estimation of RNA by Orcinol method. Value-added modifications of the same.	B.Sc. (H) Biochemistry Semester V	BCH C12 Gene Expression and Regulation
August	**Theory**	Unit 2. Chromosome theory of inheritance, incomplete dominance, codominance, multiple alleles, Lethal alleles, epistasis. Pleiotropy, penetrance and expressivity, norm of reaction, phenocopy. Organelle heredity: chloroplast mutation in four O'clock plant, Chlamydomonas, mitochondrial mutations in yeast, Neurospora, maternal effect, kappa particles.	B.Sc.(H) Biological Sciences Semester V	BS C12 Genetics
		Testing genetic hypothesis, chromosomal theory of Mendelism, Sutton and Boveri hypothesis. Extranuclear inheritance Concept of cistron, bacterial and viral genomes, conjugation, transformation. Gene mapping in bacteria.	B.Sc.(H) Biochemistry Semester V	BCH C11 Concepts in Genetics

	Practicals	1.Extraction of nucleic acids from plant tissue 2. To study growth curve and diauxic growth curve effect in E.coli.	B.Sc. (H) Biochemistry Semester V	BCH C12 Gene Expression and Regulation
	Internal Assessment	Class Test -1 For both courses		
September	**Theory**	Chromosomal aberrations: variations in chromosome numbers and structures	B.Sc.(H) Biological Sciences Semester V	BS C-12 Genetics
		Chromosomal aberrations: numerical and structural.	B.Sc.(H) Biochemistry Semester V	BCH C11 Concepts in Genetics
	Practicals	Isolation of total RNA from bacteria and yeast.	B.Sc.(H) Biochemistry Semester V	BCH C12 Gene Expression and Regulation
October	**Theory**	Unit 3. Linkage, crossing over and mapping techniques. Unit 4. Sex determination: in humans, Drosophila	B.Sc.(H) Biological Sciences Semester V	BS C12 Genetics
		. Unit 6. Population genetics: Hardy-Weinberg law, predicting allelic and genotypic frequencies.	B.Sc.(H) Biochemistry Semester V	BCH C11 Concepts in Genetics
	Practical	To study the effect of protease inhibitors on protein synthesis.	B.Sc.(H) Biochemistry Semester V	BCH C12 Gene Expression and Regulation
	Internal assessment	Midterm Tests for all courses, from the syllabus covered thus far.		

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November	**Theory**	Epigenetics: Dosage compensation, X chromosome inactivation, genomic imprinting.	B.Sc.(H) Biological Sciences Semester V	BS C12 Genetics
		Molecular evolution: analysis of nucleotide and amino acid sequences, molecular phylogenies, homologous sequences, phenotypic evolution and speciation.	B.Sc.(H) Biochemistry Semester V	BCH C11 Concepts in Genetics
		Restriction enzymes: various types, methylases.	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1
	Practical	Repetition of practicals, as required and mock exam	B.Sc.(H) Biochemistry Semester V	BCH C12 Gene Expression and Regulation
		1.Preparation and sterilization of medium 2. Streak plate and spread plate method for isolated colonies.	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1
December	**Theory**	DNA modifying enzymes: DNA polymerases, RNA polymerases, Reverse transcriptase, Ligase, DNase I Unit 3: Ligation strategies, Linkers, adaptors, homopolymer tailing.	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1
	Practical	3. Growth curve of E.coli 4. Isolation of chromosomal DNA from E.coli 5. Plasmid DNA isolation by alkaline lysis method: miniprep	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1
January 2022	**Theory**	Generation of genomic DNA libraries. cDNA synthesis, preparation of good cDNA libraries. Problems faced while making cDNA libraries.	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1
	Practical	Plasmid DNA maxi preparation. Restriction digestion of plasmid DNA	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1

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February	**Theory**	Sequence dependent and independent screening of DNA libraries	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1
	Practical	Recovery of DNA from low-melting temperature agarose gel.	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1
March	**Theory**	Revision and class discussions	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1
	Practical	Mock practicals and viva related discussions	P.G.Diploma in Molecular and Biochemical Technology	PGDMB RDT-1

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-2023) ODD SEMESTER

PRINCIPAL (Acting)
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Name of the Faculty: Dr. Vandana Malhotra **Department: BIOCHEMISTRY**

Semester: III/V (B.Sc (H) Biochemistry & B.Sc (H) Biological Science)

Month		Topics	Course	Paper Code /Name
JULY	Theory	UNIT I. Biosynthesis of RNA in Prokaryotes RNA polymerases, transcription cycle in bacteria, sigma factor, bacterial promoters, identification of DNA binding sites by DNA footprinting, the three stages of RNA synthesis, initiation, elongation and termination, rho-dependent and rho-independent termination. Inhibitors of transcription and applications as anti-microbial drugs.	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		UNIT 4. Molecular Genetics Genetics of bacteria and viruses: Complementation test, limitations of cis-trans test, intragenic complementation, rII locus of phage T4 and concept of cistron. Mechanism of genetic exchange - conjugation, transformation, and transduction. Gene mapping in bacteria.	B.Sc. BIOLOGICAL SC. (Hons) III Year, Semester V	BS C-12 Genetics
	Practicals	• Estimation of RNA by Orcinol Method	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester V	BCH C-12 Gene Expression and Regulation
AUGUST	Theory	Unit I. Biosynthesis of RNA in Prokaryotes Contd.	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		UNIT 4. Molecular Genetics Contd.	B.Sc. BIOLOGICAL SC. (Hons) III Year, Semester V	BS C-12 Genetics
		Unit 1. Introduction to Metabolism & Design of Metabolic pathways	B.Sc. BIOCHEMISTRY (Hons) II Year, Semester III	BCH C-5 Metabolism of Carbohydrates and lipids
	Practicals:	• Extraction of Nucleic Acids from Plant Tissue • Determination of NA content in heterogeneous samples (value added) • Studies of DNA and RNA as a function of time (value added)	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester V	BCH C-12 Gene Expression and Regulation

		• Glucose Tolerance Test	B.Sc. BIOCHEMISTRY (Hons) II Year, Semester III	BCH C-7 Hormone Biochemistry and function
		• Sequence retrieval (protein and gene) from NCBI and Molecular file formats - FASTA, GenBank/Genpept	B.Sc. BIOLOGICAL SC. (Hons) II Year, Semester III	BS SEC-3 Bioinformatics
SEPTEMBER	Theory	UNIT I: Contd. UNIT V: Regulation of Gene Expression in Prokaryotes Strategies for gene regulation, negative and positive regulation, concept of operons, regulatory proteins, activators, repressors, DNA binding domains, regulation of lac operon and the concept of combinatorial control, trp operon. Regulatory RNAs in bacteria, small RNA, and Riboswitches.	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		UNIT I: Glycolysis, and Pentose phosphate pathway Autotrophs, Heterotrophs, catabolism, anabolism, metabolic pathways, ATP as energy currency, experimental approaches to study metabolism, High energy compounds. Glycolysis: overview, reactions, regulations including hormones, fates of pyruvate, feeder pathways for glycolysis, galactosemia. Lactose intolerance. Cori and Cori cycle. Pentose phosphate pathway and its importance, Relationship between glycolysis and pentose phosphate pathway. Anaerobic ATP production, fermentation.	B.Sc. BIOCHEMISTRY (Hons) II Year, Semester III	BCH C-5 Metabolism of Carbohydrates and lipids
		UNIT 4. Molecular Genetics (contd).	B.Sc. BIOLOGICAL SC. (Hons) III Year, Semester V	BS C-12 Genetics
	Practicals	• Extraction of Total RNA from Plant tissue • Growth Curve for *E. coli* • Diauxic Curve for *E. coli*	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		• Estimation of T4 • Estimation of Ca^{2+}	B.Sc (Hons) Biochemistry, II Year, Semester III	BCH C-7 Hormone Biochemistry and function

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		• Structure download (protein and DNA) from PDB and Molecular viewer by visualization software • Pairwise alignment using BLAST • Multiple sequence alignment and construction of phylogenetic trees	B.Sc. BIOLOGICAL SC. (Hons) II Year, Semester III	BS SEC-3 Bioinformatics
	Assignment And Tests	Assignments pertaining to the topics were given to the students Online MCQ Quiz		
OCTOBER	Theory	UNIT V: Regulation of Gene Expression in Prokaryotes Contd. UNIT VI: Regulation of Gene Expression in Eukaryotes	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		UNIT II: Additional pathways in carbohydrate metabolism Glycogen synthesis, glycogen breakdown, regulation of glycogen metabolism, gluconeogenesis. Glycogen storage diseases; Von Gierke, Pompe, Cori and McArdle. Gluconeogenesis. Photosynthesis dark reaction: Calvin cycle, regulation, Photo respiration, C4 and CAM pathways in plants.	B.Sc. BIOCHEMISTRY (Hons) II Year, Semester III	BCH C-5 Metabolism of Carbohydrates and lipids
		Unit 4: Genome dynamics-Transposable Genetic Elements. Prokaryotic transposable elements-IS elements, Composite transposons, Tn-3 elements. Eukaryotic transposable elements- Ac-Ds system in maize and P-elements in drosophila, uses of transposons.	B.Sc. BIOLOGICAL SC. (Hons) III Year, Semester V	BS C-12 Genetics
	Practicals	• Protein Synthesis Inhibitors	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		• HCG based pregnancy detection test • Continuous evaluation	B.Sc (Hons) Biochemistry, II Year, Semester III	BCH C-7 Hormone Biochemistry and function
		• Secondary Structure Prediction of RNA/Protein • Tertiary structure prediction (SWISSMODEL) and Protein structure evaluation - Ramachandran map (PROCHECK	B.Sc. BIOLOGICAL SC. (Hons) II Year, Semester III	BS SEC-3 Bioinformatics
	Assignment and Tests	Assignments pertaining to the topics were given to the students MCQ/Class tests		

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NOVEMBER	Theory	UNIT VI: Regulation of gene expression in eukaryotes Contd.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		UNIT II (Contd.) UNIT III: Citric acid cycle Overview of citric acid cycle, synthesis of acetyl Coenzyme A, enzymes of citric acid cycle, regulation of citric acid cycle, anaplerotic reactions, amphibolic nature, Malate aspartate shuttle, Glyceraldehyde-3-phosphate dehydrogenase shuttle, Glyoxylate cycle in plants. Signaling pathways, regulation of carbohydrate metabolism by hormones, diseases associated with metabolic irregularities.	B.Sc. BIOCHEMISTRY (Hons) II Year, Semester III	BCH C-5 Metabolism of Carbohydrates and lipids
		Unit VI: Introduction to genomics and proteomics Genomes of bacteria, Drosophila and Humans; Human genome project; Introduction to Bioinformatics, Gene and Protein databases, sequence similarity and alignment, Gene feature identification. Gene Annotation and analysis of transcription and translation; Posttranslational analysis-Protein interaction.	B.Sc. BIOLOGICAL SC. (Hons) III Year, Semester V	BS C-12 Genetics
	Practicals	Revision Exercises	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		• Estimation of serum electrolytes • Case Studies	B.Sc (Hons) Biochemistry, II Year, Semester III	BCH C-7 Hormone Biochemistry and function
		• Design probe and primers for a given gene sequence • Gene Prediction Tools Revision Exercises	B.Sc. BIOLOGICAL SC. (Hons) II Year, Semester III	BS SEC-3 Bioinformatics
	Assignments and Tests	Evaluation of all assignments Internal Assessment		
DECEMBER	Theory	UNIT III: Citric acid cycle Contd.	B.Sc. BIOCHEMISTRY (Hons) II Year, Semester III	BCH C-5 Metabolism of Carbohydrates and lipids
	Practical	Revision Exercises/Mock	B.Sc (Hons) Biochemistry, II Year, Semester III	BCH C-7 Hormone Biochemistry and function

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		Revision Exercises	B.Sc. BIOLOGICAL SC. (Hons) II Year, Semester III	BS SEC-3 Bioinformatics
	Assignments and Tests	Evaluation of all assignments Internal Assessment		

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SEMESTER WISE TEACHING PLAN-2022-23
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kameshwar Sharma YVR, Assistant Professor (AL-12)
Department: Biochemistry
Semester: I/III/V (Odd Semester)

Month		Topics	Course	Paper Code/Name
July and August	**Theory**	Ultracentrifugation, Fluorescence, Microscopy- FACS, FRET, Confocal Microscopy	**B.Sc(H) Biochemistry - Sem V**	**BC-DSE-2 Advanced Cell Biology**
		Overview of Bioinformatics and its applications in biology. Week 2: Databases & types of biological databases. Week 3: Structure and Sequence Databases with examples.	**B.Sc(H) Biological sciences - Sem III**	**SEC: Bioinformatics**
		Ammonium sulphate fractionation, dialysis. Ion exchange chromatography, molecular sieve chromatography, affinity chromatography.	**B.Sc(H) Biological sciences - Sem III**	**BS-C5 Proteins and Enzymes**
	Practicals	• Introduction to Bioinformatics • J mol/Pymol and Java	**B.Sc(H) Biological sciences - Sem III**	**BS SEC Bioinformatics**
		Determination of absorption maxima (λmax) of small molecules and macromolecules. 2. Verification of Beer's Law	**B.Sc(H) Biochemistry - Sem III**	**SEC- Biochemical Techniques**
		MCL - Practical Estimation of Blood Glucose by O Toluidine and GOD POD method	**B.Sc(H) Biochemistry - Sem III**	**BC C 5- Metabolism of Carbohydrates and Lipids**
SEPTEMBER	**Theory:**	Electron Microscopy, Plant and Animal Cell Culture, Immunohistochemistry.	**B.Sc(H) Biochemistry - Sem V**	**BC-DSE-2 Advanced Cell Biology**
		Sequence Alignment & its applications in study of phylogeny. BLAST and Multiple Sequence Alignment.	**B.Sc(H) Biological sciences - Sem III**	**BS SEC Bioinformatics**
		HPLC and FPLC. Gel electrophoresis, SDS-PAGE, IEF and 2-D electrophoresis. Week 7: Nature of enzymes - protein and non-protein (ribozyme, abzymes).Cofactor and prosthetic group.Classification of enzymes.	**B.Sc(H) Biological sciences - Sem III**	**BS-C5 Proteins and Enzymes**

	Practicals:	Determination of molar extinction coefficient. 4. Separation of amino acid acids/sugars by thin layer chromatography (TLC) 5. Separation of proteins by gel filtration chromatography **MCL - Practical** Assay of salivary amylase Isolation of Cholesterol from egg yolk	**B.Sc(H) Biochemistry - Sem III** **B.Sc(H) Biochemistry - Sem III**	SEC- Biochemical Techniques **BC C 5- Metabolism of Carbohydrates and Lipids**
	Tutorials:	Class Tests / assignments		
OCTOBER	**Theory:**	**Cytoskeleton and Cell Motility** Function and origin of The Cytoskeleton; Organization and Assembly of Actin Filaments And Myosin; Assembly and Dynamics of Genomics & its application. Genome Annotation. Gene prediction methods Fischer‟s lock& key and Koshland‟s induced fit hypothesis. Enzyme specificity.Factors affecting enzyme activity. Week 8: Enzyme Kinetics- Michaelis-Menten equation, Lineweaver-Burk plot. Determination of Km, Vmax, Kcat. Week 9: Enzyme inhibition, irreversible and reversible (competitive, uncompetitive, noncompetitive, mixed). Mechanism based inhibitors.	**B.Sc(H) Biochemistry - Sem V** **B.Sc(H) Biological sciences - Sem III** **B.Sc(H) Biological sciences - Sem III**	**BC-DSE-2 Advanced Cell Biology** **BS SEC – Bioinformatics** **BS-C5 Proteins and Enzymes**
	Practicals	6. Separation of proteins by ion-exchange chromatography 7. Separation of nucleic acids using agarose gel electrophoresis 8. Separation of protein by SDS-PAGE. Phylogenetic Analysis, Rooted & Unrooted Trees **MCL – Practical** Separation of Cholesterol and Lecithin from egg yolk by TLC Cholesterol estimation	**B.Sc(H) Biochemistry - Sem III** **B.Sc(H) Biological sciences - Sem III** **B.Sc(H) Biochemistry - Sem III**	**SEC- Biochemical Techniques** **BS SEC – Bioinformatics** **BC C 5- Metabolism of Carbohydrates and Lipids**
	Tutorials	Assignments / Tests		

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NOVEMBER	**Theory:**	**Cytoskeleton and Cell Motility** Microtubules And Intermediate Filaments; Assembly and organization of Cilia and Flagella, Muscle Contractility; Cell Polarization And migration. Applications of Bioinformatics in Drug Discovery. CADD. Microbial Genomics. Applications of	**B.Sc(H) Biochemistry - Sem V**	**BC-DSE-2 Advanced Cell Biology**
		Bioinformatics in Agriculture	**B.Sc(H) Biological sciences - Sem III**	**BS SEC – Bioinformatics**
		Application of enzymes in diagnostics (SGPT, SGOT, creatine kinase, alkaline and acid phosphatases), Enzyme immunoassay (HRP), enzyme therapy (Streptokinase). Metal based drug interaction. Enzyme immobilization and its applications.	**B.Sc(H) Biological sciences - Sem III**	**BS-C5 Proteins and Enzymes**
	Practicals:	• To study the parts of a microscope • Cytochemical staining of proteins by Methylene Blue	**B.Sc(H) Biochemistry - Sem I**	**BCH C-2 CELL BIOLOGY**
		Continuous evaluation 2. Revision of practical	**B.Sc(H) Biological sciences - Sem III**	**BS SEC - Bioinformatics**
		Continuous evaluation 2. Revision of practical (MCL)	**B.Sc(H) Biochemistry - Sem III**	**BC C 5- Metabolism of Carbohydrates and Lipids**
	Tutorials:			
	<u>Test</u>	**MID TERM Exams**		
DECEMBER	**Theory:**	Theory Examination Invigilation And Paper Evaluation		

DR. KAMESHWAR SHARMA YVR
Assistant professor
Department of Biochemistry (Dated: 14th February, 2023)

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SEMESTER WISE TEACHING PLAN 2022-23

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. NIMISHA SINHA
Department: BIOCHEMISTRY **Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
July-August	**Theory**	**Unit 1 Introduction to Nutrition and Energy Metabolism** No. of HOURS: 8 Defining Nutrition, role of nutrients. Unit of energy, Biological oxidation of foodstuff. Physiological energy value of foods, SDA.	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester V	CBCS DSE 1 Nutritional Biochemistry
		UNIT I: Autotrophs, Heterotrophs, catabolism, anabolism, metabolic pathways, ATP as energy currency, experimental approaches to study metabolism, High energy compounds. Lipid digestion, absorption and transport.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS
		Unit 3: Respiration: Overview of glycolysis, Alternative reactions of glycolysis.	B.Sc. (Hons) BIOLOGICAL SCIENCE Hons) III Year Semester VI	CBCS DSE 9: Plant Biochemistry
	Practical	1. Glucose tolerance test. 2. Estimation of serum Ca2+. 3. Case studies	B.Sc. (Hons) BIOCHEMISTRY II Year, Semester III	CBCS C7: Hormone Biochemistry
		1. Introduction to Drosophila for studying sex linked inheritance 2. Induction of polyploidy in onion roots.	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C11 Concepts of Genetics
		1. Estimation of RNA by Orcinol Method 2. Extraction of total nucleic acids from plant tissue.	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C12 Gene Expression and Regulation
SEPTEMBER	**Theory**	Unit 1 contd…Measurement of energy expenditure. Basal and Resting metabolism, physical activity, factors affecting energy input - hunger, appetite, energy balance. Recommended Nutrient Intakes (RNI) and Recommended Dietary Allowances for different age groups. Unit 4 Dietary Proteins and health No. of HOURS: 8 Review of functions of proteins in the body, Digestion and absorption. Essential and Non-essential amino acids. Amino Acid Availability Antagonism, Toxicity and Imbalance, Amino acid Supplementation.	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester V	CBCS DSE 1 Nutritional Biochemistry
		Unit 1 Fatty acid oxidation: transport to mitochondria, activation of fatty acids, β oxidation of saturated, unsaturated, odd and even numbered and branched chain fatty acids, regulation of fatty acid oxidation, peroxisomal β oxidation, ω oxidation and α oxidation. Ketone-body metabolism	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS

		Unit 3: Respiration: Regulation of plant glycolysis, Translocation of metabolites across mitochondrial membrane, TCA cycle, Alternative NAD(P)H oxidative pathways; Cyanide resistant respiration. Unit 3: Biological Nitrogen fixation by free living and in symbiotic association, structure and function of enzyme Nitrogenase. Nitrate assimilation: Nitrate and Nitrite reductase.	B.Sc. (Hons) BIOLOGICAL SCIENCE Hons) III Year Semester VI	CBCS DSE 9: Plant Biochemistry
	Practical	1. Estimation of serum T4, T3 and TSH 2. Estimation of serum electrolytes. 3. Case studies	B.Sc. (Hons) BIOCHEMISTRY II Year, Semester III	CBCS C 7 Hormone Biochemistry
		1. Drosophila maintenance, media preparation and Monohybrid crosses in Drosophila for studying sex linked inheritance using a software	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C11 Concepts of Genetics
		1. Monoauxic and Diauxic growth curve effect. 2. Isolation of Total RNA from bacteria/yeast.	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C12 Gene Expression and Regulation
OCTOBER	**Theory**	Unit 4 contd. Effects of deficiency. Food source and Recommended Dietary Allowances for different age group. Amino acid pool. NPU, Biological Value, Nitrogen balance. PEM and Kwashiorkor. **Unit 5 Fat and water soluble Vitamins No. of HOURS: 8** Vitamin A, D, E, K Dietary sources, RDA, Adsorption, Distribution, Metabolism and excretion(ADME), Deficiency. Role of Vitamin A as an antioxidant, in Visual cycle, dermatology and immunity. Role of Vitamin K in Gamma carboxylation. Role of Vitamin E as an antioxidant. Extra-skeletal role of Vitamin D and its effect on bone physiology. Hypervitaminosis..	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester V	CBCS DSE Nutritional Biochemistry
		Transport of mitochondrial Acetyl Co A to cytosol, Fatty acid synthase complex enzyme. Synthesis of saturated, unsaturated, odd and even chain fatty acids, regulation of fatty acid metabolism.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS
		Primary and secondary ammonia assimilation in plants; ammonia assimilation by Glutamine synthetase-glutamine oxoglutarate amino transferase (GS-GOGAT) pathway. Seed storage proteins in legumes and cereals Unit 3: Cell and tissue culture techniques, types of cultures: organ and explants culture, callus culture, cell suspension culture and protoplast culture.	B.Sc. (Hons) BIOLOGICAL SCIENCE Hons) III Year Semester VI	CBCS DSE 9: Plant Biochemistry

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	Practical	1. HCG based pregnancy detection test. 2. Case studies on hormone disorders.	B.Sc. (Hons) BIOCHEMISTRY II Year, Semester III	CBCS C7 Hormone Biochemistry
		1. Squash preparation of salivary glands of Dipteran larva to observe polytene chromosomes. 2. Smear technique to demonstrate sex chromatin in buccal epithelial cells. 3. Study of abnormal human karyotype and pedigrees (dry lab) 4. Continuous evaluation	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C11 Concepts of Genetics
		1. Effect of inhibitors on protein synthesis	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C12 Gene Expression and Regulation
NOVEMBER	**Theory**	Unit 5 contd. Vitamin C role as cofactor in amino acid modifications. Niacin- Metabolic interrelation between tryptophan, Niacin and NAD/ NADP. Vitamin B6-Dietary source, RDA, conversion to Pyridoxal Phosphate. Role in metabolism, Biochemical basis for deficiency symptoms. Vitamin B12 and folate; Dietary source, RDA, absorption, metabolic role Biochemical basis for deficiency symptoms **Unit 8 Food and drug interactions and Nutraceuticals No. of HOURS: 4** Nutrient interactions affecting ADME of drugs, Alcohol and nutrient deficiency, Antidepressants, psychoactive drugs and nutrient interactions,	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester V	CBCS DSE Nutritional Biochemistry
		Synthesis of glycerophospholipids and sphingolipids. Cholesterol metabolism, diseases associated with abnormal lipid metabolism. Photosynthesis dark reaction: Calvin cycle, regulation, Photo respiration, C4 and CAM pathways in plants.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS
		Unit 6: Plant regeneration pathways: organogenesis and somatic embryogenesis. Applications of cell and tissue culture and somoclonal variation.	B.Sc. (Hons) BIOLOGICAL SCIENCE Hons) III Year Semester VI	CBCS DSE 9: Plant Biochemistry
	Practical	1. Revision of practical 2. Continuous evaluation	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C12 Gene Expression and Regulation

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		1. Continuous evaluation 2. Revision of practical	B.Sc. (Hons) BIOCHEMISTRY II Year, Semester III	CBCS C7 Hormone Biochemistry
		1. PTC testing in a population and calculation of allele and genotype frequencies. 2. Continuous evaluation 3. Revision of practical	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C11 Concepts of Genetics
		MIDTERM EXAM AND ASSIGNMENT		

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SEMESTER WISE TEACHING PLAN-2022-23
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr.Ravindra Varma Polisetty, Assistant Professor
Department: Biochemistry
Semester : I/III/V

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	• Polypeptides and proteins. Subunit structures, conjugated proteins, diversity of function	**B.Sc(H) Biochemistry Sem I**	**BS-C5: PROTEINS AND ENZYMES**
	Practicals	• Preparation of buffers	**B.Sc(H) Biological sciences - Sem - III**	**BS-C5: PROTEINS AND ENZYMES**
	Tutorials			
AUGUST	**Theory:**	• Techniques to isolate and analyze proteins- salt fractionation, ion-exchange chromatography, gel permeation, HPLC, SDS-PAGE, IEF. **Principles of Spectrophotometry:** • ultraviolet- visible absorption spectrophotometry, visible recording of spectra for proteins and nucleic acids and calculation of concentration of protein and nucleic acids from spectrum. • Fluorescence spectroscopy, mass spectrometry	**B.Sc(H) Biochemistry Sem I** **PG DIPLOMA – SEM I**	**BS-C5: PROTEINS AND ENZYMES** **PAPER - PGD MB 101: BIOPHYSICAL TECHNIQUES-I**

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Practicals:	• Determination of PKa value for acetic acid • Estimation of proteins by Biuret method • Estimation of proteins by Lowry's method	**B.Sc(H) Biological sciences - Sem - III**	**BS-C5: PROTEINS AND ENZYMES**
	• Study of Linkage, recombination, gene mapping using marker based data from Drosophila. • Study of Phlox/ Allium karyotype (normal and abnormal). • PTC testing in a population and calculation of allele and genotype	**B.Sc(H) Biological sciences - Sem - V**	**BS C-12: Genetics**
Tutorials:	Class Tests / assignments		

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SEPTEMBER	**Theory:**	• Protein primary structure - sequencing by Edman degradation, • use of enzymes and chemical reagents to obtain overlap peptides. • Synthesis of peptides using Merrifeld method. **<u>Ion Exchange chromatography:</u>** • Separation based on charge, types of ion exchangers and general properties, selection of ion exchanger, selection of buffer, operating methods, batch operation and column operation packing and development of column, various gradients for elution, effect of flow rate, volume of gradient and fraction size on separation, • high pressure liquid chromatography, fast protein liquid chromatography	**B.Sc(H) Biochemistry Sem I** **PG DIPLOMA – SEM I**	**BS-C5: PROTEINS AND ENZYMES** **<u>PAPER - PGD MB 101: BIOPHYSICAL TECHNIQUES-I</u>**
	Practicals	• Separation of sugars by Thin Layer chromatography • Assay of the enzyme acid phosphatase from germinated mungdal or β-amylase from Sweet potato beams • Study of abnormal human karyotype and pedigrees (dry lab). • Squash preparation of salivary glands of Dipteran larva to observe polytene chromosomes.	**B.Sc(H) Biological sciences - Sem – III** **B.Sc(H) Biological sciences - Sem - V**	**BS-C5: PROTEINS AND ENZYMES** **BS C-12: Genetics**
	Tutorials	Assignments / Tests		

OCTOBER	**Theory:**	• Oxygen binding curves, cooperativity models for haemoglobin • General mechanisms of catalysis.Nomenclature. • Mechanism of action of chymotrypsin. • Inhibitors of enzymes - antibiotics.	**B.Sc(H) Biochemistry Sem I**	**BS-C5: PROTEINS AND ENZYMES**
		Gas liquid chromatography: • Principle, instrumentation, detectors. • **Purification of proteins**: using salts, organic solvents, organic polymers. Dialysis and membrane filtration. • **Enzymes:** Basic features of enzymes, catalysis, estimation of Vmax and Km using Lineweaver –Burke plot, enzyme inhibition, specific activity.	**PG DIPLOMA – SEM I**	**PAPER - PGD MB 101: BIOPHYSICAL TECHNIQUES-I**
	Practicals:	• Effect of pH on the activity of an enzyme • Progress curve of an enzyme	**B.Sc(H) Biological sciences - Sem - III**	**BS-C5: PROTEINS AND ENZYMES**
		• Squash preparation of salivary glands of Dipteran larva to observe polytene chromosomes. • Smear technique to demonstrate sex chromatin in buccal epithelial cells.	**B.Sc(H) Biological sciences - Sem - V**	**BS C-12: Genetics**
	Tutorials:			
	Test			

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NOVEMBER	**Theory:**	• Regulation of enzyme activity and its importance - aspartate transcarbamoylase • **Enzymes:** Basic features of enzymes, catalysis, estimation of Vmax and Km using Lineweaver –Burke plot, enzyme inhibition, specific activity. • Introduction to structures of protein, Amino acids and their properties. Biologically important peptides, Conjugated proteins, multimeric proteins and metalloproteins. Diversity of proteins.	**B.Sc(H) Biological science - Sem - III** **PG DIPLOMA – SEM I** **B.Sc(H) Biochemistry Sem I**	**BS-C5: PROTEINS AND ENZYMES** **PAPER - PGD MB 101: BIOPHYSICAL TECHNIQUES-I** **DSC-1: proteins**
	Practicals:	Mock practicals / Tests • Screening for an auxotrophic mutation in E.coli. • Estimation of proteins using UV-absorbance and Biuret method. • Estimation of proteins using Lowry/Bradford method.	**B.Sc(H) Biological sciences - Sem - V** **B.Sc(H) Biochemistry Sem I**	**BS C-12: Genetics** **DSC-3: Biochemical Techniques**
	Tutorials:			

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December	**Theory:**	• Organization of protein structure- primary, secondary, tertiary and quaternary structures.Protein sequencing- Edman degradation.Solid phase peptide synthesis.Nature of stabilizing bonds- covalent and non covalent.	**B.Sc(H) Biochemistry Sem I**	**DSC-1: proteins**
	Practical:	• Preparation of cell free extract from a biological sample • Aminoacid separation by thin layer chromatography	**B.Sc(H) Biochemistry Sem I**	**DSC-3: Biochemical Techniques**
January	**Theory:**	• Denaturation and renaturation of proteins.Introduction to thermodynamics of folding.Role of chaperones, chaperonins and PDI. Defects in protein folding: Alzheimer‟s and Prion based.	**B.Sc(H) Biochemistry Sem I**	**DSC-1: proteins**
	Practical:	• Separation of molecules by gel filteration chromatography • Separation of molecules by ion exchange chromatography	**B.Sc(H) Biochemistry Sem I**	**DSC-3: Biochemical Techniques**
February	**Theory:**	• Peptide bond- dihedral angles. Ramachandran map, Secondary structure- Helices, sheets and turns.	**B.Sc(H) Biochemistry Sem I**	**DSC-1: proteins**
	Practical:	• Separation of molecules by ion exchange chromatography • SDS PAGE	**B.Sc(H) Biochemistry Sem I**	**DSC-3: Biochemical Techniques**

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sarika Yadav **Department: BIOCHEMISTRY**

Semester: I/III/V (2022-23) (ODD SEMESTER)

Month		Topics	Course	Paper Code/Name
July	**Theory**	Session didn't start	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		Session didn't start	B. Sc (H) Biochemistry, II Yr, Sem III	LOCF CBCS C-7: HORMONE: BIOCHEMISTRY AND FUNCTION
		Overview of the endomembrane system;	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY
		Practicals		
	Practical	Session didn't start	B.Sc. Biochemistry (H) II Yr, Sem III	CBCS C-6: Membrane Biology and Bioenergetics
		Anthropometric identifications for nutrition related disease	B.Sc. Biochemistry (H) III Yr, Sem V	DSE 1: Nutritional Biochemistry
		Session didn't start	B. Sc (H) Biochemistry, I Yr, Sem I	NEP DSC-2 Proteins
August	**Theory**	Session didn't start	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		Session didn't start	B. Sc (H) Biochemistry, II Yr, Sem III	LOCF CBCS C-7: HORMONE: BIOCHEMISTRY AND FUNCTION
		Targeting, modification and sorting of proteins from and into Endoplasmic Reticulum;	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY
	Practical:	Session didn't start	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		Session didn't start	B. Sc (H) Biochemistry, I Yr, Sem I	NEP DSC-2 Proteins (PRACTICALS)
		Blood Lipid profile 3. Determination of oxidative stress: TBARS in serum, antioxidant enzymes in hemolysate/plant sources. Estimation of vitamin in drugs/food/serum.	B.Sc. Biochemistry (H) III Yr, Sem V	DSE 1: Nutritional Biochemistry

September	**Theory**	Membrane composition and structure: Historical background and various membrane models. Overview of membrane functions. Composition of membranes: Lipids - Phospholipids, Glycolipids, sterols; Proteins - Peripheral Proteins, Integral Membrane Proteins and Lipid-Anchored proteins, and carbohydrates. Comparison of the composition of various cellular and subcellular membranes. Lateral and transverse asymmetry in membranes.	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		Introduction to Endocrinology and Cellular signaling: Functions of hormones and their regulation. Chemical signaling - endocrine, paracrine, autocrine, intracrine and neuroendocrine mechanisms. Chemical classification of hormones, transport of hormones in the circulation and their half-lives.	B. Sc (H) Biochemistry, II Yr, Sem III	LOCF CBCS C-7: HORMONE: BIOCHEMISTRY AND FUNCTION
		Cell Division and its Regulation: Overview of the cell cycle; Eukaryotic cell cycle; Events of Mitotic Phase; Cytokinesis; Events of Meiosis And Fertilization;	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY
	Practical	Effect of lipid composition on the permeability of a lipid monolayer. Determination of CMC of detergents.	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		Session didn't start	B. Sc (H) Biochemistry, I Yr, Sem I	NEP DSC-2 Proteins (PRACTICALS)
		Estimation of minerals in drugs/food/serum. Estimation of glycosylated haemoglobin	B.Sc. Biochemistry (H) III Yr, Sem V	DSE 1: Nutritional Biochemistry
October	**Theory**	Role of Flippase, Floppase and Scramblase. Model systems to study membranes - Lipid Monolayers, Planar Bilayer and Liposome, and their application. Polymorphic Lipid-Water Systems. The various determinants of polymorphic phases: CMC, lipid shape, critical packing parameter. Membrane dynamics: Membrane fluidity: lateral, transverse and rotational motion of lipids and proteins. Factors affecting membrane fluidity- composition, barriers (tight junctions), cytoskeleton interactions, microdomains – rafts, caveolae.	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		Hormone therapy. General introduction to Endocrine methodology. Hormone receptors - extracellular and intracellular. Receptor - hormone binding, Scatchard analysis. G protein coupled receptors,	B. Sc (H) Biochemistry, II Yr, Sem III	LOCF CBCS C-7: HORMONE: BIOCHEMISTRY AND FUNCTION

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		Regulation of Cell Division and Cell Growth Molecular Basis of Cancer Biology: Development and causes of cancer	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY
	Practical	Preparation of RBC ghost cell. Study the photosynthetic O2 evolution in hydrilla plant.	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		Session didn't start	B. Sc (H) Biochemistry, I Yr, Sem I	NEP DSC-2 Proteins (PRACTICALS)
		Determination of nutritive value of foods 8. Case studies on nutritional disorders.	B.Sc. Biochemistry (H) III Yr, Sem V	DSE 1: Nutritional Biochemistry
November	**Theory**	Fence and gate model. Study of RBC membrane architecture. Homeoviscous Adaptation. Techniques to study membrane dynamics: FRAP, TNBS, SPT. Membrane transport: Thermodynamics of transport. Simple diffusion and facilitated diffusion. Passive transport□glucose transporter and anion transporter. Primary active transporters- P type ATPases, V type ATPases, F type ATPases. Secondary active transporters - lactose permease, Na+ -glucose symporter. ABC family of transporters – MDR and CFTR. Group translocation and bacteriorhodopsin.	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		G proteins, second messengers - cAMP, cGMP, IP3, DAG, Ca2+ , Effector systems - adenylyl cyclase, guanylyl cyclase, PDE, PLC. Protein kinases (PKA, PKB, PKC, PKG). Receptor tyrosine kinases - EGF, insulin and Ras - MAP kinase cascade	B. Sc (H) Biochemistry, II Yr, Sem III	LOCF CBCS C-7: HORMONE: BIOCHEMISTRY AND FUNCTION
		Genetic basis of cancer; Oncogenes, Tumor Viruses; Molecular approach to cancer treatment.	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY
	Practical	Isolation of chloroplast from spinach leaves and estimation of chlorophyll content. Study the Hill reaction by using artificial electron acceptor. Isolation of mitochondria from liver and assay of marker enzyme SDH	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		Scanning the protein using UV-visible absorbance method	B. Sc (H) Biochemistry, I Yr, Sem I	NEP DSC-2 Proteins (PRACTICALS)
		Revision of practical, Practical Examination	B.Sc. Biochemistry (H) III Yr, Sem V	DSE 1: Nutritional Biochemistry

December	**Theory**	Ion channels: voltage-gated ion channels (Na+ /K+ voltage-gated channel) and ligand-gated ion channels (acetyl choline receptor), and aquaporins. Ionophores: valinomycin, gramicidin. Relationship of membrane transport and diseases.	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
		Non receptor tyrosine kinase, erythropoietin receptor JAK - STAT pathway. Steroid hormone Receptor. Receptor regulation and cross talk	B. Sc (H) Biochemistry, II Yr, Sem III	LOCF CBCS C-7: HORMONE: BIOCHEMISTRY AND FUNCTION
	Practical	Separation of photosynthetic pigments by TLC. 8. Separation of RBC membrane proteins by SDS-PAGE Revision of practical, Practical Examination	B.Sc. Biochemistry (H) II Yr, Sem III	LOCF CBCS C-6: Membrane Biology and Bioenergetics
	Practical	Solvent perturbation and denaturation studies of proteins; Estimation of proteins using Biuret, Lowry/ Bradford methods	B. Sc (H) Biochemistry, I Yr, Sem I	NEP DSC-2 Proteins (PRACTICALS)
January 2023	**Practical**	Determination of isoelectric point of casein, Understanding Protein sequence Databases and homology modeling of proteins	B. Sc (H) Biochemistry, I Yr, Sem I	NEP DSC-2 Proteins (PRACTICALS)
Feb 2023	**Practical**	Molecular visualization software: Pymol, Rasmol for protein structures from PDB; Revision of practical, Practical Examination	B. Sc (H) Biochemistry, I Yr, Sem I	NEP DSC-2 Proteins (PRACTICALS)

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SEMESTER WISE TEACHING PLAN (2022 -2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shukla Saluja **Department: Botany**
Semester: I/III/V

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Introduction of Biostatistics. History, statistical terms, Basic principles of biostatistics	B.Sc. (H) Botany (Sem: V)	BHDS2. Biostatistics
	Practicals:	1. Collection of data. 2. Tabulation of data.	B.Sc. (H) Botany (Sem: V)	BHDS2. Biostatistics
	Tutorials			
AUGUST	**Theory**	Aims of biostatistics ,variables-measurements, applications, Limitations and Importance of biostatistics Importance of biostatistics in modern research.	B.Sc. (H) Botany (Sem: V)	BHDS2. Biostatistics
	Practicals	1. Calculation of arithmetic mean from given /collected data. 2. Calculation of geometric mean from collected/given data. 3. Calculation of harmonic mean from collected/given data. 4. Calculation of median from collected/given data.	B.Sc. (H)Botany (Sem: V)	BHDS2, Biostatistics
		1. Study of meristems through permanent slides and photographs. 2.Tissues (parenchyma, collenchyma and sclerenchyma);	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology
	Tutorials			
SEPTEMBER	**Theory:**	Collection of data. Classification of data and frequency distribution. Presentation of data-types of graphs. Measures of central tendency.	B.Sc. (H) Botany (Sem: V)	BHDS2 - Biostatistics
	Practicals:	1. Calculation of mode from given data 2. Calculation of range from given data. 3. Calculation of standard deviation and error from given data.	B.Sc. (H) Botany (Sem: V)	BHDS2 - Biostatistics
		1. Macerated xylary elements and Phloem 2. T.S. Stem: Monocot: *Zea mays*; Dicot: *Helianthus*. 3. T.S. Root: Monocot: *Zea mays*; Dicot: *Helianthus*. 4. Leaf: Dicot and Monocot (only Permanent slides).	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology
	Tutorials:			
	Assignment:	From the entire syllabus of Biostatistics	B.Sc. (H)Botany (Sem: V)	BHDS2, Biostatistics

OCTOBER	**Theory:**	Measures of central tendency - mean, median, mode, merits & demerits of harmonic and geometric mean.	B.Sc. (H)Botany (Sem: V)	BHDS2, Biostatistics
	Practicals:	1. Calculation of coefficient of variance from given data. 2. Calculation of correlation coefficient value by Spearmen's rank method from given data. 3. Question based on Addition and multiple rules of probability.	B.Sc. (H) Botany (Sem: V)	BHDS2-Biostatistics
		1.Adaptive anatomy: Xerophyte (*Nerium* leaf); Hydrophyte (*Hydrilla* stem). 2.Structure of anther (young and mature) 3.Study of Polygonum type of embryo sac by photographs. 4. Types of ovules: anatropous, orthotropous, circinotropous, amphitropous/ campylotropous.	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology
	Tutorials:			
	<u>Test</u>			
NOVEMBER	**Theory:**	Measures of dispersion - range, standard deviation, mean deviation, standard error.	B.Sc. (H) Botany (Sem: V)	BHDS2- Biostatistics
	Practicals:	1 . Statistical inference - hypothesis testing. 2. Calculation of student t' test and chi square test on given/collected data set. 3. One way analysis of variance. 4. Uses of software in biostatistics. **Practical Test.**	B.Sc. (H)Botany (Sem: V)	BHDS2, Biostatistics
		1. Dissection of embryo from developing seeds. 2. Dissection of endosperm from developing seeds. 3.Calculation of percentage of germinated pollen in a given medium	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology
	Tutorials:			

DECEMBER	**Theory:**	**Semester exam**	B.Sc. (H)Botany (Sem: V)	BHDS2-Biostatistics
		1. Pollination types 2.Seed dispersal mechanisms (including appendages, aril,caruncle) **Practical Test.**	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2022-23)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Tabassum Afshan

Department: Botany

Semester : III & V

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	1.Classification of tissues, Simple and Complex Tissues	B.Sc. Botany (Hons)	CC – V **(**Anatomy of Angiosperms**)**
		2. Role of Ethnobotany in modern medicine : Medico Ethnobotanical sources in India, significance of the following plants in Ethnobotanical practices(along with their habitat and morphology)a)*Azardirachta Indica*	B.Sc. Botany (Hons) B.Sc. Life Science	SEC - Ethnobotany SEC - Ethnobotany
	Practicals	1.Apical meristem of root, shoot and vascular cambium. 2.Distribution and types of parenchyma, collenchyma and sclerenchyma.	B.Sc. Botany (Hons)	CC – V **(**Anatomy of Angiosperms**)**
		3.Collection, identification and preparation of herbarium of three ethnobotanically important plants with appropriate references.	B.Sc. Botany (Hons) B.Sc. Life Science	SEC – Ethnobotany SEC - Ethnobotany
		4.Study of meristems through permanent slides and photographs 5.Tissues (parenchyma, collenchyma and sclerenchyma), Macerated xylary elements, Phloem (permanent slides, photographs)	B.Sc. Botany (Hons)	CC – III /Plant Anatomy and Embryology
	Tutorials			

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SEPTEMBER	**Theory:**	1. Pits and plasmodesmata, Wall ingrowths and transfer cells, adcrustation and incrustation, Ergastic substances. 2. Stem : Organisation of shoot apex(Apical cell theory, Histogen theory, Tunica Corpus theory, Continuing meristematic residue, Cytohistological zonation 3. Significance of the following plants in Ethnobotanical practices (along with their habitat and morphology) b)*Ocimum sanctum*, c)*Vitex negundo*, d)*Gloriosa superba* e) *Tribulus terrestris, f) Pongamia pinnata,*	B.Sc. Botany (Hons) B.Sc. Botany (Hons) B.Sc. Life Science	CC – V / Anatomy of Angiosperms SEC : Ethnobotany SEC : Ethnobotany
	Practicals:	1. Xylem: Tracheary elements-tracheids, vessel elements; thickenings; perforation plates; xylem fibres. 2. Phloem: Sieve tubes-sieve plates; companion cells; phloem fibres. 3. Epidermal system: cell types, stomata types; trichomes: non-glandular and glandular. 4. Root: monocot, dicot, secondary growth 5. Wood: ring porous; diffuse porous; tyloses; heart- and sapwood. 1. Preparation of crude extract of ethnobotanically important plants with appropriate references (any method to be used) 2. Stem : Monocot: *Zea mays* , Dicot : *Helianthus* 3. Root : Monocot: *Zea mays* , Dicot : *Helianthus* 4. Leaf : Dicot and Monocot (only permanent slides) 5. Adaptive anatomy : Xerophyte (Nerium leaf), Hydrophyte (Hydrilla stem) 6. Structure of anther (young and mature)	B.Sc. Botany (Hons.) B.Sc. Life Science B.Sc. Botany (Hons) B.Sc. Life Science	CC – V / Anatomy of Angiosperms SEC : Ethnobotany SEC : Ethnobotany CC – III /Plant Anatomy and Embryology
	Tutorials:			

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OCTOBER	**Theory:**	1. Types of vascular bundles, structure of Dicot and Monocot Stem, Shoot chimeras 2. Leaf : Structure of Dicot and Monocot leaf, Kranz Anatomy, Development of leaf 3. Root : Organisation of Root apex, (Apical cell theory, Histogen theory, Korper-Kappe theory), Quiescencentre, Root cap, Structure of Dicot and Monocot Root, Endodermis, Exodermis, Origin of Lateral root	B.Sc. Botany (Hons.)	CC – V / Anatomy of Angiosperms
		4. Significance of following plants *g) Cassia auriculata, h) Indigofera tinctoria*	B.Sc. Botany (Hons.) B.Sc. Life Science	SEC : Ethnobotany SEC : Ethnobotany
		5. Role of Ethnobotany in modern medicine with special example – *Rauvolfia serpentina, Trichopus zeylanicus, Artemesia, Withania*		
		6. Role of Ethnic groups in conservation of plant genetic resources, endangered taxa and forestmanagement (participatory management), Ethnobotany as a tool to protect interests of ethnic groups, sharing of wealth concept with few examples from India Ethnobotany and legal aspects – Ethnobotany as a tool to protect interests of ethnic groups. Sharing ofwealth concepts with few examples from India, Biopiracy	B.Sc. Life Science	SEC : Ethnobotany

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Practicals:	1. Stem: monocot, dicot - primary and secondary growth; phloem wedges in *Bignonia,* included phloem in *Leptadenia / Salvadora;* periderm; lenticels. 2. Leaf: isobilateral, dorsiventral, C4 leaves (Kranz anatomy). 3. Adaptive Anatomy: xerophytes, hydrophytes.	B.Sc. Botany (Hons.)	CC – V / Anatomy of Angiosperms
	4. Project work documentation, literature survey, and collection of information on ethnobotanically useful plants from traditional healers	B.Sc. Life Science B.Sc. Botany(Hon)	SEC Ethnobotany SEC Ethnobotany
	5.Types of ovules : anatropous, orthotropous, circinotropous, amphitropous, campylotropous 6.Female gametophyte: Polygonum onosporic) type of Embryo sac ermanent slides/ photographs) 7.Pollination types and seed dispersal echanism (including appendages, aril, runcle) photographs/ specimens	B.Sc. Life Science	CC – III /Plant Anatomy and Embryology
	8.Project work documentation	B.Sc. Life Science	SEC Ethnobotany
Tutorials:			
Assignment :	Entire syllabus		

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NOVEMBER	**Theory:**	1. Vascular Cambium – Strucure (axially and radially oriented elements), Function and Seasonal Activity of Cambium, Secondary growth in root and Stem. Anamolies in secondary growth in stem: included phloem and phloem wedges. 2. Adaptive and Protective Systems: Epidermal tissue systems, cuticle, epicuticular waxes, trichomes (uni and multicellular, glandular and non glandular , stomata(classification), anatomical adaptations of Xerophytes and Hydrophytes	B.Sc. Botany (Hons.)	CC – V / Anatomy of Angiosperms
		4. Role of Ethnic groups in conservation of plant genetic resources, endangered taxa and forest management (participatory management), Ethnobotany as a tool to protect interests of ethnic groups, sharing of wealth concept with few examples from India 5. Ethnobotany and legal aspects – Ethnobotany as a tool to protect interests of ethnic groups. Sharing of wealth concepts with few examples from India, Biopiracy	B. Sc. Botany (Hons)	SEC : Ethnobotany

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	Practicals:	1. Secretory tissues: cavities, lithocysts and laticifers. 2. Project work documentation 3.Dissection of embryo/ endosperm from developing seeds 4.Calculation of percentage of germinated pollen in a given medium Mock test and File evaluation	B.Sc. Botany (Hons.) B.Sc. Botany (Hons) B.Sc. Life Science	CC – V / Anatomy of Angiosperms SEC : Ethnobotany CC – III /Plant Anatomy and Embryology
	Tutorials:			
	<u>Test</u>	Entire syllabus		

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Name of the Faculty: Dr. SunitaYadav
Department: Botany **Semester : I/III/V 2022-23**

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Introduction to paper and discussion about the paper Unit-5 Plant Growth regulators: Discovery, structure, precursor, bioassay and physiological roles and commercial applications of auxins	B.Sc. (H) Botany Semester V	Plant Physiology
		Semester started on August 20, 2022	GE-III	Plant physiology and metabolism
		Introduction to paper Unit-1 Plant nutrition: uptake and distribution: water potential and its components, Intercellular water transport, short-distance transport	B.Sc. (H) Biological Sciences	Plant Physiology
	Practicals	• To determine osmotic potential of plant cell sap by plasmolytic method	B.Sc. (H) Botany Semester V	Plant Physiology
		• To determine osmotic potential of plant cell sap by plasmolytic method	GE-III	Plant physiology and metabolism
		• To determine osmotic potential of plant cell sap by plasmolytic method	B.Sc. (H) Biological Sciences	Plant Physiology
	Tutorials	----------		
AUGUST	**Theory:**	Unit-5: Discovery, structure, precursor, bioassay and physiological roles and commercial applications of cytokinins, gibberellins, ethylene, abscisic acid, mode of action of auxins	B.Sc. (H) Botany Semester V	Plant Physiology
		Introduction to paper Unit 1:Plant water relations: Importance of water	GE-III	Plant physiology and metabolism
		Unit-1: Aquaporins, pathway of water movementwater and ion uptake from soil to roots, structural features of xylem, root pressure, guttation, ascent of sap, transpiration and its significance, factors affecting transpiration, mechanism of stomatal movement	B.Sc. (H) Biological Sciences	Plant Physiology

	Practicals:	• To determine water potential of given tissue by weight method. • To study the effect of two environmental factors (light and wind) on transpiration by excised twig • To calculate stomatal index and stomatal frequency from two surfaces of leaves of a mesophyte and xerophytes. • To calculate the area of open stoma and percentage of leaf area open through stomata in a mesophyte and xerophytes (both surfaces).	B.Sc. (H) Botany Semester V	Plant Physiology
		• Comparison of the rate of respiration in any two parts of a plant. • To study the effect of two environmental factors (light and wind) on transpiration by excised twig • To demonstrate hill reaction	GE-III	Plant physiology and metabolism
		• To determine water potential of given tissue by weight method. • To study the effect of two environmental factors (light and wind) on transpiration by excised twig • To calculate stomatal index and stomatal frequency from two surfaces of leaves of a mesophyte and xerophytes. • To study the effect of light intensity and carbon dioxide on oxygen evolution in photosynthesis.	B.Sc. (H) Biological Sciences	Plant Physiology
	Tutorials:	----------		
SEPTEMBER	**Theory:**	Unit 5: Brassinosteroids, Jasmonic acid Unit-6 Physiology of flowering: photoperiodism, Flowering stimulus, florigen, CO-FT model, ABC model of flowering, vernalization, seed dormancy	B.Sc. (H) Botany Semester V	Plant Physiology
		Unit 1: Water potential and its components, pathway of water movement, ascent of sap Transpiration and its significance	GE-III	Plant physiology and metabolism
		Unit-3: Plant growth regulators: Discovery, basic structure, precursors, bioassays , physiological role and commercial applications of auxin, gibberellins	B.Sc. (H) Biological Sciences	Plant Physiology

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	Practicals:	• To study the phenomenon of seed germination • To study the induction of amylase activity in germinating barley grains • To study the effect of different concentrations of IAA on coleoptiles elongation • To demonstrate bolting	B.Sc. (H) Botany Semester V	Plant Physiology
		• To study the activity of catalase • To study the effect of pH on catalase • To study the effect of enzyme concentration on catalase	GE-III	Plant physiology and metabolism
		• To demonstrate the activity of nitrate reductase in two plant sources • To perform chemical separation of photosynthetic pigments using solvent extraction method. • To demonstrate bolting • To demonstrate rooting of cuttings	B.Sc. (H) Biological Sciences	Plant Physiology
	Tutorials:	---------		
	<u>Assignment :</u>	Given to all students for respective papers		
OCTOBER	**Theory:**	Unit-1 Plant water relationship: water potential and its components,water absorption by roots, aquaporins, pathway of water movement, root pressure, guttation, ascent of sap, transpiration	B.Sc. (H) Botany Semester V	Plant Physiology
		Unit 1: Factors affecting transpiration, root pressure, guttation, stomatal movements	GE-III	Plant physiology and metabolism
		Unit-3: Discovery , basic structure, precursor, bioassay, physiological roles and commercial applications of cytokinins, abscisic acid, ethylene	B.Sc. (H) Biological Sciences	Plant Physiology
	Practicals:	• To demonstrate effect of auxins on rooting • To demonstrate suction due to transpiration • To demonstrate fruit ripening	B.Sc. (H) Botany Semester V	Plant Physiology
		• To demonstrate bolting • To demonstrate effect of auxins on rooting • To demonstrate suction due to transpiration	GE-III	Plant physiology and metabolism
		• To demonstrate suction due to transpiration • To demonstrate fruit ripening • To demonstrate respiration in roots • To demonstrate effect of pH on anthocyanin pigments	B.Sc. (H) Biological Sciences	Plant Physiology
	Tutorials:	---------		
	<u>Test</u>	Conducted for all papers		

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NOVEMBER	**Theory:**	Unit-1: Mechanism of stomatal movement, proton transport theory, blue light stimulated response Revision and test	B.Sc. (H) Botany Semester V	Plant Physiology
		Unit 3: Translocation in phloem: composition of phloem sap, girdling experiment, pressure flow model	GE-III	Plant physiology and metabolism
		Unit-3: Plant growth regulators: Mode of action of hormones, secondary metabolites, allelopathy	B.Sc. (H) Biological Sciences	Plant Physiology
	Practicals:	• Repetitions of experiments which students feel • Revision and test	B.Sc. (H) Botany Semester V	Plant Physiology
		• To demonstrate hydroponics using a photograph • To demonstrate the delay of senescence by cytokinins • To study the phenomenon of seed germination	GE-III	Plant physiology and metabolism
		• Repetitions of experiments which students feel • Revision and test	B.Sc. (H) Biological Sciences	Plant Physiology
	Tutorials:	--------		
DECEMBER	**Theory:**	Unit3: Phloem loading and unloading	GE-III	Plant Physiology and Metabolism
	Practicals:	• Repetitions of experiments which students feel • Revision and test	GE-III	Plant Physiology and Metabolism

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SEMESTER WISE TEACHING PLAN (2022-23)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Upasana Sharma **Department: Botany**

Semester: Odd Sem 2022-23

Month	Theory/Practical	Topics	Class	Subject/Paper
July	Theory	• Unit 1:Introduction: History (contributions of G.B.Amici, W. Hofmeister, E.Strasburger, S.G. Nawaschin, P. Maheshwari, B.M. Johri, W.A.Jensen, J. Heslop-Harrison)	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
		• Introduction, concept, scope and objective	B.Sc. (P) Life Sciences, Sem-V, Batch-II	Ethnobotany
	Practical	• Anther: Wall and its ontogeny, Tapetum (ameboid and glandular); MMC, spore tetrads, uninucleate, bicelled and dehisced anther stages through slides/micrographs	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
August	Theory	• Scope of reproduction biology. • Unit 2: Anther wall: structure and functions	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
		• Ethnobotany as an interdisciplinary science. The relevance of ethnobotany in the present context	B.Sc. (P) Life Sciences, Sem-V, Batch-II	Ethnobotany
		• Historical contribution of Julius von Sachs, Blackman, Emerson, Engelmann, Hill. Arnon	Sem-III, Generic Elective	Plant physiology and Metabolism
	Pracical	• Male germ unit through photographs and schematics representation. • Pollen grains: Fresh pollen showing ornamentation and aperture, pseudomonads, polyads, pollinia (slides, photographs and fresh material), ultrastructure of pollen wall (Micrograph); Pollen viability; Calculation of percentage germination in different media using hanging drop method.	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
September	Theory	• Unit 2: Microsporogenesis, callose deposition and its significance. Unit 7: Endosperm; types, development, structure and functions	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
		• Major and minor ethnic groups or Tribals of India and their life styles	B.Sc. (P) Life Sciences, Sem-V, Batch-II	Ethnobotany
		• Photosynthetic pigments (chlorophyll a and b, xanthophyll, carotene); photosystem I and II, 181 reaction centre, antenna molecules; electron transport and mechanism of ATP synthesis, C3 pathway; C4 and CAM plants (in brief, no pathways); photorespiration.	Sem-III, Generic Elective	Plant physiology and Metabolism

	Practical	• Ovule: Types-anatropous, orthotropous, amphitropous/camphylotropous, circinotropous, unitegmic, bitegmic; tenuinucellate and crassinucellate; special structures: endothelium. Obturator, hypostase, caruncle, epistase and aril (permanent slides/specimen, photographs).	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
		• Female gametophyte through permanent slides, photographs: types, ultrastructure of mature egg apparatus.		
		• Intra- ovarian pollination; Test tube pollination through photographs		
October	Theory	• Unit 8: Embryo-Six types of Embryogeny, General pattern of development of dicot and monocot embryo, suspensor, structure and functions; Embryo-endosperm relationship; nutrition of embryo; unusual features;	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
		• Major and minor ethnic groups or Tribals of India,and their life styles (cont.). Ethnobotany as a tool to protect interests of ethnic groups.Sharing of wealth concept with few examples from India; Biopiracy	B.Sc. (P) Life Sciences, Sem-V, Batch-II	Ethnobotany
		• Plant response to light and temperature: Photoperiodism - discovery (SDP, LDP, day neutral plants); phytochrome (discovery and structure), red and far-red light response on photomorphogenesis (general account), florigen	Sem-III, Generic Elective	Plant physiology and Metabolism
	Practical	• Endosperm: Dissections of developing seeds for endosperm with free-nuclear haustoria.	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
		• Embryogenesis: Study of development of dicot embryo through permanent slides, dissection of developing seeds for embryo at various developmental stages; study of suspensor through electron micrographs.		
November	Theory	• Embryo development in *Paeonia*	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
		• Intellectual Property Rights and Traditional Knowledge	B.Sc. (P) Life Sciences, Sem-V, Batch-II	Ethnobotany
		• Respiration: Glycolysis, anaerobic respiration, TCA cycle, oxidative phosphorylation, glyoxylate cycle, RQ. Enzymes: Structure and properties, Km (no derivation) and mechanism of enzyme catalysis	Sem-III, Generic Elective	Plant physiology and Metabolism

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		• Importance of biodiversity in daily life. Biodiversity crisis and biodiversity loss • Five kingdom classification and the position of Algae, Fungi, Bryophytes and Pteridophytes. • Algae: Study of general characteristics, Outline Classification, Economic Importance, Thallus Organization and Reproduction in *Nostoc* and *Polysiphonia*	B.Sc. (H) Biological Science, Sem-I	Diversity in Life forms-I
	Practical	• Seed dispersal mechanism (adaptations through photographs/specimens).	B.Sc. (H) Botany, Sem-V	Reproductive Biology of Angiosperms
		• Study of pollen cytology to see 2-celled and 3-celled pollen grains, pollen culture, protoplast isolation from pollen grains and pollen-pistil interaction through photographs. • Mock Test		
		• To study structure of TMV and Bacteriophage (electron micrographs/models). • To study morphology of Volvox, *Oedogonium, Chara, Fucus* and *Polysiphonia* (Temporary preparation/specimens/slides).	B.Sc. (H) Botany, Sem-I	Plant Diversity and Evolution
		• Study of Vegetative and Reproductive Structures through Temporary Preparations and Permanent Slides- *Nostoc, Oedogonium, Polysiphonia; Chlamydomonas* (Through Photograph/Electron photomicrograph)	B.Sc. (H) Biological Science, Sem-I	Diversity in Life forms-I
Dec	Theory	• Enzyme inhibition. • Nitrogen metabolism: Biological nitrogen fixation - nodulation in detail, nitrate and ammonia assimilation, dinitrogenase, NR, NiR, transamination.	Sem-III, Generic Elective	Plant physiology and Metabolism
		• Thallus Organization and Reproduction in *Ectocarpus.* • Fungi – General Characteristics, Outline Classification, Economic Importance, Thallus Organization and Reproduction in *Rhizopus* and *Puccinia*	B.Sc. (H) Biological Science, Sem-I	Diversity in Life forms-I
	Practical	• To study *Rhizopus, Penicillium, Alternaria* (Temporary preparations), symptoms of rust of wheat, white rust of crucifer (specimen). • To study *Marchantia* (morphology, WM of rhizoids and scales), *Anthoceros* (morphology), *Sphagnum* (morphology, WM of leaf), *Funaria* (morphology WM of rhizoid and leaf)	B.Sc. (H) Botany, Sem-I	Plant Diversity and Evolution
		• Study of Asexual Stage from Temporary/ Tease Mounts- *Rhizopus Albugo; Puccinia* - WM uredospores, teleutospores, Section of Leaf through pustules to show conidia	B.Sc. (H) Biological Science, Sem-I	Diversity in Life forms-I

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January	Theory	• Lichens (crustose, foliose and fruticose), Mycorrhiza (ectomycorrhiza and endomycorrhiza,VAM) • Bryophytes: General Characteristics; Outline Classification; Ecological and Economic Importance; Morphology, Structure and Reproduction (comparative) in *Marchantia* and *Anthoceros*	B.Sc. (H) Biological Science, Sem-I	Diversity in Life forms-I
	Practical	• To study *Selaginella* (morphology, WM of strobilus and spores), Equisetum (morphology, WM of spores), *Pteris* (morphology, tease mount of sporangia and spores). • To study *Cycas* (morphology, leaf, leaflet anatomy, coralloid root, bulbils, megasporophyll and microsporophyll); *Pinus* (morphology of dwarf shoot, needle anatomy, male and female cones, WM pollen grains). • To study variation in leaf venations in dicots and monocots (at least two specimens each)	B.Sc. (H) Botany, Sem-I	Plant Diversity and Evolution
		• *Marchantia*-Morphology of Thallus, W.M. Rhizoids, V.S. Thallus through Gemma Cup, Antheridiophore (Permanent slide), Archegoniophore (Permanent Slide)), • *Funaria* Morphology of Gametophyte bearing Sporophyte, W.M. Rhizoids, W.M. Leaf, W.M. Operculum, W.M. Peristome, W.M. Spores (all Temporary Slides), L.S. Capsule (Permanent Slide).	B.Sc. (H) Biological Science, Sem-I	Diversity in Life forms-I
		• **Field Trip to Delhi Zoological Park**		
February	Theory	• Pteridophytes: General Characteristics; Outline Classification; Economic Importance; Morphology, Structure and Reproduction in *Selaginella*	B.Sc. (H) Biological Science, Sem-I	Diversity in Life forms-I
	Practical	• To study the types of inflorescences in angiosperms (through specimens). • To study the types of fruits in angiosperms (through specimens). • Mock Test	B.Sc. (H) Botany, Sem-I	Plant Diversity and Evolution
		• *Selaginella*- Morphology, T.S. Stem, W.M. Strobilus, W.M. Microsporophyll and Megasporophyll (all Temporary Slides), L.S. Strobilus (Permanent Slide), • *Pteris* Morphology, V.S. Sporophyll, W.M. Sporangium, W.M. Spores (all Temporary Slides), W.M. Prothallus with Sex Organs (Permanent Slide). • Mock Test	B.Sc. (H) Biological Science, Sem-I	Diversity in Life forms-I

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sachin Kumar **Department: Botany**

Semester: Odd sem. (V, III and I)

Month		Topics	Course	Paper Code/Name
JULY	**Theory:**	Unit 2: Nitrogen metabolism- Biological Nitrogen fixation by free living organisms and in symbiotic association (nodulation, signals between symbionts- nod and nif genes).	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology
	Practicals:	To determine osmotic potential of plant cell sap by plasmolytic method	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology
	Tutorials:			
AUGUST	**Theory**	Unit 2: Structure and function of enzyme Nitrogenase. Nitrate assimilation: Nitrate and Nitrite reductase. Primary and secondary ammonia assimilation in plants; ammonia assimilation by GS, GOGAT, GDH, seed storage proteins in legumes and cereals. Unit 4: Physiology of Flowering- Photoperiodism: SDPs, LDPs, DNPs, photoinductive cycle (perception of photoperiodic signal and florigen).	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology
		Unit 1: General account about the microbes used as biofertilizer.	B.Sc(P) Life Sciences Sem III	SEC-I/Biofertilizers
	Practicals:	1.To determine water potential of given tissue by weight method. 2.To study the effect of two environmental factors (light and wind) on transpiration by excised twig 3.To calculate stomatal index and stomatal frequency from two surfaces of leaves of a mesophyte and xerophytes. 4.To study the effect of light intensity and carbon dioxide on oxygen evolution in photosynthesis.	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology

		1.Study of plasmolysis and deplasmolysis on Rhoeo leaf. 2.Study of mitosis and meiosis (temporary mounts and permanent slides). 3.Study of the photomicrographs or cell organelles. Measure the cell size (either length or breadth/diameter) by micrometry.	B.Sc(P) Life Sciences Sem V, Batch-II	LSDS2/Cell and Molecular Biology
	Tutorials:			
SEPTEMBER	**Theory:**	Unit 4: phytochrome (discovery and structure), red and far-red light responses on photomorphogenesis, fluence response, vernalization. Unit 5: Signal transduction and stress physiology- Spatial and temporal aspects of signal transduction, signal perception at plasma membrane (characteristic features of membrane receptors, receptor kinases), signal transduction and amplification via second messengers (calcium, lipid signaling molecules, mitogen-activated protein (MAP) kinase cascade, cyclic nucleotides).	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology
		Unit 1: *Rhizobium* – isolation,identification, mass multiplication, carrier based inoculants, Actinorrhizal symbiosis.	B.Sc(P) Life Sciences Sem III	SEC-I/Biofertilizers
	Practicals:	1.To demonstrate the activity of nitrate reductase in two plant sources 2.To perform chemical separation of photosynthetic pigments using solvent extraction method. 3.To demonstrate bolting 4.To demonstrate rooting of cuttings	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology
		1.Study the effect of temperature, organic solvent on semi permeable membrane. 2.To study the structure of plant cell through temporary mounts. 3.Study DNA packaging by micrographs.	B.Sc(P) Life Sciences Sem V, Batch-II	LSDS2/Cell and Molecular Biology
	Tutorials:			

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OCTOBER	**Theory:**	Unit 5: Plant responses to abiotic stress through signaling pathways; developmental and physiological mechanisms that protect plants against environmental extremes; biotic stress (plant defense mech., PAMP/MAMP triggered immunity (PTI), effector-triggered responses, SAR, pathogenesis-related proteins). Unit 6: Effect of increase in CO2 on photosynthesis and nutritional status of plant and soil, CO2 fertilization effect on plants, effect of climate change induced warming on enzymes of photosynthesis (Rubisco) and respiration, blockers of photosynthetic electron transport as potential herbicides. Unit 1: Essential elements (macronutrients and micronutrients, criteria of essentiality, roles), methods of study and use of nutrient solutions (ash analysis, hydroponics and aeroponics), mineral deficiency symptoms.	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology
		Unit 2: *Azospirillum*: isolation and mass multiplication – carrier based inoculant, associative effect of different microorganisms.Azotobacter: classification.	B.Sc(P) Life Sciences Sem III	SEC-I/Biofertilizers
	Practicals:	1.To demonstrate suction due to transpiration 2.To demonstrate fruit ripening 3.To demonstrate respiration in roots 4.To demonstrate effect of pH on anthocyanin pigments	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology
		1.Study the structure of nuclear pore complex by photograph (from Gerald Karp)Study of special chromosomes (polytene & lampbrush) either by slides or photographs. 2.Demonstration of dialysis of starch and simple sugar. 3.Preparation of the karyotype and idiogram from given photograph of somatic metaphase chromosome.	B.Sc(P) Life Sciences Sem V, Batch-II	LSDS2/Cell and Molecular Biology
	Tutorials:			

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NOVEMBER	**Theory:**	Unit 1: Soil cation exchange capacity, transport of ions across cell membrane-passive transport: simple (Fick"s law) and facilitated diffusion (carrier and channel proteins), Donnan 81 equilibrium, Nernst equation, active transport, proton ATPase pump, P-type ATPase and V-type ATPase, electrochemical gradient, ion flux, uniport, co-transport.	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology
		Unit 2: Characteristics – crop response to Azotobacter inoculum, maintenance and mass multiplication. Unit 3: Cyanobacteria (blue green algae), Azolla and Anabaena azollae association.	B.Sc(P) Life Sciences Sem III	SEC-I/Biofertilizers
		Unit 1: Biomolecules-Types of chemical bonds and their biological significance.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Practicals:	Repetitions of experiments which students feel. Revision and test	B.Sc(H) Biological Science Sem-V	BS DSE-1/Plant Physiology
		Repetitions of experiments which students feel. Revision and test	B.Sc(P) Life Sciences Sem V, Batch-II	LSDS2/Cell and Molecular Biology
		Study of cell and its organelles with the help of electron micrographs and otherdigital resources.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Tutorials:			
DECEMBER	**Theory:**	Unit 3: nitrogen fixation, factors affecting growth, blue green algae and Azolla in rice cultivation.	B.Sc(P) Life Sciences Sem III	SEC-I/Biofertilizers
		Unit 1: Structure and biological roles of carbohydrates, lipids, proteins and nucleic acids.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Practicals:	1.Study of plant cell structure with the help of epidermal peel mount of *Allium*/*Rhoeo*/*Crinum*. 2.Microchemical tests for carbohydrates (reducing, non-reducing sugars and starch), lipids and proteins.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
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JANUARY	**Theory:**	Unit 1: ATP: structure and its role as an energy currency molecule. Unit 2: Cell as a unit of structure and function; Characteristics of prokaryotic and eukaryotic cells; Origin of eukaryotic cell (Endosymbiotic theory). Unit 3:Chemistry, structure and function of Plant Cell Wall.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Practicals:	1.Separation of chloroplast pigments by paper chromatography/ Thin Layer Chromatography. 2.Separation of amino acids by paper chromatography. 3.Study the effect of organic solvent and temperature on membrane permeability. 4.Demonstration of the phenomenon of protoplasmic streaming in *Hydrilla* leaf.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Tutorials:			
FEBRUARY	**Theory:**	Unit 3:Cell Wall and Plasma Membrane- Singer and Nicolson's fluid mosaic model of cell membrane.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Practicals:	1.Demonstration of the phenomenon of plasmolysis and deplasmolysis. 2.Demonstration of separation of biomolecules by dialysis. -Mock Test	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Kavita Meena **Department: BOTANY**

Semesters: I/III/V

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	UNIT- 9 Seed structure	B.Sc.(H) Botany V Semester	BHCC11
	Practicals			
	Tutorials			
AUGUST	**Theory:**	UNIT-9 Importance and dispersal mechanisms (Adaptations – Autochory, Anemochory, Hydrochory, Zoochory with 2 examples each).	B.Sc.(H) Botany V Semester	BHCC11
		Unit 1 Meristematic and permanent tissues	B.Sc.(P) Life Sciences III Semester	LSCL4
		Unit 4 Mycorrhizal association	B.Sc.(P) Life Sciences III Semester-SEC Biofertilizers	LSSE1
	Practicals:	Study of Rhizobium from root nodules of leguminous plants by Gram staining method	B.Sc.(P) Life Sciences III Semester-SEC Biofertilizers	LSSE1

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	Assignment :			
SEPTEMBER	**Theory:**	Units 10 Polyembryony Introduction; Classification (given by Bhojwani and Bhatnagar); Apomixis	B.Sc.(H) Botany V Semester	BHCC11
		Simple (parenchyma, collenchyma, sclerenchyma) and complex tissues (xylem, phloem)Root and shoot apical meristems (describe theories in brief with special reference to Tunica Corpus and Korper-Kappe theory)	B.Sc.(P) Life Sciences III Semester- Sec A	LSCL4
		Taxonomy, occurrence and distribution, phosphorus nutrition, growth and yield – colonization of VAM	B.Sc.(P) Life Sciences III Semester-SEC Biofertilizers	LSSE1
	Practicals:	Isolation of Anabaena from Azolla leaf Projects on any topic mentioned in the syllabus, with Rhizobium technology, AMF technology, Organic farming, vermicomposting, biocompost, Azolla culture	B.Sc.(P) Life Sciences III Semester-SEC Biofertilizers	LSSE1
	Tutorials:			
	Test			
OCTOBER	**Theory:**	Apomixis- Introduction; Classification (given by Bhojwani and Bhatnagar) Causes and applications.	B.Sc.(H) Botany V Semester	BHCC11
		Unit 2 Organs (4 lectures) Structure of dicot and monocot stem (include types of vascular bundles), root and leaf (including Kranz anatomy).	B.Sc.(P) Life Sciences III Semester- Sec A	LSCL4
		Isolation and inoculum production of VAM, and its influence on growth and yield of crop plants.	B.Sc.(P) Life Sciences III Semester-SEC Biofertilizers	LSSE1

	Practicals:	Isolation of Anabaena from Azolla leaf. Test for pH, No2, SO4, Cl and organic matter of different composts Observation of mycorrhizae from roots.	B.Sc.(P) Life Sciences III Semester-SEC Biofertilizers	LSSE1
	Tutorials:			

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Month		Topics	Course	Paper
NOVEMBER	**Theory**	Unit 11 Germline transformation (4 lectures) Pollen grain and ovules through pollen tube pathway method. REVISION AND DOUBT SESSION	B.Sc.(H) Botany V Semester	BHCC11
		Unit 5 Introduction to Plant Reproduction (5 lectures) Modes of reproduction in plants: vegetative options - natural and artificial; introduction and Significance of sexual reproduction. History (contributions of G.B. Amici, W. Hofmeister, E. Strasburger, S.G. Nawaschin, P. Maheshwari, B.M. Johri, W.A. Jensen, J. Heslop-Harrison, and scope, Significance of Reproductive Biology studies.	B.Sc.(P) Life Sciences III Semester- Sec A	LSCL4
		Unit 5 Organic farming – Green manuring and organic fertilizers, Recycling of biodegradable municipal, agricultural and Industrial wastes	B.Sc.(P) Life Sciences III Semester-SEC Biofertilizers	LSSE1
	Practicals	Spots, Specimen /photographs of earthworm, Azolla, arbuscules. vesicles Biocontrol photographs -pheromons trap, *Trichoderma*, *Pseudomonas*, Neem etc, , Identification and application Photographs of biocompost methods,	B.Sc.(P) Life Sciences III Semester-SEC Biofertilizers	LSSE1
	Tutorials			

DECEMBER	**Theory:**	ALGAE-Brief introduction of major classes Blue green, Green, Brown and Red algae. Diagnostic features of identification; morphology, reproduction and classification with special reference to Nostoc, Volvox, and Spirogyra.	B.Sc.(P) Life Sciences I Semester	BOT-LS-DSC-1
	Practicals:	1. Viruses: EM of TMV and Bacteriophage, Specimens of virus infected plants (any two). (Week: 01) 2. Bacteria: EM of a bacterium, types through permanent slides/photographs, specimens of infected plants (any two). (Week: 01) 3. Algae: Study of vegetative and reproductive structures of (a) Nostoc (b) Volvox (c) Spirogyra through temporary preparations and permanent slides. (Week: 01) 4) Lichens: Crustose, Foliose and Fruticose (specimens/photographs).	B.Sc.(P) Life Sciences I Semester (Batch I and III)	BOT-LS-DSC-1
	Tutorials:			

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	Assignment :			
JANUARY	**Theory:**	Unit 4: Fungi Diagnostic features of identification; morphology, reproduction and classification with special reference to *Rhizopus*, *Penicillium* and *Agaricus;* Lichens (a general account). Unit-5 Characteristic features of identification, Morphology and reproduction of Bryophytes	B.Sc.(P) Life Sciences I Semester	BOT-LS-DSC-1
	Practicals:	5. Fungi: Study of vegetative and reproductive structures of (a) *Rhizopus*, (b) *Penicillium*, and (c) *Agaricus* through temporary preparations and permanent slides/specimens/photographs. (Week: 01) 6. Bryophytes: Study of (a) *Marchantia* morphology of thallus, W.M. rhizoids and scales, V.S. thallus through gemma cup, W.M. gemmae (all temporary slides), V.S. antheridiophore, archegoniophore, L.S. sporophyte (all permanent slides), (b) *Funaria*: detailed study and classification from W.M. rhizoids, operculum, peristome, spores and permanent slides of archegonia, antheridia and capsule. (Weeks: 02) 7. Pteridophytes: Study of *Pteris*: T. S. of Rachis, V.S. of Sporophyll and W.M. of sporangium. (Week: 01) 8. Gymnosperms: Study of *Pinus* morphology of long & dwarf shoot, male and female cones (specimens) and T.S. of needle (permanent slides only). (Week: 01)	B.Sc.(P) Life Sciences I Semester (Batch I and III)	BOT-LS-DSC-1
	Tutorials:			
	Test			

FEBRUARY	**Theory:**	Pteridophytes and Gymnosperms, with special reference to Marchantia, Funaria, Pteris and Pinus (only morphology). Unit 6: Angiosperms Week: 01 Diagnostic features, Structure of flower, types of inflorescences	B.Sc.(P) Life Sciences I Semester	BOT-LS-DSC-1
	Practicals:	9. Herbarium technique (Mounting of a properly dried and pressed specimen of any wild plant on the herbarium sheet with complete herbarium label). (Week: 01) 10. Taxonomic study of characters of 1 plant from each of the following families (any four): Malvaceae, Solanaceae, Asteraceae, Fabaceace, and Liliaceae. (Weeks: 05) .	B.Sc.(P) Life Sciences I Semester (Batch I and III)	BOT-LS-DSC-1
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2021-2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Priyanka Mishra **Department:Botany**

Semester:V

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	**Unit 2: Cell as a unit of Life** The Cell Theory; Prokaryotic and eukaryotic cells; Cell size and shape; Eukaryotic Cell component **Unit 2: Cell as a unit of Life** The Cell Theory; Prokaryotic and eukaryotic cells; Cell size and shape; Eukaryotic Cell component	B.Sc.(P) LIFE SCIENCES FIFTH SEMESTER SEC-A B.Sc.(P) LIFE SCIENCES FIFTH SEMESTER SEC B	
	Practicals		B.Sc.(P) LIFE SCIENCES FIFTH SEMESTER BATCH-I B.Sc.(P) LIFE SCIENCES FIFTH SEMESTER BATCH-II	
	Tutorials			
AUGUST	**Theory:**	.**Unit 4: Cell Membrane and Cell Wall** The functions of membranes; Models of membrane structure; The fluidity of membranes; Membrane proteins and their functions; Carbohydrates in the membrane; Faces of the membranes; Selective permeability of the membranes; Cell wall.	B.Sc.(P) LIFE SCIENCES FIFTH SEMESTER SEC-A B.Sc.(P) LIFE SCIENCES FIFTH SEMESTER SEC B	

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	Practicals:	1.Study of plasmolysis and deplasmolysis on Rhoeo leaf. Study of mitosis and meiosis (temporary mounts and permanent slides). 2.Study of the photomicrographs or cell organdies Measure the cell size (either length or breadth/diameter) by micrometry	B.Sc.(P) LIFE SCIENCES FIRST SEMESTER BATCH-II	LSCC2
	Tutorials:			

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	Assignment :			
	Tutorials:			
	Test			
SEPTEMBER	**Theory:**	**Unit 4: Cell Membrane and Cell Wall** The functions of membranes; Models of membrane structure; The fluidity of membranes; Membrane proteins and their functions; Carbohydrates in the membrane; Faces of the membranes; Selective permeability of the membranes; Cell wall.	B.Sc.(P) LIFE SCIENCES FIRST SEMESTER SEC-A B.Sc.(P) LIFE SCIENCES FIRST SEMESTER SEC-B	

	Practicals:	Study the effect of temperature, organic solvent on semi permeable membrane. To study the structure of plant cell through temporary mounts. Study DNA packaging by micrographs. .	B.Sc.(P) LIFE SCIENCES FIRST SEMESTER BATCH-II B.Sc.(P) LIFE SCIENCES FIRST SEMESTER BATCH-I	LSCC2
	Tutorials:			

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OCTOBER	**Theory:**	**Unit 5: Cell Cycle** Overview of Cell cycle, Mitosis and Meiosis; Molecular controls **Unit 6: Genetic material** DNA: Miescher to Watson and Crick-historic perspective, Griffith's and Avery's transformation experiments, Hershey-Chase bacteriophage experiment, DNA structure, types of DNA, types of genetic material. DNA replication (Prokaryotes and eukaryotes): bidirectional replication, semi—conservative, semi discontinuous RNA priming, 6 (theta) mode of replication, replication of linear, dsDNA, replicating the 5 end of linear chromosome including replication enzymes	B.Sc.(P) LIFE SCIENCES FIRST SEMESTER SEC-A B.Sc.(P) LIFE SCIENCES FIRST SEMESTER SEC-B	
	Practicals:	Study the structure of nuclear pore complex by photograph (from Gerald Karp)Study of special chromosomes (polytene&lampbrush) either by slides or photographs. Demonstration of dialysis of starch and simple sugar. . Preparation of the karyotype and ideogram from given photograph of somatic metaphase chromosome.	B.Sc.(P) LIFE SCIENCES FIRST SEMESTER BATCH-II B.Sc.(P) LIFE SCIENCES FIRST SEMESTER BATCH-I	
	Tutorials:			

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Name of the Faculty: **Dr. Mercy Jacob** **Department:Chemistry**

Semester : I/III/V

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	General Principles of Metallurgy: Chief modes of occurrence of metals based on standard electrode potentials. Ellingham diagrams for reduction of metal oxides using carbon and carbon monoxide as reducing agent.	B.Sc. (H) Chemistry IInd Year, Semester-III (Batch A and B)	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals	Inorganic preparations (i) Cuprous Chloride, Cu_2Cl_2	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Synthesis of silver nanoparticles using different reagents	B.Sc. (Hons.) Chemistry IIIrd Year	DSE LAB: NOVEL INORGANIC SOLIDS
	Tutorials			
SEPTEMBER	**Theory:**	Electrolytic Reduction, Hydrometallurgy with reference to cyanide process for silver and gold. Methods of purification of metals: Electrolytic process, Van Arkel-De Boer process, Zone refining.	B.Sc. (H) Chemistry IInd Year, Semester-III (Batch A and B)	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals	Preparations: (ii) Manganese(III) phosphate, MnPO4.H2O (iii) Aluminium potassium sulphate $KAl(SO_4)_2.12H_2O$ (Potash alum) Estimation of Zn^{2+} Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Synthesis of lead sulphide, zinc sulphide, copper sulphide,manganese sulphide, nickel sulphide, cadmium sulphide	B.Sc. (Hons.) Chemistry III Year	DSE : NOVEL INORGANIC SOLIDS
	Tutorials:			
OCTOBER	**Theory:**	Chemistry of *p*- Block Elements: Electronic configuration, atomic and ionic size, metallic/non-metallic character, melting point, ionization enthalpy, electron gain enthalpy, electronegativity, Catenation, Allotropy of C, P, S; inert pair effect, diagonal relationship between B and Si and	B.Sc. (H) Chemistry IInd Year, Semester-III (Batch A and B)	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements

	Practicals	Estimation of Mg^{2+} Complexometric titrations using disodium salt of EDTA Estimation of Ca^{2+} Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Preparation of polyaniline Intercalation of hydrogen in tungsten trioxide	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
	Tutorials:			
	<u>Assignment:</u>	Chemistry of *s* and *p* block elements	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
NOVEMBER	**Theory:**	Structure, bonding and properties: Acidic/basic nature, stability, ionic/covalent nature, oxidation/reduction, hydrolysis, action of heat of the following: • Hydrides: hydrides of Group 13 (only diborane), Group 14, Group 15 (EH3 where E = N, P, As, Sb, Bi), Group 16 and Group 17. • Oxides: oxides of phosphorus, sulphur and chlorine	B.Sc. (H) Chemistry IInd Year, Semester-III (Batch A and B)	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals	Synthesis of Inorganic pigments-Prussian blue, malachite green, chrome yellow, chromium oxide,	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
		(A) Titrimetric Analysis (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality	B.Sc. (H) Chemistry Ist Year, Semester-I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
	Tutorials:			
	<u>Test</u>	Chemistry of *s* and *p* block elements	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
DECEMBER	**Theory:**	• Oxoacids: oxoacids of phosphorus and chlorine; peroxoacids of sulphur • Halides: halides of silicon and phosphorus	B.Sc. (H) Chemistry IInd Year, Semester-III (Batch A and B)	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements

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	Practicals	Estimation of Cu(II) and K2Cr2O7 using sodium thiosulphate solution (Iodometrically) Estimation of antimony in tartar-emetic iodimetrically	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Preparation of zeolite.	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
		2. Acid-Base Titrations: Principles of acid-base titrations to be discussed. (i) Estimation of oxalic acid using standardized NaOH solution (ii) Estimation of sodium carbonate using standardized HCl	B.Sc. (H) Chemistry Ist Year, Semester-I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
	Tutorials:			
JANUARY	**Practicals**	(iii)Estimation of carbonate and hydroxide present together in a mixture. (iv)Estimation of carbonate and bicarbonate present together in a mixture. 3. Redox Titration: Principles of oxidation-reduction titrations to be discussed. (i) Estimation of oxalic acid using standardized KMnO4 solution	B.Sc. (H) Chemistry Ist Year, Semester-I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
FEBRUARY	**Practicals**	(ii) Estimation of water of crystallization in Mohr's salt by titrating with KMnO4. (iii) Estimation of oxalic acid and sodium oxalate in a given mixture.		

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Dr. Vibha Saxena

Department: Chemistry **Semester: I/III/ V**

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	*Section A: Inorganic Chemistry-3:* Transition Elements (3d series) General group trends with special reference to electronic configuration,	B.Sc.(P) Life Science III year **SEMESTER V**	DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
JULY	**Practicals**	Synthesis of silver nanoparticles by chemical methods and characterization using UV-visible spectrophotometer.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
AUGUST	**Practicals**	Iodo / Iodimetric Titrations (i) Estimation of Cu(II) and K_2Cr_2O7 using sodium thiosulphate solution (Iodometrically). (ii) Estimation of antimony	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-Block Elements
NOVEMBER	**Practicals**	1. Titrimetric Analysis: (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality.	B.Sc. (H) Chemistry I Year **SEMESTER I**	DSC-1: Atomic Structure & Chemical Bonding: Inorganic Chemistry -I
	Tutorials	NA	NA	NA
AUGUST	**Theory:**	variable valency, colour, magnetic and catalytic properties, ability to form complexes and stability of various oxidation states (Latimer diagrams)	B.Sc.(P) Life Science III year **SEMESTER V**	DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
AUGUST	**Practicals:**	Synthesis of silver nanoparticles by green approach methods and characterization using UV-visible spectrophotometer.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
SETEMBER	**Practicals**	**Complexometric titrations using disodium salt of EDTA** (i) Estimation of Mg2+,Zn2+ (ii) Estimation of Ca2+ by	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	Course Code: CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-Block Elements

DECEMBER	**Practicals**	Acid-Base Titrations: Principles of acid-base titrations to be discussed. (i) Estimation of sodium carbonate using standardized HCl.	B.Sc. (H) Chemistry I Year **SEMESTER I**	DSC-1: Atomic Structure & Chemical Bonding: Inorganic Chemistry -I
	Tutorials:	NA	NA	NA
SEPTEMBER	**Theory:**	Lanthanoids and actinoids: Electronic configurations, oxidation states, colour, magnetic properties, lanthanide contraction, separation of lanthanides (ion exchange method only).	B.Sc.(P) Life Science III year	DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY

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SEPTEMBER	**Practicals:**	Intercalation of hydrogen in tungsten trioxide and its conductivity measurement using conductometer. Synthesis of metal sulphide	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
OCTOBER	**Practicals:**	**Paper chromatographic separation of following metal ions:** (i) Ni (II) and Co (II) (ii) Cu(II) and Cd(II)	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	**Course Code: CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-**
JANUARY	**Practicals**	(iii) Estimation of carbonate and bicarbonate present together in a mixture. (iv) Estimation of free alkali present in different soaps/detergents 3. Oxidation-Reduction Titrimetry: Principles of oxidation-reduction titrations (electrode potentials) to be discussed. (i) Estimation of	B.Sc. (H) Chemistry I Year **SEMESTER I**	DSC-1: Atomic Structure & Chemical Bonding: Inorganic Chemistry -I
	Tutorials:	NA	NA	NA
	Assignment :	CHEMISTRY OF d-BLOCK ELEMENTS	B.Sc.(P) Life Science III year	DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCK ELEMENTS.
OCTOBER	**Theory:**	Coordination Chemistry Valence Bond Theory (VBT): Inner and outer orbital complexes of Cr, Fe, Co, Ni and Cu (coordination numbers 4 and 6). Structural and stereoisomerism in complexes with coordination numbers 4 and 6. Drawbacks of VBT. IUPAC system of nomenclature. **(8 Lectures)** **Crystal Field Theory** Crystal field effect, octahedral symmetry. Crystal field stabilization	B.Sc.(P) Life Science III year	DSE CHEMISTRY 11 CHEMISTRY OF d-BLOC KELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY

OCTOBER	**Practicals:**	Synthesis of inorganic pigments (PbCrO4, ZnCrO4, Prussian Blue, Malachite). Synthesis of pure ZnO and	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
NOVEMBER	**Practicals**	**Inorganic preparations** (i) Cuprous Chloride, Cu2Cl2 (ii) Aluminium potassium sulphate KAl(SO4)2	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	Course Code: CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-
FEBRUARY		(ii) Estimation of oxalic acid and sodium oxalate in a given mixture. (iii) Estimation of Fe(II) with K2Cr2O7 using	B.Sc. (H) Chemistry I Year **SEMESTER I**	DSC-1: Atomic Structure & Chemical Bonding: Inorganic Chemistry -I Bonding
	Tutorials:	NA	NA	NA
	<u>Test</u>	CHEMISTRY OF d-BLOCK ELEMENTS	B.Sc.(P) Life Science III year	DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
NOVEMBER	**Theory:**	Factors affecting the magnitude of D. Spectrochemical series. Comparison of CFSE for *Oh* and *Td* complexes, Tetragonal distortion of	B.Sc.(P) Life Science III year	DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
NOVEMBER	**Practicals:**	Preparation of zeolite A and removal of Mg and Ca ions from water samples quantitatively using zeolite.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
			B.Sc. (H) Chemistry I Year **SEMESTER I**	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
	Tutorials:	NA	NA	NA

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Prof. Sharda Pasricha

Department:CHEMISTRY

Semester: V

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	**Carbohydrates** Occurrence, classification and their biological importance. Correlation of configuration.(6 lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	Practical	Isolation and characterization of DNA from onion/ cauliflower/peas. Preparation and characterization of biodiesel from vegetable oil/ waste cooking oil.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V B.Sc. CHEMISTRY (Hons.) IIIrd Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV CHEMISTRY PRACTICAL – DSE II LAB: GREEN CHEMISTRY
AUGUST	**Theory:**	**Carbohydrates** Monosaccharides: Constitution and absolute configuration of glucose and fructose, epimers and anomers, mutarotation, determination of ring size of glucose and fructose, Haworth projections and conformational structures; Interconversions of aldoses and ketoses; Killiani- Fischer synthesis and Ruff degradation; Disaccharides – Structure elucidation of maltose, lactose and sucrose. (10 lectures) **Amino acids, PolyPeptides and Proteins**: Preparations, properties and reactions of amino acids. Correlation of Configuration.(6 lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV

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	Practical:	1.Study of the titration curve of glycine. 2. Estimation of glycine by Sorenson's formalin method. 3. Estimation of Protein by Lowry's method	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Mechanochemical solvent free synthesis of azomethines. Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide. Photoreduction of benzophenone to benzopinacol in the presence of sunlight.	B.Sc. CHEMISTRY (Hons.) IIIrd Year, Semester V	CHEMISTRY PRACTICAL – DSE II LAB: GREEN CHEMISTRY
		Organic Synthesis i. Benzolyation of one of the following amines (aniline, o-, m-, p- toluidines and o-, m, p-anisidine) and one of the following phenols (β -naphthol, resorcinol, p- cresol) by Schotten-Baumann reaction.	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester III	CHEMISTRY -CVI: Organic Chemistry II

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SEPTEMBER	**Theory:**	**Amino acids, proteins:** Study of peptides: determination of their primary structures-end group analysis, methods of peptide synthesis. Synthesis of peptides using N-protecting, C-protecting and C-activating groups , Solid-phase synthesis; primary, secondary and tertiary structures of proteins, Denaturation (10 lectures) **Enzymes :** Introduction, classification and characteristics of enzymes. Salient features of active site of enzymes. Mechanism of enzyme action (taking trypsin as example), factors affecting enzyme action, coenzymes and cofactors, specificity of enzyme action (including stereospecificity), enzyme inhibitors and their importance. (**6 Lectures)**	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV

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	Practicals:	1. Study of the action of salivary amylase on starch at optimum conditions. 2. Effect of temperature on the action of salivary amylase. 3. Saponification value of an oil or a fat.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Preparation and characterization of nano particles of gold using tea leaves. Principle of atom economy. Use of molecular model kit to stimulate the reaction to investigate how the atom economy can illustrate Green Chemistry. Preparation of propene by two methods can be studied (I) Triethylamine ion + OH- → propene + trimethylpropene + water	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY
		ii)Hydrolysis of esters and amides iii). Oxidation of ethanol/ isopropanol (Iodoform reaction). iv.Selective reduction of meta dinitrobenzene to m-nitroaniline.	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester III	CHEMISTRY - C VI: ORGANIC CHEMISTRY III
	<u>Assignment :</u>	Amino Acids, Peptides Nucleic Acids	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV

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OCTOBER	**Theory:**	**Nucleic Acids:** Components of nucleic acids, Nucleosides and nucleotides; Structure, synthesis and reactions of: Adenine, Guanine, Cytosine, Uracil and Thymine. Structure of polynucleotides (DNA and RNA). **(8 Lectures)** **Concept of Energy in Biosystems:** Cells obtain energy by the oxidation of foodstuff (organic molecules). Introduction to metabolism (catabolism, anabolism). ATP: The universal currency of cellular energy, ATP hydrolysis and free energy change. Agents for transfer of electrons in biological redox systems: NAD+, FAD. Conversion of food to energy: (4 Lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	Internal Exam	**Topics: Carbohydrates and Amino Acids**	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	Practicals:	Determination of Iodine number of an oil/ fat. Any pending work	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Extraction of D-limonene from orange peel using liquid CO_2 prepared from dry ice. Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II).	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY
		v.**Semicarbazone of any one of the following compounds**: acetone, ethyl methyl ketone, cyclohexanone, benzaldehyde. vi) **S-Benzylisothiouronium salt of one each of water soluble and water insoluble acids (benzoic** acid, oxalic acid, phenyl acetic acid and phthalic acid).	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester III	CHEMISTRY - C VI: ORGANIC CHEMISTRY III

NOVEMBER	**Theory:**	Outline of catabolic pathways of carbohydrate- glycolysis, fermentation, Krebs cycle. Caloric value of food, standard caloric content of food types.(2 lectures) Any Pending Work from Previous Month Revision and Discussion of Previous year papers.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	Practicals:	Mock Practicals	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Mock Practicals	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C VI: ORGANIC CHEMISTRY III
		viii. Aldol condensation using either conventional or green method **ix)Functional Group Identification**: Alcohols, Phenols, Aldehydes, Ketones, Carboxylic acids	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester III	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester III
December		**ix)Functional Group Identification**: Alcohols, Phenols, Aldehydes, Ketones, Carboxylic acids Mock Practical Exam	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester III	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester III

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SEMESTER WISE TEACHING PLAN 2022-23 (2022, odd sem)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. SHEFALI SHUKLA

Department: CHEMISTRY **Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	**Practicals**	(i) Introductory class Introductory class	B.Sc.(H) Chemistry Sem-V B.Sc.(H) Chemistry Sem-V	CHEMISTRY-DSE: GREEN CHEMISTRY CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
AUGUST	**Theory:**	Examples of Green Synthesis/ Reactions Real world case studies based on the Presidential green chemistry awards of EPA Introductory class polylactic acid made from corn Healthier Fats and oils Development of Fully Recyclable Carpet: Cradle to Cradle Carpeting	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	Practicals:	Biodiesel synthesis from waste cooking oil Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide. **Organic preparations:** (i) Benzoylation of amines and phenols (ii) Preparation of Acetanilide by conventional method. Estimation of glucose by Fehling's solution	B.Sc. CHEMISTRY (Hons.) III Year, Semester V B.Sc. CHEMISTRY (Hons.) II Year, Semester III B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY C VI: ORGANIC CHEMISTRY II CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
SEPTEMBER	**Theory:**	A new generation of environmentally advanced wood preservatives: Using a naturally occurring protein to stimulate plant growth Oxidation reagents and catalysts	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY

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	Practicals:	Preparation of gold nanoparticles Azomethine synthesis Photoreduction of benzophenone to benzopinacol in the presence of sunlight.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
		Preparation of Acetanilide by green method Hydrolysis of amide/Esters Pending work Semicarbazone synthesis	B.Sc. (Hons) Chemistry II Year, Semester III	C VI: ORGANIC CHEMISTRY II
		Isolation and estimation of DNA using cauliflower/onion. Saponification value of the given oil or fat Estimation of protein by Lowry's Method Study of the action of salivary amylase on starch under optimum conditions.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
OCTOBER	**Theory:**	Oxidation reagents and catalysts	B.Sc. CHEM (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	Practicals:	Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide Designing and conducting an experiment by utilizing the products and by products	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
		SBT preparation. qualitative tests of oxygen containing functional Groups	B.Sc. CHEM (Hons.) II Year, Semester V	C VI: ORGANIC CHEMISTRY II
		Effect of temperature on the action of salivary amylase.	B.Sc. (Hons.) CHEM III Year, Sem V	CHEMISTRY - C XI: ORGANIC CHEM IV
	<u>Test</u>	Green Chemistry	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	<u>Assignment</u>	Green Chemistry	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
NOVEMBER	**Theory:**	mechanochemical and solvent free synthesis of inorganic complexes; co crystal controlled solid state synthesis (C2S 3); Green chemistry in sustainable development	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY

	Practicals:	Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II). Extraction of D-limonene from orange peel using liquid CO_2 prepared form dry ice. Discussion and doubt solving Class	B.Sc. CHEM (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
		Selective Reduction Iodoform reaction Aldol Condensation qualitative tests of oxygen containing functional Groups Revision and Doubts	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C VI: ORGANIC CHEMISTRY II
		Study of the titration curve of glycine. Determination of Iodine number of the given oil	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV

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SEMESTER WISE TEACHING PLAN (2022-23)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. PRAGYA GAHLOT **Department: CHEMISTRY**
Semester: I/III/V

Month		Topics	Course	Paper Code/Name
July	**Practical**	Verify Lambert-Beer's law and determine the concentration of $CuSO_4$/$KMnO_4$/$K_2Cr_2O_7$ in a solution of unknown	B.Sc. CHEMISTRY (Hons.) III Year,	C – XII: PHYSICAL CHEMISTRY V
August	**Theory**	**Phase Equilibria:**Concept of phases, components and degrees of freedom, derivation of Gibbs Phase Rule for nonreactive and reactive systems; Clausius-Clapeyron equation and its applications to solidliquid, liquid-vapour and solid-vapour equilibria, phase diagram for one component systems (H2O and S), with applications. A comparison between the phase diagram of CO2 and H2O.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
	Practicals	Introduction to word processor. Incorporating chemical structures, chemical equations, expressions from chemistry into word processing documents. Incorporating tables and graphs into word processing documents.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		II. Determine the concentrations of $KMnO_4$ and $K_2Cr_2O_7$ in a mixture. V. Determine the dissociation constant of an indicator (phenolphthalein).	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	C – XII: PHYSICAL CHEMISTRY V
		Determination of CST of phenol-water system. Effect of impurities on CST of phenol-water system.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III

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September	**Theory:**	Phase diagrams for systems of solid-liquid equilibria involving eutectic, congruent and incongruent melting points. Binary solutions: Gibbs-Duhem-Margules equation, its derivation and applications to fractional distillation of binary miscible liquids (ideal and non-ideal), azeotropes, lever rule, partial miscibility of liquids, CST, miscible pairs, steam distillation. Nernst distribution law: its derivation and applications.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
	Practicals:	Handling numeric data: Spreadsheet software (Excel) Plotting graphs using a spreadsheet. Graphical solution of equations. Numeric modelling	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Cooling Curves Thermal Analysis	B.Sc. CHEMISTRY (Hons.) II Year,	C – VII: PHYSICAL CHEMISTRY III
		III. Study the kinetics of iodination of propanone in acidic medium. IV. Determine the amount of iron present in a sample using 1, 10-phenathroline. VI. Study the kinetics of interaction of crystal violet/ phenolphthalein with sodium hydroxide.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	C – XII: PHYSICAL CHEMISTRY V
October	**Theory:**	**Surface chemistry**: Physical adsorption, chemisorption, adsorption isotherms (Langmuir and Freundlich). Nature of adsorbed state. Qualitative discussion of BET. **Electrochemical Cells:** Rules of oxidation/reduction of ions based on half-cell potentials, applications	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
	Practicals:	Numerical curve fitting, linear regression, numerical differentiation integration	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Cooling ccurves for simple eutectic systems Benzoic acid + Urea Benzoic acid + Cinnamic acid	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III

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		I. Study the 200-500 nm absorbance spectra of $KMnO_4$ and $K_2Cr_2O_7$ (in 0.1 M H_2SO_4) and determine the λ_{max} values. Calculate the energies of the two transitions in different units (J molecule^{-1}, kJ mol^{-1}, cm^{-1} , eV). I. Study the 200-500 nm absorbance spectra of $KMnO_4$ and $K_2Cr_2O_7$ (in 0.1 M H_2SO_4) and determine the λ_{max} values. Calculate the energies of the two transitions	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	C – XII: PHYSICAL CHEMISTRY V
	<u>Assignment :</u>		B.Sc. CHEMISTRY (Hons.) II Year,	C – VII: PHYSICAL CHEMISTRY III
November	**Theory:**	Application of EMF measurements in determining (i) free energy, enthalpy and entropy of a cell reaction, (ii) equilibrium constants, and (iii) pH values, using hydrogen, quinone-hydroquinone, glass and SbO/Sb2O3 electrodes. Concentration cells with and without transference, liquid junction potential; determination of activity coefficients and transference numbers. Qualitative discussion of potentiometric titrations (acid-base, redox, precipitation).	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
	Practicals:	Statistical analysis: Gaussian distribution and Errors in measurements and their effect on data sets. Descriptive statistics using Excel. Statistical significance testing: The t test. The Ftest.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Perform the following potentiometric titrations: i.Strong acid vs. strong base ii. Weak acid vs strong base	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
		II. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of $K_2Cr_2O_7$. III. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde, 2-	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	C – XII: PHYSICAL CHEMISTRY V

		propanol, acetic acid) in water. Comment on the effect of structure on the UV spectra of organic compounds.		
	<u>Test</u>		B.Sc. CHEMISTRY (Hons.) II	C – VII: PHYSICAL CHEMISTRY III
December	**Theory:**	Revision	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
	Practicals:	Perform the following potentiometric titrations: II.Mixture of acids acid vs. strong base	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III

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SEMESTER WISE TEACHINGPLAN (2022-23)

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Name of the Faculty: **Harshvardhan Meena**

Department: Chemistry **Semester: I/III/V**

Month		**Topics**	**Course**	**Paper Code/Name**
JULY	**Theory**	**Introduction:** Introduction to Analytical Chemistry and its interdisciplinary nature.	BSc. (P) Life Science III Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**
		Introduction: Introduction to Analytical Chemistry and its interdisciplinary nature.	BSc. (P) Life Science II Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**
	Tutorials	NA	NA	NA
AUGUST	**Theory:**	Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures. **Analysis of soil**: Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators a. Determination of pH of soil samples. b. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	BSc. (P) Life Science III SEM	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**

		Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures.	BSc. (P) Life Science III SEM	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**
	Practicals:	2. Estimation of oxalic acid by titrating it with KMnO4. 3. Estimation of water of crystallization in Mohr's salt by titrating with KMnO4.	B.Sc. (P) Life Science I year	Chemistry Lab
		(B) Acid-Base Titrations Principles of acid-base titrations to be discussed. (i) Estimation of sodium carbonate using standardized HCl. (ii) Estimation of carbonate and hydroxide present together in a mixture. (iii) Estimation of carbonate and bicarbonate present together in a mixture.	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
	Tutorials:	NA	NA	NA
SEPTEMBER	**Theory:**	**Analysis of water:** Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods. a. Determination of pH, acidity and alkalinity of a water sample. b. Determination of dissolved oxygen (DO) of a water sample. **Chromatography:** Definition, general introduction on principles of chromatography, paper chromatography, TLC etc.	BSc. (P) Life Science III Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**

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		Analysis of soil: Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators a. Determination of pH of soil samples. b. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	BSc. (P) Life Science II Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**

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	Practicals:	Estimation of Fe (II) ions by titrating it with K2Cr2O7 using internal indicator. Estimation of Cu (II) ions iodometrically using Na2S2O3. Purification of OC by crystallisation (from water and alcohol) and distillation. Criteria of purity: Determination of Mpt/Bpt	B.Sc. (P) Life Sciences I Year	Practical CC – I Lab
		Estimation of free alkali present in different soaps/detergents. Oxidation-Reduction Titrimetry Principles of oxidation-reduction titrations (electrode potentials) to be discussed. (i) Estimation of Fe(II) and oxalic acid using	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
	Tutorials:	NA	NA	NA
	<u>Assignment :</u>	Basic Analytical Chemistry	BSc. (P) Life Science III Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**
		Basic Analytical Chemistry	BSc. (P) Life Science I Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**
OCTOBER	**Theory:**	Paper chromatographic separation of mixture of metal ion (Ni2+ and Co2+). **Ion-exchange:** Column, ion-exchange chromatography etc. Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible).	BSc. (P) Life Science III Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**

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		Analysis of water: Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods. a. Determination of pH, acidity and alkalinity of a water sample. Ionic bond: General characteristics, types of ions, size effects, radius ratio rule and its limitations.	BSc. (P) Life Science II Year BSc. (H) SEM I	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY** C 1 INORGANIC CHEMISTRY I
	Practicals:	(A) Titrimetric Analysis (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
		Estimation of oxalic acid and sodium oxalate in a given mixture. (iii) Estimation of Fe(II) with K2Cr2O7 using internal indicator (diphenylamine, Nphenylanthranilic acid) and discussion of external indicator.	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021

	Tutorials:	NA	NA	NA
	<u>Test</u>	Basic Analytical Chemistry	BSc. (P) Life Science III Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**
NOVEMBER	**Theory:**	Suggested Applications (Any one): a. To study the use of phenolphthalein in trap cases. b. To analyze arson accelerants. c. To carry out analysis of gasoline. Suggested Instrumental demonstrations: a. Estimation of macro nutrients: Potassium, Calcium, Magnesium in soil samples by flame photometry. b. Spectrophotometric determination of Iron in Vitamin / Dietary Tablets. c. Spectrophotometric Identification and Determination of Caffeine and Benzoic Acid in Soft Drink.	BSc. (P) Life Science III Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**

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DECEMBER	**THEORY**	Determination of dissolved oxygen (DO) of a water sample. Born-Landé equation with derivation and importance of Kapustinskii expression for lattice energy. Madelung constant, Born-Haber cycle and its application, Solvation energy. (ii) Covalent bond: Lewis structure, Valence Bond theory Resonance and resonance energy, Molecular orbital theory. Molecular orbital diagrams of diatomic and simple polyatomic molecules N2 , O2 , C2 , B2 , F2 , CO, NO, and their ions; HCl (idea of s-p mixing and orbital interaction to be given). Formal charge, Valence shell electron pair repulsion theory (VSEPR), shapes of the following simple molecules and ions	BSc. (P) Life Science II Year BSc. (H) CHEMISTRY SEM I	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY** C 1 INORGANIC CHEMISTRY C 1 INORGANIC CHEMISTRY
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	Practicals:	(b)Identify and separate the sugars present in the given mixture by paper chromatography.	B.Sc. (P) Life Science I year	Practical CC – I Lab
		Practical exercise test	B.Sc. (Hons) Chemistry I year	Chemistry Lab
	TEST	INTERNAL ASSIGNMENT	B.Sc (H) CHEMISTRY I	
JANUARY	**THEORY**	Metallic Bond: Qualitative idea of valence bond and band theories. Semiconductors and insulators, defects in solids. Weak Chemical Forces: van der Waals forces, ion-dipole forces, dipole-dipole	BSc. (H) CHEMISTRY SEM I	INORGANIC CHEMISTRY

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SEMESTER WISE-TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Vinita Kapoor

Department: Chemistry **Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	**Molecular Spectroscopy:** Interaction of electromagnetic radiation with molecules and various types of spectra; Born Oppenheimer approximation.	B.Sc. (Hons.) Chemistry sem V	Physical chemistry-V
	Theory	Postulates of quantum mechanics, Wave-particle duality	B.Sc. (P) Life Sci. sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	Vibrational spectroscopy and Rotation spectroscopy	B.Sc. (Hons.) Chemistry sem V	Physical chemistry-V

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Theory	quantum mechanical operators, Free particle. Particle in a I -D box (complete solution), quantization, normalization of wavefunct ions, concept of zero-point energy. Spectroscopy and its importance in chemistry. Wave-particle duality. Link between spectroscopy and quantum chemistry. Electromagnetic radiation and its interaction with matter. Types of spectroscopy. Difference between atomic and molecular spectra. Born-Oppenheimer approximation: Separation of molecular energies into translational, rotational, vibrational and electronic components *Rotational Motion:* Schrodinger equation of a rigid rotator and brief discussion of its results (solution not required). Quantization of rotational energy levels. Microwave (pure rotational) spectra of diatomic molecules. Selection rules. Structural information derived from rotational spectroscopy	B.Sc. (P) Life Sci. sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
Practicals	Introduction to word processor. Incorporating chemical structures, chemical equations, expressions from chemistry (e.g. Maxwell-Boltzmann distribution law, Bragg's law, van der Waals equation, etc.) into word processing documents. Incorporating tables and graphs into word processing documents.	B. Sc. (H) Chemistry II year Semester III	SEC: IT SKILLS FOR CHEMISTS

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	Practicals	1. General instructions of complexometric titrations 2. - Lambert Beer Law for Potassium permanganate 3. Estimation of Zn2+ ions by complexometric titrations using EDTA	BSc (P) Life Sci. Semester V	Chemistry DSE-11
	Practicals	1. Verify Lambert-Beer's law and determine the concentration of CuSO4/KMnO4/K2Cr2O7 in a solution of unknown concentration. 2. Determine the concentrations of KMnO4 and K2Cr2O7 in a mixture. 3. Study the kinetics of iodination of propanone in acidic medium.	B.Sc. (Hons.) Chemistry sem V	CHEMISTRY - CXII: PHYSICAL CHEMISTRY–V

Month		Topics	Course	Paper Code/Name
September	**Theory**	Vibrational spectroscopy, Vib-Rot spectroscopy	B.Sc. (Hons.) Chemistry sem V	Physical chemistry-V

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Theory	*Vibrational Motion:* Schrodinger equation of a linear harmonic oscillator and brief discussion of its results (solution not required). Quantization of. vibrational energy levels. Selection rules, IR spectra of diatomic molecules. Structural information derived from vibrational spectra. Vibrations of polyatomic molecules. Group frequencies. Effect of hydrogen bonding (inter- and intramolecular) and substitution on vibrational frequencies.	B.Sc. (P) Life Sci. sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
Practicals	Handling numeric data: Spreadsheet software (Excel), creating a spreadsheet, entering and formatting information, basic functions and formulae, creating charts, tables and graphs. Simple calculations, plotting graphs using a spreadsheet. Graphical solution of equations. Numeric modelling	B. Sc. (H) Chemistry II year Semester III	SEC: IT SKILLS FOR CHEMISTS

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	Practicals	1. Lambert Beer Law for potassium dichromate 2. Job's method for iron-salicylic acid complex 3. Study the 200-500 nm absorbance spectra of KMnO4and K2Cr2O7(in 0.1 M H2SO4) and determine the Xmax values. Calculate the energies of the two transitions in different units (J molecule-1, kJ mol-1 , cm -1, eV). 4. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde, 2-propanol, acetic acid) in water. Comment on the effect of structure on the UV spectra of organic compounds.	BSc (P) Life Sci. Semester V	Chemistry DSE-11

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	Practicals	1. Determine the dissociation constant of an indicator (phenolphthalein). 2. Study the kinetics of interaction of crystal violet/ phenolphthalein with sodium hydroxide 3. Study the 200-500 nm absorbance spectra of KMnO4 and K2Cr2O7 (in 0.1 M H2SO4) and determine the λmax values. Calculate the energies of the two transitions in different units (kJ molecule-1, kJ mol-1 , cm-1, eV). 4. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde, 2-propanol, acetic acid) in water. Comment on the effect of structure on the UV spectra of organic compounds.	B.Sc. (Hons.) Chemistry sem V	CHEMISTRY - CXII: PHYSICAL CHEMISTRY–V

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Month		Topics	Course	Paper Code/Name
October	**Theory**	VIB-ROT SPECTRA, RAMAN SPECTRA, ROT-RAMAN SPECTRA, Vibrational Raman spectra, Stokes and anti-Stokes lines; their intensity difference, rule of mutual exclusion. NMR SPECTRA	B.Sc. (Hons.) Chemistry sem V	Physical chemistry-V
	Theory	*Electronic Spectroscopy:* Electronic excited states. Free Electron model and its application to electronic spectra of polyenes. Colour and constitution, chromophoes, auxochromes, bathochromic and hypsochromic shifts.	B.Sc. (P) Life Sci. sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
	Practicals	Numerical curve fitting, linear regression numerical differentiation integration	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
	Practicals	1. Estimation of total hardness of a given sample of water by complexometric titration 2. Estimation of Mg2+ by complexometric titrations using EDTA	BSc (P) Life Sci. Semester V	Chemistry DSE-11

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	Practicals	1. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde, 2-propanol, acetic acid) in water. Comment on the effect of structure on the UV spectra of organic compounds. 2. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K2Cr2O7.	B.Sc. (Hons.) Chemistry sem V	CHEMISTRY - CXII: PHYSICAL CHEMISTRY–V

Month		Topics	Course	Paper Code/Name
November	**Theory**	NMR, Vib-Raman SPECTRA	B.Sc. (Hons.) Chemistry sem V	Physical chemistry-V
	Theory	Photochemistry Laws of photochemistry. Lambert-Beer's law. Fluorescence and phosphorescence. Quantum efficiency and reasons for high and low quantum yields. Primary and secondary processes in photochemical reactions. Photochemical and thermal reactions. Photoelectric cells	B.Sc. (P) Life Sci. sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY

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	Practicals	Differential calculus: The tangent line and the derivative of a function, numerical differentiation. Numerical integration (Trapezoidal and Simpson's rule, e.g. entropy/enthalpy change from heat capacity data). Computer Programming BASIC language.	B.Sc. (Hons.) Chemistry sem III	SEC: IT SKILLS FOR CHEMISTS
	Practicals	1. Estimation of total hardness of a given sample of water by complexometric titration. 2. Determination of the composition of the Fe3+ - salicylic acid complex / Fe2+ - phenanthroline complex in solution by Job's method.	BSc (P) Life Sci. Semester V	DSE Chemistry -11
	Practicals	1. Study the 200-500 nm absorbance spectra of KMnO4 and K2Cr2O7 (in 0.1 M H2SO4) and determine the λmax values. Calculate the energies of the two transitions in different units (kJ molecule-1, kJ mol-1 , cm-1, eV). 2. Analysis of the given vibration-rotation spectrum of HCl (g)	B.Sc. (Hons.) Chemistry sem V	CHEMISTRY - CXII: PHYSICAL CHEMISTRY–V

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Month		Topics	Course	Paper Code/Name
December	**Practicals**	Constants, variables, bits, bytes, binary and ASCII formats, arithmetic expressions, hierarchy of operations, inbuilt functions. Elements of the BASIC language.	B.Sc. (Hons.) Chemistry sem III	SEC: IT SKILLS FOR CHEMISTS

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Aditi Gupta **Department: Chemistry**

Semester : I/III/V

Month		Topics	Course	Paper Code/Name
JULY	**Theory:**	Introduction to analytical chemistry and its interdisciplinary nature, Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Significant figures.	B.Sc. Life Sciences-Sem V	SEC: Basic Analytical Chemistry
	Practical (Batch I, III):	Estimation of (i) Mg2+ or (ii) Zn2+ by complexometric titrations using EDTA	B.Sc. Life Sciences-Sem V	DSE: Chemistry of d-Block Elements, Quantum Chemistry and Spectroscopy
AUGUST	**Theory:**	Presentation of experimental data and results. Composition of soil, concept of pH and its measurement, complexometric titrations	B.Sc. Life Sciences-Sem V	SEC: Basic Analytical Chemistry
	Practical (Batch I, III):	1) Estimation of total hardness of a given sample of water by complexometric titration. 2) Verify Lambert-Beer's law and determine the concentration of CuSO4/KMnO4/K2Cr2O7/CoSO4 in a solution of unknown concentration	B.Sc. Life Sciences-Sem V	DSE: Chemistry of d-Block Elements, Quantum Chemistry and Spectroscopy
		1) Introduction 2) Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	B.Sc. Life Sciences-Sem III	SEC: Basic Analytical Chemistry

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SEPTEMBER	**Theory:**	Chelation, chelating agents, use of indicators. Definition of pure water, sources responsible for contaminating water, water sampling methods	B.Sc. Life Sciences-Sem V	SEC: Basic Analytical Chemistry
	Practical (Batch I, III):	1) Determination of the composition of the Fe3+ - salicylic acid complex / Fe2+ - phenanthroline complex in solution by Job's method. 2) Study the 200-500 nm absorbance spectra of KMnO4 and K2Cr2O7 (in 0.1 M H2SO4) and determine the λmax values. Calculate the energies of the two transitions in different units (J molecule-1, kJ mol-1, cm-1, eV).	B.Sc. Life Sciences-Sem V	DSE: Chemistry of d-Block Elements, Quantum Chemistry and Spectroscopy
		1) Determination of pH of soil samples. 2) Determination of pH, acidity and alkalinity of a water sample.	B.Sc. Life Sciences-Sem III	SEC: Basic Analytical Chemistry
	<u>Test</u>	Unit 1 and Unit 2	B.Sc. Life Sciences-Sem V	SEC: Basic Analytical Chemistry
OCTOBER	**Theory:**	Water purification methods. Definition and general introduction on principles of chromatography. Paper chromatography, thin layer Chromatography.	B.Sc. Life Sciences-Sem V	SEC: Basic Analytical Chemistry
	Practical (Batch I, III):	1) Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K2Cr2O7 2) Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde, 2-propanol, acetic acid) in water. Comment on the effect of structure on the UV spectra of organic compounds.	B.Sc. Life Sciences-Sem V	DSE: Chemistry of d-Block Elements, Quantum Chemistry and Spectroscopy
		1) Paper chromatographic separation of mixture of metal ion (Ni2+ and Co2+). 2) To study the use of phenolphthalein in trap cases.	B.Sc. Life Sciences-Sem III	SEC: Basic Analytical Chemistry

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NOVEMBER	**Theory:**	Column chromatography, Ion-exchange chromatography. Practise questions, previous year question papers	B.Sc. Life Sciences-Sem V	SEC: Basic Analytical Chemistry
		Dual nature of matter; de Broglie concept. Heisenberg uncertainty principle; its significance. Atomic orbitals, Schrödinger wave equation (no derivation); significance of ψ and ψ2 . Quantum numbers, radial and angular wave functions and probability distribution curves, shapes of s, p and d orbitals. Aufbau energy diagram, Pauli's exclusion principle. Hund's rule of maximum multiplicity.	B.Sc. Chem (H)-Sem I	Fundamentals of Chemistry-I
	Practical (Batch I, III):	1) Study the kinetics of Saponification of ethyl acetate. 2) Mock test 3) Exam	B.Sc. Life Sciences-Sem V	DSE: Chemistry of d-Block Elements, Quantum Chemistry and Spectroscopy
		1)Determination of dissolved oxygen (DO) of a water sample. 2) Paper chromatographic separation of mixture of metal ion (Ni2+ and Co2+). .	B.Sc. Life Sciences-Sem III	SEC: Basic Analytical Chemistry

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DECEMBER	**Theory:**	Electronic configuration of elements (s block, p block and first series of d-block elements). Effective nuclear charge, Slater's rule. The general idea of Modern periodic table, atomic and ionic radii, ionization potential, electron affinity, electronegativity-definition, trends of variation in periodic table and their application in prediction and explaining the chemical behaviour of elements and compounds thereof.	B.Sc. Chem (H)-Sem I	Fundamentals of Chemistry-I
	Practicals:	1) Revision 2) Exam	B.Sc. Life Sciences-Sem III	SEC: Basic Analytical Chemistry
JANUARY	**Theory:**	Ionic bond, covalent bond-Valence Bond Theory and its limitations; various types of hybridization and shapes of different inorganic and organic molecules	B.Sc. Chem (H)-Sem I	Fundamentals of Chemistry-I
	Test:	Atomic Structure, Covalent Bond	B.Sc. Chem (H)-Sem I	Fundamentals of Chemistry-I
FEBRUARY	**Theory:**	Valence Shell Electron Pair Repulsion Theory (VSEPR) and shapes of NH3, H2O, H3O + , SF4, ClF3, ICl2 - , TeF5 - NH4 + and other simple molecules/ions (CO2, SO2, SO3, Cl2O7, SO4 2-, CO3 2-, NO3 - , PO4 3-) including compounds of xenon. Resonance, hyperconjugation, field effects- inductive, mesomeric, electromeric effect Practise Papers, Revision	B.Sc. Chem (H)-Sem I	Fundamentals of Chemistry-I

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Name of the Faculty: Dr. Shikha Gulati

Department: Chemistry **Semester: III/ V**

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Basic introduction to solid-state chemistry: Semiconductors, different types of semiconductors and their applications.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
JULY	**Practicals**	Synthesis of silver nanoparticles by chemical methods and characterization using UV-visible spectrophotometer.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
AUGUST	**Practicals**	Iodo / Iodimetric Titrations (i) Estimation of Cu(II) and K_2Cr_2O7 using sodium thiosulphate solution (Iodometrically). (ii) Estimation of antimony	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-Block Elements
AUGUST	**Practicals**	Determination of pH of soil samples.	B.Sc. (P) Life Science III year SEC **SEMESTER III**	Basic Analytical Chemistry Lab
	Tutorials	NA	NA	NA
AUGUST	**Theory:**	Characterization techniques of inorganic solids:Powder X-ray Diffraction, UV-visible spectroscopy, Scanning Electron	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
AUGUST	**Practicals:**	Synthesis of silver nanoparticles by green approach methods and characterization using UV-visible spectrophotometer.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
SEPTEMEBER	**Practicals**	**Complexometric titrations using disodium salt of EDTA** (i) Estimation of Mg2+,Zn2+ (ii) Estimation of Ca2+ by substitution method (iii) Estimation of Calcium content in milk.	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	Course Code: CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-Block Elements

SEPTEMEBER	**Practicals**	Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration	B.Sc. (P) Life Science III year SEC	Basic Analytical Chemistry Lab
	Tutorials:	NA	NA	NA
SEPTEMBER	**Theory:**	Nanomaterials: Overview of nanostructures and nanomaterials: classification. Preparation of gold and silver metallic nanoparticles, self-assembled nanostructures-control of nanoarchitecture-one dimensional control. Carbon nanotubes and inorganic nanowires. Bioinorganic nanomaterials, DNA and nanomaterials, natural and artificial nanomaterials, bionano composites.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS

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SEPTEMBER	**Practicals:**	Intercalation of hydrogen in tungsten trioxide and its conductivity measurement using conductometer. Synthesis of metal sulphide	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
OCTOBER	**Practicals:**	**Paper chromatographic separation of following metal ions:** (i) Ni (II) and Co (II) (ii) Cu(II) and Cd(II)	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	**Course Code: CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-Block Elements**
OCTOBER	**Practicals**	Determination of pH, acidity and alkalinity of a water sample. Determination of dissolved oxygen (DO) of a water sample.	B.Sc. (P) Life Science III year SEC	Basic Analytical Chemistry Lab
	Tutorials:	NA	NA	NA
	Assignment :	NOVEL INORGANIC SOLIDS	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS

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OCTOBER	**Theory:**	Composite materials: Introduction, limitations of conventional engineering materials, role of matrix in composites, classification, matrix materials, reinforcements, metal-matrix composites, polymer-matrix composites, fibre-reinforced composites, environmental effects on composites, applications of composites. Speciality polymers: Conducting polymers - Introduction, conduction mechanism, polyacetylene, polyparaphenylene and polypyrole,	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
OCTOBER	**Practicals:**	Synthesis of inorganic pigments (PbCrO4, ZnCrO4, Prussian Blue, Malachite). Synthesis of pure ZnO and	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
NOVEMBER		**Inorganic preparations** (i) Cuprous Chloride, Cu2Cl2 (ii) Aluminium potassium sulphate KAl(SO4)2	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	Course Code: CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-
NOVEMBER		To study the use of phenolphthalein in trap cases. To carry out analysis of gasoline.	B.Sc. (P) Life Science III year SEC	Analytical Chemistry Lab
	Tutorials:	NA	NA	NA
	<u>Test</u>	NOVEL INORGANIC SOLIDS	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
NOVEMBER	**Theory:**	Applications of conducting polymers, Ion-exchange resins and their applications. Ceramic & Refractory: Introduction, classification, properties,	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
NOVEMBER	**Practicals:**	Preparation of zeolite A and removal of Mg and Ca ions from water samples quantitatively using zeolite.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE-2022-23 (Odd)

Name of the Faculty: Dr. POOJA **Department: CHEMISTRY**

Semester: I/III/V

Month		**Topics**	**Course**	**Paper Code/Name**
JULY	**Theory:**	Structure of components of nucleic acids: Bases, Sugars,	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV BIOMOLECULES
AUGUST	**Theory:**	Structure of components of nucleic acids: Nucleosides and Nucleotides. Nomenclature of nucleosides and nucleotides, structure of polynucleotides (DNA and RNA), concept of DNA duplex formation and its characterization.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV BIOMOLECULES
	Practicals:	General introduction of Green Chemistry, 12 principles of Green Chemistry General introduction of Green Chemistry, 12 principles of Green Chemistry	B.Sc. CHEMISTRY (Hons.) III Year, Semester V B.Sc. CHEMISTRY (Hons.) II Year, Semester III	DSE-8 GREEN CHEMISTRY GE-III Green Chemistry: Designing Chemistry for Human Health and Environment
SEPTEMBER	**Theory:**	Biological roles of DNA and RNA. Concept of heredity: Genetic Code, Replication, Transcription and Translation. Introduction to oils and fats; common fatty acids present in oils and fats,	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV BIOMOLECULES

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	Practicals:	Preparation of biodiesel from waste cooking oil and characterization (TLC, pH, Solubility, Combustion Test, Density, Viscosity, Gel Formation at Low Temperatures and IR can be provided). Mechanochemical solvent-free, solid–solid synthesis of azomethine using p- toluidine and o-vanillin/p-vanillin (various other combinations of primary amine and aldehyde can also be tried). Converting Waste to Wealth: · Synthesis of biodiesel from waste cooking oil	B.Sc. CHEMISTRY (Hons.) III Year, Semester V B.Sc. CHEMISTRY (Hons.) II Year, Semester III	DSE-8 GREEN CHEMISTRY GE-III Green Chemistry: Designing Chemistry for Human Health and Environment
OCTOBER	**Theory:**	Hydrogenation of fats and oils, Saponification value, acid value, iodine number. Reversion and rancidity.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV BIOMOLECULES
	Practicals:	ON LEAVE		
NOVEMBER	**Theory:**	ON LEAVE		
	Practicals:	ON LEAVE		
DECEMBER	**Theory:**	ON LEAVE		
	Practicals:	ON LEAVE		
JANUARY	**Theory:**	TO BE PLAN	B.Sc. CHEMISTRY (Hons.) I Year, Semester I B.Sc. Biological sciences, I Year, Semester I	DSC-2 Basic Concepts and Aliphatic Hydrocarbons BS-C1: CHEMISTRY ORGANIC CHEMISTRY

FEBRUARY	**Theory:**	TO BE PLAN	B.Sc. CHEMISTRY (Hons.) I Year, Semester I B.Sc. Biological sciences, I Year, Semester I	DSC-2 Basic Concepts and Aliphatic Hydrocarbons BS-C1: CHEMISTRY ORGANIC CHEMISTRY
MARCH	**Theory:**	TO BE PLAN	B.Sc. CHEMISTRY (Hons.) I Year, Semester I B.Sc. Biological sciences, I Year, Semester I	DSC-2 Basic Concepts and Aliphatic Hydrocarbons BS-C1: CHEMISTRY ORGANIC CHEMISTRY

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: **Dr. Deepti Sharma**

Department: Chemistry **Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
July	**Practicals**	1. Preparation of biodiesel from waste cooking oil and characterization. 2. Mechanochemical solvent free, solid–solid synthesis of azomethine	B.Sc (H) Chemistry Semester-V	DSE-8: Green Chemistry
August	**Theory**	Alkyl Halides: Preparation, properties, nucleophilic substitution reactions – SN1, SN2 and SNi mechanisms.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
	Practicals	1. Preparation and characterization of nanoparticles of gold using tea leaves. 2. Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide.	B.Sc (H) Chemistry Semester-V	DSE-8: Green Chemistry
		Systematic qualitative analysis of organic compounds possessing monofunctional groups.	B.Sc Life Science Semester-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	Tutorials	NA	NA	NA
September	**Theory:**	Aryl halides: Preparation, properties, nucleophilic aromatic substitution; Relative reactivity towards nucleophilic substitution reactions. Organometallic compounds of Mg Alcohols: preparation, properties and relative reactivity and reactions. Phenols: Preparation and properties; Acidity and reactions and their mechanism. Ethers and Epoxides: Preparation and reactions with acids. Reactions of epoxides with alcohols,ammonia and LiAlH4.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
	Practicals:	1.Photoreduction of benzophenone to benzopinacol in the presence of sunlight.	B.Sc (H) Chemistry Semester-V	DSE: Green Chemistry
		Discussed –COOH and Carbonyl functional group including derivative preparation	B.Sc Life Science Semester-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		1. Acetylation of aniline and β -naphthol by: a. Using conventional method. b. Using green approach 2. Hydrolysis of benzamides and ethylbenzoate.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II

	Tutorials:	NA	NA	NA
OCTOBER	**Theory:**	Carbonyl Compounds: Structure, reactivity, preparation and properties; reactions Addition reactions of α, β- unsaturated carbonyl compounds: Michael addition. Active methylene compounds: Keto-enol tautomerism. Preparation and synthetic applications of diethyl malonate and ethyl acetoacetate.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II

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	Practicals:	1. Rearrangement reaction from Benzopinacol to Benzopinacolone	B.Sc (H) Chemistry Semester-V	DSE: Green Chemistry
		Systematic qualitative analysis alcohols and Phenols including derivative preparation).	B.Sc Life Science Semester-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		1. Semicarbazone of any one of the following compounds acetone and cyclohexanone.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
	Tutorials:	NA	NA	NA
	<u>Assignment :</u>	Alkyl halides, alcohols, phenols and ether.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
November	**Theory:**	Carboxylic Acid and derivatives completed.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
		Stereochemistry: DL, dl, RIP nomenclature started. Cis trans and E Z nomenclature. Interconversion of flying wedge, to fischer, to newmann and sawhorse projection	B.Sc Life Science Semester-I	Basic Concepts of Organic Chemistry
	Practicals:	MOCK TESTS	B.Sc (H) Chemistry Semester-V	DSE: Green Chemistry
		Practices monofuntional organic compounds through ssesments.	B.Sc Life Science Semester-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		1. Systematic analysis of oxygen containing functional groups. 2. Selective reduction of metadinitrobenzene by Zinin method. 3. SBT preparation of oxalic acid and benzoic acid	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
	Tutorials:	NA	NA	NA
	<u>Test</u>	Alkyl aryl halides, phenols, alcohols and epoxides	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
December	**Theory:**	Conformations of cyclohexane, ethane and butane. Nucleophilic Addition Reactions.	B.Sc Life Science Semester-III	Basic Concepts of Organic Chemistry
	Practicals:			
	Tutorials:	NA	NA	NA
	<u>Assignment :</u>	Assignment on Sterochemistry covered till December.	B.Sc Life Science Semester-III	Basic Concepts of Organic Chemistry
January	**Theory**	Nucleophilic Addition Reactions.	B.Sc Life Science Semester-III	Basic Concepts of Organic Chemistry
	<u>Test :</u>	Sterochemistry and Nucleophilic addition reaction covered.	B.Sc Life Science Semester-III	Basic Concepts of Organic Chemistry
Feburary	**Theory:**	Nucleophilic Addition Reactions.	B.Sc Life Science Semester-III	Basic Concepts of Organic Chemistry

SEMESTER WISE TEACHING PLAN

Academic year 2022-2023 (odd Semester)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Laishram Saya Devi **Department: CHEMISTRY**

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	**B.Sc (H) Chemistry Sem I class session starts in November.**		
		Phase Equilibrium: Phases, components and degrees of freedom of a system, criteria of phase equilibrium,	B.Sc. (Prog) Life Sciences II Year, Semester III **(Section B)**	CHEMISTRY – CC III; Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	Practical	1.Verify Lambert-Beer's law and determine the concentration of CuSO4/KMnO4/K2Cr2O7 in a solution of unknown concentration. 2. Determine the concentrations of KMnO4 and K2Cr2O7 in a mixture.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V **(Batch 2)**	CHEMISTRY – CC XII; PHYSICAL CHEMISTRY V
SEPTEMBER	**Theory**	**B.Sc (H) Chemistry Sem I class session starts in November.**		
		Phase Equilibrium: Gibbs phase rule and its thermodynamic derivation, derivation of Clausius- Clapeyron equation and its importance in phase equilibria, phase diagrams of one component systems (water and sulphur) and two component systems involving eutectics, congruent and incongruent melting points (lead-silver, FeCl3-H2O and Na-K only).	B.Sc. (Prog) Life Sciences II Year, Semester III **(Section B)**	CHEMISTRY – CC III; Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	Practical	3. Study the kinetics of iodination of propanone in acidic medium. 4.Determine the amount of iron present in a sample using 1, 10-phenanthroline. 5.Determine the dissociation constant of an indicator (phenolphthalein).	B.Sc. CHEMISTRY (Hons.) Year, Semester V **(Batch 2)**	CHEMISTRY – CC XII; PHYSICAL CHEMISTRY V
		1. Determination of critical solution temperature and composition of phenol water system 2. Study the effect of impurities (NaCl, Succinic acid) on the CST of water	B.Sc. (Prog) Life Sciences II Year, Semester III **(Section B**	CHEMISTRY – CC III; Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
OCTOBER	**Theory**	**B.Sc (H) Chemistry Sem I class session starts in November.**		

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		Solutions: Thermodynamics of ideal solutions: Ideal solutions and Raoult's law, deviations from Raoult's law-nonideal solutions. Vapour pressure, composition and temperature-composition curves of ideal and non-ideal solutions. Distillation of solutions, Lever rule, Azeotropes. Partial miscibility of liquids: Critical solution temperature; effect of impurity on partial miscibility of liquids. Immiscibility of liquids: principle of steam distillation, Nernst distribution law and its applications, solvent extraction.	B.Sc. (Prog) Life Sciences II Year, Semester III **(Section B)**	CHEMISTRY – CC III; Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	Practical	6. Study the kinetics of interaction of crystal violet/ phenolphthalein with sodium hydroxide. Study the 200-500 nm absorbance spectra of KMnO4 and K2Cr2O7 (in 0.1 M H2SO4) and determine the λmax values. Calculate the energies of the two transitions in different units (kJ molecule-1, kJ mol-1 , cm-1, eV Systematic qualitative analysis of organic compounds possessing monofunctional groups (Alcohols, Phenols, Carbonyl, -COOH). (Including Derivative Preparation).	B.Sc. CHEMISTRY (Hons.) III Year, Semester V **(Batch 2)** B.Sc. (Prog)Life Sciences II Year, Semester III **(Section B)**	CHEMISTRY – CC XII; PHYSICAL CHEMISTRY V CHEMISTRY – CC III; Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
NOVEMBER	**Theory**	**Conductance**: Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes, Kohlrausch Law of independent migration of ions, transference number and its experimental determination using Hittorf and moving boundary methods, Ionic mobility, applications of conductance measurements: determination of degree of ionization of weak electrolytes, solubility and solubility products of sparingly soluble salts, ionic product of water, hydrolysis constant of a salt. Conductometric titrations (only acid-base). **GASEOUS STATE:** Kinetic molecular model of a gas: postulates and derivation of the kinetic gas Equation.	B.Sc. (Prog) Life Sciences II Year, Semester III **(Section B)** B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	CHEMISTRY – CC III; Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Gaseous and Liquid
	Practical	2. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K2Cr2O7. 3. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde, 2-propanol, acetic acid) in water. Comment on the effect of structure on the UV spectra of organic compounds. 4. Analysis of the given vibration-rotation spectrum of HCl (g **Revision Exercises along with Viva**	B.Sc. CHEMISTRY (Hons.) III Year, Semester V **(Batch 2)**	CHEMISTRY – CC XII; PHYSICAL CHEMISTRY V

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		Determination of equivalent conductance, degree of dissociation and dissociation constant of a weak acid. 3. Perform the following conductometric titrations: a) Strong acid vs strong base b) Weak acid vs strong base. Systematic qualitative analysis of organic compounds possessing monofunctional groups (Alcohols, Phenols, Carbonyl, -COOH). (Including Derivative Preparation).	B.Sc. (Prog) Life Sciences II Year, Semester III **(Section B)**	CHEMISTRY – CC III; Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		Viscosity measurement using Ostwald's viscometer a. Determination of co-efficient of viscosity of two unknown aqueous solution. b. Study the variation of viscosity with different concentration of sugar solutions. c. Study the effect of the addition of solutes such as (i) polymer (ii) ethanol (iii) sodium chloride on the viscosity of water at room temperature and explain the observations in terms of molecular interactions	B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Gaseous and Liquid
DECEMBER	**Theory**	**Electrochemistry**: Reversible and irreversible cells, concept of EMF of a cell, measurement of EMF of a cell, Nernst equation and its importance, types of electrodes, standard electrode potential, electrochemical series. thermodynamics of a reversible cell, calculation of thermodynamic properties: G, H and S from EMF data. Calculation of equilibrium constant from EMF data, concentration cells with transference and without transference, liquid junction potential and salt bridge, pH determination using hydrogen electrode and quinhydrone electrode, Potentiometric titrations-qualitative treatment (acid-base and oxidation-reduction only).	B B.Sc. (Prog) Life Sciences II Year, Semester III **(Section B)**	CHEMISTRY – CC III; Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		GASEOUS STATE: Maxwell distribution of molecular velocities and its use in evaluating average, root mean square and most probable velocities and average kinetic energy. Definition, expression, applications and temperature and pressure dependence of each one of the following properties of ideal gases: Collision frequency, Collision diameter, Mean free path.	B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Gaseous and Liquid
	Practical	Perform the potentiometric titrations of (i) Strong acid vs strong base and (ii) Weak acid vs strong base. Systematic qualitative analysis of organic compounds possessing monofunctional groups (Alcohols, Phenols, Carbonyl, -COOH). (Including Derivative Preparation).	B.Sc. (Prog) Life Sciences II Year, Semester III **(Section B)**	CHEMISTRY – CC III; Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II

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		Viscosity measurement using Ostwald's viscometer: (d. Study the variation of viscosity of water with the amounts of a solute and calculate the intrinsic viscosity at room temperature. e. Determine the viscosity average molecular mass of the polymer (PVA) using viscosity measurements	B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	C II: PHYSICAL CHEMISTRY I LAB
JANUARY	**Theory**	**GASEOUS STATE:** Coefficient of viscosity, definition, units and origin of viscosity of gases, relation between mean free path and coefficient of viscosity, temperature and pressure dependence of viscosity of a gas, calculation of molecular diameter from viscosity Barometric distribution law, its derivation and applications, alternative forms of barometric distribution law in terms of density and number of molecules per unit volume, effect of height, temperature and molecular mass of the gas on barometric distribution	B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Gaseous and Liquid
	Practical	2. Surface tension measurements using stalagmometer a. Determine the surface tension of a liquid by drop number method. b. Determine the surface tension of a liquid by drop weight method. c. Study the variation of surface tension with different concentration of detergent solutions. Determine CMC.	B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	C II: PHYSICAL CHEMISTRY I LAB
FEBRUARY	**Theory**	**GASEOUS STATE:** Behaviour of real gases- Compressibility factor, Z , Variation of compressibility factor with pressure at constant temperature (plot of Z vs P) for different gases (H2, CO2, CH4 and NH3), Cause of deviations from ideal gas behaviour and explanation of the observed behaviour of real gases in the light of molecular interactions van der Waals (vdW) equation of state, Limitations of ideal gas equation of state and its modifications in the form of derivation of van der Waal equation, Physical significance of van der Waals constants, application of van der Waal equation to explain the observed behaviour of real gases. Isotherms of real gases-Critical state, relation between critical constants and van der Waals constants, correlation of critical temperature of gases with intermolecular forces of attraction, Continuity of states, Limitations of van der Waals equation, Reduced equation of state and law of corresponding states (statement only). Virial equation of state-Physical significance of second and third virial coefficients, van der Waals equation expressed in virial form, Relations between virial coefficients and van der. **ASSIGNMENT FOR INTERNAL ASSESMENT**	B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Gaseous and Liquid
	Practical	d. Study the effect of the addition of solutes on the surface tension of water at room temperature and explain the observations in terms of molecular	B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-

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		interactions: (i) sugar (ii) ethanol (iii) sodium chloride e. Study the variation of surface tension with different concentration of sodium chloride solutions.		3): Gaseous and Liquid LAB
MARCH	**Theory**	**Liquid state**: Nature of liquid state, qualitative treatment of the structure of the liquid state 104 Physical properties of liquids-vapour pressure, its origin and definition, Vapour pressure of liquids and intermolecular forces, and boiling point Surface tension, its origin and definition, Capillary action in relation to cohesive and adhesive forces, determination of surface tension by (i) using stalagmometer (drop number and drop mass method both) and (ii) capillary rise method, Effects of addition of sodium chloride, ethanol and detergent on the surface tension of water and its interpretation in terms of molecular interactions, Role of surface tension in the cleansing action of detergents Coefficient of viscosity and its origin in liquids, Interpretation of viscosity data of pure liquids (water, ethanol, ether and glycerol) in the light of molecular interactions, Effects of addition of sodium chloride, ethanol and polymer on the viscosity of water, relative viscosity, specific viscosity and reduced viscosity of a solution, comparison of the origin of viscosity of liquids and gases, effect of temperature on the viscosity of a liquid and its comparison with that of a gas.	B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Gaseous and Liquid
	Practical	**1. Gases** a. To verify the Charles law using Charles law apparatus b. To determine the value of universal gas constant R using the reaction Mg(s) + 2HCl (aq) ◊ MgCl2 (aq) + H2 (g) **REVISION EXCERCISES**	B.Sc.(H) CHEMISTRY Semester I (**Sec: B)**	DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Gaseous and Liquid

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Year: 2022-2023 (Odd)
Name of the Faculty: Dr. Rekha Yadav
Department: Chemistry **Semester: I/III/V**

Month		Topic	Course	Paper
August	**Theory:**	Fundamentals, mathematical functions, polynomial expressions, logarithms, the exponential function, units of a measurement, interconversion of units, constants and variables, equation of a straight line, plotting graphs.	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Phases, components and degrees of freedom of a system, criteria of phase equilibrium	B.Sc. (P) Life Sciences II year, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
	Practicals:	Introduction to word processor. Incorporating chemical structures, chemical equations, expressions from chemistry (e.g. Maxwell-Boltzmann distribution law, Bragg's law, van der Waals equation, etc.) into word processing documents.	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Colorimetry 1. Verify Lambert-Beer's law and determine the concentration of $CuSO_4/KMnO_4/K_2Cr_2O_7/CoSO_4$ in a solution of unknown concentration Chemical Kinetics; Study the kinetics of the following reactions. 1. Initial rate method: Iodide-persulphate reaction 2. Integrated rate method: Saponification of ethyl acetate.	B. Sc. (P) Life Sciences III year, Semester V	DSE: Chemistry of d-Block Elements, Quantum Chemistry and Spectroscopy
			B. Sc. (H) Chemistry II year, Semester III	CVII: PHYSICAL CHEMISTRY–III Course Title: Phase Equilibria and Electrochemical Cells
	Practicals:			
	Tutorials:	NA	NA	NA

September	**Theory:**	Uncertainty in experimental techniques. Uncertainty in measurement. Statistical treatment. Data reduction and the propagation of errors. Graphical and numerical data reduction. Numerical curve fitting: the method of least squares (regression).	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Gibbs phase rule and its thermodynamic derivation, derivation of Clausius- Clapeyron equation and its importance in phase equilibria, phase diagrams of one component systems (water and sulphur) two component systems involving eutectics, congruent (lead-silver, $FeCl_3$-H_2O).	B.Sc. (P) Life Sciences II year, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
	Practicals:	Incorporating tables and graphs into word processing documents. Handling numeric data: Spreadsheet software (Excel), creating a spreadsheet, entering and formatting information, basic functions and formulae, creating charts, tables and graphs. Simple calculations, plotting graphs using a spreadsheet. Graphical solution of equations. Numeric modelling	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		1. Study the 200-500 nm absorbance spectra of $KMnO_4$ and $K_2Cr_2O_7$ (in 0.1 M H_2SO_4) and determine the λ_{max} values. Calculate the energies of the two transitions in different units (J molecule^{-1}, kJ mol^{-1}, cm^{-1}, eV). 2. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of $K_2Cr_2O_7$ 3. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde) in water. Comment on the effect of structure on the UV spectra of organic compounds.	B. Sc. (P) Life Sciences III year, Semester V	DSE: Chemistry of d-Block Elements, Quantum Chemistry and Spectroscopy
	Tutorials:	NA	NA	NA
October	**Theory:**	Algebraic operations on real scalar. Roots of quadratic equations analytically and iteratively Numerical methods of finding roots	B. Sc. (H) Chemistry II year,	SEC: IT SKILLS FOR CHEMISTS

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			Semester III	
		incongruent melting points (Na-K). Reversible and irreversible cells, concept of EMF of a cell, measurement of EMF of a cell, Nernst equation and its importance, types of electrodes, standard electrode potential, electrochemical series.	B.Sc. (P) Life Sciences II year, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
	Practicals:	Numerical curve fitting, linear regression numerical differentiation integration	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Record the 200-350 nm UV spectra of the given compounds (2-propanol, acetic acid) in water. Comment on the effect of structure on the UV spectra of organic compounds. 1. Estimation of the amount of nickel present in a given solution as bis - (dimethylglyoximato) nickel(II) or aluminium as oxinate in a given solution gravimetrically. 2. Estimation of (i) Mg^{2+} or (ii) Zn^{2+} by complexometric titrations using EDTA.	B. Sc. (P) Life Sciences III year, Semester V	DSE: Chemistry of d-Block Elements, Quantum Chemistry and Spectroscopy
	Tutorials:	NA	NA	NA
November	**Theory:**	Differential calculus: The tangent line and the derivative of a function, numerical differentiation. Numerical integration (Trapezoidal and Simpson's rule).	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Thermodynamics of a reversible cell, calculation of thermodynamic properties: G, H and S from EMF data. Calculation of equilibrium constant from EMF data, concentration cells with transference and without transference, liquid junction potential and salt bridge, pH determination using hydrogen electrode and quinhydrone electrode	B.Sc. (P) Life Sciences II year, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
	Practicals:	Statistical analysis: Gaussian distribution and Errors in measurements and their effect on data	B. Sc. (H) Chemistry II year,	SEC: IT SKILLS FOR CHEMISTS

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		sets. Descriptive statistics using Excel. Statistical significance testing: The t test. The Ftest.	Semester III	
		3. Estimation of total hardness of a given sample of water by complexometric titration. 4. Determination of the composition of the Fe^{3+} - salicylic acid complex / Fe^{2+} - phenanthroline complex in solution by Job's method.	B. Sc. (P) Life Sciences III year, Semester V	DSE: Chemistry of d-Block Elements, Quantum Chemistry and Spectroscopy
		Surface tension measurements using Stalagmometer. i. Determine the surface tension of aqueous solutions by (i) drop number (ii) drop weight method.	B. Sc. (H) Chemistry I year, Semester I	Practical CC II: PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium
	Tutorials:	NA	NA	NA
	Assignment	Assignment-1	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
	Assignment	Assignment-1	B. Sc. (P) Life Sciences year II, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
December	**Theory:**	Numerical integration applications e.g. entropy/enthalpy change from heat capacity data.	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Potentiometric titrations-qualitative treatment (acid-base and oxidation-reduction only).	B. Sc. (P) Life Sciences year II, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
	Practicals:	Presentation: Presentation graphics	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Practice Exercise	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY–V Course Title: Quantum Chemistry & Spectroscopy

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		Study the variation of surface tension with different concentration of detergent solutions and Determine CMC. Determination of co-efficient of viscosity of an unknown aqueous solution. Study the variation of viscosity with different concentration of sugar solutions.	B. Sc. (H) Chemistry I year, Semester I	Practical CC II: PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium
	Tutorials:	NA	NA	NA
	Practical	Study the variation of co-efficient of viscosity with different concentration of Poly Vinyl Alcohol (PVA) and determine molar mass of PVA. Preparation of buffer solutions of different pH values (a) Sodium acetate-acetic acid (b) Ammonium chloride-ammonium hydroxide. pH metric titration of (i) strong acid with strong base, (ii) weak acid with strong base and determination of dissociation constant of a weak acid.	B. Sc. (H) Chemistry I year, Semester I	Practical CC II: PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium
	practical	Determination of molecular weight of a volatile compound using Victor Meyer's method.	B. Sc. (H) Chemistry I year, Semester I	Practical CC II: PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium
	Practical	Practice exercise	B. Sc. (H) Chemistry I year, Semester I	Practical CC II: PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium

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SEMESTER WISE
TEACHING PLAN 2022-2023
ODD SEMESTER

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Name of the Faculty: Dr. Rangarajan T. M.
Department: Chemistry **Semester: I /III/V**

Month		Topic	Course	Paper
July/August	**Theory:**	Green Chemistry: The perfect toolbox to prevent waste, Twelve Principles of Green Chemistry UN sustainable development goals: How can Green Chemistry Contribute? Special Emphasis on Prevention of Waste. New Directions from Academia Innovations stemming from academia Academia Being Recognized: US Presidential Green Challenge Awards.	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment
		Introduction to Green Chemistry What is Green Chemistry? Some important environmental laws, pollution prevention Act of 1990, emergence of green chemistry, Need for Green Chemistry. Goals of Green Chemistry. Limitations/ Obstacles in the pursuit of the goals of Green Chemistry. Twelve principles of Green Chemistry and their explanation with examples Special emphasis on the following: • Prevention of Waste/ by products; maximum incorporation of the materials used in the process into the final products , Environmental impact factor, waste or pollution prevention hierarchy	B.Sc. (H) Chemistry-III Year Semester-V	CHEMISTRY –DSE-8 Green Chemistry
	Practicals:	Perform the following potentiometric titrations:	B. Sc. (P) Life Sciences, II Year	Solutions, Phase Equilibrium,

		i.Strong acid vs. strong base	(SLS), Semester-III	Conductance, Electrochemistry & Functional Group
	Practicals:			
	Practicals:			
	Tutorials:	NA	NA	NA
September	**Theory:**	Green Catalysts General Introduction to Catalysis Types of Catalysts Green Catalyst Nanocatalyst	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment
		Green metrics to assess greenness of a reaction, e.g. Atom Economy, calculation of atom economy of the rearrangement, addition, substitution and elimination reactions. Use of catalytic reagents (wherever possible) in preference to stoichiometric reagents; catalysis and green chemistry, comparison of heterogeneous and homogeneous catalysis, biocatalysis, asymmetric catalysis and photocatalysis. Green solvents: super critical fluids with special reference to carbon dioxide, water as a solvent for organic reactions, ionic liquids, fluorous biphasic solvent, PEG, solventless processes, solvents obtained from renewable resources and how to compare greenness of solvents • Energy requirements for reactions – alternative sources of energy: use of microwaves , ultrasonic energy and photochemical energy	B.Sc. (H) Chemistry-III Year Semester-V	CHEMISTRY –DSE-8 Green Chemistry
	Practicals: **Practicals:**	Determination of CST of phenol-water system. Effect of impurities on CST of phenol-water system. Potentiometric titrations ii. Weak acid vs. strong base Systematic qualitative analysis of organic compounds possessing	B. Sc. (P) Life Sciences, II Year (SLS), Semester-III	Solutions, Phase Equilibrium, Conductance, Electrochemistry & Functional Group

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	Practicals:	monofunctional groups (Alcohols, Phenols).		
	Tutorials:	NA	NA	NA
October	**Theory:**	Green Solvents Problems associated with traditional solvents Water as a green solvent Ionic Liquids Bio-based Solvents Supercritical CO2.	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment
		Prevention/ minimization of hazardous/ toxic products reducing toxicity • Risk = (function) hazard x exposure • Designing safer chemicals with minimum toxicity yet has the ability to perform the desired functions Selection of starting materials; should be renewable rather than depleting, Illustrate with few examples such as biodiesel and polymers from renewable resources (such as green plastic) • Avoidance of unnecessary derivatization – careful use of blocking/protecting groups Design for degradation: A product should not persist after the commercial function is over e.g. soaps and detergents, pesticides and polymers • Strengthening/ development of analytical techniques to prevent and minimize the generation of hazardous substances in chemical processes. • Prevention of chemical accidents designing greener processes, inherent safer design, principle of ISD "What you don't have cannot harm you", greener alternative to Bhopal Gas Tragedy (safer route to carcarbaryl) and Flixiborough accident (safer route to cyclohexanol)	B.Sc. (H) Chemistry-III Year Semester-V	CHEMISTRY –DSE-8 Green Chemistry

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		subdivision of ISD, minimization, simplification, substitution, moderation and limitation.		
	Practicals:	Conductometric titrations of strong acid vs strong base, Functional group analysis Cooling curves	B. Sc. (P) Life Sciences, II Year (SLS), Semester-III	Solutions, Phase Equilibrium, Conductance, Electrochemistry & Functional Group
	Practicals:			
	Practicals:			
	Tutorials:	NA	NA	NA
	Assignment	**Assignment-I**	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment
November	**Theory:**	Green Energy Global Warming (Climate Change) Renewable energy Microwave Assisted Synthesis Ultrasound Assisted Synthesis.	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment
		Examples of Green Synthesis/ Reactions • Green Synthesis of the following compounds: adipic acid, catechol, disodium iminodiacetate (alternative to Strecker synthesis). • Green Reagents: Non-phosgene Isocyanate Synthesis, Selective Methylation using dimethylcarbonate. • Microwave assisted solvent free synthesis of copper phthalocyanine • Microwave assisted reactions in water: Hofmann Elimination, methyl benzoate to benzoic acid and Decarboxylation reaction • Ultrasound assisted reactions: sonochemical Simmons-Smith Reaction (Ultrasonic alternative to	B.Sc. (H) Chemistry-III Year Semester-V	CHEMISTRY –DSE-8 Green Chemistry

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		Iodine)		
	Practicals:	Systematic qualitative analysis of organic compounds possessing monofunctional groups (Carbonyl, -COOH).	B. Sc. (P) Life Sciences, II Year (SLS), Semester-III	Solutions, Phase Equilibrium, Conductance, Electrochemistry & Functional Group
	Tutorials:	NA	NA	NA
	Test			
December	**Theory:**			
	Practicals:	Revision- Practice experiment and Mock test	B. Sc. (P) Life Sciences, II Year (SLS), Semester-III	Solutions, Phase Equilibrium, Conductance, Electrochemistry & Functional Group
	Tutorials:	NA	NA	NA

Month		Topic	Course	Paper
November	**Theory:**			
	Practicals:	Purification of an organic compound by crystallization (from water and alcohol) and distillation, Criteria of purity: Determination of M.P. Determination of boiling point of liquid compounds. (Boiling point lower than and more than 100 °C by distillation and capillary method)	B. Sc. (P) Life Science-I year (FLS), Semester-I, Batch-II	CHEM-DSC-01 Course Title: Basic Concepts of Organic Chemistry
	Practicals:	Introductory class Calibration of a thermometer and determination of the melting points of the organic compounds using any one of the following methods- Kjeldahl method, electrically heated melting point apparatus and BODMEL).	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-I	Basic Concepts and Aliphatic Hydrocarbons (DSC-2: Organic Chemistry-I)
	Practicals:	Introductory class Calibration of a thermometer and determination of the melting points of the organic compounds using any one of the following methods-	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-II	Basic Concepts and Aliphatic Hydrocarbons (DSC-2: Organic Chemistry-I)

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		Kjeldahl method, electrically heated melting point apparatus and BODMEL).		
	Tutorials:	NA	NA	NA
December	**Theory:**			
	Practicals:	Detection of extra element. Preparations: (Mechanism of various reactions involved to be discussed). 2,4-Dinitrophenylhydrazone of aldehydes and ketones c. Semicarbazone of aldehydes/ ketones	B. Sc. (P) Life Science-I year (FLS), Semester-I, Batch-II	CHEM-DSC-01 Course Title: Basic Concepts of Organic Chemistry
		Concept of melting point and mixed melting point. Concept of recrystallisation using alcohol/water/alcohol-water systems (Any two). Determination of boiling point of liquid compounds (boiling point lower than and more than 100 °C by distillation, capillary method and BODMEL method)	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-I	Basic Concepts and Aliphatic Hydrocarbons (DSC-2: Organic Chemistry-I)
		Concept of melting point and mixed melting point. Concept of recrystallisation using alcohol/water/alcohol-water systems (Any two). Determination of boiling point of liquid compounds (boiling point lower than and more than 100 °C by distillation, capillary method and BODMEL method)	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-II	Basic Concepts and Aliphatic Hydrocarbons (DSC-2: Organic Chemistry-I)
	Tutorials:	NA	NA	NA
January	**Theory:**			
	Practicals:	Detection of extra element. Preparations: (Mechanism of various reactions involved to be discussed). Bromination of phenol /aniline. Aldol condensation reaction using green method.	B. Sc. (P) Life Science-I year (FLS), Semester-I, Batch-II	CHEM-DSC-01 Course Title: Basic Concepts of Organic Chemistry
		Separation of a mixture of two amino acids/sugars by radial/ascending paper chromatography. Separation of a mixture of o-and p-nitrophenol or o-	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-I	

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		and p-aminophenol by thin layer chromatography (TLC).		
		Separation of a mixture of two amino acids/sugars by radial/ascending paper chromatography. Separation of a mixture of o-and p-nitrophenol or o-and p-aminophenol by thin layer chromatography (TLC).	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-II	
	Tutorials:	NA	NA	NA
	Assignment	**Assignment-I**		
February	**Theory:**			
	Practicals:	Detection of extra element. Preparations: (Mechanism of various reactions involved to be discussed). Bromination of Stilbene. f. Acetanilide to p-Bromoacetanilide.	B. Sc. (P) Life Science-I year (FLS), Semester-I, Batch-II	CHEM-DSC-01 Course Title: Basic Concepts of Organic Chemistry
		Detection of extra elements	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-I	Basic Concepts and Aliphatic Hydrocarbons (DSC-2: Organic Chemistry-I)
		Detection of extra elements	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-II	Basic Concepts and Aliphatic Hydrocarbons (DSC-2: Organic Chemistry-I)
	Tutorials:	NA	NA	NA
	Test			
March	**Theory:**			
	Practicals:	Detection of extra element.	B. Sc. (P) Life Science-I year (FLS), Semester-I, Batch-II	CHEM-DSC-01 Course Title: Basic Concepts of Organic Chemistry
		Detection of extra elements	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-I	Basic Concepts and Aliphatic Hydrocarbons (DSC-2: Organic Chemistry-I)
		Detection of extra elements	B. Sc. (H) Chemistry-I year (FCH), Semester-I, Batch-II	Basic Concepts and Aliphatic Hydrocarbons (DSC-2: Organic Chemistry-I)
	Tutorials:	NA	NA	NA

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SEMESTER WISE TEACHING PLAN
(2022-2023) 0dd semester
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Name of the Faculty: Dr Devendra Kumar Verma
Department: Chemistry **Semester: I/III/V**

Month		Topic	Course	Paper
20 July 2022 (V semester start)	**Practicals:**	Introductory class	B. Sc. (H)chemistry, Vth Semester 3rd year	CHEMISTRY - C XII: PHYSICAL CHEMISTRY V
26 August 2022 (III semester start)	**Theory:**	Concept of phases, component and degree of freedom,	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVll:Physical Chemistry lll
	Practicals:	Introductory class Colorimetry: I. Verify Lambert-Beer's law and determine the concentration of CuSO4/KMnO4/K2Cr2O7 in a solution of unknown concentration.	B. Sc. (H)chemistry, Vth Semester 3rd year	CHEMISTRY - C XII: PHYSICAL CHEMISTRY V
September	**Theory:**	Derivation of Gibbs phase rule for non reactive and reactive system. Clausius clapeyron equation and its applicaition to solid-liquid, liquid vapour and solid-vapour equilibria. Phase diagram for one component system.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVll:Physical Chemistry lll
	Practicals:	1. Determination of critical solution temperature and composition of phenol water system and study the effect of impurities on it.	B. Sc. (Life Science) III Semester 2nd year	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
		Determine the concentrations of $KMnO_4$ and $K_2Cr_2O_7$ in a mixture. Study the kinetics of iodination of propanone in acidic medium Determine the amount of iron present in a sample using 1,	B. Sc. (H) Chemistry V sem, 3rd year	CHEMISTRY - C XII: PHYSICAL CHEMISTRY V

		10-phenathroline.		
	Tutorials:	NA	NA	NA
October	**Theory:**	Phase diagram for H2O and S, with applications. Phase diagram for a system of solid liquid equilibria involving eutectic congruent and incongruent melting point. Three component system: triangular plots, water-chloroform-acitic acid system. Binary solutions: gibbs-duhem margules equation, its derivation and application to fractional distillation of binary miscible liquid (ideal and non ideal), azeotropes, level rule, partial miscibility of liquids, CST, miscible pairs, steam distillation. Nerst distribution law: its derivation and application.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVll:Physical Chemistry lll
	Practicals:	Construction of phase diagram of a binary system (simple eutectic) using cooling curves. Determination of equivalent conductant, degree of dissociation and dissociation constant of a weak acid.	B. Sc. (Life Science) III Semester 2nd year	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
		Determine the dissociation constant of an indicator (phenolphthalein). Study the kinetics of interaction of crystal violet/ phenolphthalein with sodium hydroxide. Verify the Freundlich and Langmuir isotherms for adsorption of acetic acid on activated charcoal.	B. Sc. (H)chemistry Vth Semester,3nd year	CHEMISTRY - C XII: PHYSICAL CHEMISTRY V
	Tutorials:			
	Assignment			
16 November (Dispersion of V semester class), 2 November (start I semester)	**Theory:**	Electrochemical cells: rules of oxidation/reduction of ions based on half- cell potential, applications of electrolysis in metallurgy and industry. Chemical cell potential.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVll:Physical Chemistry lll

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		Reversible and irreversible cells with examples. Electromotive force of a cell and its measurement, Nernst equation; standard electrod potential and its application to different kinds of half cells. Application of EMF measurement in determining free energy; enthalpy and entropy of a cell reaction, equilibrium constant, and pH value using hydrogen, quinine-hydroquinone, glass and SbO/Sb2O3 electrodes.		
		Perform the following conductometric titrations: 1. strong acid Vs strong base	B. Sc. (Life Science) III Semester 2nd year	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
	Practicals:	1.To determine the surface tension of a liquid by drop no method. 2. To determine the surface tension of a liquid by drop weight method. 3.To study the variation of surface tension with the different concentration of Sodium chloride solution.	B. Sc. (H) I Semester I year	DSE: III, Physical chemistry 1
13 December 2022 (Dispersion of III semester class)	**Theory:**	Surface chemistry: Nature of adsorbed state. Qualitative discussion of BET.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVll:Physical Chemistry lll
	Practicals:	4. To study the variation of surface tension with different concentration of detergent solution, Determination of CMC. 5.To study the effect of addition of soluts on the surface tention of watr at room temperature and explain the observations in terms of molecular interactions: Sugar, ethanol, and sodium chloride. 6. To Determine coefficient of viscosity of two unknown	B. Sc. (H) I Semester I year	DSE: III, Physical chemistry 1

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		aqueous solution.		
		Perform the following conductometric titrations: 1. weak acid Vs strong base	B. Sc. (Life Science) III Semester 2nd year	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
January	**Practicals:**	7. To study the variation of viscosity with different concentration of sugar solutions. 8.To study the variation of viscosity of water with the amounts of a solute and calculate the intrinsic viscosity at room temperature.	B. Sc. (H) I Semester I year	DSE: III, Physical chemistry 1
17 February 2022 (Dispersion of class I semester)	**Practicals:**	9. Determine the viscosity average molecular mass of the polymer (PVA) using viscosity measurement. 10. to determine the value of universal gas constant R using the reaction $Mg + 2HCl(aq) \rightarrow MgCl_2 + H_2$	B. Sc. (H) I Semester I year	DSE: III, Physical chemistry 1

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SEMESTER WISE TEACHING PLAN
Academic year 2022-2023 (Odd Semester)
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Name of the Faculty: Dr. Balendra **Department: Chemistry**
Semester: I/III/V

Month		Topic	Course	Paper Code/Name
July	**Practicals**	(i) Introductory class Introductory class	B.Sc.(H) Chemistry Sem-V B.Sc Life Science Semester-III	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
August	**Theory**	Introductory class Water Pollution and root causes	GE-III	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practicals	Estimation of glucose by Fehling's solution Systematic qualitative analysis of organic compounds possessing monofunctional groups.	B.Sc.(H) Chemistry Sem-V B.Sc Life Science Semester-III	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
September	**Theory:**	Catalytic Degradation of organic water pollutants	GE-III	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practical	Isolation and estimation of DNA using cauliflower/onion. Saponification value of the given oil or fat Estimation of protein by Lowry's Method Study of the action of salivary amylase on starch under optimum conditions. 1. Acetylation of aniline and β - naphthol by: a. Using conventional method.	B.Sc.(H) Chemistry Sem-V B.Sc (H)	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules Organic Chemistry-II

		b. Using green approach 2. Hydrolysis of benzamides and ethylbenzoate. 1. Determination of critical solution temperature and composition of phenol water system 2. Study the effect of impurities (NaCl, Succinic acid) on the CST of water	Chemistry Semester-III B.Sc. (Prog) Life Sciences II Year, Semester III (Section B	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	Tutorial:	**Assessment-1**	B.Sc.(H) Chemistry Sem-III	CHEMISTRY-CVI: Halogenated Hydrocarbons and Oxygen Containing Functional Groups
October	**Theory:**	Photo-oxidation technologies Removal of heavy metals (inorganic pollutants) via new adsorption technology	GE-III	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practicals	Effect of temperature on the action of salivary amylase. 1. Semicarbazone of any one of the following compounds acetone and cyclohexanone. Systematic qualitative analysis of organic compounds possessing monofunctional groups (Alcohols, Phenols, Carbonyl, -COOH). (Including Derivative Preparation).	B.Sc.(H) Chemistry Sem-V B.Sc.(H) Chemistry Sem-III B.Sc Life Science Semester-III	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules Organic Chemistry-II Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	Tutorials:	NA	NA	NA
	Assessment	**Assessment-1**	GE-III	Green chemistry
	Assessment	**Assessment-2**	B.Sc.(H) Chemistry Sem-V	DSE-8 Green Chemistry
November	**Theory:**	Green chemistry and resource efficiency, Concept of Circular Economy: Renewable resources, the	GE-III	Green Chemistry: Designing Chemistry for Human Health

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		bio-based economy and waste Valorization, Creating an Effective Regulatory System		and Environment
		Alkanes: Preparation, Halogenation of alkanes, Concept of relative reactivity v/s selectivity	B.Sc.(H) Chemistry Sem-I	Basic Concepts, Hydrocarbons and Haloalkanes
		Electronic displacements: Inductive effect, Electromeric effect, resonance, hyperconjugation. Cleavage of bonds: homolysis and heterolysis. Reaction intermediates: carbocations, carbanions and free radicals.	B. Sc (P) Life Sciences Sem-I (B-II)	Basic Concepts of Organic Chemistry
		Electronic displacements and their applications: Inductive, electromeric, resonance and hyperconjugation. Dipole moment, acidity and basicity. Types, shape and relative stability of carbocations, carbanions and free radicals. Electrophiles and nucleophiles, Intramolecular and intermolecular molecular forces including hydrophobic, hydrophilic interactions and hydrogen bond (emphasis on effect of these forces on the stability of biomolecules),	FBSH	Basic Concepts of hydrocarbons
	Practicals:	Study of the titration curve of glycine. Determination of Iodine number of the given oil	B.Sc.(H) Chemistry Sem-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
		1. Systematic analysis of oxygen containing functional groups. 2. Selective reduction of metadinitrobenzene by Zinin method. 3. SBT preparation of oxalic acid and benzoic acid	B.Sc.(H) Chemistry Sem-III	Organic Chemistry-II
		Determination of equivalent conductance, degree of dissociation and dissociation constant of a weak acid. 3. Perform the following conductometric titrations: a) Strong acid vs strong base b) Weak acid vs strong base.	B.Sc (P) Life Sciences Sem-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II

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		Systematic qualitative analysis of organic compounds possessing monofunctional groups (Alcohols, Phenols, Carbonyl, -COOH). (Including Derivative Preparation).		
	Tutorials:	Test-1	GE-III	Green Chemistry:
December	**Theory:**	Alkenes and Alkynes: Methods of preparation of alkenes using Mechanisms of E1, E2, E1cb reactions, Types of projection formulae: Flying Wedge Formula, Newmann, Sawhorse and Fischer representations and their interconversion. Stereoisomerism: Concept of chirality (upto two carbon atoms). Biologically significant chemical reactions (6 hours) Aldol condensation (Glucogenesis), Retro-aldol (Glycolysis), Benzoin condensation (umpolungdecarboxylation of pyruvate in the presence of TPP), C	B.Sc.(H) Chemistry Sem-I B. Sc (P) Life Sciences Sem-I (B-II) FBSH	Basic Concepts, Hydrocarbons and Haloalkanes Basic Concepts of Organic Chemistry Basic Concepts of hydrocarbons
	Practicals	Perform the potentiometric titrations of (i) Strong acid vs strong base and (ii) Weak acid vs strong base. Systematic qualitative analysis of organic compounds possessing monofunctional groups (Alcohols, Phenols, Carbonyl, -COOH). (Including Derivative Preparation).	B.Sc (P) Life Sciences Sem-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	Tutorials:	NA	NA	NA
January	**Theory**	Electrophilic additions, mechanism with suitable examples, (Markownikoff/Anti-markownikoff addition), syn and anti-addition; addition of H2, X2, oxymercuration-demercuration, hydroboration-oxidation, ozonolysis,	B.Sc.(H) Chemistry Sem-I	Basic Concepts, Hydrocarbons and Haloalkanes

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		hydroxylation, Nucleophilic addition reactions Nucleophilic addition reaction of carbonyl compounds: Addition of HCN, ammonia derivatives (Hydroxylamine, Hydrazine, Semicarbazide and 2,4-DNP), Classification of carbohydrates, reducing and non-reducing sugars, biological functions, linkage between monosaccharides, general properties and reactions of glucose and fructose, their open chain structure, epimers, mutarotation and anomers,	B. Sc (P) Life Sciences Sem-I (B-II) FBSH	Basic Concepts of Organic Chemistry Basic Concepts of Biomolecules
	Practicals			
	Tutorials:	NA	NA	NA
	Assessment	Assessment-1		
February	**Theory**	Reactions of alkynes; acidity, Alkylation of terminal alkynes, electrophilic addition: hydration to form carbonyl compounds, Reactive intermediates and Rearrangement Reactions Unit V: Lipids	B.Sc.(H) Chemistry Sem-I B. Sc (P) Life Sciences Sem-I (B-II) FBSH	Basic Concepts, Hydrocarbons and Haloalkanes Basic Concepts of Organic Chemistry Basic Concepts of Biomolecules

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SEMESTER WISE TEACHING PLAN (2022-23)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Komal Aggarwal **Department: Chemistry**

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
July	**Theory**			
	Theory			
	Practicals		B.Sc. (H) Chemistry 3rdYear, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Practicals			
	Tutorials			
August	**Theory:**			
	Practicals:	1. Study of the titration curve of glycine. 2. Estimation of glucose by Fehling's solution. 3. Isolation and estimation of DNA using cauliflower/onion	B.Sc. (H) Chemistry 3rdYear, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules

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September	**Theory:**	**Alkyl halides:** Methods of preparation and properties, nucleophilic substitution reactions – SN1, SN2 and SNi mechanisms with stereochemical aspects and effect of solvent; nucleophilic substitution vs. elimination. **Aryl halides:** Preparation (including preparation from diazonium salts) and properties, nucleophilic aromatic substitution; SNAr, Benzyne mechanism. Relative reactivity of alkyl, allyl, benzyl, vinyl and aryl halides towards nucleophilic substitution reactions **Alcohols:** preparations, Properties and relative reactivity of 1°, 2°, 3° alcohols, Bouveault–Blanc Reduction; Oxidation of diols by periodic acid and lead tetraacetate,	B.Sc. (H) Chemistry 2nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Practicals:	4. Saponification value of the given oil or fat. 5. Estimation of proteins by Lowry's method.	B.Sc. (H) Chemistry 3rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules

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October	**Theory:**	Pinacol-Pinacolone rearrangement. Revision Class **Phenols:** Preparation and properties; Acidity and affecting factors, Ring substitution reactions. **Ethers and Epoxides:** Preparation and reactions with acids. Reactions of epoxides with alcohols, ammonia and LiAlH4. **Carbonyl Compounds** Structure, reactivity, preparation and properties; Nucleophilic additions, Nucleophilic addition-elimination reactions with ammonia derivatives with mechanism.	B.Sc. (H) Chemistry 2nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Practicals:	7. Study of the action of salivary amylase on starch under optimum conditions. 8. Effect of temperature on the action of salivary amylase.	B.Sc. (H) Chemistry 3rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Assignment:	Alkyl halides, Aryl halides and Alcohols, phenols and Ethers and Epoxides	B.Sc. (H) Chemistry 2nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups

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November	**Theory:**	**Carbonyl Compounds** Mechanisms of Aldol and Benzoin condensation, Knoevenagel condensation, Claisen-Schmidt, Perkin, Cannizzaro and Wittig reaction, Beckmann and Benzil-Benzilic acid rearrangements, haloform reaction and Baeyer Villiger oxidation, α-substitution reactions, oxidations and reductions (Clemmensen, WolffKishner, LiAlH4, NaBH4, MPV, PDC). Addition reactions of α, β- unsaturated carbonyl compounds: Michael addition. Active methylene compounds: Keto-enol tautomerism. Preparation and synthetic applications of diethyl malonate and ethyl acetoacetate. Carboxylic acids and their derivatives General methods of preparation, physical properties and reactions of monocarboxylic acids.	B.Sc. (H) Chemistry 2nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Practicals:	Study of the action of salivary amylase on starch under optimum conditions.	B.Sc. (H) Chemistry 3rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Assignment:	Carbonyls	B.Sc. (H) Chemistry 2nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Test:	Alkyl Halides, Aryl Halides, Phenols and Ethers	B.Sc. (H) Chemistry 2nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing

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December	**Theory:**	**Stereochemistry:** Types of projection formulae: Flying Wedge Formula, Newmann, Sawhorse and Fischer representations and their interconversion. Stereoisomerism: Concept of chirality (upto two carbon atoms). Configurational isomerism: geometrical and optical isomerism; enantiomerism, diastereomerism and meso compounds).	B.Sc. (P) Life Sciences Ist Year, Semester-I	DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Basic Concepts of Organic
	Theory	**Carboxylic Acids and their derivatives:** Effect of substituents on acidic strength. Typical reactions of dicarboxylic acids, hydroxy acids and unsaturated acids. Preparation and reactions of acid chlorides, anhydrides, esters and amides; Comparative study of nucleophilic substitution at acyl group- Mechanism of acidic and alkaline hydrolysis of esters, Claisen condensation, Dieckmann and Reformatsky reactions, Hoffmann-bromamide degradation and Curtius rearrangement		
	Test:	Alkyl Halides, Aryl Halides, Phenols and Ethers	B.Sc. (H) Chemistry 2nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing

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SEMESTER WISE TEACHING
PLAN 2022-2023 (Odd Sem)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Chandra Sekhar Tekuri **Department: Chemistry**

Semester: I/III

Month		Topics	Course	Paper Code/Name
August	**Theory**	1. Introduction of Carboxylic acids and their derivatives (aliphatic and aromatic) 2. Preparation: Acidic and alkaline hydrolysis of esters. Reactions: Hell-Volhard Zelinsky reaction, acidity of carboxylic acids, effect of substitution on acid strength. Carboxylic acid derivatives (aliphatic): Preparation: Acid chlorides, anhydrides, esters and amides from acids and their interconversion,	B.Sc. Life Science, II Year, III Semester	CHEMISTRY –Core Paper-3 Course Title: Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
September	**Theory**	1. Claisen condensation. Reactions: Relative reactivities of acid derivatives towards nucleophiles, Reformatsky reaction, Perkin condensation. 2 Amines (aliphatic & aromatic) and Diazonium Salts Amines Preparation: from alkyl halides, Gabriel's Phthalimide synthesis, Hofmann Bromamide reaction. **Reactions:** Hofmann vs Saytzeff elimination, carbylamine test, Hinsberg test, reaction with HNO2, Schotten-Baumann reaction. Electrophilic substitution (case aniline): nitration, bromination, sulphonation, basicity of amines. Diazonium salt Preparation: from aromatic amines **Reactions:** conversion to benzene, phenol and dyes.	B.Sc. Life Science, II Year, III Semester	CHEMISTRY –Core Paper-3 Course Title: Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II

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October	**Theory**	1. Amino Acids, Peptides and Proteins Zwitterion, isoelectric point and electrophoresis Preparation of amino acids: Strecker synthesis and using Gabriel's phthalimide synthesis. 2. Reactions of amino acids: ester of –COOH group, acetylation of –NH2 group, complexation with Cu2+ ions, ninhydrin test. Overview of Primary, Secondary, Tertiary and Quaternary Structure of proteins. Determination of primary structure of peptides by degradation Edmann degradation (N- terminal) and C– terminal (thiohydantoin and with carboxypeptidase enzyme). Synthesis of simple peptides (upto dipeptides) by N-protection (t-butyloxycarbonyl and phthaloyl) & C- activating groups and Merrifield solid phase synthesis	B.Sc. Life Science, II Year, III Semester	CHEMISTRY –Core Paper-3 Course Title: Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
November	**Theory**	**Carbohydrates** Classification, and general properties, glucose and fructose (open chain and cyclic structure), determination of configuration of monosaccharides, absolute configuration of glucose and fructose, mutarotation, ascending and descending in monosaccharides. Structure of disaccharides (sucrose, cellobiose, maltose, lactose)	B.Sc. Life Science, II Year, III Semester	CHEMISTRY –Core Paper-3 Course Title: Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		. **Fundamentals of Organic chemistry** Electronic Displacements; Inductive effect, electrometric effect, resonance, hyper conjugation, Reaction intermediates and their stability; carbocations, carbanions and free radicals, benzyne, carbenes. Acidity and basicity in organic compounds (comparison of carboxylic acids , alcohols, phenols, primary, secondary and tertiary aliphatic amines, aniline and its derivatives	B.Sc. Life Science, I Year, I Semester	Basic concepts of Organic chemistry

	Practicals	1. Purification of an organic compound by crystallization (from water and alcohol) and distillation, Criteria of purity: Determination of M.P. 2. Determination of boiling point of liquid compounds. (Boiling point lower than and more than 100 °C by distillation and capillary method)	B.Sc. Life Science, I Year, first Semester	Basic Concepts of Organic
		1. Calibration of a thermometer and determination of the melting points of the organic compounds using any one of the following methods-Kjeldahl method, electrically heated melting point apparatus and BODMEL). 2. Concept of melting point and mixed melting point.	B.Sc. (Hons) Chemistry, I Year, I Semester Batch- I & II	(DSC-2): Basic Concepts and Aliphatic Hydrocarbons
		1. Purification of organic compounds by recrystallization using the following solvents: i. Water ii. Water-Alcohol iii. Alcohol 2. Criterion of purity of organic compound- melting point, mixed melting point and boilingpoint	B.Sc. (Hons) Biological Science, I Year, I Semester	(DSC-2): Organic chemistry
December	**Theory**	**Carbohydrates** polysaccharides (starch and cellulose) excluding their structure elucidation.	B.Sc. Life Science, II Year, III Semester	CHEMISTRY –Core Paper-3 Course Title: Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		Reactions Free radicals (Birch Reduction); Carbocations (Pinacol-Pinacolone, Wagner-Meerwein, Rearrangement, and Beckmann rearrangement); Carbanions (Michael Addition); Carbenes (Reimer-Tiemann)	B.Sc. Life Science, I Year, I Semester	Reactive intermediates and Rearrangement Reactions

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	Practicals	1. Detection of extra element 2. Preparations a) Bromination of phenol/aniline.	B.Sc. Life Science, I Year, first Semester	Basic Concepts of Organic
		3. Concept of recrystallisation using alcohol/water/alcohol-water systems (Any two). 4. Determination of boiling point of liquid compounds (boiling point lower than and more than 100 °C by distillation, capillary method and BODMEL method)	B.Sc. (Hons) Chemistry, I Year, I Semester Batch- I & II	(DSC-2): Basic Concepts and Aliphatic Hydrocarbons
		1. Estimation of saponification value of fat/oil. 2. Estimation of iodine value of fat/oil.	B.Sc. (Hons) Biological Science, I Year, I Semester	(DSC-2): Organic chemistry
January	**Theory**	Electrophilic Aromatic substitution with mechanism (benzene)- sulphonation, nitration, halogenation, Friedel craft acylation :o-, m- and p- directive influence giving examples of toluene/nitrobenzene/ phenol/ aniline/ chlorobenzene	B.Sc. Life Science, I Year, I Semester	Electrophilic substitution reactions
	Practicals	1. 2,4-Dinitrophenylhydrazone of aldehydes and ketones 2. Semicarbazone of aldehydes/ ketones 3. Aldol condensation reaction using green method.	B.Sc. Life Science, I Year, first Semester	Basic Concepts of Organic
		1. Separation of a mixture of two amino acids/sugars by radial/ascending paper chromatography. 2. Separation of a mixture of o-and p-nitrophenol or o-and p-aminophenol by thin layer chromatography (TLC)	B.Sc. (Hons) Chemistry, I Year, I Semester Batch- I & II	(DSC-2): Basic Concepts and Aliphatic Hydrocarbons

		1. Qualitative tests for carbohydrates and lipids 2. Chromatography a) To separate a mixture of sugars by circular paper chromatography	B.Sc. (Hons) Biological Science, I Year, I Semester	(DSC-2): Organic chemistry
February	**Theory**	Electrophilic addition reactions Electrophilic addition reaction (with respect to propene, propyne, 3,3-dimethyl-1-butene): Hydration, Addition of HX in the absence and presence of peroxide, Hydroboration oxidation, Addition of bromine (with stereochemistry).	B.Sc. Life Science, I Year, I Semester	Elimination and Nucleophilic substitution reactions
	Practicals	1. Bromination of Stilbene. 2. Acetanilide to p-Bromoacetanilide	B.Sc. Life Science, I Year, first Semester	Basic Concepts of Organic
		1.Detection of extra elements	B.Sc. (Hons) Chemistry, I Year, I Semester Batch- I & II	(DSC-2): Basic Concepts and Aliphatic Hydrocarbons
		To separate a mixture of lipids in a sample by Thin Layer Chromatography	B.Sc. (Hons) Biological Science, I Year, I Semester	(DSC-2): Organic chemistry

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Name of the Faculty: Dr. Akanksha Gupta

Department: Chemistry **Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
July	**Practical**	Synthesis of silver nanoparticles using different reagents	B.Sc. (Hons.) Chemistry IIIrd Year Sem V	DSE LAB: NOVEL INORGANIC SOLIDS
	Practical	Determination of pH of soil samples	B.Sc. (P) Life Sciences IIIrd Year Sem V	Basic Analytical Chemistry (SEC)
August	**Theory**	Chemistry of *s*-Block Elements General characteristics: melting point, flame colour, reducing nature, diagonal relationships and anomalous behavior of first member of each group.	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals	Inorganic preparations (i) Cuprous Chloride, Cu_2Cl_2	B.Sc. (Hons.) Chemistry IInd Year, Sem III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Estimation of calcium and Magnesium by complexometric titrations using EDTA. Determination of pH, acidity of a water sample. Determination of dissolved oxygen (DO) of a water sample.	B.Sc. (P) Life Sciences IIIrd Year Sem V	Basic Analytical Chemistry (SEC)
	Tutorials			
September	**Theory:**	General characteristics: melting point, flame colour, reducing nature, diagonal relationships and anomalous behavior of first member of each group. Reactions of alkali and alkaline earth metals with oxygen, hydrogen, nitrogen and water. Common features such as ease of formation, thermal stability and solubility of the following alkali and alkaline earth metal compounds: hydrides, oxides, peroxides, superoxides, carbonates, nitrates, sulphates.	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals:	Preparations: (i) Cu_2Cl_2 (ii) Aluminium potassium sulphate $KAl(SO_4)_2.12H_2O$ (Potash alum) Estimation of Zn^{2+} Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements

		Synthesis of lead sulphide, zinc sulphide, copper sulphide,manganese sulphide, nickel sulphide, cadmium sulphide	B.Sc. (Hons.) Chemistry III Year	DSE : NOVEL INORGANIC SOLIDS
		Determination of dissolved oxygen (DO) of a water sample. Paper chromatographic separation of mixture of metal ion (Ni2+ and Co2+).	B.Sc. (P) Life Science III year	Basic Analytical Chemistry (SEC)
	Tutorials:			
	Assignment	Chemistry of *s* and *p* block elements	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
October	**Theory:**	Complex formation tendency of *s*-block elements; structure of the following complexes: crown ethers and cryptates of Group I; basic beryllium acetate, beryllium nitrate, EDTA complexes of calcium and magnesium. Solutions of alkali metals in liquid ammonia and their properties	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements

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	Practicals:	Estimation of Mg^{2+} Complexometric titrations using disodium salt of EDTA Estimation of Ca^{2+} Complexometric titrations using disodium salt of EDTA Paper chromatographic separation of following metal ions: (i) Ni (II) and Co (II) (ii) Cu(II) and Cd(II)	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Preparation of polyaniline Intercalation of hydrogen in tungsten trioxide Preparation of zeolite	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
		To study the use of phenolphthalein in trap cases. Spectrophotometric determination of Iron in vitamin / dietary tablet	B.Sc. (P) Life Science III year	Basic Analytical Chemistry (SEC)
	Tutorials:			
November	**Theory:**	Preparation, properties, structure and uses of the following compounds: • Borazine • Silicates, silicones, • Phosphonitrilic halides {$(PNCl_2)n$ where n = 3 and 4}	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Brief discussion of the following properties of the elements, with reference to s- & pblock andtheir trends: (a) Effective nuclear charge, shielding or screening effect and Slater's rules (b) Atomic and ionic radii	B.Sc. (H) Chemistry Ist Year, Semester-I	DSC-1 Atomic Structure and Chemical Bonding
	Practicals:	Estimation of Cu(II) and K2Cr2O7 using sodium thiosulphate solution (Iodometrically)	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Synthesis of Inorganic pigments-Prussian blue, malachite green, chrome yellow, chromium oxide,	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
		Determination of alkalinity of a water sample	B.Sc. (P) Life Science I year	
	Tutorials:			

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	Test	Chemistry of *s* and *p* block elements	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
December	**Theory:**	• Interhalogen and pseudohalogen compounds • Clathrate compounds of noble gases, xenon fluorides (MO treatment of XeF_2)	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Brief discussion of the following properties of the elements, with reference to s- & p block and their trends: (Ionization enthalpy (Successive ionization enthalpies) (d) Electron gain enthalpy	B.Sc. (H) Chemistry Ist Year, Semester-I	DSC-1 Atomic Structure and Chemical Bonding
	Practicals:	Estimation of antimony in tartar-emetic iodimetrically	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Tutorials:			
January	**Theory:**	Electronegativity, Pauling's scale of electronegativity.Variation of electronegativity with bond order and hybridization.	B.Sc. (H) Chemistry Ist Year, Semester-I	DSC-1 Atomic Structure and Chemical Bonding
February	**Theory:**	General characteristics, types of ions, size effects, radius ratio rule and its limitations. Packing of ions in crystals. Lattice energy, Born-Landé equation with derivation, Madelung constant, importance of Kapustinskii equation for lattice energy. Born-Haber cycle and its applications.	B.Sc. (H) Chemistry Ist Year, Semester-I	DSC-1 Atomic Structure and Chemical Bonding

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Name of the Faculty: Dr. Manoj Trivedi **Department: Chemistry**

Semester: III/V/I

Month		Topics	Course	Paper Code/Name
July	Practicals	Determination of pH of soil samples Determination of pH.	B.Sc. Life Science, III Year, V Semester	Basic Analytical Chemistry
August	Theory	General characteristics: melting point, flame colour, reducing nature, diagonal relationships and anomalous behavior of first member of each group. Reactions of alkali and alkaline earth metals with oxygen, hydrogen, nitrogen and water. Common features such as ease of formation, thermal stability and solubility of the following alkali.	B.Sc.(H) Chemistry, II Year , III Semester (Batch 1)	Chemistry-CV: Inorganic Chemistry II
	Theory	Innovations stemming from academia	Generic Elective Courses (GE), II Year, III Semester	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practicals	Acidity and alkalinity of a water sample. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	B.Sc. Life Science, III Year, V Semester	Basic Analytical Chemistry
September	Theory	Alkaline earth metal compounds: hydrides, oxides, peroxides, superoxides, carbonates, nitrates, sulphates. Complex formation tendency of s-block elements; structure of the following complexes: crown ethers and cryptates of Group I; basic beryllium acetate, beryllium nitrate, EDTA complexes of calcium and magnesium. Solutions of alkali metals in liquid ammonia and their properties.	B.Sc.(H) Chemistry, II Year , III Semester (Batch 1)	Chemistry-CV: Inorganic Chemistry II
	Theory	Academia Being Recognized: US Presidential Green Challenge Awards	Generic Elective Courses (GE), II Year, III Semester	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practicals	Paper chromatographic separation or mixture of metal ion (Ni^{2+} and Co^{2+}). Determination of dissolved oxygen (DO) of a water sample.	B.Sc. Life Science, III Year, V Semester	Basic Analytical Chemistry
	Practicals	Synthesis of biodiesel from waste cooking oil Making green plastics from corn starch. Green synthesis of gold/silver nanoparticles.	Generic Elective Courses (GE), II Year, III Semester	Green Chemistry: Designing Chemistry for Human Health and

				Environment
October	Theory	Borazine Silicates, silicones.	B.Sc.(H) Chemistry, II Year , III Semester (Batch 1)	Chemistry-CV: Inorganic Chemistry II
	Theory	Resource efficiency, atom economy and the *E* factor Concept of Circular Economy: Renewable resources, the bio-based economy and waste valorisation Creating an Effective Regulatory System New Technological Developments: New Avenues for the Green Economy and Sustainable Future of Science and Technology	Generic Elective Courses (GE), II Year, III Semester	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practicals	To study the use of phenolphthalein in trap cases. Spectrophotometric determination of Iron in Vitamin / Dietary Tablets.	B.Sc. Life Science, III Year, V Semester	Basic Analytical Chemistry
	Practicals	Catalytic degradation of dyes using nanoparticles Microwave assisted synthesis of copper phthalocyanine complex Preparation of Fe(III)AcAc Complex using a greener approach	Generic Elective Courses (GE), II Year, III Semester	Green Chemistry: Designing Chemistry for Human Health and Environment
November	Theory	Phosphonitrilic halides {(PNCl2)n where n = 3 and 4} Interhalogen and pseudohalogen compounds Clathrate compounds of noble gases, xenon fluorides (MO treatment of XeF_2). Group 17 and Zero group	B.Sc.(H) Chemistry, II Year , III Semester (Batch 1)	Chemistry-CV: Inorganic Chemistry II
	Theory	Discuss back year Paper	Generic Elective Courses (GE), II Year, III Semester	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practicals	Making green plastics from corn starch. (Repeat)	Generic Elective Courses (GE), II Year, III Semester	Green Chemistry: Designing Chemistry for Human Health and Environment
December	Theory	Basic introduction of atomic structure Bohr's theory and its limitations	Generic Elective Courses (GE), I Year, I Semester	Chemistry-GE-Atomic Structure and Bonding
	Practicals	Basic of Volumetric Analysis Estimation of oxalic acid by titrating it with KMnO4. Estimation of Mohr's salt by titrating it with KMnO4.	Generic Elective Courses (GE), I Year, I Semester	Inorganic Chemistry - Volumetric Analysis

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23) (Odd-Semester)

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Name of the Faculty: Dr. Mamta Arora
Department: Commerce
Course: B. Com (H)
Semester: V

Month	Type of Class	Topics	Course	Paper Code/Name
JULY 2022	**Theory**	1. Nature, Scope and Objectives of financial management, Time value of money, Risk & Return – (including Capital Asset Pricing Model); Long-term investment decisions: The capital budgeting process, cash flow estimation, pay-back period method, accounting rate of return, net present value, net terminal value, internal rate of return and Profitability Index	1. B.Com. (Hons) - V	1. BCH 5.2: Fundamental of Financial Management
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
AUGUST 2022	**Theory**	1. Financing Decisions: Sources of long-term financing, Estimation of components of cost of capital, methods of calculating cost of equity, cost of retained earnings, cost of debt and preference capital, weighted average cost of capital, capital structure: theories of capital structure (Net Income, Net Operating Income, MM Hypothesis, Traditional approach), Operating and Financing Leverage, Determinants of capital structure.	1. B.Com. (Hons) - V	1. BCH 5.2: Fundamental of Financial Management
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
SEPTEMBER 2022	**Theory**	1. Dividend Decisions: Theories of relevance and irrelevance of dividend decisions for corporate valuation: Walter's Model, Gordon's model, MM Approach, Cash and stock dividends, Dividend	1. B.Com. (Hons) - V	1. BCH 5.2: Fundamental of Financial Management

		policies in practice		
	Assignment	1. Topics were allotted for making the assignments.	1. B.Com. (Hons) - V	1. BCH 5.2: Fundamental of Financial Management
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
OCTOBER 2022	**Theory**	1. Working capital decisions: concepts of working capital, operating & cash cycles, sources of short-term finance, working capital estimation, cash management, receivables management, inventory management	1. B.Com. (Hons) - V	1. BCH 5.2: Fundamental of Financial Management
	Test	1. Test would be conducted on the concerned subject.	1. B.Com. (Hons) - V	1. BCH 5.2: Fundamental of Financial Management
November 2022	**Theory**	1. Long-term investment decisions: The capital budgeting process, cash flow estimation, pay-back period method, accounting rate of return, net present value, net terminal value, internal rate of return and Profitability Index	1. B.Com. (Hons) - V	1. BCH 5.2: Fundamental of Financial Management

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SEMESTER WISE TEACHING PLAN
2022-23 Odd Semester
SRI VENKATESWARA COLLEGE

PRINCIPAL (Acting)
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Name of the Faculty: Dr. Shruti Mathur
Department: Commerce **Semester: 3rd**

Month		Topics	Course	Paper Code/Name
August	**Theory**	**Unit 1- Introduction** • Meaning and importance of management; • Coordination mechanisms in organisations, • management as an eclectic modern discipline; • Managerial functions, • Managerial roles (Mintzberg), • Managerial levels and • Managerial competencies.	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	Tutorials	• Case studies/ presentations/ management games related to the topics done in theory	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
September	**Theory**	**Unit 2- Planning** • Organisational objective setting; • Decision Making: environment (certainty, risk, uncertainty), • techniques for individual and group decision-making; • Forecasting and Scheduling; • Planning vis-à-vis Strategy- • meaning and elements of environment of business firm • SWOT • Industry structure,/ Porter's Five Force Analysis • Business-level strategic planning. Porter's Strategies	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	Tutorials	• Case studies/ presentations/ management games related to the topics done in theory	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	Assignment	• Assignment on various topics from the course	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications

October	**Theory**	**Unit 4- <u>Unit IV: Directing and Controlling</u>** • Motivation- meaning, importance • Factors affecting motivation; • Maslow's Theory; • Herzberg's Theory • Theory X and Y • Leadership – meaning, importance • factors affecting leadership, • leadership styles, • Managerial Grid • Fiedler's theory of leadership • Transactional & Transformational Leadership • followership; • Principles of controlling; • relationship amongst planning, organizing, directing and controlling; • Performing controlling function; • Measures of controlling • Financial Ratios, Budgetary Control, Networking Analysis (PERT/CPM), Balance Scorecard, and EVA • Accountability for performance	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications

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	Tutorials	• Case studies/ presentations/ management games related to the topics done in theory	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	Test	• Unit I – Introduction, • Unit II – Planning	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
November	**Theory**	**Unit 3: Organizing** • Organisational forms (Mintzberg); • Factors affecting organisational design; • Departmentalization; • Organisational structures • Organograms- traditional and modern - comparative suitability and changes over time, • formal- informal organisations' interface. **Unit 5 Salient Developments and Contemporary Issues in Management** • Management challenges of the 21st Century; • Factors reshaping and redesigning management purpose, performance and reward perceptions- • Internationalization ; • Digitalization; • Entrepreneurship & innovation; • Values & ethics, • holistic purpose and measures of firm performance; • Workplace diversity; • Democracy and Sociocracy; • Subaltern management ideas from India	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	Tutorials	• Case studies/ presentations/ management games related to the topics done in theory	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications

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December	**Theory**	• Revision of topics	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	Tutorial	• Doubt solving, Discusion of past papers	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
JULY-DEC 2022-23

Name of the Faculty: Ms Pooja Jain **Department: Commerce** **Semester: I/III/V**

Month	Type of Class	Topics	Course	Paper Code/Name
JULY-AUGUST	**Theory**	**1.Unit I**:Nature and Scope, Difference between cost accounting and management accounting, cost control, cost reduction, cost management, difference between cost control, cost reduction and cost management. **Unit IV:** a. Absorption versus variable costing: Distinctive features and income determination. **2. Unit 1: Introduction:** Meaning, nature, concepts, advantages, disadvantages and reasons for transacting online, types of E-commerce	**1. B.Com. (Hons) – V A+B** **2. B.Com. (Hons) – III A+B**	1. BCH 5.3/Management Accounting 2. BCH 3.5 E-Commerce
	Practicals	Introduction to HTML, Creating and viewing a Webpage and basic HTML tags.	**1. B.Com. (Hons) – III A** **2. B.Com. (Hons) – III B**	1. BCH 3.5 E-Commerce Practical
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
SEPTEMBER	**Theory**	**1. Unit IV:** Cost-Volume-Profit Analysis: Break-even analysis-algebraic and graphic methods. Contribution / sales ratio, key factor. Margin of safety. Angle of incidence. Determination of cost indifference point. **Unit II**: Budgeting and budgetary control: Concept of budget and budgetary control, objectives, merits, and limitations, Budget administration, Functional budgets, Fixed and flexible budgets, Zero base budget, Programme and performance budgets. **2. UNIT 1: Introduction: E**-commerce business models (introduction, key elements of a business model and categorizing major E-commerce business	**1. B.Com. (Hons) – V A+B** **2. B.Com. (Hons) – III A+B**	1. BCH 5.3/Management Accounting 2. BCH 3.5 E-Commerce

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		models), forces behind e-commerce. Technology used in e-commerce: The dynamics of world wide web and internet (meaning, evaluation and features); Designing, building and launching e-commerce website(A systematic approach involving decisions regarding selection of hardware, software, outsourcing vs. In house development of website.)		
	Practicals	Text Formatting tags, Images and hyperlinks	**1. B.Com. (Hons) – III A** **2. B.Com. (Hons) – III B**	1. BCH 3.5 E-Commerce Practical
	Assignment	One home assignment will be given from the topic: Absorption and variable Costing and CVP analysis	**1. B.Com. (Hons) – V A** **2. B.Com. (Hons) – V B**	BCH 5.3/Management Accounting
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
OCTOBER	**Theory**	**Unit V:** Decision making: Costs for decision making, variable costing and differential analysis as aids in making decisions – fixation of selling price, exploring new markets, make or buy, product mix, operate or shut down, sell or process further Responsibility Accounting: Concept, Significance, Different Responsibility Centres, Divisional Performance Measurement – Financial Measures. **2. UNIT V** Needs and concepts, the e-commerce security environment : (dimension, definition and scope of e-security) Security threats in e-commerce environment(security intrusions and breaches, attacking methods like	**1. B.Com. (Hons) – V A+B** **2. B.Com. (Hons) – III A+B**	1. BCH 5.3/Management Accounting 2. BCH 3.5 E-Commerce

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		hacking, sniffing, cyber- vandalism etc.), technology solutions (Encryption, security channels of communication, protecting networks and protecting servers and clients). Threats in E-commerce , security of clients and service provider; cyber laws – Relevant provisions of information technology act 2000, offences , secure electronic records and digital signatures penalties and adjudication.		
	Practicals	Lists, Tables and Forms	**1. B.Com. (Hons) –IIIA** **2. B.Com. (Hons) – IIIB**	1.BCH 3.5 E-Commerce Practical Part C
	Test	1. Class Test will be conducted in the middle of the month from these topics: a. Nature and scope of management accounting b. Absorption and variable costing c. C-V-P Analysis d. Budgeting 2. Class Test will be conducted in the middle of the month from these topics: **a.** Introduction to E-commerce **b.** Security and Encryption **c.** E-payment system models and methods of e-payments	**1. B.Com. (Hons) – V A+B** **2. B.Com. (Hons) – III A+B**	1. BCH 5.3/Management Accounting 2. BCH 3.5 E-Commerce
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
NOVEMBER	**Theory**	**1. Unit III**: Standard costing and variance analysis: Meaning of standard cost and standard costing: advantages, limitations and applications, Variance analysis – material, labour, and sales variances, Disposition of variances, Control ratios. Standard Costing and Variance analysis: Overhead variance **2. UNIT IV:** E-payment system models and methods of e-payments (Debit cards, Credit cards, Smart cards,	**1. B.Com. (Hons) – V A+B** **2. B.Com. (Hons) – III A+B**	1. BCH 5.3/Management Accounting 2. BCH 3.5 E-Commerce

		e-money), digital signatures (Procedures, working and legal position), payment gateways, online banking(meaning, concepts, importance, electronic fund transfer, automated clearing house, automated ledger posting), risks involved in e-payments. **UNIT II :On-line business transactions:** Meaning, purposes ,advantages and disadvantages of transacting online, E-commerce application in various industries like {banking ,insurance, payment of utility bills, online marketing, E-tailing (popularity ,benefits ,problems ,and features), online services (financial, travel and career), auctions (online portal ,online learning, publishing and entertainment) online shopping (amazon ,snapdeal, alibaba, flipkart , etc)		
	Practicals	Forms, Frames and Cascading style sheets	**1. B.Com. (Hons) – V A** **2. B.Com. (Hons) – V B**	1. BCH 3.5 E-Commerce Practical Part C

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Department of Commerce (Year 2022-23)

TEACHING PLAN

Name of the Faculty: Dr. Sindhu Mani Bag **Department: Commerce** **Semester: I/III/V**

Month	Type of Class	Topics	Course	Paper Code/Name
July-August	**Theory**	**1. Introduction:** Meaning and characteristics of company: Lifting of corporate veil; overview of administration of company law, Types of Companies including private and public company, Government company, Foreign company, one person company, small company, Associate company, Dormant company, producer company, Association not for profit and Illegal Association. **2. Introduction:** Meaning and characteristics of company: Lifting of corporate veil; overview of administration of company law, Types of Companies including private and public company. 3. **Financial Services Industry:** Overview of Financial Services Industry, Merchant Banking. 4. **Business Ethics**: Business Ethics and values, Importance of ethics, Corporate Governance and ethics,	1. B.Com (P)-IIIA 2. B.Com(P)-IIIB 3. B.Com(H)-V A&B 4. B.com(p)-V A&B	**1.** BC-3.1-Company Law 2. BC 3.1-Company Law 3. BCH 5.4(b)- Financial Markets, Institutions and Services 4. BC 5.1(c)-Auditing & CG
	Tutorial	1. Students Presented case Law 2. Students Presented case Law 3. Students presented case Study and discuss	1. B.Com (P)-IIIA 2. B.Com(P)-IIIB 3. B.Com(H)-V A&B	**1.** BC-3.1-Company Law 2.BC 3.1-Company Law 3. BCH 5.4(b)- Financial Markets, Institutions and Services
	Practical	**Income Tax Return Filing-II**	1.B.Com(p) -III	**2.** BC 3.2-Income Tax Law &Practices

Month	Type of Class	Topics	Course	Paper Code/Name
September	**Theory**	**1. Formation and Incorporation Documents:** Formation of company, promoters, their legal position and preincorporation contracts; online registration of company, Memorandum of Association and its alterations, Articles of Association and its alteration, Doctrine of Constructive notice, doctrine of Ultra vires and Indoor Management. **Share Capital:** Prospectus, Shelf and redherring prospectus, Misstatement in prfospectus, book building, Allotment and forfeiture of shares, Sweat Equity, ESOPs, Bonus share and further issue of shares. 2. Government company, Foreign company, one person company, small company, Associate company, Dormant company, producer company, Association not for profit and Illegal Association. **Formation and Incorporation Documents:** Formation of company, promoters, their legal position and preincorporation contracts; online registration of company, Memorandum of Association and its alterations, 3. **Financial Services Industry:** pre and post issue management, Underwriting, Regulatory framework relating to merchant banking in India. 4. Ethical Theories, code of ethics and ethics committee.	1.B.Com (P)-IIIA 2. B.Com(P)-IIIB 3. B.Com(H)-V A&B 4. B.com(p)-V A&B	1.BC-3.1-Company Law 2. BC 3.1-Company Law 3. BCH 5.4(b)- Financial Markets, Institutions and Services 4. BC 5.1(c)-Auditing & CG

	Tutorial	1. Students Presented case Law 2. Students Presented case Law 3. Students presented case Study and discuss	1. B.Com (P)-IIIA 2. B.Com(P)-IIIB 3. B.Com(H)-V A&B	1. BC-3.1-Company Law 2. BC 3.1-Company Law 3. BCH 5.4(b)-Financial Markets, Institutions and Services
	Practical	**Income Tax Return Filing-II**	1. B.Com – III B	**1.** BC 3.2-Income Tax Law &Practices
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
October	**Theory**	**Share Capital:** buyback, split of shares and provisions regarding buyback: Transfer and transmission of shares; Demat System. **Management and Meetings:** Directors: legal positions, disqualifications, Director Identification Number(DIN), Classifications of Directors-Additional, alternate and casual dirctors, Women directors, Independent directors, small shareholder's director; Appointment and removal of directors; powers and Duties, Key Managerial Personnel(KMP), Board meetings, Shareholders meeting, AGM and EGM convening and coonducting meetings, Requisite of a valid meeting, Resolutions(Virtual meeting) postal ballot and e-voting. 2. **Formation and Incorporation Documents:** Articles of Association and its alteration, Doctrine of Constructive notice, doctrine of Ultra vires and Indoor Management. **Share Capital:** Prospectus, Shelf and redherring prospectus, Misstatement in prospectus, book building, Allotment and forfeiture of shares, Sweat Equity, ESOPs, Bonus share and further issue of shares. 3. **Financial Services Industry:** Leasing and Hire purchase, Consumer and Housing Finance, Factoring Services. 4. **Corporate Social Responsibilities:** Concept of corporate social responsibility, CSR and corporate sustainability, CSR and Business Ethics, CSR and corporate governance, CSR and corporate Philanthropy,	1. B.Com – III A 2. B.Com – IIIB 3. B.Com(H)-V A&B 4. B.com(p)-V A&B	1. BC-3.1-Company Law 2. BC 3.1-Company Law 3. BCH 5.4(b)- Financial Markets, Institutions and Services **4. BC 5.1(c)-Auditing & CG**
	Practical	**Conduct Practical Examination of Income Tax Return Filing-II**	1. B.Com – IIIB	1. BC 3.2-Income Tax Law &Practices
	Assignment	1. Topics allotment and collect the assignments	1. B.Com – IIIA 2. B.Com-IIIB	**1.** BC 3.1 Company law **2.** BC 3.1: Compny Law
	Internal Test	1. Test conducted on the concerned subject after mid-semester break.	1. B.Com – III A 2. B.Com IIIB	1. BC 3.1 Company law 2. BC 3.1: Compny Law 3. BCH 5.4(b)- Financial Markets, Institutions and Services 4. BC 5.1(c)-Auditing & CG
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**

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November	**Theory**	**Dividends, Audit and Winding up:**Provisions relating to payment of dividend, company audit, Auditor's qualifications and disqualifications, Auditor's appointment, rotation and removal, secretarial audit. Winding Up: provisions of winding up under Insolvency and Bankruptcy code 2016. 2. **Share Capital:** buyback, split of shares and provisions regarding buyback: Transfer and transmission of shares; Demat System. 3. **Financial Services Industry:** Credit Rating. Financial Advisory and portfolio Management Services. 4. **Corporate Social Responsibilities:** Environmental aspects of CSR, modelS and benefit of CSR, driver of CSR, CSR in India.	1. B.Com –III A 2. B.Com – IIIB 3. B.Com(H)-V A&B 4. B.com(p)-V A&B	1. BC-3.1-Company Law 2. BC 3.1-Company Law 3. BCH 5.4(b)-Financial Markets, Institutions and Services 4. BC 5.1(c)-Auditing & CG
	Internal Assessment	Finalisation of Internal Assessment	1.B.Com –III A 2.B.Com – IIIB 3. B.Com(H)-V A&B 4. B.com(p)-V A&B	1. BC-3.1-Company Law 2. BC 3.1-Company Law 3. BCH 5.4(b)-Financial Markets, Institutions and Services 4. BC 5.1(c)-Auditing & CG

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23) (Odd-Semester)

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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Vinod Kumar
Department: Commerce
Course: B.Com (H)/B.Com
Semester: V

Month	Type of Class	Topics	Course	Paper Code/Name
July 2022	1. Theory 2. Theory 3. Tutorial	1. Nature, Scope and Objectives of financial management, Time value of money, Risk & Return 2. Introduction to financial planning: financial goals, time value of money, steps of financial planning, personal finance/loans, education loan, car loan & home loan schemes. 3. Unit I: Introduction to financial management	1. B.Com.- V 2. B.Com. - V 3. B. Com. - V	1. BC 5.2 (a) DSE :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance 3. BC 5.2 (a) DSE: Fundamental of Financial Management
	Practical	1. Time value of money with MS-EXCEL Software	1. B.Com.(H) - V	1. BCH 5.2 DSE: Financial Management
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
August 2022	1. Theory 2. Theory 3. Tutorial	1. The capital budgeting process, cash flow estimation, payback period method, accounting rate of return, net present value (NPV), net terminal value, internal rate of return (IRR), profitability index method. 2. Introduction of savings, benefits of savings, management of spending & financial discipline, net banking and UPI, digital wallets, security and precautions against Ponzi schemes and online frauds, such as phishing, credit card cloning, skimming etc. Process and objectives of investment, concept and measurement of return & risk for various assets class, measurement of portfolio risk and return, diversification & portfolio formation,	1. B.Com.- V 2. B.Com. - V 3. B. Com. - V	1. BC 5.2 (a) DSE :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance 3. BC 5.2 (a) DSE: Fundamental of Financial Management

		real estate, financial derivatives & commodity market in India, mutual fund schemes including SIP. 3. Unit-II capital budgeting		
	Practical	1. Capital Budgeting methods and cost of capital with MS-EXCEL Software	1. B.Com. – (H) - V	1. BCH 5.2 DSE: Financial Management
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
September 2022	1. Theory 2. Theory 3. Tutorial	1. Sources of long-term financing, estimation of components of cost of capital, method for calculating cost of equity, cost of retained earnings, cost of debt and cost of preference capital, weighted average cost of capital and marginal cost of capital, capital structure-theories of capital structure (net income, net operating income, MM hypothesis, traditional approach), operating, financial and combined leverage, EBIT-EPS analysis, determinants of capital structure 2. Tax structure in India for personal taxation, steps of personal tax planning, exemptions and deductions for individuals, tax avoidance versus tax evasion. 3. Unit-III: cost of capital and financing decision	1. B.Com.- V 2. B.Com. - V 3. B. Com. - V	1. BC 5.2 (a) DSE :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance 3. BC 5.2 (a) DSE: Fundamental of Financial Management
	Practicals	1. Cost of capital and financing decisions with MS-EXCEL Software	1. B.Com. (H) -V	1. BCH 5.2 DSE: Financial Management
	Assignment	1. Topics allotted for making the assignments. 2. Topics allotted for making the assignments.	1. B.Com.- V 2. B.Com. - V	1. BC 5.2 (a) DSE :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
October 2022	1. Theory 2. Theory 3. Tutorial	1. Dividend Decisions: Theories of relevance and irrelevance of dividend decisions for corporate valuation: Walter's Model, Gordon's model, MM Approach, Cash and stock dividends, Dividend policies in practice	1. B.Com.- V 2. B.Com. - V 3. B. Com. - V	1. BC 5.2 (a) DSE :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance 3. BC 5.2 (a) DSE: Fundamental

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		2. Need for protection planning, risk of mortality, health, disability and property, importance of insurance: life and non-life insurance schemes. 3. Unit IV: Dividend decision		of Financial Management
	Practical	1. Dividend decision with MS-EXCEL Software	1. B.Com. (H) -V	2. BCH 5.2 DSE: Financial Management
	Test	1. Test will be held for internal assessment purpose. 2. Test will be held for internal assessment purpose.	1. B.Com.- V 2. B.Com. - V	1. BC 5.2 (a) DSE :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance
NOVEMBER 2022	1. Theory 2. Theory 3. Tutorial	1. Working capital decisions: concepts of working capital, operating & cash cycles, sources of short-term finance, working capital estimation, cash management, receivables management, inventory management 2. Retirement planning goals, process of retirement planning, pension plans available in India, reverse mortgage, new pension scheme 3. Unit V: Working capital decisions	1. B.Com.- V 2. B.Com. - V 3. B. Com. - V	1. BC 5.2 (a) DSE :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance 3. BC 5.2 (a) DSE: Fundamental of Financial Management
	Practicals	1. Working capital management with MS-EXCEL Software	1. B.Com. (H) -V	1. BC 5.2(a) DSE: Financial Management
	Practical Examination	1. Working capital management with MS-EXCEL Software	1. B.Com. (H) -V	1. BC 5.2(a) DSE: Financial Management
B.Com (Hons.) UGCF (Semester -I)				
Subject: Business Law				
November 2022	**1. Theory**	1. Salient features of LLP: Definition and salient features of LLP, Sections 2(1) (n) (3) 2. Small LLP Section 2 (1) (a) 3. Difference between LLP and Partnership Firm and LLP and Company 4. LLP Agreement	1. B.Com. (H) -Ist Sem.	1. BCH 1.2 (DSE): Business Law
December 2022	**1. Theory**	1. Nature of LLP, Partners and Designated Partners: Section 3 to 10	1. B.Com. (H) -Ist Sem.	1. BCH 1.2 (DSE): Business Law

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		2. Incorporation document and its contents: Section 11 3. Incorporation by registration – process of registration and effects of registration: Sections 12; 14 4. Registered office of LLP and change therein: Section 13		
January 2023	**1. Theory**	1. Change of name – name of LLP and changes therein – rectification of name: sections 15-21 2. Partners and their relations: sections 22-25	1. B.Com. (H) -Ist Sem.	1. BCH 1.2 (DSE): Business Law
February 2023	**1. Theory**	1. Extent and limitation of liability of LLP and partners: sections 26-30 2. Whistle blowing: Section 31 3. Conversion into LLP: Sections 55-58	1. B.Com. (H) -Ist Sem.	1. BCH 1.2 (DSE): Business Law
	Test	1. Test will be held for internal assessment purpose.	1. B.Com. (H) -Ist Sem.	1. BCH 1.2 (DSE): Business Law

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Diamond Jubilee Year
1961 - 2021

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Neha Singhal **Department: Commerce** **Semester : July- December (III/V)**

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	1. Introduction, Types of Audit, Audit Planning and Documentation.	1) B.Com-V	1. BC- 5.1 (b) Auditing and CG
AUGUST	**Theory:**	1. Internal Control System, Evidence in Auditing, Vouching, Verification of Assets, Verification of Liabilities, Appointment and Removal of Auditor, Rights and Duties of a Company Auditor, Auditor's Report, Liabilities of Auditor. 2. Role of Auditor, PCAOB, NFRA 3. MPA-Evolution of Management, Contemporary Management Thinkers. 4. Introduction to E Commerce	1) B.Com-V 2) B.com (H) - III 3) B.com (H) - III	1. BC- 5.1 (b) Auditing and CG 2. BCH-3.3 Management Principles and Applications 3. BCH-3.5 (a), E Commerce
	Practical:	HTML	B.Com (H)-III	BCH-3.5 (a), E Commerce

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SEPTEMBER	**Theory**	1. Corporate Governance Theories and Models 2. Committee, Regulatory Framework 3. MPA-Contemporary Management Thinkers, Organizing and Authority- Responsibility Relationships. 4. Planning Online Business and Technology for Online Business	1) B.com-V 2) B.com (H) -III 3) B.com (H) -III	1. 1. BC- 5.1 (b) Auditing and CG 2. BCH-3.3 Management Principles and Applications 3. BCH-3.5 (a), E Commerce
	Practical	HTML	B.Com (H)-III	BCH-3.5 (a), E Commerce
	Assignment	1. Compare and Contrast CG models 2. Management Thinkers	1. B.Com - V 2. B.com (H) -III	1. BC- 5.1 (b) Auditing and CG 2. B.com (H) -III
OCTOBER	**Theory**	1. Major Corporate Failures 2. MPA-Delegation and Decentralization of Authority, Organization Design and Forms and Departmentalization. 3. Technology for Online Business and E payment System	1) B.Com - V 2) B.com (H) -III 3) B.com (H) -III	1. BC- 5.1 (b) Auditing and CG 3. B.com (H) -III 4. B.com (H) -III

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	Practical	HTML	B.Com (H)-III	BCH-3.5 (a), E Commerce
	TEST:	1. Auditing, Types and CG failures. 2. Management Approaches	. B.Com -V	1. BC- 5.1 (b) Auditing and CG
NOVEMBER	**THEORY:**	1. Business Ethics and Corporate Social Responsibility 2. MPA- Types of Organizational Structure, Formal and Informal Organizations and Staffing. 3. Security and Legal Aspects of E Commerce	1. B.Com -V 2. B.com (H) - III 3. B.Com (H)- III	1. BC- 5.1 (b) Auditing and CG 2.BCH-3.3 Management Principles and Applications 3. BCH-3.5 (a), E Commerce
	PRACTICAL:	Practical Exam on Web Designing	B.Com (H)-III	BCH-3.5 (a), E Commerce
DECEMBER	**PRACTICAL**	1. Savings and Investment 2. PAN Card Application	VAC/ Financial Literacy	VAC/ Financial Literacy
JANUARY	**PRACTICAL**	1. E-Filing of Return 2. Mutual Funds	VAC/ Financial Literacy	VAC/ Financial Literacy
FEBRUARY	**PRACTICAL**	Practical and VIVA on Financial Literacy	VAC/ Financial Literacy	VAC/ Financial Literacy

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Ajit Singh **Department: Commerce**

Semester: III

Month		Topics	Course	Paper Code/Name
JULY-AUGUST-2022	Theory	1. Unit I: Introduction to HRM: Basic concepts and significance of HRM, role and functions of HR manager, emerging issues in hrm, Emerging issues in human resource management: Work force diversity, employee empowerment, downsizing, VRS, work life balance and work from home.	1. B.Com (H)-III A	1. BCH 3.1 HRM
		2. Unit I: Introduction to HRM: Basic concepts and significance of HRM, role and functions of HR manager, emerging issues in hrm, Emerging issues in human resource management: Work force diversity, employee empowerment, downsizing, VRS, work life balance and work from home.	2. B.Com (H)- III B	2. BCH 3.1 HRM
		3. Dividend provisions, Winding up of Companies.	3. B.Com(P)-III	3.BC 3.1: Corporate Laws
	Tutorials /Practical:	1. Case Studies presented by the Students.	1. B.Com (H)-III A	1. BCH 3.1 HRM
		2. Case Studies presented by the Students.	2. B.Com (H)-III B	2. BCH 3.1 HRM
		3. Introduction to Preparing Presentation. Inserting tables, Images, Text, Symbols.	3. B.Com (P)- III A+B	3. BC 3.4 (A) Computer Application In Business.
		4. Introduction to Preparing Presentation. Inserting tables, Images, Text, Symbols.	4. B.Com (P)- III B	4. BC 3.4 (A) Computer Application In Business.
		5. Case laws discussion.	5. B.Com (P)- III B	5. BC 3.1: Corporate Laws

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SEPTEMBER 2021	**Theory:**	**1. Unit 2: Procurement of Human Resource: Human resource planning quantitative and qualitative dimensions, job analysis- job description and job specification, recruitment- concept and sources, selection- concept and process, tests and interview, placement, induction and socialization, employee retention.**	**1. B.Com (H)-III A**	**1. BCH 3.1 HRM**
		2. Unit 2: Procurement of Human Resource: Human resource planning quantitative and qualitative dimensions, job analysis- job description and job specification, recruitment- concept and sources, selection- concept and process, tests and interview, placement, induction and socialization, employee retention.	**2. B.Com (H)- III B**	**2. BCH 3.1 HRM**
		3. Audit and Auditors The Depository System.	**3. B.Com(P)-III**	**3.BC 3.1: Corporate Laws**
	Tutorials/Practical:	**1. Case Studies presented by the Students.**	**1. B.Com (H)-III A**	**1. BCH 3.1 HRM**
		2. Case Studies presented by the Students.	**2. B.Com (H)-III B**	**2. BCH 3.1 HRM**
		3. Media, Design, Transition, Animation, and Slideshow. Business Presentation Using All Tools.	**3. B.Com (P)- III A+B**	**3. BC 3.4 (A) Computer Application In Business.**
		4. Media, Design, Transition, Animation, and Slideshow. Business Presentation Using All Tools.	**4. B.Com (P)- III B**	**4. BC 3.4 (A) Computer Application In Business.**
		5. Case laws Discussed.	**5. B.Com (P)- III B**	**5. BC 3.1: Corporate Laws**
	Assignment	**Assignment and Presentation Given to the students.**	**1. B.Com (H)-III A**	**1. BCH 3.1 HRM**
			2. B.Com (H)-III B	**2. BCH 3.1 HRM**
			3. B.Com (P)- III A+B	**3. BC 3.4 (A) Computer Application In Business.**
			4. B.Com (P)- III B	**4. BC 3.4 (A) Computer Application In Business.**
			5. B.Com (P)- III B	**5. BC 3.1: Corporate Laws**

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OCTOBER 2021	**Theory:**	**1. Unit 3: Training & Development Topic – Concept & importance; Role specific & competency based; Training & Development methods; Training process outsourcing.** **2. Unit 3: Training & Development Topic – Concept & importance; Role specific & competency based; Training & Development methods; Training process outsourcing.** **3. Management – Directors & shareholders Meeting.**	**1. B.Com (H)-III A** **2. B.Com (H)- III B** **3. B.Com(P)-III**	**1. BCH 3.1 HRM** **2. BCH 3.1 HRM** **3.BC 3.1: Corporate Laws**
	Tutorials/Practical:	**1. Case laws presented by the Students. & Case Studies Discussed.** **2. Case laws presented by the Students. & Case Studies Discussed.** **3. Word Processing Concept & Use.** **4. Word Processing Concept & Use.** **5. Case Studies Discussion.**	**1. B.Com (H)-III A** **2. B.Com (H)-III B** **3. B.Com (P)- III A+B** **4. B.Com (P)- III B** **5. B.Com (P)- III B**	**1. BCH 3.1 HRM** **2. BCH 3.1 HRM** **3. BC 3.4 (A) Computer Application In Business.** **4. BC 3.4 (A) Computer Application In Business.** **5. BC 3.1: Corporate Laws**
	<u>Test/Work Book</u>	**Time schedule decided for conduct of Internal exam in October.**	**1. B.Com (H)-III A** **2. B.Com (H)- III B** **3. B.Com(P)-III**	**1. BCH 3.1 HRM** **2. BCH 3.1 HRM** **3.BC 3.1: Corporate Laws**

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NOVEMBER/December 2021	**Theory:**	**1. Unit 4: Performance Appraisal and Compensation Management: Performance appraisal – Nature, objectives, process and methods, performance management, potential appraisal, employee counseling, employee enhancement: transfer and promotion. Compensation-concept and policies, types of compensation:base and supplementary.**	**1. B.Com (H)-III A**	**1. BCH 3.1 HRM**
		2. Unit 4: Performance Appraisal and Compensation Management: Performance appraisal – Nature, objectives, process and methods, performance management, potential appraisal, employee counseling, employee enhancement: transfer and promotion. Compensation-concept and policies, types of compensation: base and supplementary.	**2. B.Com (H)- III B**	**2. BCH 3.1 HRM**
		3. Management – Directors & shareholders Meeting.	**3. B.Com(P)-III**	**3.BC 3.1: Corporate Laws**
	Tutorials/Practical:	**1. Case laws presented by the Students. & Case Studies Discussed.**	**1. B.Com (H)-III A**	**1. BCH 3.1 HRM**
		2. Case laws presented by the Students. & Case Studies Discussed.	**2. B.Com (H)-III B**	**2. BCH 3.1 HRM**
		3. Merge; citations & footnotes.	**3. B.Com (P)- III A+B**	**3. BC 3.4 (A) Computer Application In Business.**
		4. Merge; citations & footnotes.	**4. B.Com (P)- III B**	**4. BC 3.4 (A) Computer Application In Business.**
		5. Case Studies Discussion.	**5. B.Com (P)- III B**	**5. BC 3.1: Corporate Laws**

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Name of the Faculty: Dr. Arpita Kaul **Department: Commerce**

Semester: I, III, V

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	INTRODUCTION: Nature, Scope and importance of marketing, Evolution of marketing concepts, Marketing Mix https://www.youtube.com/watch?v=F9OzaQPlQvs, Marketing environment. Micro and Macro environmental factors - *https://www.youtube.com/watch?v=4vcZWJ-AhLw* *Buland bharat ki buland tasweer* *https://theprint.in/features/brandma/liril-and-lalitaji-a-tale-of-two-ads-and-how-they-captured-indias-attention/177169/* *Liril* *https://www.youtube.com/watch?v=IRkXL9rRbmk&feature=emb_rel_end*	B.COM V	BC 5.1(b)Principles of Marketing
		INTRODUCTION: Nature, Scope and importance of marketing, Evolution of marketing concepts, Marketing Mix https://www.youtube.com/watch?v=F9OzaQPlQvs, Marketing environment. Micro and Macro environmental factors -https://www.youtube.com/watch?v=4vcZWJ-AhLw Buland bharat ki buland tasweer https://theprint.in/features/brandma/liril-and-lalitaji-a-tale-of-two-ads-and-how-they-captured-indias-attention/177169/ Liril https://www.youtube.com/watch?v=IRkXL9rRbmk&feature=emb_rel_end	B.Com H V	BCH 5.1 Principles of Marketing
	Practicals	MS Access : Creating Tables	B.Com III	BC 3.4(a)COMPUTER APPLICATION IN BUSINESS

	Tutorials	Group presentations by students.	B.Com V	BC 5.1(b)Principles of Marketing

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AUGUST	**Theory:**	Consumer Behavior: An overview, Consumer buying process https://www.bing.com/videos/search?q=consumere+behaviour+decision+process&&view=detail&mid=F26E2085A4F8738F2086F26E2085A4F8738F2086&&FORM=VRDGAR https://www.bing.com/videos/search?q=types+of+buying+decision+behaviour&&view=detail&mid=9F2C913B3F77EEB6E4299F2C913B3F77EEB6E429&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dtypes%2Bof%2Bbuying%2Bdecision%2Bbehaviour%26FORM%3DHDRSC4, Factors influencing Consumer buying decisions https://www.youtube.com/watch?v=ppPzROPWyKU Market Selection: Market Segmentation-concept, importance and bases https://www.youtube.com/watch?v=15zHUfSjLG4. Target market selection, Positioning concept, importance and bases, Product differentiation v market segmentation	B.Com V	BC 5.1(b)Principles of Marketing
		Consumer Behavior: An overview, Consumer buying process https://www.bing.com/videos/search?q=consumere+behaviour+decision+process&&view=detail&mid=F26E2085A4F8738F2086F26E2085A4F8738F2086&&FORM=VRDGAR https://www.bing.com/videos/search?q=types+of+buying+decision+behaviour&&view=detail&mid=9F2C913B3F77EEB6E4299F2C913B3F77EEB6E429&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dtypes%2Bof%2Bbuying%2Bdecision%2Bbehaviour%26FORM%3DHDRSC4, Factors influencing Consumer buying decisions https://www.youtube.com/watch?v=ppPzROPWyKU	B. Com H V	BCH 5.1 Principles of Marketing

	Practicals:	MS Access: Creating queries	B.Com III	BC 3.4(a)Computer Applications in business
	Tutorials:	Case studies and doubts will be taken up. Group presentations by students.	B.Com V	BC 5.1(b)Principles of Marketing

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SEPTEMBER	**Theory**	Product: Meaning and importance. Product classifications; Concept of product mix; Branding, packaging and labeling; After-sales services; Product life-cycle; New Product Development. Distribution: Channels of distribution - meaning and importance; Types of distribution channels; Wholesaling and retailing; Factors affecting choice of distribution channel; Distribution Logistics; Meaning, importance and decisions. Retailing: Types of retailing – store based and non-store based retailing, chain stores, specialty stores, supermarkets, retail vending machines, mail order houses, retail cooperatives; Management of retailing operations: an overview; Retailing in India: changing scenario.	B.Com V	BC 5.1(b)Principles of Marketing
		Market Selection: Market Segmentation-concept, importance and bases https://www.youtube.com/watch?v=15zHUfSjLG4. Target market selection, Positioning concept, importance and bases, Product differentiation v market segmentation	B.Com H V	BCH 5.1 Principles of Marketing
	Practicals	MS Access: Creating forms, Creating reports	B.Com III	BC 3.4(a)COMPUTER APPLICATION IN BUSINESS
	Tutorial	Assessment 1: Presentation on diversity Inclusion plan of any company	B.Com II	DSC 2.3 Human Resource Management

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	Assignment	Students will make group presentations on approved topics and present in the class/ tutorial	B.Com V	BC 5.1(b)Principles of Marketing
OCTOBER	**Theory:**	Promotion: Nature and importance of promotion; Promotion Tools: advertising, personal selling, public relations; sales promotion and publicity – concept and their distinctive characteristics; Promotion mix; Factors affecting promotion mix decisions; and Integrated Marketing Communication https://youtu.be/-qxHnfhDPF8 https://www.adsoftheworld.com/media/film/mumbai_traffic_police_guiltShame https://youtu.be/lC5EhJl1wFE Promotion mix; Factors affecting promotion mix decisions; and Integrated Marketing Communication https://youtu.be/-qxHnfhDPF8 https://www.adsoftheworld.com/media/film/mumbai_traffic_police_guiltShame https://youtu.be/lC5EhJl1wFE	B Com V	BC 5.1(b) Principles of Marketing
			B.Com H	BCH 5.1 Principles of Marketing
	PRACTICAL	MS EXCEL- FUNCTIONS, WHAT IF, CAPITAL BUDGETING	B.Com III	BC 3.4(a)COMPUTER APPLICATION IN BUSINESS

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	Tutorials: **TEST**	Doubts and presentations After midterm break, in the second week of Oct for iii and v sem. For ii sem according to the college notification.	B.Com V	BC 5.1(b)Principle of Marketing
NOVEMBER	**Theory** **PRACTICAL**	Rural marketing: Growing Importance; Distinguishing characteristics of rural markets; Understanding rural consumers and rural markets; Marketing mix planning for rural markets. https://www.youtube.com/watch?v=to5_HxvrZMs https://www.youtube.com/watch?v=bC26MSKjA1s Contemporary Issues in Marketing: Relationship Marketing; Sustainable Marketing; Social marketing; Digital marketing; Ethical issues in marketing Promotion mix; Factors affecting promotion mix decisions; and Integrated Marketing Communication https://youtu.be/-qxHnfhDPF8 https://www.adsoftheworld.com/media/film/mumbai_traffic_police_guiltShame https://youtu.be/lC5EhJl1wFE MS WORD- BASIC, MAIL MERGE, CREATING TABLES		BC 5.1(b)Principle of Marketing BCH 5.1 Principles of Marketing BC 3.4(a)COMPUTER APPLICATION IN BUSINESS

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DECEMBER	**Theory**	Unit I Introduction 1. Meaning and Importance of management. 2. Coordination Mechanisms: Meaning, Essence and Principles of Effective coordination 3. Theory Base of Management: Overview of classical and neo classical and Neo-Classical. Focus on Contingency Approach and system approach. 4. Indian Ethos for Management: Value-Oriented Holistic Management; Learning Lessons from Bhagavat Gita and Ramayana. 5. Mintzberg Managerial Roles and Competency Unit V: Salient Developments and Contemporary Issues in Management 1. Focus on Management challenges of the 21st Century 2. Factors reshaping and redesigning management purpose 3. Short notes on: Performance and Reward Perceptions Internationalization; Digitalization; Entrepreneurship & Innovation; Workplace diversity; Democracy and Sociocracy; Subaltern management ideas from India.	B.Com H I	BCH DSC1.1 Management Principles and Applications
JAN	**Theory** **TUTORIAL**	Unit II Planning 1. Overview of planning Approaches of Organizational Goal Settings: Traditional and Modern Approach of Objective Settings 2. Decision Making: Meaning, Bounded Rationality and Decision making process. Decision Making under Certainty and risk Techniques: Delphi Technique, Nominal Group Technique, Decision Tree and Simulation 3. Planning vis-a-vis Strategy: Overview of Strategy 4. Elements of Business Environment: micro, meso, and macro 5. Industry Structure Analysis: Five Forces Model 6. Types of Business Level Strategies: Michael E. Porter 7. Industry Analysis: Michael E Porter Five Forces Model Group discussion on management lessons from Bhagwat Geeta and Ramayana	B.COM H I	BCH DSC1.1Management Principles and Applications
FEB	**THEORY**	Unit III Organizing 1. Overview of organsing Delegation of authority: Concept, Process, Difficulties in Delegation of Authority, Guidelines for Effective Delegation of Authority Decentralization: Measuring the Degree of Decentralization, Factors affecting Decentralization of Authority Distinction between Decentralization and Centralization 2. Factors Affecting Organisational Design 3. Departmentalization: Bases of	B.COM H I	BCH DSC1.1Management Principles and Applications

		Departmentalization 4. Overview of Traditional Organisational Structure 5. Focus on Modern Organisation Structure (Boundaryless, Team Structure, Matrix Structure and Project Structure). Types of Organisation Chart. 6. Features, Advantages and Limitations of Formal Organisation. Features of Informal organisation, Causes of Emergence of Informal Groups, Limitations of Informal Organisation, How to Handle Informal Groups? Distinction between the Formal and Informal Organisation structure TUTORIAL: Presentations		
MARCH	**THEORY** **TUTORIAL**	Unit IV Directing and Controlling 1. Motivation- Meaning, Importance and factors Affecting Motivation. 2. Leadership – Meaning, Importance and Factors affecting leadership, leadership styles, and Followership: Meaning, Types and Robert Kelley Model of Followership 3. Controlling- Principles of controlling; Control Process 4. Measures of Controlling: Traditional Control Measures: Financial Ratios and Budgetary Control Modern Control Measures: Economic Value Added, Balance Score Card, Network Analysis(PERT/CPM) 5. Accountability for performance: Meaning, Importance and Pre-requisite of Accountability for Performance Tutorial Values & Ethics - Case studies on Indian corporate like Tata, Bhilwara Group, IOC and Godrej,	B.COM H I	BCH DSC1.1Management Principles and Applications

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Department of Commerce (Year 2022-23)

TEACHING PLAN

Name of the Faculty: Mr. Aashish Jain **Department: Commerce** **Semester: I/III/V**

Month	Type of Class	Topics	Course	Paper Code/Name
July-August	**Theory**	**Business Statistics** **a)** Mathematical averages including arithmetic mean, geometric mean & harmonic mean. Properties & applications. **Income Tax** **a)** Basic Concepts – Person, Assessee, Assessment Year, Previous Year, Gross Total Income, Maximum marginal rate of tax & Computation of Total Tax Liability **b)** Residential Status – Scope of total income on the basis of residential status.	1. B.Com – (H) III Semester-V 2. B.Com – II Semester-III	1. BCH 5.4 (e): Business Statistics 2. BC 3.2: Income Tax
	Practical	**BUSINESS STATISTICS** **1.** Frequency - Excel	1. B.Com H Semester – V	1. BCH 5.4 : Business Statistics
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
September	**Theory**	**Business Statistics** **a)** Positional averages: absolute & relative	1. B.Com – (H) III Semester-V	1. BCH 5.4 (e): Business

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		Range, quartile deviation, mean deviation, standard deviation & their co-efficient, properties of standard deviation/variance. Moments:- calculation & significance. Skewness, meaning, measurement using karl pearson & bowley's measures, concept of kurtosis. **Income Tax** Computation of Total Income on the basis of various heads- **a)** Income from Salary (include all allowances & perquisites) **b)** Income from House Property (with all latest amendments)	2. B.Com – II Semester-III	Statistics 2. BC 3.2: Income Tax
	Practical	**BUSINESS STATISTICS** **1.** Frequency - Excel	1. B.Com – (H) Semester V	1. BC 5.4€: Business Statistics
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
October	**Theory**	**Business Statistics** 1) Theory of probability, approaches to calculate probability 2) Calculation of event probabilities. Addition & multiplication laws of probability. 3) Conditional probability & Bayes' theorem 4) Expectation & variance of a random variable **Income Tax** Computation of Total Income on the basis of various heads- **a)** Income from PGBP (with all amendments) **b)** Income from Capital Gains (with all exemptions covered under section 54)	1. B.Com – (H) III Semester-V 2. B.Com – (H) I Semester-I	**1.** BCH 5.4 (e): Business Statistics **2.** BC 3.2: Income Tax
	Practical	**BUSINESS STATISTICS** Regression & Correlation – Excel	1. B.Com – (H) I Semester-V	1. BCH 5.4 e: Business Statistics

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	Assignment	1. Topics allotment for making the assignments from probability & central value	1. B.Com – (H) III Semester-v	1. BCH 5.4 (e): Business Statistics
	Test	1. Test conducted on the concerned subject after mid-semester break.	1. B.Com – (H) III Semester-v 2. B.Com II Semester – III	1. BCH 5.4 (e): Business Statistics 2. BC 3.2: Income tax
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
November	**Theory**	**Business Statistics** a) Correlation analysis: meaning of correlation- simple , multiple & partial:linear & non-lenear, scatter diagram, pearson's co-efficient of correlation: calculation & properties. Probable & standard errors, rank correlation. b) Regression analysis. Principle of least squares & regression lines, regression equations & estimation. Standard error of estimates. **Income Tax** Computation of Income on the basis of various heads- **c)** Income from other sources (Including all latest amendments & provisions of Gifts & Black Money) **d)** Income from Agricultural Income **e)** Set off & Carry forward **Personal Tax Panning** **a)** Basic Concepts – Person, Assessee, Assessment Year, Previous Year, Gross Total Income, Maximum marginal rate of tax & Computation of Total Tax Liability **b)** Residential Status – Scope of total income on the	1. B.Com – (H) III Semester-V 2. B.Com – II Semester-III 3. GE – Semester – I	**1.** BCH 5.4 (e): Business Statistics **2.** BC 3.2: Income Tax **3.** BC 4.4c: Personal Tax Planning

		basis of residential status.		
	Practical	Internal Exam conducted for Business Statistics (Frequency, Regression, Correlation, Index)	1. B.Com H Semester – V	1. BCH 5.4 (e): Business Statistics

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NAAC Grade A+

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SEMESTER WISE TEACHING PLAN (2022-23 odd Semester)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mohini Yadav
Department: Commerce **Semester: 1/3/5**

Month		Topics	Course	Paper Code/Name
July	**Theory**	Concepts & Perspectives on HRM & HR Challenges in a dynamic business environment	B.Com: Sem V	Paper BC 5.4 (a) GE: Human Resource Management
August	**Theory**	Job Analysis and Role Description, Corporate Objectives & Human Resource Planning Database Management System: Introduction	B.Com: Sem V B.COM – Sem 3	Paper BC 5.4 (a) GE: Human Resource Management Paper BC 3.4(a): Computer Applications in Business
	Tutorials/ Practical	Introduction to ITR	B.COM – Sem 3	BC 3.2- Income tax law and Practice
September	**Theory**	Recruitment & Selection, Induction Database Management System: Entity Relationship Model	B.Com: Sem V B.COM – Sem 3	Paper BC 5.4 (a) GE: Human Resource Management Paper BC 3.4(a): Computer Applications in Business
	Tutorials/ Practical	ITR – 2 (Practice questions)	B.COM – Sem 3	BC 3.2- Income tax law and Practice
	Assignment	Concepts & Perspectives on HRM & HR Challenges in a dynamic business environment, Job Analysis and Role Description	B.Com: Sem V	Paper BC 5.4 (a) GE: Human Resource Management
October	**Theory**	Performance Management, Employee health, safety, welfare and social security (excluding legal provisions) Database Management System: Transforming Entity Relationship Model	B.Com: Sem V B.COM – Sem 3	Paper BC 5.4 (a) GE: Human Resource Management Paper BC 3.4(a): Computer Applications in Business
	Tutorials/ Practical	ITR – 2 (Generation of JSON)	B.COM – Sem 3	BC 3.2- Income tax law and Practice

	Test	Corporate Objectives & Human Resource Planning, Recruitment & Selection, Induction, Performance Management	B.Com: Sem V	Paper BC 5.4 (a) GE: Human Resource Management
November	**Theory**	Grievance Redressal Dispute Resolution & Conflict Management, International Dimensions of HRM & Emerging challenges Database Management System: Implementing RDM design	B.Com: Sem V B.COM – Sem 3	Paper BC 5.4 (a) GE: Human Resource Management Paper BC 3.4(a): Computer Applications in Business
	Tutorials/ Practical	ITR – 2 (Practice full questions)	B.COM – Sem 3	BC 3.2- Income tax law and Practice
December	**Theory**	Database Management System: Softwares The Indian Contract Act, 1872	B.COM – Sem 3 B.Com – Sem 1	Paper BC 3.4(a): Computer Applications in Business Paper BC DSC 1.2: Business Laws
	Tutorials/ Practical	ITR – 2 (Practice full questions)	B.COM – Sem 3	BC 3.2- Income tax law and Practice
	Test	ITR – 2 (Practical Paper) Database Management System: Softwares	B.COM – Sem 3 B.COM – Sem 3	BC 3.2- Income tax law and Practice Paper BC 3.4(a): Computer Applications in Business
January	**Theory**	Discharge of Contracts and Remedies of Breach, Introduction to Special Contracts	B.Com – Sem 1	Paper BC DSC 1.2: Business Laws
February	**Theory**	The Sales of Goods Acts, 1930	B.Com – Sem 1	Paper BC DSC 1.2: Business Laws
	Assignment	Discharge of Contracts and Remedies of Breach, Introduction to Special Contracts	B.Com – Sem 1	Paper BC DSC 1.2: Business Laws
	Test	The Indian Contract Act, The Sales of Goods Act	B.Com – Sem 1	Paper BC DSC 1.2: Business Laws
March	**Theory**	The LLP Act, 2008	B.Com – Sem 1	Paper BC DSC 1.2: Business Laws

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Department of Commerce (Year 2022-23)
ODD SEMESTER TEACHING PLAN (JULY-DECEMBER 2022)

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Name of the Faculty: Ms. Angel Josy Lakra **Department: Commerce** **Semester: III/V**

Month	Type of Class	Topics	Course	Paper Code/Name
July	**Theory**	**1. Investing in Stock Markets** ✓ Basics of Investment & Investment Environment. Risk and Return ✓ Instruments of Investment- Equity shares, Preference shares, Bonds and Debentures. ✓ Indian Security Markets: Primary Markets (IPO, FPO, Private placement, Offer for sale), Secondary Markets (cash market and derivative market: Futures and Options) ✓ Market Participants: Stock Broker, Investor, Depositories, Clearing House, Stock Exchanges.	Hons III GE	BCH 3.4(a)
	Theory	**2. Income Tax Law & Practices** Income Under the head "Profits and gains of business or profession" and its computation: ✓ Basics of charge: meaning of business, business income not taxable under the head, Taxation on certain incomes. ✓ Basic principles for arriving at business income ✓ Method of Accounting ✓ Scheme of Business Deductions/Allowances	B.Com III-B	BC 3.2
	Theory	**3. Entrepreneurship Development (SEC)** ✓ Basics of Entrepreneurship: Evolution of Entrepreneurship; meaning; definition; can entrepreneur be a manager also; types; functions; role in the economic development; entrepreneurial process; prerequisites/traits/characteristics; determinants of	B.Com V	BC 5.3 (a)

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		entrepreneurship; misconceptions and myths. ✓ Creativity and Innovation: creativity; innovation; importance, process of creativity; types of innovation, process of innovation; Innovation and business/role of managers in promoting innovations. ✓ Dimensions of Entrepreneurship: intrapreneurship, technopreneurship, netpreneurship, international entrepreneurship, ecopreneurship, culture entrepreneurship; social entrepreneurship; women entrepreneurship; Entrepreneurship and new challenges of globalization. **Class Activity:** One-two slide PPT class presentations by few students on types of entrepreneurship.		
	Practical	**4. Computers Applications in Business** ✓ Spreadsheet Concepts ✓ Creating, Opening and Saving a Workbook ✓ Organizing Worksheets ✓ Working with Cell(s) ✓ Formatting Cells, Rows and Columns ✓ Formulas in Excel ✓ Formulas Copying and Types of Cell References ✓ Charts in Excel ✓ Printing Worksheet ✓ What-if Analysis	B.Com III A+B	BC 3.4 (a)
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
August	**Theory**	**1. Investing in Stock Markets** ✓ Role of stock exchange, Stock exchanges in India: BSE, NSE, MSEI. Security Market Indices: Nifty & Sensex, Sources of financial information. ✓ Trading in securities: types of orders, using brokerage and analyst recommendations. ✓ Primary Markets (IPO, FPO, Private placement, Offer for sale), Secondary Markets (cash market and derivative market: Futures and Options) ✓ Market Participants: Stock Broker, Investor,	Hons III GE	BCH 3.4(a)

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		Depositories, Clearing House, Stock Exchanges. ✓ Role of stock exchange, Stock exchanges in India: BSE, NSE, MSEI. ✓ Security Market Indices: Nifty & Sensex, Sources of financial information.		
	Theory	**2. Income Tax Law & Practices** ✓ Specific Deductions under the Act: Rent, rates, taxes, repairs, and insurance for building; repairs and insurance of machinery, plant and furniture. ✓ Depreciation Allowance: conditions for claiming; computation of depreciation; Block of Assets; WDV; Computation of Normal Depreciation Allowance ✓ Computation of additional depreciation; meaning of actual cost; unabsorbed depreciation; SLB in case of power based units;Sec. 32AC; Sec. 32AD; Sec. 33AB, Sec. 33ABA, Sec. 33AC, Sec.35	B.Com III-B	BC 3.2
	Theory	**3. Entrepreneurship Development (SEC)** ✓ MSME: Definition; Benefits/role in India; Issues and challenges; Support to MSME by GOI; Support to MSME by E-Commerce World ✓ Business Groups and Family Business: Concept; Features; Role; Key challenges; Resolving conflicts among family members; Changing orientation of family business in India; What makes Indian family business special? ✓ Sources of Business Ideas: Introduction; Definition of business idea; Prerequisite of convincing business idea; identifying business opportunity. ✓ Feasibility of the study: Introduction; meaning, elements of feasibility analysis ✓ Business Plan: Introduction, meaning, need/significance pitfalls to be avoided while planning/writing a business plan, contents of business plan/project proposal; Sample Business Plan. **Class Activity 1:** Students (leaving the students who have already given presentation) were asked to give one-two slide	B.Com V	BC 5.3 (a)

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		presentation on profiles of noted Indian Entrepreneurs such as Kumar Manglam Birla, Sunil Mittal and many more. **Class Activity 2:** Students (leaving the students who have already given presentation) were asked to give one-two slide presentation on Promotional Schemes for MSME by GOI.		
	Practical	**4. Computers Applications in Business** ✓ Goal Seek ✓ Data Tables ✓ Scenario Manager ✓ Solver ✓ Statistical Analysis ✓ Data Validation ✓ Data Protection ✓ Pivot Table Reports and Charts ✓ Subtotals	B.Com III A+B	BC 3.4 (a)
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
September	**Theory**	**1. Investing in Stock Markets** ✓ Trading in securities: types of orders, using brokerage and analyst recommendations. ✓ Top down and bottom up approaches, Analysis of international & domestic economic scenario, Industry analysis, Company analysis (Quality of management, financial analysis :Both Annual and Quarterly, ✓ Income statement analysis, position statement analysis including key financial ratios ✓ Cash flow statement analysis, Industry market ratios: PE, PEG, Price over sales, Price over book value, EVA) ✓ Understanding Shareholding pattern of the company. **Assignment for IA:** Group Project	Hons III GE	BCH 3.4(a)
	Theory	**2. Income Tax Law & Practices** ✓ Expenditure for obtaining right to use spectrum for telecommunication services. ✓ Amortization of telecom license fees. ✓ Expenditure on eligible projects or scheme ✓ Deductions in respect of expenditure on specified	B.Com III-B	BC 3.2

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		business ✓ Payment to Associations and institutions for carrying out rural and development programs ✓ Expenditure on agricultural extension project ✓ Expenditure for skill development ✓ Amortization of preliminary expenses ✓ Amortization of expenditure in case of amalgamation/demerger ✓ Amortization of expenditure under voluntary retirement scheme ✓ Amortization of expenditure on prospecting, etc for development of certain minerals ✓ Insurance premium ✓ Bonus or commission to employees ✓ Interest on Borrowed Capital ✓ Discount on Zero Coupon Bonds ✓ Employer's contribution to recognized PF and approved superannuation fund; notified pension scheme; gratuity fund; staff welfare schemes ✓ Write off Useless or dead animals		
	Theory	**3. Entrepreneurship Development (SEC)** ✓ Business processes: meaning, types, steps in business processes; Challenges related to business process; Technical solution to business process challenges. ✓ Forms of Business: Different forms of Business Corporation, Sole Proprietorship; Partnership Firm, LLP, Private Company, Public Limited Company. ✓ Entrepreneurial Sustainability: Public and Private System of Stimulation; Government support for Innovation and Entrepreneurship in India ✓ Support and Sustainability of Enterprise: meaning of business sustainability; Advantages; Steps for sustainable business/ futuristic outlook for sustainable business. **Assignment for IA:**	B.Com V	BC 5.3 (a)

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<table>
<tr>
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<td>Dear Students,
Following is the information regarding your Entrepreneurship Development group assignment:
<table>
<tr><td>Submission of PPT</td><td>26th Sept 2022</td></tr>
<tr><td>Class presentation</td><td>26th Sept 2022 onwards (Which group will present on which day will be informed after 18th Sept 2022)</td></tr>
<tr><td>Type</td><td>Group Assignment</td></tr>
<tr><td>Groups</td><td>Groups are supposed to be formed as discussed in class a week ago. You are required to submit your team with Chhavi by 18th Sept 2022. 8 members in each team.</td></tr>
<tr><td>Topic</td><td>Prepare a Business Plan of product of your choice (should be creative) which includes: Introductory Page; Business Despcription(Mission&Vision of the company, Product&services Offered); Marketing Plan (Marketing Strategies, Pricing Strategies, Advertising, Promotional techniques); Operations Plan(Physical facilities required, outsourcing services if any)</td></tr>
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<td>Practical</td>
<td>4. Computers Applications in Business
✓ What are functions
✓ Inserting a Function
✓ Mathematical Functions
✓ Statistical Functions
✓ Logical Functions
✓ Financial Functions
✓ Other functions
✓ Ratio Analysis</td>
<td>B.Com III A+B</td>
<td>BC 3.4 (a)</td>
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<tr>
<th>Month</th>
<th>Type of Class</th>
<th>Topics</th>
<th>Course</th>
<th>Paper Code/Name</th>
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<td>October</td>
<td>Theory</td>
<td>1. Investing in Stock Markets
✓ Trading rules- credit balance theory, confidence index, filter rules, market breath, advances vs declines and charting (use of historic prices, simple moving average and MACD)
✓ Basic and advanced interactive charts. Do’s & Don’ts of investing in markets.</td>
<td>Hons III GE</td>
<td>BCH 3.4(a)</td>
</tr>
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		✓ Concept and background on Mutual Funds: Advantages, Disadvantages of investing in Mutual Funds **Test:** Test conducted on the concerned subject after mid-semester break		
	Theory	**2. Income Tax Law & Practices** ✓ Bad Debts; Provision for Bad and Doubtful Debts ✓ Transfer of Special reserve ✓ Family Planning Expenditure ✓ Revenue Expenditure ✓ Banking Cash transactions ✓ Expenditure by Co-operative societies ✓ Marked to Market Loss ✓ Advertisement Expenses ✓ Expenses Deductible from commission earned by agents **Test:** Test conducted on the concerned subject after mid-semester break	B.Com III-B	BC 3.2
	Theory	**3. Entrepreneurship Development (SEC)** ✓ Requirement, Availability, and Access to Finance: Reasons for requirement of funds; Factors determining the requirement of capital; Funding Life Cycle; Problems in financing a New Venture ✓ Access to Marketing Assistance: Factors to be considered in market research; Marketing Assistance; Role of Technology; Digital Marketing. ✓ Business Incubators, Angel Investors, Venture Capital, and Private Equity Funds. ✓ Role of Industries/Entrepreneurs Associations: Institutions set up by Government; Industrial Association.	B.Com V	BC 5.3 (a)

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		Test: Test conducted on the concerned subject after mid-semester break		
	Practical	**4. Computers Applications in Business** ✓ Generalized Loan Sheet ✓ Generalized Loan Sheet with Garbage Cleaning ✓ Loan Sheets with Rescheduling ✓ Capital Budgeting	B.Com III A+B	BC 3.4 (a)
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
November	**Theory**	**1. Investing in Stock Markets** ✓ Types of Mutual funds: Open ended, close ended, equity, debt, hybrid, money market, and entry load vs. exit load funds. ✓ Factors affecting choice of mutual funds. CRISIL mutual fund ranking and its usage, calculation and use of Net Asset Value.	Hons III GE	BCH 3.4(a)
	Theory	**2. Income Tax Law & Practices** ✓ General Deductions ✓ Specific Disallowances under the Act	B.Com III-B	BC 3.2
	Theory	**3. Entrepreneurship Development (SEC)** ✓ Self Help Groups: Introduction, meaning, objectives, rationale, functions; Role in Women Empowerment; Role of Banks in Development of SHGs. ✓ Resource Mobilization: Attributes to Resource Mobilization, types, importance, and impediments/challenges. ✓ Utilities and Accommodation; Preliminary contracts; Contract management, Start-up Problems.	B.Com V	BC 5.3 (a)
	Practical	**4. Computers Applications in Business** ✓ Depreciation ✓ Regression Analysis ✓ Trend Analysis ✓ Revision	B.Com III A+B	BC 3.4 (a)

		Workbook Assigned and Collected		

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ODD SEMESTER TEACHING PLAN
SRI VENKATESWARA COLLEGE
2022-23

Name of the Faculty: Amit Kumar Jha

Department: ECONOMICS

ODD SEMESTER

Semester: v, B.A. (H) Economics

Month		Topics	Course	Paper Code/Name
JULY 2022	**Theory**	Fiscal Function: an Overview(Hendricks & Myles, Chapter 5) Public goods : Definition ,	**B.A. (H) Economics**	Public Economics
	Tutorials	Past Year question, Students doubts		
AUGUST	**Theory:**	Public goods : Definition , Models of efficient allocation, pure and impure public goods, free riding(Cullis & jones, chapter 3,12) Externalities: the problem and its solution, taxes versus regulation, property rights, the coase theorem(Hendricks &	**B.A. (H) Economics**	Public Economics
	Tutorials:	Past Year question, Students doubts		

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SEPTEMBER	**Theory:**	Externalities: the problem and its solution, taxes versus regulation, property rights, the coase theorem(Hendricks & Myles, Chapter 8) Taxation: its economic effects, dead weight loss and distortion, efficiency and equity considerations, tax incidence, optimal taxation (stiglitz, ch	**B.A. (H) Economics**	Public Economics
	Tutorials:	Past Year question, Students doubts		
	<u>Test 1 :</u>	First two units from reading		
OCTOBER	**Theory:**	Taxation: its economic effects, dead weight loss and distortion, efficiency and equity considerations, tax incidence, optimal taxation (Hendricks &	**B.A. (H) Economics**	Public Economics
	<u>Test 2 :</u>	First four units from reading		
	Tutorials:	Past Year question, Students doubts		
NOVEMBER 2022	**Theory:**	Indian Public Finance: tax system, buget, deficit, public debt, fiscal federalism in India	**B.A. (H) Economics**	Public Economics
	Tutorials/ Presentatio	Past Year question, Students doubts		

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Semester : I, B.A. (H) Economics

Month		Topics	Course	Paper Code/
November 2022	**Theory**	Introduction, function of one variable, polynomials Hammond and sydsaeter ch 1,2,3	**B.A. (H) Economics**	Mathematical methods for Economics **I**
	Tutorials	Last year papers, students doubts		
December 2022	**Theory:**	Polynomials, power and exponential Single variable differentiation More on differentiation	**B.A. (H) Economics**	Mathematical methods for Economics **I**
	Tutorials:	Last year papers, students doubts		
Janurary 2023	**Theory:**	Limits , continuity and series, Implications of continuity and differentiability, exponential and logarithmic functions Hammond and sydsaeter ch 5, 6,7	**B.A. (H) Economics**	Mathematical methods for Economics **I**
	Tutorials:	Last year papers, students doubts		
	<u>Test 1:</u>	On above topics		
Feburary 2023	**Theory:**	Single variable optimization, Concavity and convexity Hammond and sydsaeter ch 8,9	**B.A. (H) Economics**	Mathematical methods for Economics **I**
	Test2	Above topic		
	Tutorials:	Last year papers, students doubts		

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SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ankit Joshi **Department:** Economics

Semester : III

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	Basic overview of the course		
	Practicals	-		
	Tutorials	Revision of macroeconomic principles		
SEPTEMBER	**Theory**	**Unit -1**: Money: Concepts, Functions and Money Supply Determination	B.A. (Hons.) Economics	GE: Money and Banking
	Practicals	-		
	Tutorials	**Unit -1**: Money: Concepts, Functions and Money Supply Determination		
OCTOBER	**Theory:**	**Unit -2**: Financial Institutions, Money and Capital Markets, Asymmetric Information **Unit – 3**: Interest Rate Determination, Term Structure of Interest Rates	B.A. (Hons.) Economics	GE: Money and Banking

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	Practicals:	-		
	Tutorials:	**Unit -1**: Money: Concepts, Functions and Money Supply Determination **Unit -2**: Financial Institutions, Money and Capital Markets, Asymmetric Information		

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	<u>Test</u>	**Unit – 1**: Money: Concept, measurement and money supply determination **Unit -2**: Financial Institutions, Money and Capital Markets, Asymmetric Information		
NOVEMBER	**Theory:**	**Unit – 4**: Balance Sheet and Portfolio Management **Unit – 5**: Central Banking and Monetary Policy	B.A. (Hons.) Economics	GE: Money and Banking
	Practicals:	-		
	Tutorials:	**Unit – 3**: Interest Rate Determination, Term Structure of Interest Rates **Unit – 4**: Balance Sheet and Portfolio Management		
	<u>Test</u>	**Unit – 3**: Interest Rate Determination, Term Structure of Interest Rates **Unit – 5**: Central Banking and Monetary Policy		
DECEMBER	**Theory:**	Revision and past year papers	B.A. (Hons.) Economics	GE: Money and Banking
	Practicals:	-		
	Tutorials:	**Unit – 5**: Central Banking and Monetary Policy		

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Name of the Faculty: Ankit Joshi **Department:** Economics

Semester : V

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Unit 1: Deterministic Cash Flow Streams	B.A. (Hons.) Economics	Financial Economics
	Practicals			
	Tutorials	Unit 1: Deterministic Cash Flow Streams		
AUGUST	**Theory:**	Unit 1: Deterministic Cash Flow Streams Unit 2: CAPM	B.A. (Hons.) Economics	Financial Economics
	Practicals:			
	Tutorials:	Unit 1: Deterministic Cash Flow Streams Unit 2: CAPM		
SEPTEMBER	**Theory:**	Unit 3 (I): Futures	B.A. (Hons.) Economics	Financial Economics

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	Practicals:			
	Tutorials:	Unit 3 (I): Futures		
	<u>Test</u>	Unit 1: Deterministic Cash Flow Streams Unit 2: CAPM		
OCTOBER	**Theory:**	Unit 3 (II): Options	B.A. (Hons.) Economics	Financial Economics
	Practicals:			
	Tutorials:	Unit 3 (II): Options		
	<u>Term Paper</u>	Term paper submission		
NOVEMBER	**Theory:**	Revision and past year questions	B.A. (Hons.) Economics	Financial Economics
	Practicals:			
	Tutorials:	Clearing of doubts		

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Dr. Aruna Rao

Teaching Plan for odd Semester 2022-2023

BA(H) Sem 1: Introductory Microeconomics

Unit 1: Introduction to economic trade offs Chapters 1,2, 3 ,November 2-November 21

Unit 2: How markets work , Chapters 4, 5, 6, 7, 8, November 22, 2022- January 7, 2023

Unit 3: Role of the Government, Chapters 9, 10, January 8- January 31

Unit 4: Individual decision and interactions, Chapters 1,2,February 1- February 17

BA(P)with economics as Major/ Minor: Introductory Microeconomics

Unit 1: Introduction to economic trade offs Chapters 1,2, 3 ,November 2-November 21

Unit 2: How markets work , Chapters 4, 5, 6, 7, 8, November 22, 2022- January 7, 2023

Unit 3: Role of the Government, Chapters 9, 10, January 8- January 31

Unit 4: Individual decision and interactions, Chapters 1,2,February 1- February 17

GE Sem 1: Principles of Microeconomics

December 22- January 22: Unit 2: Consumer theory

January 23- February 23: Production and costs

February 24- march 15: Perfect competition

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Course Teacher- D. Brahma Reddy **B.A (P)/B.Com (P): Principles of Microeconomics (GE)** **Semester V** **UPC-62275504** **(5 Lectures + 2 Tutorial)**	
Month(s)	**Topic**
July	1 Ten Principles of Economics Solving the End of Chapter Problems
	2 Thinking Like an Economist 4 The Market Forces of Supply and Demand 5 Elasticity and Its Application Solving the End of Chapter Problems
August	Class Test-1
September	6 Supply, Demand, and Government Policies 7 Consumers, Producers, and the Efficiency of Markets 13 The Costs of Production Solving the End of Chapter Problems
October/ November	14 Firms in Competitive Markets 21 The Theory of Consumer Choice Solving the End of Chapter Problems
October	Class Test-2

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Course Teacher: D. BRAHMA REDDY **B.A (P) II- SEC: Understanding ES & UBI** **UPC: 62273326** **2022-23(Odd Semester)** **(4 Lectures)**	
Month(s)	Topic
August/ September	UNIT 1: BASIC CONCEPTS 1.1. BASIC BUDGET CONCEPTS a. ANNEXURE I: Glossary of Budget Concepts and Documents, pages 84-87 b. Annexure II : Navigating Union Budget Documents, page 88 c. Annexure III : Budget Cycle of the Union Government, page 89 [Reference: Budget in the Time of the Pandemic, An analysis of Union Budget 2022-23, Centre for Budget and Governance Accountability (2022) https://www.cbgaindia.org/wp-content/uploads/2022/02/In-Search-of-Inclusive-Recovery-An-Analysis-of-Union-Budget-2022-23.pdf 1.2 GENDER BUDGETING: INTRODUCTION, Recognising Gender Biases, Rethinking Budgets, Chapter 1, Unit 1.1 only, p 11-12 [Reference: Recognising Gender Biases, Rethinking Budgets, Centre for Budget and Governance Accountability,2020, https://www.cbgaindia.org/wpcontent/uploads/2016/03/Recognising-Gender-Biases-Rethinking-Budgets.pdf] 1.3 FISCAL FEDERALISM by Amrita Dhillon in K Basu and A Maertens (ed), 2011, The Concise Oxford Companion to Economics in India, OUP, India 1.4 Report of 15th Finance Commission for 2021-26 a. Chapter 1 – Introduction – Section 1.44 till Section 1.54 (Page 11-14) b. Chapter 2 - Intergovernmental Fiscal Relations: Lessons from International Experience – Section 2.23 till Section 2.36 (Page 32-36) https://fincomindia.nic.in/writereaddata/html_en_files/fincom15/Reports/XVFC%20VOL%20I%20Main%20Report.pdf 1.5 Inclusive Recovery https://www.cbgaindia.org/wp-content/uploads/2022/02/In-Search-of-Inclusive-

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September/ October/ November	2.1 EVOLUTION OF THE PLANNING PROCESS: Five Year Plans, Chapter 7, Statistical Year Book India 2016, Ministry of Statistics and Programme Implementation, Government of India, Sections 7.2 to 7.4 and 7.8 and 7.14 and 7.24 (pages 1, 6, 7, 8 and 13) 2.2 CURRENT POLICY ISSUES AND INITIATIVES 1.State of the Economy, Chapter 1, Section 1.1 to 1.20, Economic Survey, 2022, Government of India . https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap01.pdf 2.Fiscal Development Chapter https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap02.pdf 3.Monetary Management and Financial Intermediation, Chapter 4, Section 4.1 to 4.16 https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap04.pdf 4.External Sector, chapter 3, Section 3.1 to 3.36, and Table 6 [Pg 116 – Students should be able to comprehend the BoP Table], Economic Survey vol. II, Government of India https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap03.pdf 5.Prices andInflationChapter5 https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap05.pdf 6.Sustainable Development and Climate Change, Chapter 6, Section 6.1 to 6.9, Box 1 and, 6.60 to 6.76, Economic Survey, 2022, Government of India. https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap06.pdf 7.Agriculture & Food Management, Chapter 7, Section 7.1 to 7.8, 7.17 to 7.25, 7.29 to 7.31 and 7.36 to 7.37. https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap07.pdf 8.Industry and Infrastructure , chapter 8, Section 8.1 to 8.15, 8.24 to 8.26 and 8.37 to 8.41
October	Allocation of Projects (65 Projects for a Group of Two Students)

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November/ December	UNIT 3: THE UNION BUDGET OF INDIA 2022 Union Budget website link for material in ENGLISH https://www.indiabudget.gov.in/bh.php Union Budget website link for material in HINDI https://www.indiabudget.gov.in/hbh.php 3.1 KEY TO BUDGET DOCUMENTS, (Government of India documents) https://www.indiabudget.gov.in/doc/Key_to_Budget_Document_2020.pdf 3.2 BUDGET AT A GLANCE https://www.indiabudget.gov.in/budgetglance.php (Government of India documents) a.Budget at a Glance https://www.indiabudget.gov.in/doc/Budget_at_Glance/bag1.pdf b.The strength of numbers https://economictimes.indiatimes.com/opinion/et-commentary/view-budgets-war-plan-against-inflation-is-heroic-on-economic-as-well-as-political-fronts/articleshow/89306773.cms Key to the Budget Document https://www.indiabudget.gov.in/doc/Key_to_Budget_Document_2022.pdf a. Highlights https://www.indiabudget.gov.in/doc/bh1.pdf b. Receipts https://www.indiabudget.gov.in/doc/Budget_at_Glance/bag5.pdf c. Expenditure https://www.indiabudget.gov.in/doc/Budget_at_Glance/bag6.pdf d.Budget Profile https://www.indiabudget.gov.in/doc/Budget_at_Glance/bag4.pdf 3.3 Let's Talk About Budget (not available in Hindi) a. Union Budget of India, chapter 4, Let's Talk About Budget b.How is the Union Budget prepared?, chapter 5, Let's Talk About Budget c. What do Union Budget papers look like?, chapter 6, Let's Talk About Budget
November	Study Visit to Parliament
November/ December	Submission of Project Reports and Presentation

Course Teacher- D. Brahma Reddy

FYUP-B.A (Hons.) Principles of Microeconomics (GE)
(Minor) Semester I
(3 Lectures + 2 Tutorial)

Month(s)	Topic
November	1 Ten Principles of Economics 2 Thinking Like an Economist Solving the End of Chapter Problems
December	4 The Market Forces of Supply and Demand 5 Elasticity and Its Application 6 Supply, Demand, and Government Policies Solving the End of Chapter Problems

January	7 Consumers, Producers, and the Efficiency of Markets 21 The Theory of Consumer Choice Solving the End of Chapter Problems
	Class Test-1
January	7 Technology and Production 8 Cost Solving the End of Chapter Problems
February	9 Profi t Maximization (9.1 &9.2) 14 Firms in Competitive Markets Solving the End of Chapter Problems Class Test-2

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Name of the Faculty: Dr M. PADMA SURESH

Department: ECONOMICS **Semester : V / 2022-23**

MONTH		TOPICS	COURSE	PAPER CODE/ NAME
JULY	**Theory**	**Issues in Development and Underdevelopment-historical & gen. perspective.** P. Dasgupta-Prologue & Ch1.Todaro and Smith, Ch 1	GE-Economics. BA Prog.	PGE 52-Issues in Economic Development
	Tutorials	Discussion and introduction to online resources e.g. World Bank for developing and developed countries comparison.		
AUGUST	**Theory:**	**Development-Capabilities, Human development approach** Todaro and Smith, Ch 1, 2.Amitava Dutt Ch 1, A.Sen Ch 4.		
	Tutorials:	Discussion developing vs developed countries, notion of development		
SEPTEMBER	**Theory:**	**Development- Growth & Inequality, Human development & Sustainable development** Todaro & Smith-Ch 5, Amitava Dutt Ch6, Omkarnath-Ch5, D. Nayyar-Ch 2 & 3. P.Dasgupta-Ch7, Seeta K Prabhu-HDI		
	Tutorials:	Writing assignment, discussion. Internal Test-1		
OCTOBER	**Theory:**	**Development- Growth & Inequality, Human development & Sustainable development contd.** D. Nayyar-Ch 2 & 3. P.Dasgupta-Ch7, Seeta K Prabhu-HDI **Globalisation & Development** D. Rodrik-Ch 1 &7.		
	Tutorials:	Discussion of past papers. Revision		
NOVEMBER	**Theory**	**Globalisation & Development contd.** D. Nayyar in Ha Joon Chang(ed.) & E. Thun in J.Ravenhill(ed.)		
	Tutorials	Discussion on globalization. Revision. Internal Test-2		

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Name of the Faculty: Dr M PADMA SURESH

Department: ECONOMICS **Semester : V / 2022-23**

MONTH		TOPICS	COURSE	PAPER CODE/NAME
JULY	**Theory**	**Issues in Growth, Development and Sustainability** Todaro and Smith, Ch 1, 2; Dreze and Sen Chs. 2 & 3. **Factors in Development** Capital formation (physical and human); technology; institutions. Todaro and Smith, Ch 1, 2, Kapila (2015), Ch 6.	BA Prog. Economics	Economic Development and Policy in India-I 62277503
	Tutorials	Discussion, Practice writing and online resources e.g. World Bank for developing and developed countries comparison.		
AUGUST	**Theory:**	**Factors in Development** Capital formation (physical and human); technology; institutions. Todaro and Smith, Ch 1, 2, **Population and Economic Development** Demographic trends; urbanization. Kapila (2015), Ch 6, 7*.		
	Tutorials:	Discussion, Population pyramid etc.		
SEPTEMBER	**Theory:**	**Employment** Occupational structure in the organized and unorganized sectors; open, under and disguised unemployment (rural and urban); employment schemes and their impact. Kapila (2015), Ch 19. Internal Test-1		
	Tutorials:	Writing assignment, discussion.		
OCTOBER	**Theory:**	**Indian Development Experience** Critical evaluation of growth, inequality, poverty and competitiveness, pre and post reform era; Kapila (2015), Ch 3, 15. Savings and investment; Kapila (2015), Ch 11, 12. optional and advanced reading material.		

	Tutorials:	Discussion of past papers. Revision		
NOVEMBER	**Theory**	Topic 5 Contd. Mobilisation of internal and external finance; Kapila (2009), Ch 8. Monetary and fiscal policies; Kapila (2015), Ch 5. Centre-state financial relations; 14th Finance Commission Report* M. Govinda Rao (2005), Y.V. Reddy (2015), Sections I to 9.		
	Tutorials	Revision Internal Test-2		

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Name of the Faculty: S. KRISHNA KUMAR (2022-23)

Department: ECONOMICS **Semester : I/III/V**

Principles of Macroeconomics-I BA Programme Semester III

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	What is macroeconomics? Macroeconomic Issues in an economy	BA Programme Sem III	Principles of Macroeconomics-I
	Practicals			
	Tutorials			
SEPTEMBER	**Theory:**	Concepts of GDP and National Income; measurement of national income and related aggregates; nominal and real GDP; limitations of the GDP concept Actual and potential GDP; aggregate expenditure; consumption function; investment function; equilibrium GDP; concepts of MPS, MPC; autonomous expenditure; concepts of	BA Programme Sem III	Principles of Macroeconomics-I
	Practicals:			
	Tutorials:	Numericals on the basis of the simple Keynesian model	BA Programme Sem III	Principles of Macroeconomics-I
OCTOBER	**Theory:**	Fiscal policy; impact of changes in government expenditure and taxes; net exports and equilibrium	BA Programme Sem III	Principles of Macroeconomics-I

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	Practicals:			
	Tutorials:	Discussion of Keynes and Great Depression, recession in the current world economy . Numericals on the three sector model	BA Programme Sem III	Principles of Macroeconomics-I
	<u>Assignment :</u>	Detailed assignment on Fiscal Policy and Keynesian model. Balanced budget multiplier. (TEST)	BA Programme Sem III	Principles of Macroeconomics-I
NOVEMBER	**Theory:**	Concept of money in a modern economy; monetary aggregates; demand for money; quantity theory of money; liquidity preference and rate of interest; money supply and credit creation;	BA Programme Sem III	Principles of Macroeconomics-I
	Practicals:	Workshop on Great Depression, staging a part of the Grapes of Wrath, performance of Brother, Can You Spare A Dime		
	Tutorials:	Exploring RBI data relating to money supply and multiplier. Discussion on the basis of the lecture by Prof Anat Admati on The Banker's New Clothes	BA Programme Sem III	Principles of Macroeconomics-I
	<u>Test</u>	Test on the basis of the course in two sets		
DECEMBER	**Theory:**	Monetary policy. Contemporary global economy and Indian economy. How do we make sense with the course which we did?	BA Programme Sem III	Principles of Macroeconomics-I
	Practicals:			
	Tutorials:	Revision and discussion of the previous year papers	BA Programme Sem III	Principles of Macroeconomics-I

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Name of the Faculty: KRISHNAKUMAR S(2022-23) **Department: ECONOMICS**

International Trade HE-52 **Semester : V**

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	Ricardian model of comparative advantage. H-O-S factor endowments model, specific factors model. Standard trade model	BA(Hons) Economics Sem V	International Trade
	Practicals			
	Tutorials	Problems on Ricardian model and modeling with specific factor model		
SEPTEMBER	**Theory:**	New trade theories. intra-industry trade. Imperfect competition and trade. Dumping and reciprocal dumping. Externalities and decreasing cost curve. Industrial district. Instruments of trade policy. Static welfare analysis of tariffs, subsidies and quotas. Political economy of trade policy. Offshoring in the global	BA(Hons) Economics Sem V	International trade
	Practicals:			
	Tutorials:	Problem set on welfare calculation of tariffs and subsidies.		
OCTOBER	**Theory:**	Brander Spencer strategic trade policy. Optimum tariff. Trade creation and trade diversion. WTO, RTAs, FTAs.	BA(Hons) Economics Sem V	International Trade
		Four Core Theorems from H-O model and Introduction to HOV model as well as offer curves in trade theory.		
	Practicals:			
	Tutorials:	Trade creation, trade diversion. Problems of instruments of trade policy		

	Assignment :	Articles assigned to students from Journal of Economic Perspectives, WIR and TDR.		
NOVEMBER	**Theory:**	.Export Policies in Resource and High Technology Industries Imperfect Competition and	BA(Hons) Economics Sem V	International Trade
	Practicals:			
	Tutorials:			
	Test	Test on the basis of four chapters : two from each section . introduction to trade databases		
DECEMBER	**Theory:**	Issues relating to international trade and labour as well as environment and trade	BA(Hons) Economics Sem V	International trade
	Practicals:			
	Tutorials:	Revision of the trade theory numerical from back of text.		

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Name of the Faculty: Ms. Sneha Bhardwaj **Paper: Money and Banking (GE)**

Department: ECONOMICS **Semester : III / 2022-23**

MONTH		TOPICS	COURSE	PAPER CODE/
AUGUST	**Theory:**	MONEY: Concept, Functions, Measurement	Generic Elective III (BA Hons. Economics)	Money and Banking
	Tutorials:	Discussion of doubts, questions		
SEPTEMBER	**Theory:**	MONEY: Concept, Functions, Measurement, Theories of Money Supply Determination Financial Institutions, Markets, Instruments and Financial Innovations: a) Role of Financial Markets and Institutions; problems of asymmetric information – adverse selection and moral hazard, financial crisis		
	Tutorials:	Discussion of doubts, questions		

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	Test:	Test-1		
OCTOBER	**Theory:**	b) Money and Capital Markets; Organization, Structure and Reforms in India; Role of Financial Derivatives and Other Innovations INTEREST RATES: Determination, Sources of interest rates differentials, Theories of term structure of interest rates; interest rates in India		
	Tutorials:	Discussion of doubts, questions and past year papers		
	Assignment:	An assignment linking the topics to the		
NOVEMBER/ DECEMBER	**Theory**	BANKING SYSTEM: a) Balance Sheet and Portfolio Management b) Indian Banking System. Changing Role and Structure, Banking Sector Reforms CENTRAL BANKING AND MONETARY POLICY Functions, Balance Sheet Goals, Targets, Indicators and instruments of monetary control, monetary management in an open economy, current monetary policy of India		
	Tutorials	Discussion of doubts, questions and past year papers		

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	Assignment:	An assignment linking the topics to the		
	Test:	Test-2		

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SEMESTER WISE TEACHING PLAN (2022-23)
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Name of the Faculty: Ms. Sneha Bhardwaj **Intermediate Macroeconomics**

Department: ECONOMICS **Semester : III / 2022-23**

MONTH		TOPICS	COURSE	PAPER CODE/
AUGUST	**Theory:**	The labour market: Wage determination; wages, prices and employment; natural rate of unemployment; from employment to output	Core Course (BA Hons. Economics)	Intermediate Macroeconomics- I
	Tutorials:	Discussion of doubts, questions		
SEPTEMBER	**Theory:**	Aggregate demand and aggregate supply curves: Derivation of aggregate demand and aggregate and supply curves; interaction of aggregate demand and supply to determine equilibrium output, price level and		
	Tutorials:	Discussion of doubts, questions		
	Test:	Test-1		

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OCTOBER	**Theory:**	Inflation, unemployment and expectations Phillips curve; adaptive and rational expectations; policy ineffectiveness debate		
	Tutorials:	Discussion of doubts, questions and past year papers		
NOVEMBER/ DECEMBER	**Theory**	Microeconomic foundations Consumption: Keynesian consumption function; Fisher‘s theory of optimal intertemporal choice; lifecycle and permanent income hypotheses; rational expectations and random walk of consumption expenditure Investment: determinants of business fixed investment; residential investment and inventory investment		
	Tutorials	Discussion of doubts, questions and past year papers		
	Test:	Test-2		

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SEMESTER WISE TEACHING PLAN (2022-23)
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Name of the Faculty: Yogita Yadav **Department: Economics**

Semester : III

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	1. Introduction & Overview 2. Elementary Probability Theory	B.A (H) Economics	12271303 / Statistical methods for Economics
	Practical			
	Tutorials	1. Assignment on 1. Introduction & Overview 2. Elementary Probability Theory		
SEPTEMBER	**Theory**	1. Random Variables & Probability Distributions (Discreet & continuous Variables) 2. Random Sampling & Jointly Distributed	B.A (H) Economics	12271303 / Statistical methods for Economics
	Practicals:			
	Tutorials:	Assignment on: 1. Random Variables & Probability Distributions (Discreet & continuous Variables) 2. Random Sampling & Jointly Distributed		

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	Test	Internal Assessment 1 on Elementary Probability theory & Probability Distributions (Discreet Variables)		
OCTOBER	**Theory**	1. Random Sampling & Jointly Distributed random variables 2. Sampling	B.A (H) Economics	12271303 / Statistical methods for Economics
	Practical			
	Tutorials	Assignment on: 1. Random Sampling & Jointly Distributed random variables 2. Sampling		
	Test			
NOVEMBER	**Theory**	1. Point & Interval Estimation 2. Hypothesis Testing	B.A (H) Economics	12271303 / Statistical methods for Economics
	Practical			
	Tutorials	Assignment on: 1. Point & Interval Estimation 2. Hypothesis testing		
	Test	Internal Assessment 2 on Probability distribution (Continuous variables & jointly distributed variables), Sampling &		
DECEMBER	**Theory**	1. Hypothesis Testing	B.A (H) Economics	12271303 / Statistical methods for
	Practical			
	Tutorials	Assignement on Hypothesis Testing		

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ODD SEMESTER WISE TEACHING PLAN 2022-23
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Name of the Faculty: Dr. Nutan Kala Joshi

Department: Electronics

Semester: Theory : B.Sc(H) Electronics, Sem V

Practical : B.Sc(H) Electronics Sem V Electromagnetics(DSC)
B.Sc(H) Electronics Sem V DSP (DSE)
B.Sc(H) Electronics Sem III Electronic Circuits (DSC)

Month		Topics	Course	Paper Code/Name
JULY/August -2022	**Theory**	Unit-1 Vector Analysis: Scalars and Vectors, Vector Algebra, Rectangular (Cartesian) Coordinate System, Vector Components and Unit Vector, Vector Field, Products, Cylindrical Coordinates, Spherical Coordinates,Differential Length, Area and Volume, Line Surface and Volume integrals, Del Operator, Gradient of a Scalar, Divergence and Curl of a Vector, the Laplacian. Electrostatic Fields: Coulomb‘s Law and Electric Field, Field due to Discrete and Continuous Charge Distributions,Electric Flux Density, Gauss‘s Law and Applications, Divergence Theorem and Maxwell‘s First Equation. Electric Potential,Potential due to a Charge and Charge distribution, Electric dipole,Electric Fields in Conductors, Current and Current Density, Continuity of Current, Metallic Conductor Properties. Dielectric materials, Polarization, Dielectric Constant, Isotropic and Anisotropic dielectrics, Boundary conditions, Capacitance and Capacitors. Electrostatic Energy and Forces	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
	Practical	Introduction to MATLAB functions 1.Understanding and Plotting Vectors 2. Transformation of vectors into various coordinate systems. 3. 2D and 3D Graphical plotting with change of view and rotation.	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
		Sem V: Generation of unit sample sequence, unit step, ramp function, discrete time sequence, real sinusoidal sequence.	B. Sc. (H) Electronics Sem V	DSE- Digital Signal Processing Lab

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		Sem V:, Stability and causality, frequency domain representations and Fourier transform of DT sequences Z transform and its properties, Inverse Z transform	B. Sc. (H) Electronics	DSE- Digital Signal Processing (DSP)
SEPTEMBER	**Theory**	UNIT-2 Poisson's Equation and Laplace's Equation: Derivation of Poisson's and Laplace's equation,Uniqueness Theorem, Examples of Solution of Laplace's Equation: Cartesian, Cylindrical and Spherical Coordinates. Method of Images. Magnetostatics: Biot Savert's law and Applications, Magnetic dipole, Ampere's Circuital Law, Curl and Stoke's Theorem, Maxwell'sEquation, Magnetic Flux and Magnetic Flux Density, Scalar and Vector Magnetic Potentials,Magnetization in Materials and Permeability, Anisotropic materials, Magnetic Boundary Conditions, Inductors and Inductances, Magnetic Energy, Magnetic Circuits. Inductances and Inductors, Magnetic Energy, Forces and Torques.	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
	Practicals	4. Representation of the Gradient of a scalar field, Divergence and Curl of Vector Fields. 5 Plots of Electric field and Electric Potential due to charge distributions. 6. Plots of Magnetic Flux Density due to current carrying wire.	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
		Sem V: Fourier Transform, Discrete Fourier Transform and Fast Fourier Transform	B.Sc.(Hons) Electronics, Sem V	DSE - DSP Practicals
		SEM III **Electronic Circuits Lab:** Introduction to CRO and its working. Revision of use of Bread Board and components 1. Study of Half wave rectifier. 2. Study of the Full wave rectifier with and without C filter. 3. Study of parallel biased clippers (positive and negative) and double clipper circuits.	Sem III	Core Course Electronic Circuits Practicals

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	Assignment Sem V	4. Study of Clamper Circuits		
OCTOBER	**Theory**	Unit-3 Time-Varying Fields and Maxwell's Equations: Faraday's Law of Electromagnetic Induction, Stationary Circuit in Time Varying Magnetic Field, Transformer and Motional EMF, Displacement Current, Maxwell's Equations in differential and integral form and Constitutive Relations. Potential Functions, Lorentz gauge and the Wave Equation for Potentials, Concept of Retarded Potentials. Electromagnetic Boundary Conditions.Time-Harmonic Electromagnetic Fields and use of Phasors Unit-4 Electromagnetic Wave Propagation: Time-Harmonic Electromagnetic Fields and use of Phasors, the Electromagnetic Spectrum, Wave Equation in a source free isotropic homogeneous media.	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
	Practicals:	7. Programs and Contour Plots to illustrate Method of Images 8. Solutions of Poisson and Laplace Equations – contour plots of charge and potential distributions	B. Sc.(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
		Sem V: Design of a Butterworth analog filter for low pass and high pass.	B. Sc.(H) Electronics, Sem V	DSE - DSP Practicals
	Practicals **Mid Term Test Sem V**	**Electronic Circuits Lab:** 1. Design of Fixed Bias Feedback 2. Design of Collector-to-Base Bias Feedback 3. Design of Voltage divider configuration for transistors. **Multisim Lab** 1. Study of Half wave rectifier. 2. Study of Bridge rectifier. 3. Study of Parallel biased clippers (positive and negative) clipper circuits. 4. Study of Clamper Circuits. 5. Design of Biasing circuits.	Sem III	Core Course Electronic Circuits Practicals

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NOVEMBER	**Theory:**	Uniform Plane Waves in Lossless and Lossy unbounded homogeneous media, Wave Polarization, Phase and Group velocity, Flow of Electromagnetic Power and Poynting Vector. Uniform Plane wave incident on a Plane conductor boundary, concept of reflection and standing wave. Guided Electromagnetic Wave Propagation: Waves along Uniform Guiding Structures, TEM, TE and TM waves, Electromagnetic Wave Propagation in Parallel Plate and Rectangular Metallic Waveguides	B. Sc.(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
	Practicals	9. Introduction to Computational Electromagnetics: Simple Boundary Value Problems by Finite Difference/Finite Element Methods	B. Sc.(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
		Sem V: Design of IIR and FIR digital filters	B.Sc.(Hons) Electronics, Sem V	DSE - DSP Practicals
		Sem III **Electronic Circuits Lab** 1. Designing of a Single Stage CE amplifier **Multisim Lab** 1. Designing of a Single Stage CE amplifier 2. Study of the Colpitt's Oscillator. 3. Study of the Hartley's Oscillator. 4. Study of the Phase Shift Oscillator	Sem III	Core Course Electronic Circuits
DECEMBER	**Practicals**	**Electronic Circuits Lab:** 1. Study of Class A Power Amplifier. 2. Study of Class B Power Amplifier	Sem III	Core Course Electronic Circuits

SEMESTER-WISE TEACHING PLAN 2022-23
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Name of the Faculty: Dr. Sunita Jain

Department: Electronics

Semester: V

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Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Introduction to microprocessor, Different types, Difference between microprocessor and microcontroller, Introduction to 8085 microprocessors	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	Practical	Sem V: Introduction to Instruction Set of 8085.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
AUGUST	**Theory**	Basic architecture of 8085 microprocessors, Block diagram, Instruction set, Addressing modes, Memory mapping and I/O mapping	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	Practical	Sem V: Program for addition and subtraction. Program for multibyte addition and subtraction. Program for block movement of data. Program for ascending and descending order	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
SEPTEMBER	**Theory**	Interrupt structure of 8085 microprocessors, Various interrupts, Latency and response time, Concept of interfacing of various devices with 8085 microprocessors using interrupt Introduction to microcontrollers, Different types of microcontrollers, CISC & RISC architecture, Introduction to PIC16F887 microcontroller	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers

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	Practical	Sem V: Program for GCD. Program for truth table of logic gates, Fibonacci series. Program to find minimum and maximum among N numbers. Division of 16-bit number by 8-bit no. Sem III: Introduction to lab equipment. Half wave rectifiers with C-filter, and Zener regulation. Full Wave (Bridge and center tapped) Rectifiers with C-filter, and Zener and load Regulation. Clipping and Clamping circuits.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers Core Course V
	<u>Assignment</u>	Question based on 8085 microprocessors architecture and interfacing.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
OCTOBER	**Theory**	Instruction set of PIC microcontrollers. Addressing modes. I/O ports.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	Practical	Sem V: Interfacing LED with microprocessor using 8255 peripheral. Sem III: Calculation of operating point. Fixed bias circuit, Collector to Base bias and Voltage divider circuit. Multisim lab for rectifier, clipper, clamper and biasing circuits.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers Core Course V
	<u>Mid Term Test</u>	Complete 8085 microprocessors.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
NOVEMBER	**Theory**	Interfacing of various I/O devices with PIC microcontroller	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	Practical	Sem V: Interfacing LED with PIC. Sem III: CE- Amplifier designing. Multisim lab for Amplifier, Colpit, Phase shift and Hartely Oscillator.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers Core Course V
DECEMBER	**Practical**	Sem III: Power Amplifiers: Class A, B and C.		Core Course V

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

August-December, 2022

Name of the Faculty: Dr. Neeru Kumar

Department: Electronics

Semester: III

Theory : B.Sc(H) Electronics, Sem III

Practical : B.Sc(H) Electronics, Sem III

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Month		Topics	Course	Paper Code/Name
August	**Theory:**	Number System and Codes	**B.Sc. Electronics**	CC VI/ Digital Electronics and VHDL
	Practicals:	**Sem III:** To verify and design AND, OR, NOT and XOR gates using NAND gates on Multisim. **Sem III:** 1. Generate the Fibonacci series up to the given limit N and also print the number of elements in the series. 2. Find minimum and maximum of N numbers.		**CC V**I/ Digital Electronics and VHDL Lab **CCVII**/ C Programming and Data Structures
	Tutorials:			
September	**Theory:**	Logic Gates and Boolean algebra Combinational Logic Analysis and Design	**B.Sc. Electronics**	CC VI/ Digital Electronics and VHDL

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	Practicals:	**Sem III:** 1.To convert a Boolean expression into logic gate circuit 2.Design a Half and Full Adder 3.Design a Half and Full Subtractor **Sem III:** 3. Find the GCD of two integer numbers. 4. Calculate factorial of a given number. 5. Find all the roots of a quadratic equation Ax2 + Bx + C = 0 for non – zero coefficients A, B and C. Else report error. 6. Calculate the value of sin (x) and cos (x) using the series. Also print sin (x) and cos (x) value using library function. 7. Generate and print prime numbers up to an integer N.		**CC V**I/ Digital Electronics and VHDL Lab **CCVII**/ C Programming and Data Structures
	Tutorials:			
October	**Theory:**	Combinational Logic Analysis and Design Continued.	**B.Sc. Electronics**	CC VI/ Digital Electronics and VHDL
	Practicals:	**Sem III:** 1. Design a seven segment display driver . 2. Design a 4 X 1 Multiplexer using gates. 3. To build a Flip- Flop Circuits using elementary gates. (RS, Clocked RS, D-type) . **Sem III:** 8. Sort given N numbers in ascending order. 9. Find the sum & difference of two matrices of order MxN and PxQ. 10. Find the product of two matrices of order MxN and PxQ. 11. Find the transpose of given MxN matrix. 12. Find the sum of principle and secondary diagonal elements of the given MxN matrix. 13. Calculate the subject wise and student wise totals and store them as a part of the structure. 14. Maintain an account of a customer		**CC V**I/ Digital Electronics and VHDL Lab **CCVII**/ C Programming and Data Structures

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		using classes 23. Implement Insertion sort, Merge sort, Bubble sort, Selection sort.		
	Assignment			
	Tutorials:			
November	**Theory**	Sequential logic design Programmable Logic Devices	**B.Sc. Electronics**	CC VI/ Digital Electronics and VHDL
	Practicals:	**Sem III**: 1. Design a counter using D/T/JK Flip-Flop 2. Design a shift register and study Serial and parallel shifting of data. 3. 2 bit counter **Sem III:** 15. Implement linear and circular linked lists using single and double pointers. 16. Create a stack and perform Pop, Push, Traverse operations on the stack using Linear Linked list 17. Create circular linked list having information about a college and perform Insertion at front, Deletion at end. 18. Create a Linear Queue using Linked List and implement different operations such as Insert, Delete, and Display the queue elements. 19. Implement polynomial addition and subtraction using linked lists. 20. Implement sparse matrices using arrays and linked lists. 21. Create a Binary Tree to perform Tree traversals (Preorder, Postorder, Inorder) using the concept of recursion. 22. Implement binary search tree using linked lists. Compare its time complexity over that of linear search.		**CC V**I/ Digital Electronics and VHDL Lab **CCVII**/ C Programming and Data Structures
	Tutorials:			

December	**Theory:**	Programmable Logic Devices contd.	**B.Sc. Electronics**	CC VI/ Digital Electronics and VHDL
	Practicals:	**Sem III:** **3, 4 bit Counters**		**CC V**I/ Digital Electronics and VHDL Lab **CCVII**/ C Programming and Data Structures
	Tutorials:			

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- Medical leave from 16 September to 25 October 2022.

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2022-2023 (Odd Semester)

Name of the Faculty : Dr Hari Singh
Department : Electronics

Semester: Theory : B.Sc. (H) Electronics, Semester III
B.Sc. (H) Electronics, Semester I
B.Sc./B.A. (H/P), Semester I

Practical : B.Sc. (H) Electronics, Semester III
B.Sc. (H) Electronics, Semester I
B.Sc./B.A. (H/P), Semester I

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Month		Topics	Course	Paper Code/ Name
Aug	**Theory**	Unit I: C Programming Language: Introduction, Importance of C, Character set, Tokens, keywords, identifier, constants, basic data types, variables: declaration & assigning values. Structure of C program, Arithmetic operators, relational operators, logical operators, assignment operators, increment and decrement operators, conditional operators, bit wise operators, expressions and evaluation of expressions, type cast operator, implicit conversions, precedence of operators.	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure
	Practical	To Print "C Programming and Data Structures". To add two numbers with different data types. To find Simple Interest. Generate the Fibonacci series up to the given limit N and also print the number of elements in the series. Find minimum and maximum of N numbers.	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure Lab
Sep	**Theory**	Unit I: C basic data types, variables: declaration & assigning values. Structure of C program, Arithmetic operators, relational operators, logical operators, assignment operators, increment and decrement operators, conditional operators, bit wise operators, expressions and evaluation of expressions, type cast operator, implicit conversions, precedence of operators.	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure
	Practical	Find the GCD of two integer numbers. Calculate factorial of a given number. Find all the roots of a quadratic equation: Ax2 + Bx + C = 0 for non – zero coefficients A, B and C. Else report error. Calculate the value of sin (x) and cos (x) using the series. Also print sin (x) and cos (x) value using library function. Generate and print prime numbers up to an integer N. Sort given N numbers in ascending order. Find the sum & difference of two matrices of order MxN and PxQ.	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure Lab
Mid Term Test and Assignment			**As per the syllabus covered**	
Oct	**Theory**	Unit II: Decision making, branching & looping: Decision making, branching and looping: if, if-else, else-if, switch statement, break, for loop, while loop and do loop. Introduction to C++: Object oriented programming,	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure

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		characteristics of an object-oriented language		
	Practical	➕ Find the product of two matrices of order MxN and PxQ. ➕ Find the transpose of given MxN matrix. ➕ Find the sum of principle and secondary diagonal elements of the given MxN matrix. ➕ Calculate the subject wise and student wise totals and store them as a part of the structure. ➕ Maintain an account of a customer using classes. ➕ Implement linear and circular linked lists using single and double pointers. ➕ Create a stack and perform Pop, Push, Traverse operations on the stack using Linear Linked list	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure Lab
Nov	**Theory**	Unit III: Data Structures: Data Structures: Definition of stack, array implementation of stack, conversion of infix expression to prefix, postfix expressions, evaluation of postfix expression.	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure
		Unit I: Introduction to Circuits and DC Analysis Basic Circuit Concepts: Voltage and Current Sources, V- I characteristics of ideal voltage and ideal current sources, various types of controlled sources, passive circuit components, V-I characteristics, and ratings of different types of R, L, C elements. DC Circuit Analysis: Kirchhoff's Current Law (KCL), Kirchhoff's Voltage Law (KVL), Node Analysis, Mesh Analysis, Super node & Super mesh Analysis, Star-Delta Conversion.	B.Sc.(Hons) Electronics, Semester I	Discipline Specific Core Course II/Circuit Theory and Network Analysis
		Unit I: Digital inclusion and Digital Empowerment ○ Needs and challenges ○ Vision of Digital India: DigiLocker, E-Hospitals, e-Pathshala, BHIM, e-Kranti ○ (Electronic Delivery of Services}, e-Health Campaigns ○ Public utility portals of Govt. of India such as RTI, Health, Finance, Income Tax ○ filing, Education	B.Sc./B.A. (Hons/Prog) , Semester I	Value Addition Course I/Digital Empowerment
	Practical	➕ Create circular linked list having information about a college and perform Insertion at front, Deletion at end. ➕ Create a Linear Queue using Linked List and implement different operations such as Insert, Delete, and Display the queue elements. ➕ Implement polynomial addition and subtraction using linked lists. ➕ Implement sparse matrices using arrays and linked lists. ➕ Create a Binary Tree to perform Tree traversals (Preorder, Postorder, Inorder) using the concept of recursion.	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure Lab
		➕ Familiarization with Multimeter: Resistance, Capacitor and Inductor in series, parallel and series-parallel. ➕ Familiarization with Oscilloscope: Measurement of Amplitude and Frequency of a sinusoidal signal ➕ Verification of Kirchhoff's Current Law.	B.Sc.(Hons) Electronics, Semester I	Discipline Specific Core Course II/Circuit Theory and Network Analysis Lab
		➕ The course should be conducted in an interactive mode through demonstration, using appropriate tools. ➕ Conduct workshops one-services initiated under Digital India.	B.Sc./B.A. (Hons/Prog) , Semester I	Value Addition Course I/Digital Empowerment Lab

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		▪ Spread digital literacy/awareness amongst the vulnerable groups and ▪ marginalised sections of the society like street vendors, domestic help, security guards, senior citizens. ▪ Students will take up team activities/ projects exploring digital services in the areas such as education, health, planning, farming, security, cyber security, financial inclusion, and justice, e-Kranti. ▪ Any other Practical/Practice as decided from time to time.		
Dec	**Theory**	Unit IV: Trees: Introduction to trees, Binary search tree, Insertion and searching in a BST, preorder, postorder and inorder traversal (recursive)	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure
		Unit II: AC Anylysis Steady State Analysis: Sinusoidal Voltage and Current, Definition of Instantaneous, Peak, Peak to Peak, Root Mean Square and Average Values. Phasor, Complex Impedance, Sinusoidal Circuit Analysis for RL, RC and RLC Circuits. Node and Mesh Analysis for AC circuits. Star-Delta Conversion for complex impedances. Power in AC Circuits: Instantaneous Power, Average Power, Reactive Power, Power Factor.	B.Sc.(Hons) Electronics, Semester I	Discipline Specific Core Course II/Circuit Theory and Network Analysis
		Unit II: Communication and Collaboration in the Cyberspace o Electronic Communication: electronic mail, blogs, social media o Collaborative Digital platforms o Tools/platforms for online learning o Collaboration using file sharing, messaging, video conferencing	B.Sc./B.A. (Hons/Prog), Semester I	Value Addition Course I/Digital Empowerment
	Practical	▪ Implement binary search tree using linked lists. Compare its time complexity over that of linear search. ▪ Implement Insertion sort, Merge sort, Bubble sort, Selection sort.	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure Lab
		▪ Verification of Kirchhoff's Voltage Law ▪ Verification of Norton's theorem. ▪ Verification of Thevenin's Theorem.	B.Sc.(Hons) Electronics, Semester I	Discipline Specific Core Course II/Circuit Theory and Network Analysis Lab
		▪ The course should be conducted in an interactive mode through demonstration, using appropriate tools. ▪ Conduct workshops one-services initiated under Digital India. ▪ Spread digital literacy/awareness amongst the vulnerable groups and ▪ marginalised sections of the society like street vendors, domestic help, security guards, senior citizens. ▪ Students will take up team activities/ projects exploring digital services in the areas such as education, health, planning, farming, security, cyber security, financial inclusion, and justice, e-Kranti. ▪ Any other Practical/Practice as decided from time to time.	B.Sc./B.A. (Hons/Prog), Semester I	Value Addition Course I/Digital Empowerment Lab

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Mid Term Test and Assignment		As per the syllabus covered		
Jan	**Theory**	Unit III: Network Theorems Network Theorems: Principal of Duality, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Reciprocity Theorem, Millman's Theorem, Maximum Power Transfer Theorem. (Independent Sources) AC circuit analysis using Network Theorems.	B.Sc.(Hons) Electronics, Semester I	Discipline Specific Core Course II/Circuit Theory and Network Analysis
		Unit III: Towards Safe and Secure Cyberspace (4 Weeks) o Online security and privacy o Threats in the digital world: Data breach and Cyber Attacks o Blockchain Technology o Security Initiatives by the Govt of India	B.Sc./B.A. (Hons/Prog), Semester I	Value Addition Course I/Digital Empowerment
	Practical	▪ Verification of Superposition Theorem. ▪ Verification of the Maximum Power Transfer Theorem. ▪ Design of Low Pass RC Filter and study of its Frequency Response.	B.Sc.(Hons) Electronics, Semester I	Discipline Specific Core Course II/Circuit Theory and Network Analysis Lab
		▪ The course should be conducted in an interactive mode through demonstration, using appropriate tools. ▪ Conduct workshops one-services initiated under Digital India. ▪ Spread digital literacy/awareness amongst the vulnerable groups and ▪ marginalised sections of the society like street vendors, domestic help, security guards, senior citizens. ▪ Students will take up team activities/ projects exploring digital services in the areas such as education, health, planning, farming, security, cyber security, financial inclusion, and justice, e-Kranti. ▪ Any other Practical/Practice as decided from time to time.	B.Sc./B.A. (Hons/Prog), Semester I	Value Addition Course I/Digital Empowerment Lab
Feb	**Theory**	Unit IV: Filters Filters and Resonance: Introduction to Passive Filters-High Pass, Low Pass, Band Pass & Band Stop Filters, Frequency response of RC Circuits-High pass and Low pass filters, Frequency response of Series and Parallel RLC Circuits. Resonance in Series and Parallel RLC Circuits, Quality (Q) Factor and Bandwidth, Band Pass and Band Stop RLC Filters.	B.Sc.(Hons) Electronics, Semester I	Discipline Specific Core Course II/Circuit Theory and Network Analysis
		Unit IV: Ethical Issues in Digital World (2 Weeks) o Netiquettes o Ethics in digital communication o Ethics in Cyberspace	B.Sc./B.A. (Hons/Prog), Semester I	Value Addition Course I/Digital Empowerment
	Practical	▪ Design of High Pass RC Filter and study of its Frequency Response. ▪ Study of Frequency Response of a Series LCR Circuit and determination of its (a) Resonant Frequency (b) Impedance at Resonance (c) Quality Factor Q (d) Band Width.	B.Sc.(Hons) Electronics, Semester I	Discipline Specific Core Course II/Circuit Theory and Network Analysis Lab
		▪ The course should be conducted in an interactive mode through demonstration, using appropriate tools. ▪ Conduct workshops one-services initiated under Digital India.	B.Sc./B.A. (Hons/Prog), Semester I	Value Addition Course I/Digital Empowerment Lab

		- Spread digital literacy/awareness amongst the vulnerable groups and - marginalised sections of the society like street vendors, domestic help, security guards, senior citizens. - Students will take up team activities/ projects exploring digital services in the areas such as education, health, planning, farming, security, cyber security, financial inclusion, and justice, e-Kranti. - Any other Practical/Practice as decided from time to time.		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Year 2022-2023(Odd Semester)

Name of the Faculty: Ms. Shubhra Gupta

Department Electronics

Semester : Sem V :Numerical Analysis Theory & Practical
Sem V : Microprocessor and Microcontroller Practical
Sem I : Programming fundamentals using Python Theory & Practical
Sem I: SEC : Analytics/Computing with Python

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	**SEM V** : Unit 1: Numerical Methods: Floating point, Round-off error, Error propagation, Stability, Programming errors.	Bsc (Hons) Electronics	**DSE-2** : Numerical Techniques
	Practicals	**SEM V** : Introductory Lab **SEM V:** Program for addition and subtraction using 8085 microprocessors	Bsc (Hons) Electronics	**DSE-2 Lab** : Numerical Techniques **CC XI Lab:** Microprocessors and Microcontrollers Practical
	Tutorials			
AUGUST	**Theory:**	**SEM V:** Unit 1 contd. Solution of Transcendental and Polynomial Equations f(x)=0: Bisection method, Secant and Regula Falsi Methods, Newton Raphson method, Rate of convergence, General Iteration Methods, Newton's Method for Systems, Method for Complex Roots , Roots of Polynomial Equations. Unit 2 : Interpolation and Polynomial Approximations: Taylor Series and Calculation of Functions, Langrange Interpolation	Bsc (Hons) Electronics	**DSE-2 Lab** : Numerical Techniques **CC-V Lab** : Electronic Circuits

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	Practicals:	**SEM V :** Program to implement Bisection Method , Secant Method and Regula falsi method. **SEM V:** Microprocessor & Microcontroller. Program for multibyte addition and subtraction, Program for block movement of data, Program for ascending and descending order	Bsc (Hons) Electronics	**DSE-2 Lab** : Numerical Techniques **CC XI Lab:** Microprocessors and Microcontrollers Practical
	Tutorials:			
SEPTEMBER	**Theory:**	**SEM V :** Unit 2 contd. Newton Divided Difference Interpolation (forward and backward difference formulae), Truncation errors. Curve Fitting: Least square fitting, Curve fitting, Interpolation by Spline functions. Unit 3 : Numerical Integration: Trapezoidal Rule, Error bounds and estimate for the Trapezoidal rule, Simpson‘s Rule, Error of Simpson‘s rule. Numerical Differentiation	Bsc (Hons) Electronics	**DSE-2** : Numerical Techniques
	Practicals:	**SEM V :** Program to implement Newton Raphson Method , Trapezoidal rule , Simpson‘s rule and Runge Kutta Method. **SEM V:** Microprocessor & Microcontroller. Program for GCD, Program for truth table of logic gates, Fibonacci series, Program to find minimum and maximum among N numbers, Division of 16-bit number	Bsc (Hons) Electronics	**DSE-2 Lab** : Numerical Techniques **CC XI Lab:** Microprocessors and Microcontrollers Practica
	Tutorials:			
	<u>Assignment :</u>	Based on Unit 1 and Unit 2		

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OCTOBER	**Theory:**	**SEM V :**Unit 3 contd. Finite difference method and applications to electrostatic boundary value problems. Numerical methods for first order differential equations: Euler-Cauchy Method, Heun‘s Method, Classical Runge Kutta method of fourth order. Methods for system and higher order equations. Unit 4: Numerical Methods in Linear Algebra: Linear systems Ax=B, Gauss Elimination, Partial Pivoting, LU factorization, Doolittle‘s	Bsc (Hons) Electronics	**DSE-2** : Numerical Techniques
	Practicals:	**SEM V :** Program to implement Euler-Cauchy Method and Gauss-Jordon Method **SEM V :** Microprocessor & Microcontroller. LED interface using 8255, interfacing a switch using 8255.	Bsc (Hons) Electronics	**DSE-2 Lab** : Numerical Techniques **CC XI Lab:** Microprocessors and Microcontrollers Practical
	Tutorials:			
	<u>Test</u>	Based on Unit 1 , Unit 2 and part of Unit 3.		
NOVEMBER	**Theory:**	**SEM V :** Unit 4 contd**.** Crout‘s and Cholesky‘s method. Matrix Inversion, Gauss-Jordon, Iterative Methods: Gauss-Seidel Iteration, Jacobian Iteration. Matrix Eigenvalue: Power Method **SEM I :** Unit 1 : Introduction to python, Python interpreter, Operators	Bsc (Hons) Electronics Bsc (Hons) Electronics	**DSE-2** : Numerical Techniques **ELDSC 1 :** Programming fundamentals with python

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	Practicals:	**SEM V :** Program to implement Gauss-Seidel Iteration **SEM V:**Microprocessor & Microcontroller. Program for addition & subtraction using PIC, Multiplication & division using PIC. Block movement of data. Interfacing Input & Output devices. **SEM I :** Basic programming concepts **SEM 1:** General overview, anaconda and jupyter notebook	Bsc (Hons) Electronics	**DSE-2 Lab** : Numerical Techniques **CC XI Lab:** Microprocessors and Microcontrollers Practical **ELDSC 1 :** Programming fundamentals with python **SEC** :Analytics/Computing with Python
	Assignment	Based on syllabus covered		
DECEMBER	**Theory**	**SEM I:** creating python programs, control statements, Strings, lists, functions	Bsc (Hons) Electronics	**ELDSC 1 :** Programming fundamentals with python
	Practicals	**SEM I:** Menu driven program, Fibonacci series, Pascal triangle, HCF, LCM, Maths module and statistics module. **SEM I:** Creating python programs, control statements, Strings, lists, functions, working with libraries	Bsc (Hons) Electronics	**ELDSC 1 :** Programming fundamentals with python **SEC** :Analytics/Computing with Python
JANUARY	**Theory**	**SEM I:** Sets, Tuples, Dictionaries, OOPs	Bsc (Hons) Electronics	**ELDSC 1 :** Programming fundamentals with python

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	Practicals	**SEM I:** Program to count vowels, check duplicates, count positive and negative numbers, list of cubes of tuples. **SEM I:** Working with data frames, arrays, lists, data visualisation	Bsc (Hons) Electronics	**ELDSC 1 :** Programming fundamentals with python **SEC** :Analytics/Computing with Python
	Test	Based on syllabus covered		
FEBRUARY	**Theory**	**SEM I:** Modules in python	Bsc (Hons) Electronics	**ELDSC 1 :** Programming fundamentals with python
	Practicals	**SEM I:** Creating student, record dictionary, Menu driven program to implement calculator **SEM I:** Machine learning and its libraries	Bsc (Hons) Electronics	**ELDSC 1 :** Programming fundamentals with python **SEC**: Analytics/Computing with Python

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

July-December 2022-23

Name of the Faculty: Dr. Rakhi Narang

Department: Electronics **Semester : I/III/V**

Semester: Theory : B.Sc(H) Electronics, Sem V
B.Sc(H) Electronics, Sem I

Practical : B.Sc(H) Electronics, Sem V
B.Sc(H) Electronics, Sem V
B.Sc(H) Electronics, Sem III
B.Sc(H) Electronics, Sem I

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Month		Topics	Course	Paper Code/Name
JULY	**Theory**	**Sem V:** Discrete sequences, linear coefficient difference equation, Representation of DTS, LSI Systems.	B. Sc. Electronics V	DSE- Digital Signal Processing
	Practicals	**Sem V:** Generation of unit sample sequence, unit step, ramp function, discrete time sequence, real sinusoidal sequence.	B. Sc. Electronics V	DSE- Digital Signal Processing Lab
		Sem V: Introduction to MATLAB functions 1.Understanding and Plotting Vectors	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
	Tutorials			
AUGUST	**Theory:**	**Sem V:**, Stability and causality, frequency domain representations and Fourier transform of DT sequences Z transform and its properties, Inverse Z transform	B. Sc. Electronics Sem-V	DSE- Digital Signal Processing
	Practicals:	**Sem V:** Generate and plot sequences over an interval Convolution, deconvolution Linear Constant Coefficient Difference equations Z-transform: Given x[n], write program to find X[z].	B.Sc. Electronics Sem V	DSE- Digital Signal Processing Lab
		Sem V: 2. Transformation of vectors into various coordinate systems. 3. 2D and 3D Graphical plotting with change of view and rotation.	B.Sc. (H) Electronics Sem-V	Core-Course-XII/ Electromagnetics

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		Sem III: Python programs on basic data types and built in functions, operators	B..Sc.(H) Electronics Sem III	SEC: Data Science
SEPTEMBER	**Theory:**	**Sem V:** signal flow graph, its use in representation and analysis of Discrete Time Systems. Techniques of representations. Matrix generation and solution for DTS evaluations. **System Function**: DFT assumptions and Inverse DFT. Matrix relations, relationship with FT and its inverse, circular convolution, DFT theorems, DCT. Computation of DFT.	B. Sc.(H) Electronics Sem-V	DSE- Digital Signal Processing
	Practicals:	**Sem V:** Fourier Transform, Discrete Fourier Transform and Fast Fourier Transform	B.Sc. Electronics Sem V	DSE- Digital Signal Processing Lab
		Sem V: 4. Representation of the Gradient of a scalar field, Divergence and Curl of Vector Fields. 5 Plots of Electric field and Electric Potential due to charge distributions. 6. Plots of Magnetic Flux Density due to current carrying wire.	B.Sc.(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
		Sem III: 1. Python programs on Lists, Tuples and dictionaries. 2. Write a program in Python to predict the class of the flower based on available attributes. 3. Write a program in Python to predict if a loan will get approved or not.	B.Sc(H) Electronics Sem III	SEC: Data Science
	Assignment	**Sem V:** Assignment based on Unit-I and II		
OCTOBER	**Theory:**	**Sem V:** FFT Algorithms and processing gain, Discrimination, interpolation and extrapolation. Gibbs phenomena. FFT of real functions interleaving and resolution improvement. Word length effects. **Digital Filters**: Analog filter review. System function for IIR and FIR filters, network representation. Canonical and decomposition networks.	B. Sc.(H) Electronics Sem-V	DSE- Digital Signal Processing
	Practicals:	**Sem V:** Design of a Butterworth analog filter for low pass and high pass.	B. Sc.(H) Electronics Sem-V	DSE- Digital Signal Processing Lab
		Sem V: 7. Programs and Contour Plots to illustrate Method of Images	B. Sc.(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics

		Sem III: 1. Write a program in Python to predict the traffic on a new mode of transport. 2. Write a program in Python to predict the class of user.	B.Sc(H) Electronics II	SEC: Data Science
	Mid term Test	Sem V: Test based on Unit I and II for DSE		
NOVEMBER	**Theory:**	**Sem V:** IIR filter realization methods and their limitations. FIR filter realization techniques. Discrete correlation and convolution; Properties and limitations	B. Sc.(H) Electronics Sem-V (LOCF)	DSE- Digital Signal Processing Lab
		Sem I: Introduction to Data Science, Big Data, Linear Algebra: Vectors and Matrices,	B. Sc. (Hons.) Electronics Sem I (UGCF)	GE-I- Data Engineering and Analytics
	Practicals:	**Sem V:** Design of IIR and FIR digital filters	B. Sc.(H) Electronics Sem-V	DSE- Digital Signal Processing Lab
		Sem V: 9. Introduction to Computational Electromagnetics: Simple Boundary Value Problems by Finite Difference/Finite Element Methods	B. Sc.(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
		Sem III: Write a programme in Python to predict if a loan will get approved or not using Linear Regression 2.Write a programme in Python to predict if a loan will get approved or not using Logistic Regression	B.Sc(H) Electronics Sem III	SEC: Data Science
		Sem I: Python programs on basic data types and built in functions, operators	B. Sc. (Hons.) Electronics Sem I (UGCF)	GE-I- Data Engineering and Analytics
DECEMBER	**Theory:**	**Sem I:** Statistics: Describing a single set of data, Correlation, Simpson's Paradox, Correlation and causation, Probability: Dependence and Independence	B. Sc. (Hons.) Electronics Sem I (UGCF)	GE-I- Data Engineering and Analytics
	Practicals:	**Sem III:** 1. Write a programme in Python to predict if a loan will get approved or not using Decision Tree Algorithm 2. Write a programme in Python to predict if a loan will get approved or not using Decision Tree Algorithm	B.Sc(H) Electronics II	SEC: Data Science
	Practicals:	Programs based on python Libraries	B. Sc. (Hons.) Electronics Sem I (UGCF)	GE-I- Data Engineering and Analytics

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JANUARY	**Theory:**	**Sem I:** Conditional Probabilty and Bayes's theorem, Random variables, continuous distributions, The normal distribution, the central limit theorem	B. Sc. (Hons.) Electronics Sem I (UGCF)	GE-I- Data Engineering and Analytics
		Sem I: 1. Implement various data analysis tools in the pandas library. 2. Implement various basic data analysis techiques, clean and filter and manipulate data	B.Sc(H) Electronics I	GE I: Data Engineering and Analytics
FEBRURAY	**Theory:**	Sem I: Hypothesis and Inference: Statistical hypothesis Testing, Confidence intervals, p-hacking, Bayesian Inference	B. Sc. (Hons.) Electronics Sem I (UGCF)	GE-I- Data Engineering and Analytics
		Sem I: 1. Solve real world data problems 2. Time series data Analysis for superstore real data	B.Sc(H) Electronics I	GE I: Data Engineering and Analytics

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

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Name of the Faculty : Dr. Neha Verma **Department : Electronics**

Semester: III **Theory** **:** **B.Sc.(H) Electronics, Sem III**
B.Sc.(H) Electronics, Sem I
Practical **:** **B.Sc.(H) Electronics, Sem III**
B.Sc.(H) Electronics, Sem I

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	Unit 1: Arrays-concepts, declaration, accessing elements, storing elements, two-dimensional and multi-dimensional arrays. Input output statement and library functions (math and string related functions).	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures
	Practical	1.To Print "C Programming and Data Structures" 2. To add two numbers with different data types. 3. To find Simple Interest. 4. Generate the Fibonacci series up to the given limit N and also print the number of elements in the series. 5. Find minimum and maximum of N numbers.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures Lab
SEPTEMBER	**Theory**	Unit 1: Two-dimensional and multi-dimensional arrays. Input output statement and library functions (math and string related functions). Unit 2: Functions: Defining functions, function arguments and passing, returning values from functions. Structures: defining and declaring a structure variables, accessing structure members, initializing a structure, copying and comparing structure variables, array of structures, arrays within structures, structures within structures, structures and functions. Pointers.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures
	Practical	6. Find the GCD of two integer numbers. 7. Calculate factorial of a given number. 8. Find all the roots of a quadratic	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures Lab

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		equation Ax2 + Bx + C = 0 for non – zero coefficients A, B and C. Else report error. 9. Calculate the value of sin (x) and cos (x) using the series. Also print sin (x) and cos (x) value using library function. 10. Generate and print prime numbers up to an integer N. 11. Sort given N numbers in ascending order. 12. Find the sum & difference of two matrices of order MxN and PxQ.		
OCTOBER	**Theory**	Unit 2: Array of structures, arrays within structures, structures within structures, structures and functions. Pointers. Unit 3: Definition of Queue, Circular queues, Array implementation of queues. Linked List and its implementation, Link list implementation of stack and queue, Circular and doubly linked list.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures
	Practical	13. Find the product of two matrices of order MxN and PxQ. 14. Find the transpose of given MxN matrix. 15. Find the sum of principle and secondary diagonal elements of the given MxN matrix. 16. Calculate the subject wise and student wise totals and store them as a part of the structure. 17. Maintain an account of a customer using classes. 18. Implement linear and circular linked lists using single and double pointers. 19. Create a stack and perform Pop, Push, Traverse operations on the stack using Linear Linked list	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures Lab
	Mid Term Test	Assignment: Questions based on topics covered.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures
NOVEMBER	**Theory**	Unit 3: Linked List and its implementation, Link list implementation of stack and queue, Circular and doubly linked list. Unit-4: Searching and sorting: Insertion sort, selection sort,	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures

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		Unit1: Python: General Overview, Python Vs Excel, Anaconda and Jupyter Notebook: Interface Overview, Data Types in Python, Python basic syntax: assignment statements, creating variables, indentation, conditionals.	B.Sc.(Hons) Electronics, Sem I	SEC-I Analytics/Computing with Python
	Practical	20. Create circular linked list having information about a college and perform Insertion at front, Deletion at end. 21. Create a Linear Queue using Linked List and implement different operations such as Insert, Delete, and Display the queue elements. 22. Implement polynomial addition and subtraction using linked lists. 23. Implement sparse matrices using arrays and linked lists. 24. Create a Binary Tree to perform Tree traversals (Preorder, Postorder, Inorder) using the concept of recursion.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures Lab
		Installation of Anaconda, Introduction to Jupyter Notebook, Practicals Based on Data Types in Python, Python basic syntax: assignment statements, creating variables, indentation, conditionals. **Unit I:** General overview, anaconda and jupyter notebook	B.Sc.(Hons) Electronics, Sem I	SEC-I Analytics/Computing with Python Lab
		Familiarization with Multimeter: Resistance, Capacitor and Inductor in series, parallel and series-parallel.	B.Sc.(Hons) Electronics, Sem I	ELDSC I Lab: Programming fundamentals with python
		Familiarization with Oscilloscope: Measurement of Amplitude and Frequency of a sinusoidal signal Verification of Kirchhoff's Current Law.	B.Sc.(Hons) Electronics, Sem I	ELDSC II Lab: Circuit theory and Network Analysis
		1. Study of the I-V Characteristics of Diode –Ordinary and Zener Diode, Solar Cell, Photodiode 2.Study of the I-V Characteristics of the CE configurations of BJT and obtain input and output impedances and gains	B.Sc.(Hons) Electronics, Sem I	ELDSC III Lab: Semiconductor Devices
	Tutorials	NA	NA	NA
	Mid Term	Test: As per the covered topics.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures

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	Test			
DECEMBER	**Theory**	Unit-4: Searching and sorting: bubble sort, merge sort, linear Search, binary search. **Unit I:** loops, writing user defined functions. Working with libraries: Pandas, NumPy, Matplotlib and Seaborn, Python SQL Database Access: Introduction, Installation, DB Connection, Creating DB Table	B.Sc.(Hons) Electronics, Sem III B.Sc.(Hons) Electronics, Sem I	CC-VII/ C Programming and Data Structures SEC-I Analytics/Computing with Python
	Practical	25. Implement binary search tree using linked lists. Compare its time complexity over that of linear search. 26. Implement Insertion sort, Merge sort, Bubble sort, Selection sort. Paracticals based on Practicals Based on loops, writing user defined functions. Menu driven program, Fibonacci series, Pascal triangle, HCF, LCM, Maths module and statistics module. Verification of Kirchhoff's Voltage Law Verification of Norton's theorem. Verification of Thevenin's Theorem. 2. Study of the I-V Characteristics of the CB, CC configurations of BJT and obtain input and output impedances and gains 3. Study of the I-V Characteristics of JFET/MOSFET.	B.Sc.(Hons) Electronics, Sem III B.Sc.(Hons) Electronics, Sem I B.Sc.(Hons) Electronics, Sem I B.Sc.(Hons) Electronics, Sem I B.Sc.(Hons) Electronics, Sem I	CC-VII/ C Programming and Data Structures Lab SEC-I Analytics/Computing with Python Lab ELDSC I Lab: Programming fundamentals with python ELDSC II Lab: Circuit theory and Network Analysis ELDSC III Lab: Semiconductor Devices
JANUARY	**Theory**	**Unit II:** Pandas: Working with Data Frame, Importing from Excel or .csv files, powerful filters and indexes. NumPy: Selecting data with loc and iloc, Using NumPy for speed, Trade-offs between arrays and lists, Array Functions. Data cleansing and normalization: Libraries for data visualization, Types of charts/graphs and how to build them.	B.Sc.(Hons) Electronics, Sem I	SEC-I Analytics/Computing with Python
	Practical	Practicals based on Working with libraries: Pandas NumPy, Matplotlib and Seaborn, DB, Pandas, Data Frame, NumPy,	B.Sc.(Hons) Electronics, Sem I	SEC-I Analytics/Computing with Python Lab

		Arrays, Functions, data Visualization Program to count vowels, check duplicates, count positive and negative numbers, list of cubes of tuples. Verification of Superposition Theorem. Verification of the Maximum Power Transfer Theorem. Design of Low Pass RC Filter and study of its Frequency Response. 4. Study of the I-V Characteristics of the UJT. 5.Study of the I-V Characteristics of the SCR.	B.Sc.(Hons) Electronics, Sem I B.Sc.(Hons) Electronics, Sem I B.Sc.(Hons) Electronics, Sem I	ELDSC I Lab: Programming fundamentals with python ELDSC II Lab: Circuit theory and Network Analysis ELDSC III Lab: Semiconductor Devices
February	**Theory**	**Unit III:** Machine Learning: Introduction, Definitions, Supervised, Unsupervised, python libraries for machine learning: Sci-kit learn, Regression: Linear Regression, logistic regression, over-fitting and regularization	B.Sc.(Hons) Electronics, Sem I	SEC-I Analytics/Computing with Python
	Practical	Practicals based on Machine Learning, Sci-kit learn, Regression Creating student, record dictionary, Menu driven program to implement calculator Design of High Pass RC Filter and study of its Frequency Response. Study of Frequency Response of a Series LCR Circuit and determination of its (a) Resonant Frequency (b) Impedance at Resonance (c) Quality Factor Q (d) Band Width. 6. Study of the I-V Characteristics of the DIAC and TRIAC. 7. Study of Hall Effect	B.Sc.(Hons) Electronics, Sem I B.Sc.(Hons) Electronics, Sem I B.Sc.(Hons) Electronics, Sem I B.Sc.(Hons) Electronics, Sem I	SEC-I Analytics/Computing with Python ELDSC I Lab: Programming fundamentals with python ELDSC II Lab: Circuit theory and Network Analysis ELDSC III Lab: Semiconductor Devices

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

August-December 2022-23

Name of the Faculty: Ms. Hina Yadav

Department: Electronics **Semester: III/I**

Semester: Theory : B.Sc(H) Electronics, Sem III
B.Sc(H) Electronics, Sem I

Practical : B.Sc(H) Electronics, Sem III
B.Sc(H) Electronics, Sem I

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Month		Topics	Course	Paper Code/Name
August	**Theory**	**Sem III:** Structure of a Python Program, Elements of Python, Python Interpreter, Using Python as calculator, Python shell, Indentation. Atoms, Identifiers and keywords, Literals, Operators(Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bit wise operator, Increment or Decrement operator)	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: Architectural Overview, Design principles and needed capabilities, IoT Applications	B.Sc(H) Electronics II	GE III: Internet of Things
	Practicals	**Sem III:** Python programs on basic data types and built in functions, operators	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: Familiarization with Arduino/Raspberry Pi and perform necessary software installation.	B.Sc(H) Electronics II	GE III: Internet of Things
September	**Theory**	**Sem III:** Iteration and Recursion: Conditional execution, String as a compound data type, Length, Traversal and the for loop, String slices, String comparison, A find function, Looping and counting, List values, Accessing elements, List length, List membership, Lists and for loops, List operations, List deletion. Cloning lists, Nested lists, Tuples and dictionary Object Oriented Programming: Introduction to Classes, Objects and Methods	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: Sensing, Actuation, Basics of Networking, M2M and IoT Technology Fundamentals- Devices and gateways, Data management, Business processes in IoT, Everything as a Service(XaaS), Role of Cloud in IoT, Security aspects in IoT. Hardware Components- Computing (Arduino, Raspberry Pi), Communication, Sensing, Actuation, I/O interfaces. Software Components- Programming API's (using Python/Node.js/Arduino) for Communication Protocols-MQTT, ZigBee, Bluetooth, CoAP, UDP, TCP.	B.Sc(H) Electronics II	GE III: Internet of Things

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	Practicals	**Sem III:** 1. Python programs on Lists, Tuples and dictionaries. 2. Write a program in Python to predict the class of the flower based on available attributes. 3. Write a program in Python to predict if a loan will get approved or not.	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: 1. To interface LED/Buzzer with Arduino/Raspberry Pi and write a program to turn ON LED for 1 sec after every 2 seconds. 2. To interface Push button/Digital sensor (IR/LDR) with Arduino/Raspberry Pi and write a program to turn ON LED when push button is pressed or at sensor detection. 3. To interface DHT11 sensor with Arduino/Raspberry Pi and write a program to print temperature and humidity readings. 4. To interface motor using relay with Arduino/Raspberry Pi and write a program to turn ON motor when push button is pressed.	B.Sc(H) Electronics II	GE III: Internet of Things
October	**Theory**	**Sem III:** Standard Libraries, Toolkits using Python: Matplotlib, NumPy, Scikit-learn, NLTK; Visualizing Data: Bar Charts, Line Charts, Scatterplots; Working with data: Reading Files, Scraping the Web Using APIs	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: Active, Passive, Mechanical, Electrical and their comparison. Selection of Transducers, Principle and working of following types: Displacement transducers - Resistive (Potentiometric, Strain Gauges – Types, Gauge Factor, semi-conductor strain gauge) Capacitive, Inductive (LVDT-Principle and characteristics, Piezoelectric, light (photoconductive, photo emissive, photo voltaic, semiconductor, LDR), Temperature (electrical and non-electrical), load cell	B.Sc(H) Electronics II	GE III: Internet of Things
	Practicals	**Sem III:** 1. Write a program in Python to predict the traffic on a new mode of transport. 2. Write a program in Python to predict the class of user.	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: 1. To interface OLED with Arduino/Raspberry Pi and write a program to print temperature and humidity readings on it. 2. To interface Bluetooth with Arduino/Raspberry Pi and write a program to send sensor data to smartphone using Bluetooth. 3. To interface Bluetooth with Arduino/Raspberry Pi and write a program to turn LED ON/OFF when _1‘/‘0‘ is received from smartphone using Bluetooth	B.Sc(H) Electronics II	GE III: Internet of Things

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	Assignment	As per syllabus covered		
November	**Theory**	**Sem III:** Cleaning and Munging, Manipulating Data, Rescaling, Dimensionality Reduction	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: . Sensor: Contact and Proximity, Position, Velocity, Force, Tactile etc. Introduction to Cameras: Camera calibration, Geometry of Image formation, Euclidean/Similarity/Affine/Projective transformations	B.Sc(H) Electronics II	GE III: Internet of Things
		Sem I: Pre-requistes to the subject i.e. Structure of a Python Program, Elements of Python, Python Interpreter, Using Python as calculator, Python shell, Indentation. Atoms, Identifiers and keywords, Literals, Operators(Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bit wise operator, Increment or Decrement operator)	B.Sc(H) Electronics I	GE I: Data Engineering and Analytics
	Practicals	**Sem III:** 1. Write a programme in Python to predict if a loan will get approved or not using Linear Regression 2.Write a programme in Python to predict if a loan will get approved or not using Logistic Regression	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: mini projects based on Industrial automation, Transportation, Agriculture, Healthcare, Home Automation	B.Sc(H) Electronics II	GE III: Internet of Things
		Sem I: Python programs on basic data types and built in functions, operators	B.Sc(H) Electronics I	GE I: Data Engineering and Analytics
	Mid-Term Test	Sem III tests as per syllabus covered		
December	**Theory**	**Sem III** : Random Forest, Decision Tree Algorithms, Naïve Bayes	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: Solution framework for IoT applications- Implementation of Device integration, Data acquisition and integration, Device data storage- Unstructured data storage on cloud/local server, Authentication, authorization of devices	B.Sc(H) Electronics II	GE III: Internet of Things
		Sem I: Python Libraries- NumPy, Pandas, matplotlib, SciPy, scikit-learn, stats model	B.Sc(H) Electronics I	GE I: Data Engineering and Analytics
	Practicals	**Sem III:** 1. Write a programme in Python to predict if a loan will get approved or not using Decision Tree Algorithm 2. Write a program in Python to identify the tweets which are hate tweets and which are not.	B.Sc(H) Electronics II	SEC: Data Science
		Sem III: mini projects based on Industrial automation, Transportation, Agriculture, Healthcare, Home Automation	B.Sc(H) Electronics II	GE III: Internet of Things
		Sem I: Programs based on python Libraries	B.Sc(H) Electronics I	GE I: Data Engineering and

				Analytics
January	**Theory**	**Sem I:**Introduction to data engineering and data science, types of data, data File formats, data repositories; data marts and data lakes, ETL, ELT, data pipleines, introduction to cloud computing in data science	B.Sc(H) Electronics I	GE I: Data Engineering and Analytics
	Practical	**Sem I:** 1. Implement various data analysis tools in the pandas library. 2. Implement various basic data analysis techiques, clean and filter and manipulate data	B.Sc(H) Electronics I	GE I: Data Engineering and Analytics
	Assignment	Based on syllabus covered		
February	**Theory**	**Sem I:**Understanding Pandas and Data Wrangling, Data Aggregation and Analysis Time series data Analysis	B.Sc(H) Electronics I	GE I: Data Engineering and Analytics
	Practical	**Sem I:** 1. Solve real world data problems 2. Time series data Analysis for superstore real data	B.Sc(H) Electronics I	GE I: Data Engineering and Analytics
	Mid-Term Test	Sem I test based on syllabus covered		

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SEMESTER WISE TEACHING PLAN (2021-2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Swati Sharma **Department: Electronics**

Semester : III

Theory : B.Sc(H) Electronics, Sem III

Practical : B.Sc(H) Electronics, Sem III

Month		**Topics**	**Course**	**Paper**
September	**Theory**	**DIODE Circuits:** 1. Revision of Diode and its working. 2. DC analysis and Load line formation on diode characteristics. 3. Working and complete analysis of Half wave and Full Wave rectifier circuits.	BSc(hons) Electronics	CC V
	Practical	**Electronic Circuits Lab:** Introduction to CRO and its working. Revision of use of Bread Board and components 1. Study of Half wave rectifier. 2. Study of the Full wave rectifier with and without C filter. 3. Study of parallel biased clippers (positive and negative) and double clipper circuits. 4. Study of Clamper Circuits.	BSc(hons) Electronics	CC V
	Tutorials			

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October	**Theory:**	**Bipolar Junction Transistor:** 1. Review of operation of a transistor and its Characteristics (CB and CE). 2. Illustration of DC load line analysis and need for Transistor biasing (thermal runaway). 3. Calculation of operating point, for various biasing circuits- Fixed bias without and with RE, collector to base bias, voltage divider bias). 4. Comparison of DC biasing circuits and study of stability factor. 5. Introduction to hybrid parameters BJT amplifier (CE), dc and ac load line analysis, hybrid model of CE configuration. 6. Study of the frequency response of a CE amplifier, Effect on gain and bandwidth	BSc(hons) Electronics	DSE 4
	Practical:	**Electronic Circuits Lab:** 1. Designing of Fixed Bias. 2. designing of Collector-to-Base bias Feedback 3. Designing of Voltage divider configuration for transistors. **Multisim Lab** 1. Study of Half wave rectifier. 2. Study of Bridge rectifier. 3. Study of parallel biased clippers (positive and negative) clipper circuits.	BSc(hons) Electronics	CC V
	Assignment:	Based on previous year papers for the topics covered so far.		

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November	**Theory:**	**Bipolar Junction Transistor** (cont). 7. Transistor as a switch, circuit and working, Darlington pair and its applications. **Feedback and Oscillator Circuits:** 1. Concept of feedback, negative and positive feedback. 2. Advantages and disadvantages of negative feedback/ 3. Detailed study of voltage	BSc(hons) Electronics	CC V
	Practicals:	**Electronic Circuits Lab** 1. Designing of a Single Stage CE amplifier **Multisim Lab** 1. Designing of a Single Stage CE amplifier 2. Study of the Colpitt's Oscillator. 3. Study of the Hartley's Oscillator. 4. Study of the Phase Shift Oscillator	BSc(hons) Electronics	CC V
	Test:	Based on Diode and BJT Circuits		

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December	**Theory:**	**Power Amplifiers**: 1. Introduction to power amplifiers. 2. Classification of power amplifiers, Class A, Class B, Class C and their comparisons. 3. Operation of a Class A single ended and Transformer coupled power amplifier (overall efficiency calculation). 4. Circuit operation of complementary symmetry Class B push pull power amplifier, crossover distortion, heat sinks. 5. Circuit diagram, Working and Frequency Response of single tuned amplifier. **MOSFET Circuits:** 1. Review of Depletion and Enhancement MOSFET and their characteristics. 2. Biasing of MOSFET, and its DC and Small Signal Analysis. 3.Common Source amplifier circuit analysis 4. Working of CMOS inverter circuit.	BSc(hons) Electronics	CC V
	Practicals:	**Electronic Circuits Lab:** 1. Study of Class A Power Amplifier. 2. Study	BSc(hons) Electronics	CC V

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SEMESTER WISE TEACHING PLAN (2022-2023)

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Name of the Faculty : **Priya Vinayak** **Department** : **Electronics**

Semester: I **Theory** : **:B.Sc.(H) Electronics, Sem I**
Practical **:B.Sc.(H) Electronics, Sem I**

Month		Topics	Course	Paper Code/Name
December	**Theory**	Unit I- Introduction to Semiconductor Materials, Crystal Structure, Planes and Miller Indices, Energy Band in Solids, Concept of Effective Mass, Density of States, Carrier Concentration at Normal Equilibrium in Intrinsic Semiconductors, Derivation of Fermi Level for Intrinsic & Extrinsic Semiconductors, Donors, Acceptors, Dependence of Fermi Level on Temperature and Doping Concentration, Temperature Dependence of Carrier Concentrations .Carrier Transport Phenomena: Carrier Drift, Mobility, Resistivity, Hall Effect, Diffusion Process, Einstein Relation, Current Density Equation, Carrier Injection, Generation And Recombination Processes, Continuity Equation. Unit 2- P-N Junction Diode: Formation of Depletion Layer, Space Charge at a Junction, Derivation of Electrostatic Potential Difference at Thermal Equilibrium, Depletion Width and Depletion Capacitance of an Abrupt Junction. Concept of Linearly Graded Junction	B.Sc.(Hons) Electronics, Sem I	Semiconductor Devices DSCIII
	Practicals	1. Study of the I-V Characteristics of Diode – Ordinary and Zener Diode, solar cel, Photodiode 2.Study of the I-V Characteristics of the CE, CB,CC configuration of BJT and obtain gain and input output characteristics. 3. Study of I-V characteristics of JFET/MOSFET	B.Sc.(Hons) Electronics, Sem I	Semiconductor Devices Lab
January	**Theory**	Unit 2: Derivation of Diode Equation and I-V Characteristics. Zener and Avalanche Junction Breakdown Mechanism. Tunnel diode, varactor diode, solar cell: circuit symbol, characteristics, applications Unit 3(14Lectures) Bipolar Junction Transistors (BJT):PNP and NPN Transistors, Basic Transistor Action, Emitter Efficiency, Base Transport Factor, Current Gain, Energy Band Diagram of Transistor in Thermal Equilibrium, Quantitative Analysis of Static Characteristics (Minority Carrier Distribution and Terminal Currents), Base-Width Modulation, Modes of operation, Input and Output Characteristics of CB, CE and CC Configurations. Metal Semiconductor Junctions: Ohmic and Rectifying Contacts.	B.Sc.(Hons) Electronics, Sem I	Semiconductor Devices DSCIII

	Practicals	4. Study of the I-V Characteristics of the UJT. 5.Study of the I-V Characteristics of the SCR.	B.Sc.(Hons) Electronics, Sem I	Semiconductor Devices Lab
February	**Theory**	Unit 4: Field Effect Transistors: JFET, Construction, Idea of Channel Formation, Pinch-Off and Saturation Voltage, Current-Voltage Output Characteristics. MOSFET, types of MOSFETs, Circuit symbols, Working and Characteristic curves of Depletion type MOSFET (both N channel and P Channel) and Enhancement type MOSFET (both N channel and P channel).Complimentary MOS (CMOS). Power Devices: UJT, SCR, Triac, Diac, IGBT, Circuit symbols, Basic constructional features, Operation and Applications	B.Sc.(Hons) Electronics, Sem I	Semiconductor Devices DSCIII
	Practicals	6.Study the I-V Characteristics of DIAC and TRIAC 7.Study of Hall Effect	B.Sc.(Hons) Electronics, Sem I	Semiconductor Devices Lab
	Assignment	Assignment: 1 assignment each month (total 3)	B.Sc.(Hons) Electronics, Sem I	Semiconductor Devices DSCIII
	Tutorials	NA	NA	NA
	Mid Term Test	Test: As per the covered topics till mid-term exam.	B.Sc.(Hons) Electronics, Sem I	Semiconductor Devices DSCIII

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Name of the Faculty: PROF MEENAKSHI BHARAT

Department: ENGLISH **Semester: I/III/V**

Month		**Topics**	**Course**	**Paper Code/Name**
JULY	**Theory**	Introduction to Modernism, the Novel form, the Modern novel Background of Colonialism Postcolonial Theory	B.A.(H) English III Semester V	12031502 British literature: The Earlly 20th Century Paper 12
		Introduction to Feminism and Women's Writing	B.A.(H) English III Semester V	12031501 Women's Writing Paper 11
		Introduction to Detective Fiction	B.A.(H) English III Semester III	12031302 Paper 6 Popular Fiction
		Introduction to Women's Writing and Feminism	BA Programme Semester V	62035512 GE Individual and Society
AUGUST	**Theory**	Short Story form	BA (H) English III	Women's Writing

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		The Yellow Wallpaper	Semester V	Paper 11
		Introduction to Joseph Conrad Part I of Joseph Conrad *Heart of Darkness*	B.A.(H) English III Semester V	British literature: The Early 20th Century (Paper 12)
		'Introduction to Detective Fiction Characteristics	B.A.(H) English III Semester III	Paper 6 Popular Fiction
		Jamaica Kincaid Girl Breaking Out Marge Piercy	BSc(H) Life Sciences A and B Semester I	AECC
SEPTEMBER	**Theory**	Rokkeya Rukshana's Dream	BA (H) English III Semester V	Women's Writing Paper 11
		Part II of *Heart of Darkness*	B.A.(H) English III Semester V	British literature: The Early 20th Century (Paper 12)
		'The Murder of Roger Ackroyd—The Detective	B.A.(H) English III Semester III	Paper 6 Popular Fiction
		Eunice D'souza Ambai	BA Programme III Semester V	GE Individual and Society
	<u>Assignment</u>	Colonialism and Heart of Darkness	B.A.(H) English III Semester V	Paper 12 British Literature Early 20th Century

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OCTOBER	**Theory**	Part 3 of *Heart of Darkness*	B.A.(H) English III	British literature: The Earlly 20th Century (Paper 12)
		Fefu and her Friends Irene Fornes	B.A.(H) English Semester V	Women's Writing Paper 11
		Agatha Christies—Murder Suspects	BA (H) English Semester III	Paper 6 Popular Fiction
		Ambai contd AK Ramanujam	BA programme III Semester V	GE: Individual and Society
▪	**<u>Mid Term Test</u>** ▪	Modern Poetry TSEliot and WB Yeats T	B.A.(H) English III Semester V	Paper 12 British literature: The Early 20th Century
NOVEMBER	THEORY	Reading *Heart of Darkness* from different critical perspectives and placing it in context.	B.A.(H) English III Semester V	British literature: The Early 20th Century (Paper 12)
		Fefu and her Friends contd. Concluding remarks	B.A.(H) English III Semester V	Women's Writing Paper 11
		Concluding remarks on Popular literature	BA (H) English III Semester V	Popular Fiction Paper 6

		Concluding remarks on Gender and Literature Exercises	B A Programme III Semester V	GE: Individual and Society

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Name of the Faculty: NIKHIL YADAV

Department: ENGLISH **Semester: I/III/V**

Month		**Topics**	**Course**	**Paper Code/Name**
JULY	**Theory**	Introduction to Literary Criticism and Theory. Modern European philosophical tradition of Aesthetics	B.A.(H) English IIIyr.	Literary Criticism and Theory - I
		Introduction to Sexuality and Gender	B.A.(H) English IIIyr	Interrogating Queerness
		Introduction to Creativity.	BA Prog V	Creative Writing
AUGUST	**Theory**	Introduction to Hume and English Empiricism. Introduction to Burke and the philosophy of the Sublime.	B.A.(H) English III yr	Literary Criticism and Theory - I
		Ancient Greek and Early Christianity. Contexts to Theories of Sexuality.	B.A.(H) English IIIyr	Interrogating Queerness
		Creativity. Concepts and Contexts. Readings from Chapter I.	BA Prog V	SEC- Creative Writing
		Introduction to War writing.	BA Prog V	GE- Individual & Society

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		Beginning of Detective Fiction. Historical contexts and theories of Origin.	BA Prog V	DSC- English Discipline
SEPTEMBER	**Theory**	Introduction to Critiques of Kant. Beginning Readings of prescribed Passages. Conclusion to Kant. Reading Schiller.	B.A.(H) English IIIyr	Literary Criticism and Theory - I
		Introduction to Theories of Queerness. Background to Queer Writing. Introduction and Book I of ‘ Giovanni’s Room’ by James Baldwin.	B.A.(H) English IIIyr	Interrogating Queerness
		Beginning with Introduction to Modes of Creative Writing	BA Prog V	SEC- Creative Writing
		Prescribed Passages of the Unit War and Violence	BA Prog V	GE- Individual and Society
	<u>Mid Term Test</u>	Aesthetic Theory of Hume and Burke	B.A.(H) English IIIyr	Literary Criticism and Theory - I
OCTOBER	**Theory:**	Unit III- Hegel and Nietzsche	B.A.(H) English IIIyr	Literary Criticism and Theory-I
		Book II- ‘Giovanni’s Room’ by James Baldwin. Criticism of the Novel.	B.A.(H) English IIIyr	Interrogating Queerness
NOVEMBER		Concluding prescribed Readings of the Unit ‘War and Violence’	BA Prog V	GE- Individual & Society

		Key Terms of figures and modes of writing. Chapter 2 of the prescribed book.	BA Prog V	SEC- Modes of Creative Writing.
	Mid Term Test ▪	Arthur Conan Doyle's 'Adventure of The Solitary Cyclist'.	BA Prog V	DSC- English Discipline

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Name of the Faculty: DEBARATI SEN

Department: ENGLISH **Semester: I/III/V**

Month		**Topics**	**Course**	**Paper Code/Name**
JULY	**Theory**	Introduction to Sanskrit *Kavya* and *Natyashastra.* Introduction to Vyasa's Mahabharata Introduction to Kalidasa's Abhijnanasakuntalam.	B.A.(H) English I yr.	Indian Classical Literature (Paper DSE 3)
		Introduction to Modernism Introduction to W.B.Yeats	B.A.(H) English IIIyr	British literature: The Earlly 20th Century (Paper 12)
		Introduction to Girish Karnad, The Fire and the Rain	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 8)
AUGUST	**Theory**	Analysis of Vyasa's Mahabharata Sec (a)+Sec (b). Analysis of Kalidasa's Abhijnanasakuntalam	B.A.(H) English I yr	Indian Classical Literature (Paper DSE 3)

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		acts 1-2 with criticism.		
		Leda and the Swan, No Second Troy.	B.A.(H) English IIIyr	British literature: The Earlly 20th Century (Paper 12)
		Act 1	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 8)
		Creative writing Sub section 1	B.A. (P) Sem III	SEC Creative Writing
		Phule Premchand	B.A. (P) Sem III	GE: The Individual and Society
SEPTEMBER	**Theory**	Analysis of Vyasa's Mahabharata Sec (c) Analysis of Kalidasa's Abhijnanasakuntalam acts 3-4 with criticism.	B.A.(H) English I yr	Indian Classical Literature (Paper DSE 3)
		The Second Coming and Sailing to Byzantium. Critical reading of the Yeats's poems.	B.A.(H) English IIIyr	British literature: The Earlly 20th Century (Paper 12)
		Act II	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 8)

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		Creative writing Sub section 2	B.A. (P) Sem III	SEC Creative Writing
		Valmiki Chughtai	B.A. (P) Sem III	GE: The Individual and Society
OCTOBER	**Theory:**	Critical analysis of Vyasa's Mahabharata Analysis of Kalidasa's Abhijnanasakuntalam act 5 with criticism.	B.A.(H) English I yr	Indian Classical Literature (Paper DSE 3)
		Introduction to T.S.Eliot. The Love Song of Alfred J. Prufrock, Sweeney Among the Nightingales	B.A.(H) English IIIyr	British literature: The Earlly 20th Century (Paper 12)
		Act III	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 8)
		Creative writing Sub section 3	B.A. (P) Sem III	SEC Creative Writing
	▪	Bansode Ambedkar	B.A. (P) Sem III	GE: The Individual and Society
		Pope Canto 5	B.A.(H) English IIyr	British poetry and Drama17th and 18th Centuries
		De Souza Ambai Atwood	B.A.(H) English IIyr	SEC The Individual and Society

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		Amruta Patil's Kari Sec 3	GE	Comic Books and Graphic Novels
		Milton Critical analysis of techniques and forms in the evolving Sonnet tradition	B.A. (P) Sem III	DSC 1 C Britih Literature: Poetry and Play
		Reading 5	B.Sc (H) Chemistry A+ B B.A.(H) Hindi B.Sc (H) Life Sciences Sec A B.Sc (H) Maths Sec A	AECC
	Mid Term Test	Selections of poems/prose pieces	B.A.(H) English IIyr	SEC The Individual and Society
		Selected poems	B.A. (P) Sem III	DSC 1 C Britih Literature: Poetry and Play
		Selected sections from prescribed units	B.A.(H) English I yr.	Indian Classical Literature (Paper DSE 3)

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NOVEMBER	**Theory**	Analysis of Vyasa with a critical perspective Critical analysis of Kalidasa's Abhijnanasakuntalam	B.A.(H) English I yr	Indian Classical Literature (Paper DSE 3)
		Hollow Men . Analysing the poems critically.	B.A.(H) English IIIyr	British literature: The Earlly 20th Century (Paper 12)
		Critical analysis of the play.	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 8)
		Creative writing Sub section 4+Revision	B.A. (P) Sem III	SEC Creative Writing
		Critical analysis of the Unit on 'Caste'+Revision	B.A. (P) Sem III	GE: The Individual and Society
	November	Critical analysis of Pope's The Rape of the Lock	B.A.(H) English IIyr	British poetry and Drama17th and 18th Centuries
		Ramanujan Poetry and Gender	B.A.(H) English IIyr	SEC The Individual and Society
		Amruta Patil's Kari Sec 4	GE	Comic Books and Graphic Novels
		Humanism Poet and Sonnet tradition	B.A. (P) Sem III	DSC 1 C Britih Literature:

				Poetry and Play
	December	Revision	B.A.(H) English IIyr	British poetry and Drama17th and 18th Centuries
		Different schools of thought on Gender+ Revision	B.A.(H) English IIyr	SEC The Individual and Society
		Critical analysis of Amruta Patil's Kari	GE	Comic Books and Graphic Novels
		Revision	B.A. (P) Sem III	DSC 1 C Britih Literature: Poetry and Play
		Revision	B.A.(H) English I yr	Indian Classical Literature (Paper DSE 3

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Name of the Faculty: DR RITIKA SINGH

Department: ENGLISH **Semester: I/III/V**

Month		**Topics**	**Course**	**Paper Code/Name**
JULY	**Theory**	Introduction to Literary Studies Humanities, individual and society	B.A English (H) Sem I	DSC I: Introduction to Literary Studies
		The American canon -- an introduction	B.A English (H) Sem III	American Literature
		What is Women's Writing: A discussion	B.A English (H) Sem V	Women's Writing
AUGUST	**Theory**	The novel's novelty: Defining a genre How to read a novel: Steps & Strategies	B.A English (H) Sem I	DSC I: Introduction to Literary Studies
		Pain, Prose, and Politics Slavery and History Trauma, Memory, and Narration	B.A English (H)	American Literature

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		Wollstonecraft, Burke, Rousseau on gender roles and education; Reading *Vindications*	B.A English (H) Sem V	Women's **Writing**
SEPTEMBER	**Theory**	Primary readings: Gerald Prince - *Narratology* A.N Kaul - "A New Province of Writing"	B.A English (H) Sem I	DSC I: Introduction to Literary Studies
		Toni Morrison and the African-American Novel Hyphenated identity, hyphenated America Neo-slave narrative and the gothic novel	B.A English (H) Sem **III**	American Literature
		Amar Jiban and the Hindu Wife, Hindu Nation in 19th century Reading *Amar Jiban* as the first Bengali Autobiography	B.A English (H) Sem V	Women's Writing
OCTOBER		Reading *Pride and Prejudice*	B.A English (H) Sem I	DSC I: Introduction to Literary Studies
		Reading *Beloved*	B.A English Sem III	American Literature

		Pandita Ramabai and the question of female education Reading *A Testament of our Inexhaustible Treasure:* Diary of Ramabai	B.A English (H) Sem V	Women's Writing
		Valmiki Chughtai	B.A. (P) Sem III	GE: The Individual and Society
NOVEMBER	**Theory:**	Critical material, discussions	B.A English (H) Sem I	DSC I: Introduction to Literary Studies
		Critical material, discussions	B.A English (H) Sem III	American Literature
		Critical material, discussions	B.A English (H) Sem V	Women's Writing

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Name of the Faculty: SUNITI MADAN

Department: ENGLISH **Semester: I/III/V**

Month		**Topics**	**Course**	**Paper Code/Name**
JULY	**Theory**	Introduction to Renaissance, Jacobean Drama	Semester 3 Eng hons	Paper 7: British Poetry and Drama: 17th and 18th Centuries 1. William Shakespeare *Macbeth*
		Introduction and Reading of Francis Bacon	Semester 3 Eng Hons	Paper 7: British Poetry and Drama: 17th and 18th Centuries *(+Background Readings)*
		Introduction to Graphic Narratives	Semester 5 Eng Hons	DSE 1 Background Graphic Narrative
		Introduction to *Maus*	Semester 5 Eng Hons	DSE 1 *Maus,* Art Spiegelman

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		Introduction to *Persepolis*	Semester 5 Eng Hons	DSE 1 *Persepolis,* Marjane Sartrapi
		Introduction to Creative Writing	Semester 3	B.A. (P) SEC
AUGUST	**Theory**	Historical Context of Macbeth and Act 1 Introduction to Descartes Reading Scott McCloud Discussion on Holocaust Discussion of Iranian religious war Introduction to Namdeo Dhasal, Close Reading of Hunger How to Read Poetry	Semester 3 English Hons Semester 3 English Hons Semester 5 Eng Hons Semester 5 Eng Hons Semester 5 Eng Hons Semester 5 Eng Hons Semester 5 BA (P) SEC	Paper 7: British Poetry and Drama: 17th and 18th Centuries: William Shakespeare *Macbeth* Paper 7: British Poetry and Drama: 17th and 18th Centuries *(+Background Readings)* DSE 1: Graphic Narratives DSE 1: Graphic Narratives DSE 1: Graphic Narratives

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				DSE 3: Caste and Literature SEC Creative Writing
SEPTEMBER	**Theory:** **Week 1**	Act 3, *Macbeth* Hobbes continues Hilary Chute *Maus* contd. *Persepolis* contd. Sonnet and Ballad	BA Hons Eng Sem 3 BA Hons Eng Sem 3 BA Hons Eng Sem 5 BA Hons Eng Sem 5 BA Hons Eng Sem 5 BAP Sem 5	Paper 7: British Poetry and Drama: 17th and 18th Centuries 1. William Shakespeare *Macbeth* Paper 7: British Poetry and Drama: 17th and 18th Centuries *(+Background Readings)* DSE 1: Graphic Narratives Background Reading DSE 1: Graphic Narratives *Maus* DSE 1: Graphic Narratives

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				Persepolis and *Kari* B.A. (P) SEC Creative Writing
OCTOBER	**Theory:** **Week 1**	Act 3, *Macbeth* Winstanely contd McLain contd *Maus* contd. *Persepolis* contd. Blank Verse and Free Verse	BA Hons Eng Sem 3 BA Hons Eng Sem 3 BA Hons Eng Sem 5 BA Hons Eng Sem 5 BA Hons Eng Sem 5 BAP Sem 5	Paper 7: British Poetry and Drama: 17th and 18th Centuries 1. William Shakespeare *Macbeth* Paper 7: British Poetry and Drama: 17th and 18th Centuries *(+Background Readings)* DSE 1: Graphic Narratives Background Reading B.A. (P) SEC Creative Writing
NOVEMBER	**Theory:**	Act 5, *Macbeth*	BA Hons Eng Sem 3	Paper 7: British Poetry

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	Week 1			and Drama: 17th and 18th Centuries
		Cavendish concluded	BA Hons Eng Sem 3	1. William Shakespeare *Macbeth*
		David Palmer concluded	BA Hons Eng Sem 5	Paper 7: British Poetry and Drama: 17th and 18th Centuries
		Discussion of Question Papers	BA Hons Eng Sem 5	*(+Background Readings)*
		Kari concluded		DSE 1: Graphic Narratives Background Reading
		Long Fiction contd.	BA Hons Eng Sem 5	DSE 1: Graphic Narratives *Maus*
			BAP Sem 5	DSE 1: Graphic Narratives *Persepolis* and *Kari*
				B.A. (P) SEC Creative Writing
	Tutorials:	Writing practice	Semester 3 English Hons	Paper 7: British Poetry and Drama: 17th and 18th

	<u>Test</u>	Seventeenth century was a time of upheaval in terms of power, social formations and monarchy. Discuss with reference to texts in this course.		

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Name of the Faculty: ANKITA KAUSHIK

Department: ENGLISH **Semester: I/III/V**

Month		**Topics**	**Course**	**Paper Code/Name**
JULY	**Theory**	Introduction to Modernism B.A(H) English, V semester and Modernist Novel	B.A(H) English, V semester	Paper 10: British Literature: The Early 20th Century
		Introduction to African American Literature, it's early roots and role of women and the social milieu	B.A(H) English, V semester	Paper 11: Women's Writing
		Introduction to New Criticism	B.A(H) English, V semester	DSE Paper D2: Literary Theory and Criticism-I
		Introduction to Gender and Queer Studies	B.A(H) English, V semester	DSE Paper D7: Interrogating Queerness
		Discussion on topics covered during lectures	B.A. English (H), V semester	DSE Paper D7: Interrogating Queerness
AUGUST	**Theory**	Virginia Woolf and her theory of the novel and her feminist theory	B.A(H) English, V semester	Paper 10: British Literature: The

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				Early 20th Century
		Black Women's Fiction and Black Feminism; Alice Walker and the literary influences on her	B.A(H) English, V semester	Paper 11: Women's Writing
		Critical Analysis of Foucault semester and his History of Sexuality Discussion/Doubt Session on Topics covered in Lectures Discussion	B.A(H) English, V	DSE Paper D7: Interrogating Queerness
SEPTEMBER	**Theory:**	Critical analysis and discussion of Woolf	B.A(H) English, V semester	Paper 10: British Literature: The
		Critical Analysis and discussion of Alice Walker's The Color Purple and Womanism	B.A(H) English, V semester	Paper 9: Women's Writing
		Textual Analysis and Discussion of Brooks' essay	B.A(H) English, V semester	DSE Paper D2: Literary Theory and Criticism-I
		Discussion and Critical analysis of Judith Butler and Audre Lorde	B.A(H) English, V semester	DSE Paper D7: Interrogating Queerness
		Critical Analysis of Felicity Hughes essay on Children's Literature and the Victorian times and position of Children in it's literature	B.A(H) English, V semester	Paper 6: Popular Literature

OCTOBER	**Theory**	Critical Analysis of Mrs Dalloway	B.A(H) English, V semester	Paper 10: British Literature: The Early 20th Century
		Critical Analysis of The Colour Purple	B.A(H) English, V semester	Paper 9: Women's Writing
		Russian Formalism	B.A(H) English, V semester	DSE 1, Paper D2-Literary Criticism, Unit-5
		Discussion and Critical analysis of Gloria Anzaldua	B.A(H) English, V semester	DSE Paper D7: Interrogating Queerness
NOVEMBER	**Theory**	Critical Analysis of Mrs Dalloway	B.A(H) English, V semester	Paper 10: British Literature: The Early 20th Century
		Critical Analysis of The Colour Purple	B.A(H) English, V semester	Paper 9: Women's Writing
		Critical Analysis of Lews Caroll	B.A.(H) English, V sem	Paper 6: Popular Literature
	Tutorials:	Discussion/Doubt Session on topics covered in lectures	B.A(H) English, V semester	DSE Paper D7: Interrogating Queerness

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Name of the Faculty: NISHANT

Department: ENGLISH **Semester: I/III/V**

JULY	**Theory**	BPR: Reading Virginia Woolf's A Room of One's Own	BA (H) English Semester V	Paper 11- Women's Writing
		Introduction to Graphic Narrative: Reading Will Eisner and Scott McCloud	BA (H) English Semester V	DSE D1: Graphic Narratives
		BPR: Reading Dalit Literature and Aesthetics essay	BA (H) English Semester V	DSE D3: Literature and Caste
		Introduction to Detectiove fiction genre under the form of mystery novel	BA (Programme) Semester V	English Discipline: Detective Fiction
	Tutorials	NA	NA	NA
AUGUST	**Theory**	BPR: Reading Simone De Beauvoir's Second Sex' Introduction	BA (H) English Semester V	Paper 11- Women's Writing
		Reading Frank Miller's The Dark Knight Returns Books 1 and 2	BA (H) English Semester V	DSE D1: Graphic Narratives
		BPR: Reading Caste Domination Male Domination	BA (H) English Semester V	DSE D3: Literature and Caste

		Reading Agatha Christie's A Murder is Announced Chapters 1-10	BA (Programme) Semester V	English Discipline: Detective Fiction
SEPTEMBER	**Theory**	BPR: Reading Elaine Showalter's Introduction to A Literature of Their Own	BA (H) English Semester V	Paper 11- Women's Writing
		Reading Frank Miller's The Dark Knight Returns Books 3 and 4	BA (H) English Semester V	DSE D1: Graphic Narratives
		BPR: Reading Raj Gauthaman's Dalit Culture	BA (H) English Semester V	DSE D3: Literature and Caste
		Reading Agatha Christie's A Murder is Announced Chapters 11-24	BA (Programme) Semester V	English Discipline: Detective Fiction
		Reading Marjane Satrapi's Persepolis	BA (H) Semester III	GE: Comic Books and Graphic Novels
		Reading and discussion on different modes and stages of theatre	BA (Programme) Semester III	SEC: Creative Writing
	Tutorials	Writing exercises on autobiography I graphic form	BA (H) English Semester V	DSE D1: Graphic Narratives
	Assignment	2 questions with an intenal choice between the relationship between Batman and his antagonists and drawing/writing a	BA (H) English Semester V	DSE D1: Graphic Narratives

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		comic strip or poster on given topics		
OCTOBER	**Theory**	BPR: Reading Kumkum Sangari's Introduction Recasting Women	BA (H) English Semester V	Paper 11- Women's Writing
		Reading and discussing essays on Miller's The Dark Knight Returns	BA (H) English Semester V	DSE D1: Graphic Narratives
		BPR: Reading Paramjit S Judge's Existence, Identity and Beyond	BA (H) English Semester V	DSE D3: Literature and Caste
		Reading and discussing essays on Agatha Christie's A Murder is Announced	BA (Programme) Semester V	English Discipline: Detective Fiction
		Reading Marjane Satrapi's Persepolis along with essay discussions	BA (H) Semester III	GE: Comic Books and Graphic Novels

		Readings on Indian sociological theatre	BA (Programme) Semester III	SEC: Creative Writing
	Tutorials	Individual discussions on assignments with critical feedback	BA (H) English Semester V	DSE D1: Graphic Narratives
	Test	Class test with an internal choice between three questions on Frank Miller, Marjane Satrapi and Art Speigelman	BA (H) English Semester V	DSE D1: Graphic Narratives

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NOVEMBER	**Theory**	Revision and previous years' question papers' discussion.	BA (H) English Semester V	Paper 11- Women's Writing
		Revision and previous years' question papers' discussion.	BA (H) English Semester V	DSE D1: Graphic Narratives
		Revision and previous years' question papers' discussion.	BA (H) English Semester V	DSE D3: Literature and Caste
		Revision and previous years' question papers' discussion.	BA (Programme) Semester V	English Discipline: Detective Fiction

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		Readings on Satrapi's graphic writing style in Persepolis	BA (H) Semester III	GE: Comic Books and Graphic Novels
		Theatre based classroom exercises	BA (Programme) Semester III	SEC: Creative Writing
	Tutorials	NA	NA	NA
December	**Theory**	Revision and previous years' question papers' discussion.	BA (H) Semester III	GE: Comic Books and Graphic Novels
		Revision and previous years' question papers' discussion.	BA (Programme) Semester III	SEC: Creative Writing
		Reading Gary Day's Introduction to Class and G J Watson's Introduction to Drama	BA (H) English Semester I	Introduction to Literary Studies

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		Introduction to Vikram Seth's A Suitable Boy	BA (H) Semester I	GE- Indian English Literatures
	Tutorials	NA	NA	NA

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SEMESTER WISE TEACHING PLAN (2022-2023)

SRI VENKATESWAR A COLLEGE

PRINCIPAL (Acting)
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Name of the Faculty: Aswathy Rajani

Department: English **Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	a. Introduction to Creative Writing * b. Introduction to American Literature c. Declaration of Independence' July 4, 1776 * a. Introduction to Plato * a. Introduction to Queer theory	Semester I B.A (H) SEC * Semester III B.A Eng(H) Sem V B.A (H) DSE * Sem V B.A (H) DSE	Creative Writing * American Literature Literary Theory and Criticism * Interrrogating Queerness
	Practicals	NA	NA	NA

	Tutorials	a. Presentation on on Black Power Mixtape	Semester III B.A Eng(H)	American Literature
AUGUST	**Theory:**	a. Writing Poetry * a. Ralph Waldo Emerson, Self Reliance * a. Introduction to Phaedrus * a. Discussion on Sappho	Semester I B.A(H) SEC * Semester III B.A Eng(H) * Semester V B.A Eng(H) DSE * Semester V B.A Eng(H) DSE	Creative Writing * American Literature * Literary Theory and Criticism Interrogating Queerness
	Practicals:	NA	NA	NA
	Tutorials:	a. Presentation on on "Crip Camp"	Semester III B.A Eng(H)	American Literature

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SEPTEMBER	**Theory:**	a. Writing Novels * b. Martin Luther King Jr, I have a dream * a. Discussion on Setting and dramatis personae * a. Discussion on Plato's Symposium	Semester I B.A (H) SEC * Semester III B.A Eng(H) * Sem V B.A (H) DSE * Sem V B.A (H) DSE	Creative Writing * American Literature * Literary Theory and Criticism Interrogating Queerness

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	Practicals:	NA	NA	NA
	Tutorials:	a. Presentation on “ “The Rachel Divide”	Semester III B.A Eng(H)	American Literature
	<u>Assignment :</u>	Write a research paper: a) that critiques the intersectionality of race/ class/ gender/sexuality politics in America. Draw upon plethora of the texts that cuts across genres and forms (fiction, non-fiction, documentaries, movies, memoirs, essays etc) b) Does the narrative of the colored community or the marginalized differ from the mainstream narrative in its portrayal of America as a nation and culture? Substantiate your response.	Semester III B.A Eng(H)	American Literature
October	**Theory:**	a. Writing Plays * c. Frederick Douglass, *A Narrative of the life of Frederick Douglass* chaps. 1–7 d. Adrienne Rich, When We Dead Awaken: Writing as Re-Vision * a. Discussion of themes in Phaedrus * a. Discussion on themes of Symposium	Semester I B.A (H) SEC * Semester III B.A Eng(H) * Sem V B.A (H) DSE * Sem V B.A (H) DSE	Creative Writing * American Literature * Literary Theory and Criticism Interrogating Queerness
	Practicals:	NA	NA	**NA**

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	Tutorials:	b. Presentation on "Paris is Burning"	Semester III B.A Eng(H)	American Literature
	<u>Test</u>	Essays on Background Reading	Semester III B.A Eng(H)	American Literature
NOVEMBER	**Theory:**	a. Media Writing b. Writing for Publication * a. Abraham Lincoln's Gettysburg Speech * a. Discussion of critical essays on Phaedrus * a. Discussion on Shakespeare's sonnets	Semester I B.A SEC * Semester III B.A Eng(H) * Sem V B.A (H) DSE * Sem V B.A (H) DSE	B.A(H) * American Literature * Literary Theory and Criticism * Interrogating Queerness
	Practicals:	NA	NA	NA

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Tutorials:	a. Presentation on on "She's Beautiful When She's Angry"	Semester III B.A Eng(H)	American Literature

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January 2023[1]– February/March, 2023

Name of the Faculty: Jhansi Rangu

Department: History

Semester: I BA Hons., I SEC

Month		Topics	Course	Paper Code/Name
January	Theory:	III.(a) Origins; settlement patterns and town planning (e) religious beliefs and practices; art (d) Late Harappan Cultures IV (a)Archaeological cultures: PGW, NBPW, metallic coins & role of Iron technology	B.A. (Hons.) Discipline Specific Core Course-1 Semester I	History of India-I from the beginning to the fourth century BCE UPC:2312101101
		III. Expanding Political Communication and Leadership: Orientation and action (a) Developing Communication and Leadership through research (b) Strengthening techniques of Communication and leadership IV. Extending Political Communication and Leadership: Research Issues and Challenges (a)Opinion Poll, Exit Poll	B.A., B.Sc., B.Com., (Hons. & Prog) Skill Enhancement Course (SEC) Semester I	Political Leadership and Communication UPC: 3206001002
	Tutorials:	Screening of documentary on excavations in Harappan by Mortimer Wheeler and discussion of historiography around the origin and decline of Indus Valley civilisation	B.A. (Hons.) Discipline Specific Core Course-1 Semester I	History of India-I from the beginning to the fourth century BCE UPC:2312101101
	Practical:	Case study and discussion on opinion poll and exit poll	B.A., B.Sc., B.Com., (Hons. & Prog) Skill Enhancement Course (SEC) Semester I	Political Leadership and Communication UPC: 3206001002

[1] I have joined on 28th January 2023, previously these courses were being taught by Preeti Gulati.

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February	**Class Test:**	1.Analyse various theories related to the origin of Harappan Civilisation? 2. In what ways the excavations at Mehrgarh and other associated sites have given a definite shape to our understanding of the origin of Harappan Civilisation. 3. Examine the main features of the religious beliefs and art traditions of the Harappan people.	B.A. (Hons.) Discipline Specific Core Course-1 Semester I	History of India-I from the beginning to the fourth century BCE UPC:2312101101
		1. What do you understand by the term Political Communication? Discuss the evolution and transformation of Political Communication in recent times. 2. What is leadership and enumerate the different types of leadership? In this context discuss the challenges faced by contemporary leaders? 3. Discuss 'survey' as a medium for researching, communication and leadership. Or What do you understand by Opinion poll and Exit poll? 4. Examine the contemporary issues and challenges in communication and leadership.	B.A., B.Sc., B.Com., (Hons. & Prog) Skill Enhancement Course (SEC) Semester I	Political Leadership and Communication UPC: 3206001002
	Assignment*	Q. As an analyst working with a Political research organisation, pick any topic relating to Political leadership and communication and give an in-depth analysis of the topic/issue.	B.A., B.Sc., B.Com., (Hons. & Prog) Skill Enhancement Course (SEC) Semester I	Political Leadership and Communication UPC: 3206001002
	Theory:	IV. Social and Cultural transformations (a) Literary and textual traditions: Vedic, Brahmanic and Shramanic (b) The Aryan Question (c)Emergence of social and political institutions; urbanization, social stratification and state formation	B.A. (Hons.) Discipline Specific Core Course-1 Semester I	History of India-I from the beginning to the fourth century BCE UPC:2312101101
		I Nature and Scope of Political Communication II. Leadership-theories and typologies IV (b)Examining Contemporary Issues and Challenges in Communication and Leadership V. Executing Political Communication and Leadership: Empirical and Professional Implications (a) Psephology as an Art and Vocation	B.A., B.Sc., B.Com., (Hons. & Prog) Skill Enhancement Course (SEC) Semester I	Political Leadership and Communication UPC: 3206001002

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	Tutorials:	Discussion over the original home of Aryans Revision of topics covered	B.A. (Hons.) Discipline Specific Core Course-1 Semester I	History of India-I from the beginning to the fourth century BCE UPC:2312101101
	Practical:	Understanding various career options in the field of political research. Revision and preparation for final practical exam **FINAL PRACTICAL EXAM WAS ALSO CONDUCTED**	B.A., B.Sc., B.Com., (Hons. & Prog) Skill Enhancement Course (SEC) Semester I	Political Leadership and Communication UPC: 3206001002

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
August - December 2023

Name of the Faculty: M. Jeevan

Department: History

Semester: II,V

Month		Topics	Course	Paper Code/Name
JULY	**Theory:**	Unit I: A New World [a] The Growth of American Colonies: Diverse Demography; Forms of Labour: indigen-ous tribes, indentured labour, slaves [b] Revolution: sources, historiography	B.A. (Hons.) IIIrd Year (Vth Semester)	History of the USA: Independence to Civil War
	Tutorials:	Discussions		
AUGUST	**Theory:**	Unit I: Laying the foundation of independent India [a] Making of the Constitution [b] Linguistic reorganisation	B.A. (Hons.) IInd Year (IIIrd Semester)	Making of Post Colonial India
		Unit II: Limits of American democracy [a] The Federalist Constitution: Structure and its Critique [b] Jeffersonian Democracy: Its Limitations [c] Westward Expansion: Jefferson and Jackson; Marginalization, Displacement of the indigenous tribes; case histories of the Shawnee and the Cherokee tribes	B.A. (Hons.) IIIrd Year (Vth Semester)	History of the USA: Independence to Civil War

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	Tutorials: **<u>Assignment:</u>**	Group Discussions to discuss the problems and concepts. Assignment Questions given to the students		
SEPTEMBER	**Theory:**	Unit II: Envisioning a new order [a] Economic Development: five year plans; study of Punjab and Bihar [b] Indian Foreign Policy till 1964	B.A. (Hons.) IInd Year (IIIrd Semester)	Making of Post Colonial India
		Unit III: Early Capitalism and its inequities[a] Growth of Market Society: Industrial Labour: gender, race, ethnicity[b] Immigrant Labour: religious, racial, ethnic bias; case history of Irish immigrants Unit IV: U.S. quest for dominance [a] Imperialism and Changing Diplomacy: Manifest Destiny, War of 1812; Monroe Doctrine	B.A. (Hons.) IIIrd Year (Vth Semester)	History of the USA: Independence to Civil War
	Tutorials: **<u>Mid Term Test:</u>**	Question Answer sessions Internal Class Test on Themes covered so far for the courses.		

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OCTOBER	**Theory:**	Unit III: Democracy at Work Explain the complexities involved in the making of constitution. Analyse the reasons behind the linguistic reorganisation of states. Analyse foreign policy of India during formative stages of independent India. Draw inferences to explain the functioning of different political parties. Explain the character of emergency and its consequences. Discern the nuances of Indian judicial system. [a] Congress and other political formations [b] (i) Left parties (ii) Caste politics (iii) Dravidian movement [c] Women and politics (i)Hindu Code Bill (ii)Status of Women in India Report	B.A. (Hons.) IInd Year (IIIrd Semester)	Making of Post Colonial India
		Unit V: Slavery [a] The economics of slavery: South vs. North/Debate [b] Slave life and culture; nature of female slavery; slave resistance (including female slave resistance)	B.A. (Hons.) IIIrd Year (Vth Semester)	History of the USA: Independence to Civil War
	Tutorials:	Revision & Presentations		

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NOVEMBER	**Theory:**	Unit IV: Turning Point: Emergency and After [a] Railway Strike, J.P. Movement and Emergency !236 Problems of Development case [b] Developments in the1980's: (i) Coalition politics; (ii) Mandal Commission and aftermath	B.A. (Hons.) IInd Year (IIIrd Semester)	Making of Post Colonial India
		Unit VI: The Civil War [a] Issues of the War [b] Interpretations	B.A. (Hons.) IIIrd Year (Vth Semester)	History of the USA: Independence to Civil War
	Tutorials:	Discussions		
DECEMBER	**Theory:**	Unit IV: Turning Point: Emergency and After [c] Judiciary, Civil Society and Rights: Judicial Activism and Public Interest Lit- igation [d] Popular and parallel Cinema	B.A. (Hons.) IInd Year (IIIrd Semester)	Making of Post Colonial India
	Tutorials:	Discussions and revision		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
July - November, 2023
November – February, 2023

Name of the Faculty: Dr. Ningmuanching

Department: History

Semester: ODD Semester

(Ist Semester) - Nov - Feb 2023

(Vth Semester) - July - Nov 2022

Month		Topics	Course	Paper Code/ Name
July	**Theory:**	Understanding Gender and Patriarchy	**BA(P) GE**	**Women in Indian History**
August		Historiography: Women's History in India Women in Ancient India: Brahmanical Patriarchy in India, Women and Property	**BA(P) GE**	**Women in Indian History**
September		Women and Work:Voices from Tamilakam Women in Medieval India: the harem and the household, Imperial Women: Razia Sultn, NurJahan, Jahanara	**BA(P) GE**	**Women in Indian History**

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October		Women and literary activities in Medieval India Women in Modern India: Social Reforms and Women, Women and Indian Nationalism	**BA(P) GE**	**Women in Indian History**
November		Women and Partition	BA(P) GE	**Women in Indian History**
November	**Theory:**	Evolution of Humans and Hunting-Gathering Cultures	BA (H) History	**Social Formations and Cultural Patterns of the Ancient World-1**
		Defining Civilizations	BA (P) History Major	**Ancient Societies**
	Tutorials:	Discussion		
December	**Theory:**	Transition to Food production	BA (H) History	**Social Formations and Cultural Patterns of the Ancient World-1**
		Bronze Age Civilizations: India/ China	BA (P) History Major	**Ancient Societies**
			BA (P) History Major	**Ancient Societies**
	Tutorials:	Discussion		
	<u>Assignment:</u>	Assignmnets on selected topic.		
January	**Theory:**	The Bronze Age	BA (H) History	**Social Formations and Cultural Patterns of the Ancient World-1**

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	Tutorials: **<u>Mid Term Test:</u>**	Bronze Age Civilizations: Mesopotamia	BA (P) History Major	**Ancient Societies**
		Discussion Class test on topics covered		
February	**Theory:**	Nomadic Cultures in Transition	BA (H) History	**Social Formations and Cultural Patterns of the Ancient World-1**
	Tutorials:	Bronze Age Civilizations: Minoan/Mycenean	BA (P) History Major	**Ancient Societies**
		Discussion		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
November2022-March 2023(1st Semester)
July-November, 2022(5th Semester)

Name of the Faculty: NUTI NAMITA

Department: HISTORY

Semester: ODD SEMESTER

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Month		Topics	Course	Paper Code/Name
NOVEMBER	**Theory:**	Ancient Delhi and adjoining Areas: Indraprastha, Hastinapur, Panipat, Tilpat, Ashokan Edicts	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Tutorials:	TUTORIALS/ QUESTION /ANSWER SESSIONS- REVISION	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Theory:	Understanding the Constitution; An Introduction: Values Behind it; its relevance; Federal Republic, Rule of Law, and Separation OF powers.	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
	Tutorials:	Group Discussion	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
JULY	**THEORY**	China and the Great Divergence. Imperialism and China during the 19th century Canton system	B.A(HONS) THIRD YEAR HISTORY. Fifth Semester	DSE HISTORY OF MODERN CHINA (1840-1949)
	Tutorials:	TUTORIALS/ QUESTION /ANSWER SESSIONS- REVISION	B.A(HONS) THIRD YEAR HISTORY. Fifth Semester	DSE HISTORY OF MODERN CHINA (1840-1949)
DECEMBER	**Theory:**	Mehrauli Iron Pillar: Lalkot; Delhi's 13th and 14th Century settlements Case study of any two: Anangpur, Dehli-ikuhna's masjid-ijami '(old Delhi/Mehrauli)	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY

	Tutorials;	TUTORIALS/ QUESTION ANSWER SESSIONS/ QUIZZES	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Theory:	Sovereignty, Socialism, Democracy, Secularism; Preamble	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
	Tutorials:	Quiz	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
AUGUST	**Theory**	Opium Wars. Treaty of Nanking: Second Opium Wars: Taiping Rebellion, Self-Strengthening Movement	B.A(HONS) THIRD YEAR HISTORY	DSE-HISTORY OF MODERN CHINA (1840-1949)
	Tutorials:	TUTORIALS/ QUESTION ANSWER SESSIONS/ QUIZZES	B.A(HONS) THIRD YEAR HISTORY	DSE-HISTORY OF MODERN CHINA (1840-1949)
JANUARY	**Theory:**	Siri, Ghiyaspur-Kilukhri, Tughluqabad, and Firuzabad !7th Century Delhi: Humayun's Tomb:	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Tutorials:	QUESTION/ ANSWER SESSIONS. REMEDIAL CLASSES FOR HINDI MEDIUM STUDENTS	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Assignment	ASSIGNMENT WAS GIVEN TO STUDENTS. TOPIC: DESCRIBE ANY TWO CITIES OF DELHI IN THE 13TH AND 14TH CENTURIES.	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Theory:	Constitutional Values; Justice, Liberty, Equality, Fraternity	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
	Tutorials:	Assigning group project and discussions about it	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties

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SEPTEMBER	**Theory**	Reform Movement of 1898: Boxer movement; Revolution of 1911 Sun-Yat-Sen and his ideology; Warlordism May Fourth Movement	B.A(HONS) THIRD YEAR HISTORY; Fifth SEMESTER	DSE-HISTORY OF MODERN CHINA (1840-1949)
	Tutorials:	QUESTION/ ANSWER SESSIONS. REMEDIAL CLASSES FOR HINDI MEDIUM STUDENTS	B.A(HONS) THIRD YEAR HISTORY; Fifth SEMESTER	DSE-HISTORY OF MODERN CHINA (1840-1949)
	Assignment:	Assignment was given to students on the causes and historiography of Opium Wars in China	B.A(HONS) THIRD YEAR HISTORY	DSE-HISTORY OF MODERN CHINA (1840-1949)
FEBRUARY	**Theory**	Shajahanabad: Qila Mubarak (Red Fort) as a site of power and the morphology of the city.	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Tutorials:	QUESTION/ ANSWER SESSIONS **VISIT TO HUMAYUN'S TOMB WAS ORGANISED BY THE TEACHER.MANY STUDENTS OF GE VISITED.**	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Theory	Reflecting on the Ancient notions of Righteousness and duty consciousness; Fundamental Duties-Article 51-A	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
	Tutorials	Group Presentations	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
	Assignment	Assignment was given: Discuss the Principals enshrined in the Preamble of the Indian Constitution.	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
OCTOBER	**Theory**	Sun-Yat-Sen and his ideology; Warlordism: May Fourth Movement: Nationalism and Communism; 1921-1927, Formation of CCP, Re-organization of the KMT, First United Front;	B.A(HONS) THIRD YEAR HISTORY, Fifth Semester	DSE-HISTORY OF MODERN CHINA (1840-1949)
	Tutorials:	QUESTION/ ANSWER SESSIONS	B.A(HONS) THIRD YEAR HISTORY, Fifth Semester	DSE-HISTORY OF MODERN CHINA (1840-1949)

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	Mid Term Test	CLASS TEST	B.A(HONS) THIRD YEAR HISTORY, Fifth Semester	DSE-HISTORY OF MODERN CHINA (1840-1949)
MARCH	**Theory:**	Unit V: 18th century Delhi: political upheaval and social empowerment – complicated understandings of 'decline'.	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Tutorials:	Revision; Quiz	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Mid-Term Test	Class test	B.A(HONS.) FIRST SEMESTER	GE-1 DELHI THROUGH THE AGES: THE MAKING OF ITS EARLY MODERN HISTORY
	Theory:	Legal Status of Fundamental Duties: A Judicial Approach	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
	Mid-Term Test	Question on the legal status of the fundamental Duties was given for the test	B.A(HONS.) FIRST SEMESTER	Value Addition Course (VAC)Constitutional Values and Fundamental Duties
NOVEMBER	**Theory:**	1928-1949- Kiangsi Soviet, Peasant Nationalism, Communist Victory	B.A(HONS) THIRD YEAR HISTORY	DSE-HISTORY OF MODERN CHINA (1840-1949)
	Tutorials:	TUTORIALS/ REVISION	B.A(HONS) THIRD YEAR HISTORY	DSE-HISTORY OF MODERN CHINA (1840-1949)

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
July - December, 2022

Name of the Faculty: Prabal Saran Aggarwal

Department: History

Semester: III,V

Month		Topics	Course	Paper Code/Name
JULY	**Theory:**	Unit 1: Sources (a) Persian Histories, Memoirs: Jahangirnama, Ma'asir-i Alamgiri (b) Travelogues: Bernier, Manucci (c) Vernacular literary cultures: Mangalkavya and Rekhta	B.A. Hons. CC XII IIIrd Year Vth Semester	History of India – VII (c.1600-1750)
	Tutorials:	Discussion on primary sources		
AUGUST	**Theory:**	Unit I. Survey of sources [a] Persian ta'rīkh traditions: Barani and Mushtaqi [b] Malfuzat and premakhyans; Persian, Sanskrit and Vernacular interactions [c] Inscriptions and regional identity: Kakatiyas [d] Architecture: the study of Hampi	B.A. Hons. CC VII IInd Year IIIrd Semester	History of India – IV (c. 1200-1500)

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		Unit 2: Political developments and state formation (a) Issues in the wars of succession (b) Mughal relations with Rajput States (Mewar and Marwar) (c) Maratha state formation under Shivaji and expansion under the Peshwas (d) Sikh Community formation in the seventeenth century	B.A. Hons. CC XII IIIrd Year Vth Semester	History of India – VII (c.1600-1750)
	Tutorials:	Discussion on essential readings for the courses		
	<u>Assignment:</u>	Assignment questions given to the students		
SEPTEMBER	**Theory:**	Unit II. Political structures [a] Sultanates of Delhi: transitions in ruling elites, service cultures, iqtas [b] Articulating political authority: monuments and rituals [c] Consolidation of identities: Rajputs and other warrior lineages [d] Political cultures: Vijayanagara and Gujarat	B.A. Hons. CC VII IInd Year IIIrd Semester	History of India – IV (c. 1200-1500)
		Unit 3: Religion, Society and the State (a) Orthodoxy and syncretism: Naqshbandi Sufis and DaraShukoh (b) Historiography on Aurangzeb: jizya, temples and music	B.A. Hons. CC XII IIIrd Year Vth Semester	History of India – VII (c.1600-1750)
	Tutorials:	Discussion on suggested readings		

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	Mid Term Test:	Internal Class Test on questions for syllabus covered till then		
OCTOBER	**Theory:**	Unit III. Society and economy [a] Ecological context; agricultural production [b] Technology and changes in society [c] Monetization; market regulations; urban centres; trade and craft	B.A. Hons. CC VII IInd Year IIIrd Semester	History of India – IV (c. 1200-1500)
		Unit 4: Political and Visual Culture (a) Mughal courtly culture: Umara, Haram, Mirzai (b) Shahjahanabad (c) Mughal Painting: allegory and symbolism under Jahangir and Shah Jahan	B.A. Hons. CC XII IIIrd Year Vth Semester	History of India – VII (c.1600-1750)
	Tutorials:	Group Discussions		
NOVEMBER	**Theory:**	Unit IV. Religion, society and cultures [a] Sufi silsilas: Chishtis and Suhrawardis; doctrines and practices; social roles [b] Bhakti; Sant tradition: Kabir and Nanak; cults: Jagannath and Warkari	B.A. Hons. CC VII IInd Year IIIrd Semester	History of India – IV (c. 1200-1500)
		Unit 5: Trade and Crafts (a) Indian Oceanic trade: European commercial enterprise-Kerala, Coromandel coast, West- ern India (b) Crafts and technologies Unit 6: Interpreting the Eighteenth Century	B.A. Hons. CC XII IIIrd Year Vth Semester	History of India – VII (c.1600-1750)
	Tutorials:	Discussions on themes taken up in the lecture classes		

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DECEMBER	**Theory:**	[c] Gender roles: women bhaktas and rulers [d] Terms of Identification: Modern Labels and Contingent Identities	B.A. Hons. CC VII IInd Year IIIrd Semester	History of India – IV (c. 1200-1500)
	Tutorials:	Revisions		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
July 2022 - November 2022
November 2022 - January 2023

Name of the Faculty: Preeti Gulati

Department: History

Semester: I, V

Month		Topics	Course	Paper Code/ Name
JULY	**Theory:**	Unit I: Understanding Popular Culture: Some Issues	B.A. Prog. SEC V IIIrd Year Vth Semester	Popular Culture
	Tutorials:	Discussion on different kinds of culture and popular culture		
AUGUST	**Theory:**	Unit II: Some Aspects of Popular Culture in India [a] Religion and everyday practice	B.A. Prog. SEC V IIIrd Year Vth Semester	Popular Culture
	Tutorials:	Group Discussions		
	Assignment:	Project Work given		
SEPTEMBER	**Theory:**	[b] Performative Traditions	B.A. Prog. SEC V IIIrd Year Vth Semester	Popular Culture
	Tutorials:	Discussion with the tutorial groups on the topics already taken up in the lectures		
OCTOBER	**Theory:**	[c] Food Cultures	B.A. Prog. SEC V IIIrd Year Vth Semester	Popular Culture
	Tutorials:	Discussion with regard to specific readings given for study		

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NOVEMBER	**Theory:**	[d] Making of a new 'Public'	B.A. Prog. SEC V IIIrd Year Vth Semester	Popular Culture
		Unit I: Introducing early Indian history: Sources (upto 750 CE) and historiographical trends	B.A. Hons. DSC-1 Ist Year Ist Semester	History of India-I (From the beginning to fourth century BCE)
		Unit I: Explaining Political Communication	B.A. Hons. SEC Ist Year Ist Semester	Political Leadership and Communication
	Tutorials:	Introducing the course and its main themes.		
DECEMBER	**Theory:**	Unit II: Prehistpric hunter-gatherers and early food producing societies 1. Paleolithic cultures: sequence and distribution; tool typology and technology, subsistence patterns	B.A. Hons. DSC-1 Ist Year Ist Semester	History of India-I (From the beginning to fourth century BCE)
		Sources and Historiography	B.A. Prog. DSC-1 Ist Year Ist Semester	History of India from earliest times up to c.300 CE
	Tutorials:	Discussion with the tutorial groups on the topics already taken up in the lectures		
	Assignment	Various assignment questions along given to the students		

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JANUARY	**Theory:**	2. Mesolithic cultures: regional distribution; tool typology and subsistence patterns. 3. Early food producing communities: Regional and chronological distribution of the Neolithic and Chalcolithic cultures; subsistence; patterns of interaction and exchange.	B.A. Hons. DSC-1 Ist Year Ist Semester	History of India-I (From the beginning to fourth century BCE)
		Unit II: Exploring Leadership Participation and Performance	B.A. Hons. SEC Ist Year Ist Semester	Political Leadership and Communication
	Tutorials:	Discussion with regard to specific readings given for study Discussion group for Hindi medium students		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
August - December 2023

Name of the Faculty: Rajbir Kaur

Department: History

Semester: III

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Month		Topics	Course	Paper Code/Name
AUGUST	**Theory:**	I. Studying Early Medieval India (a) Dynamic and divergent topographies (b) Sources: texts, inscriptions, coins	B.A. (Hons.) IInd Year	Core (CC V) History of India-III (c.750-1200)
		I. Foundation, expansion and consolidation of the Sultanates of Delhi c.13th to 15th Century: Expansion; iqta system; administrative reforms; nobility	B.A. (Prog.) IInd Year	Core (CC III) History of India, c. 1200-1700
		Introducing the course and its themes.		
	Tutorials:	Discussion group for Hindi medium students		
SEPTEMBER	**Theory:**	I. Studying Early Medieval India (c) Debates on the early medieval II. Political Structures and Processes (a) Evolution of political structures: Rajput polities; Chola State; Odisha (b) Symbols of political power: Brahmans and temples; scared spaces and conflicts; courtly cultures (c) Issue of 'Foreign and Indian' : Arabs and Ghaznavaids in the north-west, Cholas in Southeast Asia	B.A. (Hons.) IInd Year	Core (CC V) History of India-III (c.750-1200)
		III. Foundation, expansion and consolidation of the Mughal state, c. 16th to 17th century: expansion and consolidation; Rajputs; Mansabdari and Jagirdari; imperial ideology: assessing Aurangzeb VII. Economy and integrated patterns of exchange: rural and urban linkages; maritime trade and non-agrarian production	B.A. (Prog.) IInd Year	Core (CC III) History of India, c. 1200-1700

	Tutorials:	Discussion with the tutorial groups on the topics already taken up in the lectures		
		Interaction and Queries / Discussion group for Hindi medium students		
OCTOBER	**Theory:**	III. Social and economic processes (a) Agricultural expansion; forest-dwellers, peasants and landlords (b) Expansion of *varna-jati* order and brahmanization (c) Forms of exchange; inter-regional and maritime trade (d) Processes of Urbanization	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)
		II. Regional political formations: Vijayanagara IV. 17th century transitions: Marathas; Sikhs	B.A. (Prog.) IInd Year	Core (CC III) History of India, c. 1200-1700
	Tutorials:	Discussion with regard to specific readings given for study		
	<u>Assignment:</u>	Critically analyse the major issues and arguments given by historians in the recent debates about characterising early medieval India.	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)
		1. Describe the relations between the sultan and the nobility in Sultanate period. 2. Critically analyze the evolution of Iqta system during the Delhi Sultanate. 3. Describe the role played by Sufism in the history of Delhi Sultanate. 4. Outline the evolution of Qutub Complex during the sultanate period.	B.A. (Prog.) IInd Year	Core (CC III) History of India, c. 1200-1700
NOVEMBER	**Theory:**	IV. Religious, literary and visual cultures (a) Bhakti: Alvars and Nayanars (b) Puranic Hinduism; Tantra; Buddhism and Jainism (c) Sanskrit and regional languages: interactions	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)
		V. Art and architecture in medieval India: Qutub complex, Vijayanagara (Hampi);Fatepur Sikri; Mughal miniature painting	B.A. (Prog.) IInd Year	Core (CC III) History of India, c. 1200-1700
	Tutorials:	Virtual Tours of Monuments, Discussion group for Hindi medium students		

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	<u>Mid Term Test/Class Presentations</u>	Class Test/Presentations & Discussions	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)
		Class Test/Presentations & Discussions	B.A. (Prog.) IInd Year	Core (CC III) History of India, c. 1200-1700
DECEMBER	**Theory:**	IV. Religious, literary and visual cultures (d) Art and architecture: temples - regional styles	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)
		VI. Society, culture and religion: Bhakti – Kabir and Mira Bai; Sufism – Nizamuddin Auliya and Sufism in popular literature from the Deccan: *Chakki-Nama* and *Charkha-Nama*	B.A. (Prog.) IInd Year	Core (CC III) History of India, c. 1200-1700
	Tutorials:	Revision of the courses		
		Discussion on previous year's question papers		

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

AUGUST - DECEMBER 2023

Name of the Faculty: RAJNI CHANDIWAL
Department: HISTORY
Semester: ODD Semester

Month		Topics	Course	Paper Code/ Name
AUGUST	THEORY 1.	Transition From Feudalism to Capitalism – Problems and Theory	B.A (HONS.) IIndYEAR, Course Code -VI	CORE-RISE OF MODERN WEST-I
	Tutorials:	Question and Answer on the theme. Problemsolving.		
	THEORY 2.	I. Foundation, expansion and consolidation ofthe Sultanates of Delhi c.13th to 15th Century: Expansion; iqta system; administrative reforms; nobility	B.A (Prog)., IIndYEAR, Course Code-	CORE – HISTORY OF INDIA c. 1200-1700
	Tutorials:	Question and Answer with Maps and visual representation of the period.		
SEPTEMBER	THEORY 1.	Questions of Euro-Centrism Early Colonial Expansion, Factors for Colonization, Trade and Empire		
	Tutorials	Visual Representation of the theme throughMaps and Small youtube clips		
	THEORY.2	Unit II. Regional political formations: Vijayanagara		
	Tutorials:	Questions and Answers with Mapping theArea of the polity in modern Maps.		
OCTOBER	THEORY 1.	Mines and Plantation, Labour System, Indigenous Population and African Slaves,Renaissance, Its Origin and Roots in Italy, Humanism and its spread, Art		
	Tutorials:	Question and Answer/ Problem Solving, literature Discussions.		

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	THEORY.2	III. Foundation, expansion and consolidation of the Mughal state, c. 16th to 17th century: expansion and consolidation; Rajputs; Mansabdari and Jagirdari; imperial ideology: assessing Aurangzeb VII. Economy and integrated patterns of exchange: rural and urban linkages; commercial practices (usury and banking); maritime trade and non-agrarian production	
	Assignment.1 AND 2	1.Will be Given on the themes taught in theClass-Transition Debate and Eurocentrism,Early Colonization and Voyages, Slavery. 2.On Land Grant System and Iqta	
	Tutorials:	Question and Answer/Revision.	
NOVEMBER	THEORY 1.	Origins, Course and its Results of European Reformation Economic Developments of the 16 Century,Shift of the Economic Balance from Mediterranean to Atlantic, Commercial Revolution, Price Revolution	
	Tutorial	Questions and Answer, Problem solving	
	THEORY 2	IV. 17th century transitions: Marathas; Sikhs, Indo-Persian architecture, forts, palaces, mosques: Delhi, V. Art and architecture in medieval India: Qutub complex, Vijayanagara(Hampi);Fatepur Sikri; Mughal miniature painting	
	Tutorial	Questions and Answers /Discussions	
	MID-TERM EXAM	Both Classes will have questions from theunits and themes taught in the class.	
DECEMBER	THEORY 1	Emergence of European State Systems, withtwo case studies-France, Spain, Russia, England	
	Tutorials	Revision /Problem Solving /Discussions	
	THEORY 2	VI. Society, culture and religion : Bhakti – Kabir and Mira Bai; Sufism – Nizamuddin Auliya; Sufism in popular literature from theDeccan: *Chakki-Nama* and *Charkha-Nama*	
	Tutorial	Discussion/ Revision	

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SEMESTER WISE TEACHING
PLANSRI VENKATESWARA
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August 2022 -Dec 2022
Nov 2022 - Jan 2023

Name of the Faculty: Saurabh Kumar
Department: History
Semester: BA Hons. Sem III SEC- Understanding Heritage
BA Prog. Sem III SEC- Heritage andTourism
BA Prog. Sem I History of India from earliest times up to c.300 CE

Month		Topics	Course	Paper Code/Name
AUGUST	Theory:	Meaning and Objective of a Skill Enhancement Course (SEC) UNIT 1 Definition of Heritage Meaning of 'antiquity', 'archaeological site', 'tangible heritage', 'intangible heritage' and 'art treasure'	BA HONS SEC	Understanding Heritage
		Unit I: Constitution of heritage in colonial India Institutionalization and commodification of Indian art and architecture: collections, exhibitions, museums and monumentalization – case study of the Great Exhibition, London;Kew Gardens, London; Indian Museum, Kolkata; Tranquebar; guide books and travelliterature.	BA-Prog Sem 3	SEC Heritage and Tourism
	Tutorials:	Presentations and assignments		
SEPTEMBER	Theory:	Unit II: Evolution of heritage legislation and the institutional framework: a. Conventions and Acts -- national and international b. Heritage-related government departments, museums, regulatory bodies c. Conservation initiatives	BA HONS SEC	Understanding Heritage
		Unit II: Tourism: marketing heritage a. Religious Tourism: Case studies of Kashi, Sarnath, Ajmer Sharif, Amritsar, Bom Jesus Cathedral of old Goa b. Memory and tourism: Raj nostalgia, Indian diaspora's search for roots c. Ecotourism: commercialising nature d. Exhibiting culture: handicrafts, heritage walks and tours, palaces, heritage festivals	BA-Prog Sem 3	SEC Heritage and Tourism
	Tutorials:	Presentations and assignments		

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OCTOBER	Theory	Unit III: Challenges facing tangible and intangible heritage Development, antiquity smuggling, conflict (specific cases studies)	BA HONS SEC	Understanding Heritage
		Unit III: Sustainable Tourism a. Interface with local sensibilities: case studyof Agra, Simla, Goa b. Conservation of Heritage: Humayun's Tomb, Ajanta Caves	BA-Prog Sem 3	SEC Heritage and Tourism
	Tutorials:	Presentations and class test		
NOVEMBER	Theory:	Unit IV: Heritage and travel: a. Viewing heritage sites b. The relationship between cultural heritage, landscape and travel; recent trends	BA HONS SEC	Understanding Heritage
		Unit IV: Field trips/Project work-A visit to a heritage site (if possible, otherwise students would be requested to visit the site in their immediate vicinity at the place of residence)	BA-Prog Sem 3	SEC Heritage and Tourism
		Unit I: Sources for interpreting early Indian History	BA Prog Sem I	History of India from earliest times up to c.300 CE
	Tutorials:	Presentations and assignments		
DECEMBER		Unit V: A visit to a heritage site (if possible, otherwise students would be requested to visit the site in their immediate vicinity at the placeof residence)	BA HONS SEC	Understanding Heritage
		Revision and presentations	BA-Prog Sem 3	SEC Heritage and Tourism
		Unit II: Survey of Prehistoric Culture: Palaeolithic, Mesolithic, Neolithic	BA Prog Sem I	History of India from earliest times up to c.300 CE
	Tutorials:	Presentations and assignments		
JANUARY		Unit III: Harappan Civilization: early urbanism, town planning, economy, cultural patterns and decline	BA Prog Sem I	History of India from earliest times up to c.300 CE
	Tutorials:	Presentations and assignments		

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SEMESTER-WISE TEACHING PLAN
(2022-2023)
SRI VENKATESWARA COLLEGE
January – March, 2023

Name of the Faculty: Dr. Sunitaa Saikia

Department: History

Semester: I

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	IV. Vedic and Megalithic Cultures: An Overview	B.A. (Prog) 1st Year	DSC-1: History of India from Earliest Times up to c. 300 CE
	Tutorials:	Clarifying doubts on themes already taught		
FEBRUARY	**Theory:**	V. 2nd Urbanisation, Material & Social Changes, Rise of Heterodox Sects VI. Mauryan Empire: Administration, economy, Dhamma, Inscriptions VII. Tamil Literature, Polity, Economy, Society	B.A. (Prog) 1st Year	DSC-1: History of India from Earliest Times up to c. 300 CE
	Tutorials:	Further elaboration on the lecture classes		
	Mid-Term Test	Internal Class Test from the themes already covered from the syllabus		
MARCH	**Theory:**	VIII. Post-Mauryan Age: Polity, Economy, Society and Culture (Satavahanas, Kushanas)	B.A. (Prog) 1st Year	DSC-1: History of India from Earliest Times up to c. 300 CE
	Tutorials:	Discussion of Past year question papers.		

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

July-November, 2022 odd semester

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Name of the Faculty: Professor Vandana Joshi

Department: History

Semester: V History of Modern Europe BA Hons and BA Prog. Sem V Issues in world History 20th Century I

Month		Topics	Course	Paper Code/ Name
JULY	**Theory:**	1. On Leave		
	Practicals:			
	Tutorials:			
AUGUST	**Theory:**	On Leave		
	Practicals:			
	Tutorials:	Presentations and assignments		

		Presentations and assignments		
SEPTEMBER	**Theory:**	On Leave		
	Practicals:			
	Tutorials:			
	<u>Assignment</u>			

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OCTOBER	**Theory**	III. Capitalist industrialization and social and economic transformation (Late 18th century to AD 1914) [a] Process of capitalist development in industry and agriculture: case studies of Britain, France, the German States and Russia. [b] Evolution and differentiation of social classes: bourgeoisie, proletariat, landowning classes and peasantry. [c] Changing trends in demography and urban patterns [d] Family, gender and process of industrialization IV Liberal democracy, working class movements and Socialism in the 19th and 20th Centuries: [a] The struggle for parliamentary democracy and civil liberties in Britain: popular movements –chartists and suffragettes [b] The making of democratic and constitutional rights	BA HONS	Modern European History
		Unit 1 The Concept and Definition World History **Unit II: First World War** Background and causes of WWI film screening : All quiet on the Western Front (a) Consequences in Europe and the world, (b) League of Nations	BAP/DSE	Issues in 20thth century world history
	Practicals :			
	Tutorials:	Presentations and class test		
		Presentations and assignments		
	<u>Mid Term Test</u>			

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NOVEMBER	**Theory:**	[c] Forms of protest: food riots in France and England in early nineteenth century, Luddism; trends in labour movements: Britain, France and Germany [d] Early socialist thought, Marxian Socialism and the First and Second International.	BA HONS	Modern European History
		[**Unit III: 1917 Russian Revolution** (a) Formation of the USSR; (b) Debates on socialism and the role of the Communist International **Unit IV: Fascism and Nazism** Italy Germany and Second World War Japan and second World war **Unit V: Modernity, Rights and Democracy** (b) Suffrage movement (England) (c) The formation of the United Nations (d) Art and politics (Picasso)	BAP/DSE	Issues in 20thth century world history
	Practicals:			
	Tutorials:	Presentations and assignments		
		Presentations and assignments		

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SRI VENKATESWARA COLLEGE

Semester Teaching Plan (2022-2023)

Name of the Faculty: Aanchal **Department:** Mathematics

Semester: I/III/V

Month		Topics	Course	Paper Name/ Code
July	Theory	Sample space,Events, Probability Classical, Relative frequency and axiomatic approaches to probability, Theorems of total and compound probability, Conditional probability	B.A. Prog Sem-V	DSE: Statistics
	Tutorial	To discuss the doubts of students and various exercise questions and examples related to Sample space, Events, Probability Classical, Relative frequency and axiomatic approaches to probability, Theorems of total and compound probability, Conditional	B.A. Prog Sem-V	DSE: Statistics
August	Theory	Independent events, Baye's theorem, Random variables, Probability distributions, Expectation, Moments, Moment generating functions, Discrete and continuous distribution, Binomial, Poisson, Geometric, Normal and exponential distributions	B.A. Prog Sem-V	DSE: Statistics
	Tutorial	To discuss the doubts of students and various exercise questions and examples related to Independent events, Baye's theorem, Random variables, Probability distributions, Expectation, Moments, Moment generating functions, Discrete and continuous distribution, Binomial, Poisson, Geometric, Normal and exponential distributions	B.A. Prog Sem-V	DSE: Statistics
	Assignment	To be given assignment related to Syllabus.	B.A. Prog Sem-V	DSE: Statistics
	Practical	To check for limit point using epsilon, delta definition, Discuss the limit of functions when x tends to 0.	B.Sc(H) Maths Sem-III	Multivariate Calculus

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September	Theory	Bivariate distribution, Conditional distribution, marginal distribution, Covariance, correlation and regression, Weak law of large numbers,central limit theorem, Random sample, parameter and statistic, sampling distribution of	B.A. Prog Sem-V	DSE: Statistics
	Tutorial	To discuss the doubts of students and various exercise questions and examples related to Bivariate distribution, Conditional distribution, marginal distribution, Covariance, correlation and regression, Weak law of large numbers,central limit theorem, Random sample, parameter and statistic	B.A. Prog Sem-V	DSE: Statistics
	Practical	Discuss the limit of functions when x tends to infinity, Discuss the continuity of the functions, Illustrate the geometric meaning of Rolle's theorem.	B.Sc(H) Maths Sem-III	Multivariate Calculus
	Assignment	To be given assignment related to the practicals discussed so far.	B.Sc(H) Maths Sem-III	Multivariate Calculus
October	Theory	Standard error of sample mean, Mean, variance, of random sample from a normal population, Mean, variance of random sample from a finite population, Chi- square distribution, F distribution, t distribution	B.A. Prog Sem-V	DSE: Statistics
	Tutorial	To discuss the doubts of students and various exercise questions and examples related to Standard error of sample mean, Mean, variance, of random sample from a normal population, Mean, variance of random sample from a finite population, Chi-square distribution, F distribution, t	B.A. Prog Sem-V	DSE: Statistics
	Class Test	To take class tests related to covered syllabus	B.A. Prog Sem-V	DSE: Statistics
	Practical	Illustrate the geometric meaning of Lagrange's mean value theorem, Draw the surfaces and level curves, Draw the surfaces and discuss whether limit exists or not	B.Sc(H) Maths Sem-III	Multivariate Calculus
November	Theory	Test of hypothesis based on a single sample	B.A. Prog Sem-V	DSE: Statistics
	Tutorial	To discuss the doubts of students and various exercise questions and examples related to Test of hypothesis based on a single sample	B.A. Prog Sem-V	DSE: Statistics
	Practical	Draw the tangent plane of the given surfaces, Use an incremental approximation to estimate the given functions, Find critical points and identify relative maxima, minima or saddle points	B.Sc(H) Maths Sem-III	Multivariate Calculus
	Class Test	To take lab test related to the Practicals discussed so far.	B.Sc(H) Maths Sem-III	Multivariate Calculus

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	Theory	Descriptive statistics: Populations, Samples, Stem-and-leaf displays, Dot plots, Histograms, Qualitative data, Measures of location, Measures of variability, Boxplots. Sample spaces and events, Probability axioms and properties. Conditional probability	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
	Tutorial	To discuss the doubts of students and various exercise questions and examples related to Descriptive statistics: Populations, Samples, Stem-and-leaf displays, Dot plots, Histograms, Qualitative data, Measures of location, Measures of variability, Boxplots. Sample spaces and events, Probability axioms and properties. Conditional probability	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
	Practical	Presentation and analysis of data (univariate and bivariate) by frequency tables	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
December	Practical	Draw the given regions and check whether they are of Type I or Type II.	B.Sc(H) Maths Sem-III	Multivariate Calculus
	Theory	Bayes' theorem and independent events. Discrete random variables and probability distributions, Expected values; Probability distributions with their mean and variance: Binomial, geometric, hypergeometric, negative binomial, Poisson, and Poisson distribution as a limit	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
	Tutorial	To discuss the doubts of students and various exercise questions and examples related to Bayes' theorem and independent events. Discrete random variables and probability distributions, Expected values; Probability distributions with their mean and variance: Binomial, geometric, hypergeometric, negative binomial, Poisson, and Poisson distribution as a limit	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
	Practical	Descriptive statistics, stem-and-leaf plots, dot plots, histograms, boxplots, comparative boxplots, and probability plots	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
	Assignment	To be given assignment related to Syllabus.	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
January	Theory	Continuous random variables, Probability density functions, Uniform distribution, Cumulative distribution functions and expected values. Normal and standard normal distributions with their percentiles, Approximating the binomial distribution; Exponential distribution, Lognormal distribution	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics

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	Tutorial	To discuss the doubts of students and various exercise questions and examples related to Continuous random variables, Probability density functions, Uniform distribution, Cumulative distribution functions and expected values. Normal and standard normal distributions with their percentiles, Approximating the binomial distribution; Exponential distribution, Lognormal	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
	Practical	Fitting of binomial, Poisson and normal distributions, Illustration of the Central Limit Theorem.	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
	Class test	To take class tests related to covered syllabus and lab test related to the Practicals discussed so far.	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
February	Theory	Sampling distribution and standard error of the sample mean, Central Limit Theorem and applications. Scatterplot of bivariate data, Regression line using principle of least squares (statement with normal equations), Predicted values and the residuals, Error sum of squares, Coefficient of determination, The sample correlation coefficient and properties	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
	Tutorial	To discuss the doubts of students and various exercise questions and examples related to Sampling distribution and standard error of the sample mean, Central Limit Theorem and applications. Scatterplot of biavariate data, Regression line using principle of least squares (statement with normal equations), Predicted values and the residuals, Error sum of squares, Coefficient of determination, The sample	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics
	Practical	Fitting of regression line using the principle of least squares Computation of sample correlation coefficient	B.Sc(H) Maths Sem-I A	DSC-3: Probability and Statistics

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SEMESTER WISE

TEACHING PLAN

SRI VENKATESWARA COLLEGE

Odd Semester Teaching Plan (Aug- December 2022)

Name of the Faculty: Amit Kumar **Department: Mathematics**

Semester: III

Month		Topics	Course	Paper Code/Name
AUGUEST	**Theory**	Introduction of group theory, symmetries of a square, Dihedral groups, definition and examples of groups. Examples of groups including permutation groups and quaternion groups (illustration through matrices), elementary properties of groups.	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to examples of groups including permutation groups and quaternion groups (illustration through matrices), elementary properties of groups.	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I
	Theory	Introduction of Differential equation, Ordinary and partial differential equations, First order exact differential equations, Integrating factors and rules to find integrating factors, Examples and Exercise Questions	GE-III	Differential Equaton
September	**Theory**	Subgroups and examples of subgroups, centralizer, normalizer, center of a group, product of two subgroups. Properties of cyclic groups, classification of subgroups of cyclic groups.	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I

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	Tutorials	To discuss the doubt of students and various exercise questions and examples related to Subgroups and examples of subgroups, centralizer, normalizer, center of a group, product of two subgroups. Properties of cyclic groups, classification of subgroups of cyclic groups.	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I
	Theory	Linear equations and Bernoulli equations, Orthogonal trajectories and oblique trajectories, Basic theory of higher order linear differential equations, Wronskian and its properties; Solving differential equation by reducing its order. Related examples and exercise questions questions	GE-III	Differential Equation
	Assignments	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-III A/GE-III	Group Theory-I /Differential Equation
	Practicals	1. Solution of first order differential equation. 2. Plotting of second order solution family of differential equation. 3. Plotting of third order solution family of differential equation.		GE-III
OCTOBER	**Theory**	Cycle notation for permutations, properties of permutations, even and odd permutations, alternating group, properties of cosets, Lagrange's theorem and consequences including Fermat's Little theorem.	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I
	Tutorials	To discuss the doubt of students and various exercise questions and examples related properties of permutations, even and odd permutations, alternating group, properties of cosets, Lagrange's theorem and consequences including Fermat's Little theorem.	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I
	Theory	Linear homogenous equations with constant coefficients, Linear non–homogenous equations, Method of undetermined coefficients.	GE-III	Differential Equation

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	Practicals	4. Solution of differential equation by variation of parameter method 5. Solution of system of ordinary differential equations. 6. Solution of Cauchy problem for first order partial differential equations	GE-III	Differential Equations

NOVEMBER	**Theory**	External direct product of a finite number of groups, normal subgroups, factor groups, Cauchy's theorem for finite abelian groups and group Homomorphisms.	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I
	Tutorials	To discuss the doubt of students and various exercise questions and examples related External direct product of a finite number of groups, normal subgroups, factor groups, Cauchy's theorem for finite abelian groups and Group Homomorphisms.	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I
	Theory	Method of variation of parameters, Cauchy–Euler equations.	GE-III	Differential Equation
	Practicals	7. Plotting the characteristics of the first order partial differential equations. 8. Plot the integral surfaces of first order partial differential equations with initial data.	GE-III	Differential Equations
DECEMBER	**Theory**	Cayley's theorem, properties of isomorphism, First, Second and Third isomorphism theorems and revise whole syllabus, to discuss previous year questions	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I

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	Tutorials	To discuss the doubt of students and various exercise questions and examples related to Properties of homomorphisms, Cayley's theorem, properties of isomorphisms, First, Second and Third isomorphism theorems.	B.Sc(H) Maths Sem-III A	BMath306 Group Theory-I
	Theory	Simultaneous differential equations and revise whole syllabus, to discuss last previous year questions papers.	GE-III	Differential Equation
	Practicals	Revision of Practicals	GE-III	Differential Equations

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SRI VENKATESWARA COLLEGE

Semester Teaching Plan (2022-23)

Name of the Faculty: Mr. Anirban Chatterjee

Department: Mathematics

Semester: I/V

Month		Topics	Course	Paper Code/Name
July	Theory	Transportation problem and its mathematical formulation	BA Prog Sem- V	SEC-3/Transportation & Network flow
	Practical	Transportation problem formulation		
August	Theory	Transportation problem and its mathematical formulation, northwest-corner method, least cost method, Vogel approximation method for determination of starting basic feasible solution. Algorithm for solving transportation problem.	BA Prog Sem- V	SEC-3/Transportation & Network flow
	Practical	Finding initial basic feasible solution by using north-west corner method, and least cost method, and vogel's approximation method.	BA Prog Sem- V	SEC-3/Transportation & Network flow
September	Theory	Assignment problem and its mathematical formulation, Hungarian method for solving assignment problem, traveling salesperson problem	BA Prog Sem- V	SEC-3/Transportation & Network flow
	Practical	Assignment problem, traveling salesperson problem.	BA Prog Sem- V	SEC-3/Transportation & Network flow
October	Theory	Network models, minimum spanning tree algorithm, shortest-route problem, maximum flow model.	BA Prog Sem- V	SEC-3/Transportation & Network flow
	Practical	Shortest-route problem, Minimum spanning tree algorithm, Maximum flow model.	BA Prog Sem- V	SEC-3/Transportation & Network flow
November	Theory	CPM and PERT calculations of exercises from the chapters 5 and 6 of [2] of Taha. Shipping Wood to Market, and Case 9.3: Project Pickings.	BA Prog Sem- V	SEC-3/Transportation & Network flow
	Theory	Descriptive statistics: Populations, Samples, Stem-and-leaf displays, Dot plots, Histograms, Qualitative data, Measures of location, Measures of variability, Boxplots. Sample spaces and events, Probability axioms and properties, Conditional probability.	B.Sc(H) Maths Sem-I B	DSC-3: Probability and Statistics
	Practical	CPM, PERT and construction of time schedule.	BA Prog Sem- V	SEC-3/Transportation & Network flow
	Practical	Presentation and analysis of data (univariate and bivariate) by frequency tables.	B.Sc(H) Maths Sem-I B	DSC-3: Probability and Statistics

December	Theory	Bayes' theorem and independent events. Discrete random variables and probability distributions, Expected values; Probability distributions with their mean and variance: Binomial, geometric, hypergeometric, negative binomial, Poisson, and Poisson distribution as a limit.	B.Sc(H) Maths Sem-I B	DSC-3: Probability and Statistics
	Practical	descriptive statistics, stem-and-leaf plots, dot plots, histograms, boxplots, comparative boxplots, and probability plots	B.Sc(H) Maths Sem-I B	DSC-3: Probability and Statistics
January	Theory	Continuous random variables, Probability density functions, Uniform distribution, Cumulative distribution functions and expected values. Normal and standard normal distributions with their percentiles, Approximating the binomial distribution; Exponential distribution, Lognormal distribution.	B.Sc(H) Maths Sem-I B	DSC-3: Probability and Statistics
	Practical	Fitting of binomial, Poisson and normal distributions. Illustration of the Central Limit Theorem.	B.Sc(H) Maths Sem-I B	DSC-3: Probability and Statistics
February	Theory	Sampling distribution and standard error of the sample mean, Central Limit Theorem and applications. Scatterplot of bivariate data, Regression line using principle of least squares (statement with normal equations), Predicted values and the residuals, Error sum of squares, Coefficient of determination, The sample correlation coefficient and properties.	B.Sc(H) Maths Sem-I B	DSC-3: Probability and Statistics
	Practical	Fitting of regression line using the principle of least squares. Computation of sample correlation coefficient.	B.Sc(H) Maths Sem-I B	DSC-3: Probability and Statistics

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2022-23 (Odd Semester)

Name of the Faculty: Dr Deepti Jain

Department: Mathematics

Semester: I/III/V

Month		Topic	Course	Paper/Code Name
July	**Theory**	Definition and examples of ordered sets, Chains and antichains, Order-isomorphism, The Covering Relation, Hasse Diagram	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Tutorial	Exercises and doubts based on Hasse diagram and order-isomorphism	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
August	**Theory**	The dual of an ordered set and the Duality Principle, Top and Bottom, Maximal and minimal elements.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Tutorial	Verification of order-preserving, order- Embedding and order-isomorphisms.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Theory	Introduction to TeX and LaTeX, Typesetting a simple document, Adding basic information to a document, Environments, Footnotes, Sectioning and displayed material.	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML
	Practical	Introduction to Latex: 1. What is Tex and Latex? 2. To create Latex file. 3. To add title, author and date Mathematical Typesetting.	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML

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September	**Theory**	Sums of ordered sets, Product of ordered sets, Order-preserving maps, Order-embedding map and order-isomorphism maps, Lattices as ordered sets, Lattices as Algebraic structures, The Connecting Lemma, Sublattices, Product of lattices, Lattice homomorphism, Complete Lattices, Distributive and Modular lattices, The M3- N5 Theorem.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Tutorial	Exercises based on join and meet in an ordered set, Examples of lattices and complete lattices, relationship between order-isomorphism and lattice-isomorphism, Construction of ordered sets and lattices satisfying given conditions.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Theory	Accents and symbols, Mathematical typesetting (elementary and advanced): Subscript/ Superscript, Fractions, Roots, Ellipsis, Mathematical Symbols, Arrays, Delimiters, Multiline formulas, Spacing and changing style in math mode.	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML
	Practical	5. Delimiters 6. Arrays 7. Multi-line Expressions	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML
October	**Theory**	Boolean Algebras, Boolean Polynomials, minimal forms of Boolean polynomials, Quinn-McCluskey method, Karnaugh diagrams, Switching Circuits and applications of switching circuits.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Tutorial	Exercises and doubts based on Boolean polynomials and switching circuits.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Assignment	Question from the topics including ordered sets, Lattices and Boolean Algebras.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Mid-Term Test	Test based on the topics covered.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Theory	Graphics in LaTeX, Simple pictures using PSTricks, Plotting of functions, Beamer presentation.	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML
	Assignment	Questions from the topics: Mathematical typesetting, PSTricks, Plotting of functions	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML

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	Practical	8. How to use Graphics. Assignments based on inserting graphics.	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML
November	**Theory**	Definition, examples and basic properties of graphs, pseudographs, Complete graphs, Bipartite graphs, Isomorphism of graphs, Paths and circuits, Eulerian circuits, Hamiltonian cycles, The adjacency matrix, Weighted graph, Travelling salesman problem, Shortest path, Dijkstra's algorithm	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Tutorial	Exercises based on isomorphism of graphs, paths and circuits and adjacency matrix, algorithms of various shortest path problem.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Theory	HTML basics, Creating simple web pages, Images and links, Design of web pages.	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML
	Practical	Using PSTRICKS 1. Simple pictures 2. Plotting Functions 3. Plotting pictures with nodes **Practical test based on the topics covered.**	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML
	Mid-Term Test	Theory test based on the topics covered.	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML
December	**Theory**	Beamer Presentation and HTML	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML
	Practical	Beamer Presentation Webpage designing using HTML	B.Sc. (H) Mathematics III Semester	SEC: LaTeX and HTML

Signature of the teacher

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Department of Mathematics
Sri Venkateswara College
Odd Semester Teaching Plan (July-December 2022)

Dr. Garima V. Arora

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Month		Topics	Course	Paper Code/ Name
JULY	**Theory**	Automorphism, Inner automorphism, automorphism groups	B.Sc(H) Maths Sem-V A	BMATH512-Group Theory-II
AUGUST	**Theory**	Functions of several variables, limit and continuity of functions of two variables,	B.Sc(H) Maths Sem-III B	BMATH307-Multivariate Calculus
	Theory	Automorphism groups, automorphism groups of finite and infinite cyclic groups, application of factor groups	B.Sc(H) Maths Sem-V A	BMATH512-Group Theory-II
	Tutorial	Discuss questions of the theory done in the class	B.Sc(H) Maths Sem-V A	BMATH512-Group Theory-II
SEPTEMBER	**Theory**	Partial differentiation, total differentiation, sufficient condition for differentiability, Chain rule for one and two independent parameters, directional derivatives, the gradient, maximal and normal property of the gradient, tangent planes, Extrema of functions of	B.Sc(H) Maths Sem-III B	BMATH307-Multivariate Calculus
	Practical	Practical 7- To draw surfaces and level curves. Practical 8-To draw surfaces and discuss whether limit exits or not as approaches to the given points. Find the limit, if it exists Practical 9-To Draw the tangent planes Practical 10- Use incremental approximations to estimate functions.	B.Sc(H) Maths Sem-III (Batch B)	BMATH307-Multivariate Calculus
	Practical	To demonstrate programs done during theory class	B.Sc(H) Maths Sem-III (Batch B)	SEC-1 (Latex & HTML)

	Theory	characteristic subgroups, commutator subgroups, Properties of EDP,	B.Sc(H) Maths Sem-V A	BMATH512-Group Theory-II
	Tutorial	Discuss questions of the theory done in the class	B.Sc(H) Maths Sem-V A	BMATH512-Group Theory-II
OCTOBER	**Theory**	Method of Lagrange multipliers, constrained optimization problems, Double integration over rectangular region, Double integration over nonrectangular region, Double integrals in polar co-ordinates, Triple integrals, Triple integral over a parallelopiped and solid regions,	B.Sc(H) Maths Sem-III B	BMATH307-Multivariate Calculus
	Practical:	Practical 11-To find critical points and identify relative maxima, relative minima or saddle points to surfaces, if it exists. Practical 12- To draw and check type-I and type-II regions Practical 2- discussing the limit of the functions Practical 3- discussing the limit Practical 4- discuss the continuity of the functions	B.Sc(H) Maths Sem-III (Batch B)	BMATH307-Multivariate Calculus
	Practical	To demonstrate programs done during theory class	B.Sc(H) Maths Sem-III	SEC-1 (Latex & HTML)
	Theory	Properties of IDP.	B.Sc(H) Maths Sem-V A	BMATH512-Group Theory-II
	Tutorial	Discuss questions of the theory done in the class	B.Sc(H) Maths Sem-V A	BMATH512-Group Theory-II
NOVEMBER	**Theory**	Volume by triple integrals, cylindrical and spherical co-ordinates, Change of variables in double integrals and triple integrals , Definition of vector field, divergence and curl,Line integrals, Applications of line integrals: Mass and work. Fundamental theorem for line integrals, conservative vector fields, independence of path. Green's theorem, Surface integrals	B.Sc(H) Maths Sem-III B	BMATH307-Multivariate Calculus

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	Practical	Practical 5- Rolles theorem Practical 6 – Lagranges theorem Practical 1- using epsilon-delta definition	B.Sc(H) Maths Sem-III (Batch B)	BMATH307- Multivariate Calculus
	Practical	To demonstrate programs done during theory class	B.Sc(H) Maths Sem-III	SEC-1 (Latex & HTML)
	Theory	Fundamental Theorem of finite abelian groups.	B.Sc(H) Maths Sem-V A	BMATH512- Group Theory-II
	Tutorial	Discuss questions of the theory done in the class	B.Sc(H) Maths Sem-V A	BMATH512- Group Theory-II
DECEMBER	**Theory**	Integrals over parametrically defined surfaces, Stokes' theorem, The Divergence theorem.	B.Sc(H) Maths Sem-III B	BMATH307- Multivariate Calculus

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE
2022-23 Odd Semester

Name of the Faculty: **Dr. Mainak Mukherjee** **Department: Mathematics**
Semester: V

Month		Topics	Course	Paper Code/Name
July	**Theory:**	Metric spaces: definition and examples. Sequences in metric spaces.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related Metric spaces: definition and examples. Sequences in metric spaces.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Practical:	Demonstrating how to set up C++ programming environment for Windows/linux/Mac-OS. Demonstration of simple programs for printing messages like "Hello World"	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
August	**Theory:**	Cauchy sequences, Complete Metric Spaces, Open and closed balls, neighbourhood, open set, interior of a set, Limit point of aset, closed set, diameter of a set, Cantor's Theorem.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Practical	NA		
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Metric spaces, Cauchy sequences, Complete MetricSpaces, Open and closed balls, neighbourhood, open set, interior of a set, Limit point of a set, closed set,diameter of a set, Cantor's Theorem.		
	Practical	Program for finding sum of an arithmetic progression. Program for computing sin(x) using series expansion by using loops. Finding/demonstrating: (i) Machine epsilon. (ii) Integer and float overflow/underflow. Problems to learn use of iteration and selected based logic.	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics

September	**Theory:**	Subspaces, dense sets, separablespaces, Continuous mappings, sequential criterion and other characterizations of continuity, Uniform continuity.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Practical:	NA		
	Tutorials:	To discuss the doubt of students andvarious exercise questions and examples related to Subspaces, dense sets, separable spaces, Continuous mappings, sequential criterion and other characterizations of continuity, Uniform continuity.		
	Assignments	To be given assignment related tosyllabus.		
	Practical:	Programs based on finding Greatest common divisor. Programs based on random number generation. Program based on factorization of an integer, and Euler's totient. Programs to demonstrate basic set algebra, Modulo arithmetic, . Permutation, Polynomials by using OOP concepts.	B.Sc.(H) Maths Sem-V	C++ Programming for Mathematics
OCTOBER	**Theory:**	Homeomorphism, Contractionmappings, Banach Fixed point Theorem. Connectedness, connected subsets of **R,** connectedness and continuousmappings. Compactness.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Tutorials:	To discuss the doubt of students andvarious exercise questions and examples related to Homeomorphism, Contraction mappings, Banach Fixed point Theorem. Connectedness, connected subsets of **R,** connectedness and continuous mappings. Compactness.		
	Test	To take internal Test.		

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	Practical:	Programs based on Cartesian geometry using points (2 & 3-dimensional). Programs based on Pythagorean triples. Arbitrary precision arithmetic using the GMP package.	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
	Test	To take internal Lab Test.		
NOVEMBER	**Theory:**	Compactness and boundedness, continuous functions on compact spaces and to revise whole syllabus, to discusslast previous year questions papers.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Practical:	NA		
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to compactness and boundedness, continuous functions on compact Spaces and to revise whole syllabus, to discusslast previous year questions papers.		
	Practical:	Programs based on basic set algebra. Programs based on modulo arithmetic. Programs for finding eigenvalues, eigenvectors, rank, nullity, and solving system of linear equations in matrices. Making plots (using the GNU plotutils package).	B.Sc.(H) Maths Sem-V DSE-1	**C++ Programming for Mathematics**

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Semester wise Teaching Plan

SRI VENKATESWARA COLLEGE

2022-23 Odd Sem

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Name of Faculty: Mr. Naman Sharma Department : Mathematics

Semester : 3 (Theory)

Month	Topics	Course	Paper Name/Code
September	**Unit 1: Linear Programming Problem, Simplex Method and Duality** Graphical method of solution, Basic feasible solutions, Linear programming and convexity; Introduction to the simplex method: Theory of the simplex method, Optimality and unboundedness; Simplex tableau and examples, Artificial variables; Introduction to duality, Formulation of the dual problem with examples and interpretations, Duality theorem. Initial 5-10 mins Doubt session and Recap in every class.	GE-3 for Hons Courses Sem3	Linear Programming and Game Theory (32355345)
	Unit 2 : 3-Dimensional Geometry and Vectors Rectangular coordinates in 3-dimensional space, Spheres, Cylindrical surfaces, Cones, Vectors viewed geometrically, Vectors in coordinate systems, Vectors determined by length and angle, Dot product, Cross product and their geometrical properties, Parametric equations of lines in plane, Initial 5-10 mins Doubt session and Recap in every class	BA (P) Eco+ Maths Sem3	Analytic Geometry and Applied Algebra (62354343) Sem3
October	Unit 1 (contd) : Introduction to duality, Formulation of the dual problem with examples and interpretations, Duality theorem. A Short Doubt session every week.	GE-3 for Hons Courses Sem3	Linear Programming and Game Theory (32355345)

	Revision of Unit 1 & PYQs. **Unit 2: Transportation and Assignment Problems** Definition and mathematical formulation of transportation problems, Methods of finding initial basic feasible solutions, North West corner rule, Least-cost method, Vogel's approximation method, Algorithm for solving transportation problems;		
	Unit 2 (contd): Planes in 3-dimensional space, Dot product, Cross product and their geometrical properties, Parametric equations of lines in plane, Planes in 3-dimensional space. Initial 5-10 mins Doubt session and Recap in every class. A Short Doubt session every week. Multiple Revisions with PYQs.	BA (P) Eco+ Maths Sem3	Analytic Geometry and Applied Algebra (62354343) Sem3
November	Unit 2 (contd): Mathematical formulation and Hungarian method of solving assignment problems. Revision of Unit 1 and 2 (especially) & PYQs. Mid semester **Internal Exam.** **Unit 3: Two-Person, Zero-Sum Games** Introduction to game theory, Formulation of two-person zero-sum rectangular game, Solution of rectangular games with saddle points, Mixed strategies, Dominance principle, Rectangular games without saddle points, Graphical and linear programming solution of rectangular games. A short doubts session every week. **Assignment** given to practice and evaluate Progress.	GE-3 for Hons Courses Sem3	Linear Programming and Game Theory (32355345)

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	Recap/Revision of previous unit. **Unit 3 : Applied Algebra** Latin squares, Table for a finite group as a Latin square, Latin squares as in design of experiments, Mathematical models for matching jobs. Revision & PYQs. Mid semester **Internal Exam.** A short doubts session every week. **Assignment** given to practice and evaluate Progress.	BA (P) Eco+ Maths Sem3	Analytic Geometry and Applied Algebra (62354343) Sem3
December	Unit 3 (contd): Rectangular games without saddle points, Graphical and linear programming solution of rectangular games (& Conversion of Game into LPP) Revision of Units 1,2 & especially 3. Questions for Practice, PYQs covering whole syllabus.	GE-3 for Hons Courses Sem3	Linear Programming and Game Theory (32355345)
	Unit 3 (contd): (Basic Fundamentals of Graph Theory introduced) Spelling checker, Network reliability, Street surveillance, Scheduling meetings, Interval graph modelling and influence model, Pitcher pouring puzzle. Revision of both units (all concepts) with Questions for Practice, PYQs covering whole syllabus.	BA (P) Eco+ Maths Sem3	Analytic Geometry and Applied Algebra (62354343) Sem3

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Department of Mathematics
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Odd Semester Teaching Plan 2022-23

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Name of the Faculty: Dr. Neelesh Kumar

Department: Mathematics

Semester: Odd

Month		Topics	Course	Paper Code/Name
JULY	Theory	Fundamentals of programming, Organization of logic flow in stored program model of computation, C++ as a general purpose programming language, Structure of a C++ program, Common compilers and IDE's	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
	Practicals	Printing texts and some fundamental data types to the screen. basic structure of program main file.	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
AUGUST	Theory	Basic data-types, Variables and literals in C++, Operators, Expressions, Evaluation precedence, and Type compatibility. Outline of program development in C++, Debugging and testing; Applications: Greatest common divisor, and Random number generation.	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
	Practicals	A program to illustrate integer overflow, A program to show the sizes of the fundamental data types, A program to show the maximum and minimum values of various data types. A program to explore C++'s mod operation, Sum of AP series, Sum of first n numbers using for loop, while, do while, user defined function, user defined header file.	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
SEPTEMBER	Theory	Structured data-types in C++, Arrays and manipulating data in arrays with applications in factorization of an integer and finding Euler's totient; Objects and classes: Information hiding, Modularity, Constructors and Destructors, Methods and Polymorphism; Applications: Cartesian geometry using points, and Pythagorean triples.	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
	Practicals	GCD Program of trial division algorithm, recursive procedure using Euclid method, Iterative procedure using Euclid method Function call by value, call by reference, procedure to find x,y and gcd simultaneously. programs of random numbers and programs of	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics

		euler totient. Point Class and Ptriple class. Ptriple class using sets.		
	Assignment	Problems covering all topics done	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
OCTOBER	Theory	Containers and Template Libraries: Sets, Iterators, Multisets, Vectors, Maps, Lists, Stacks and Queues; Applications: Basic set algebra, Modulo arithmetic, Permutations	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
	Practicals	Two programs of application to find Probability, Function call by value, call by reference, procedure to find x,y and gcd simultaneously.	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
	Mid Term Test	Problems from all the topics covered till date	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
NOVEMBER	Theory1	Features of C++ for input/output and visualization: strings, streams, formatting method; Processing files in a batch, Command-line arguments.	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
	Practical	Programs based on modulo arithmetic class and permutation class.	B.Sc.(H) Maths Sem-V DSE-1	C++ Programming for Mathematics
	Theory2	Limits and continuity, Types of discontinuities;	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Theory3	Vedic Maths: History of Vedic Maths and its Features	Value Addition Course (VAC), Sem-1	Vedic Mathematics-1
	Practical	Students will visit nearby retail shops/local vendors to purchase stationery/vegetables/bread and butter and use tricks of Vedic maths of addition and subtraction to calculate the amount to pay and receive the difference.	Value Addition Course (VAC), Sem-1	Vedic Mathematics-1
DECEMBER	Theory1	Differentiability of functions; Successive differentiation: Calculation of the nth derivatives, Leibnitz theorem; Partial differentiation, Euler's theorem on homogeneous functions.	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Theory2	Vedic Maths formulae: Sutras and Upsutras, Addition in Vedic Maths: Without carrying, Dot Method Subtraction in Vedic Maths: Nikhilam Navatashcaramam Dashatah (All from 9 last from 10); Fraction -Addition and Subtraction Multiplication in Vedic Maths: Base Method (any two numbers up to three digits)	Value Addition Course (VAC), Sem-1	Vedic Mathematics-1
	Practical	Students will share their experience with the class teacher in the form of audio-video presentations of 15 minutes after visiting nearby retail shops and applying the trick of sutra Nikhilam Navatashcaramam Dashatah.	Value Addition Course (VAC), Sem-1	Vedic Mathematics-1

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JANUARY	Theory1	Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities; Expansion of functions: Taylor's theorem, Taylor's series, Maclaurin's series expansion of e^x, sin x , cos x , log(1 + x) and $(1+x)^m$; Indeterminate forms.	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Theory2	Multiplication by Urdhva Tiryak Sutra, Miracle multiplication: Any three-digit number by series of 1's and 9's; Division by Urdhva Tiryak Sutra; Squares of any two-digit numbers: Base method Square of numbers ending in 5: Ekadhikena Purvena Sutra, Easy square roots: Dwandwa Yoga (duplex) Sutra, Cubing: Yavadunam Sutra, Square root of 2: Baudhayana Shulbasutra	Value Addition Course (VAC), Sem-1	Vedic Mathematics-1
	Practical	Students will share their experiences in the form of a Project Report after visiting nearby retail shops and applying the tricks of sutras Urdhva Tiryak, Ekadhikena Purvena, Yavadunam.	Value Addition Course (VAC), Sem-1	Vedic Mathematics-1
FEBRUARY	Theory1	Concavity and inflexion points, Asymptotes (parallel to axes and oblique), Relative extrema, Tracing graphs of polynomial functions, rational functions, and polar equations.	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Theory2	Factoring Quadratic equation: Anurupyena, Adyamadyenantyamantya Sutra, Concept of Baudhayana (Pythagoras) Theorem, Circling a square: Baudhayana Shulbasutra, Concept of pi: Baudhayana Shulbasutra, Concept angle: Baudhayana number.	Value Addition Course (VAC), Sem-1	Vedic Mathematics-1
	Practical	Other forms of practice which will be given by the teacher to students such as group discussion and other.	Value Addition Course (VAC), Sem-1	Vedic Mathematics-1

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Department of Mathematics
Sri Venkateswara College
Odd Semester Teaching Plan (July -November 2022)

Faculty: Dr. Nisha Bohra

Month		Topics	Course	Paper Name and code
November	Theory	General properties of polynomials and equations, Fundamental theorem of algebra, Relations between the roots and the coefficients, Upper bounds for the real roots	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra
	Tutorial	To discuss the doubt of the students and exercise problems based on the topic covered in the class.	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra
	Practical	1) Presentation and analysis of data (univariate and bivariate) by frequeny tables, descriptive statistics, stem-and-leaf plots, dotplots, histograms, boxplots, comparative boxplots, and probability plots	B.Sc. (H) Mathematics I A and I B	DSC-3- Probability and Statistics
December	Theory	Theorems on imaginary, integral and rational roots; Newton's method for integral roots, Descartes' rule of signs; De-Moivre's theorem for integer and rational indices and their applications. The nth roots of unity, Cardan's solution of the cubic, Descartes' solution of the quartic equation	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra
	Tutorial Theory	To discuss the doubt of the students and exercise problems based on the topic covered in the class.	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra

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	Practical	2) Fitting of binomial, Poission and normal distributions. 3) Illustrating the Central Limit Theorem through Excel.	B.Sc. (H) Mathematics I A and I B	DSC-3- Probability and Statistics
JANUARY	Theory	Division algorithm in $\mathbb{Z}$, Divisibility and the Euclidean algorithm, Fundamental theorem of arithmetic, Modular arithmetic and basic properties of congruences.	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra
	Tutorial	To discuss the doubt of the students and exercise problems based on the topic covered in the class.	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra
	Practical	4) Fitting of regression line using the principle of least squares.	B.Sc. (H) Mathematics I A and I B	DSC-3- Probability and Statistics
	Internal Test	Internal Exam conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra
	Assignment	Assignment given on the topics covered in the class before mid-semester break	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra
FEBRUARY	Theory	Groups, Basic properties, Symmetries of a square, Dihedral group, Order of a group, Order of an element, Subgroups, Center of a group, Centralizer of an element, Cyclic groups and properties, Generators of a cyclic group, Classification of subgroups of cyclic groups.	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra

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	Tutorial	To discuss the doubt of the students and exercise problems based on the topic covered in the class.	B.Sc. (H) Mathematics I A and I B	DSC 1- Algebra
	Practical	5) Computation of sample correlation coefficient.	B.Sc. (H) Mathematics I A and I B	DSC-3- Probability and Statistics

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SRI VENKATESWARA COLLEGE

Odd Semester Teaching Plan (2022-2023)

Name of the Faculty: Pratibha Gaur **Department:** Mathematics

Month		Topics	Course	Paper Name/Code
August	Practical	Chapter 9 (Exercises 4 to 10)	B.Sc. (H) Maths Sem-III	SEC-1 LAB (LaTeX and HTML)
	Practical	To check for limit point using epsilon, delta definition, Discuss the limit of functions when x tends to 0.	B.Sc(H) Maths Sem-III	Multivariate Calculus
September	Practical	Chapter 10 (Exercises 1 to 4 and 6 to 9)	B.Sc. (H) Maths Sem-III	SEC-1 LAB (LaTeX and HTML)
	Practical	Discuss the limit of functions when x tends to infinity, Discuss the continuity of the functions, Illustrate the geometric meaning of Rolle's theorem.	B.Sc(H) Maths Sem-III	Multivariate Calculus
	Assignment	To be given assignment related to the practicals discussed so far.	B.Sc(H) Maths Sem-III	Multivariate Calculus
October	Practical	Chapter 11 (Exercises 1, 3, 4, and 5),	B.Sc. (H) Maths Sem-III	SEC-1 LAB (LaTeX and HTML)
	Practical	Illustrate the geometric meaning of Lagrange's mean value theorem, Draw the surfaces and level curves, Draw the surfaces and discuss whether limit exists or not.	B.Sc(H) Maths Sem-III	Multivariate Calculus
	Assignment	To be given assignment related to the practicals discussed so far.	B.Sc(H) Maths Sem-III	Multivariate Calculus & SEC-1 LAB (LaTeX and HTML)
November	Practical	Chapter 15 (Exercises 5, 6 , 8,9)	B.Sc. (H) Maths	SEC-1 LAB

			Sem-III	(LaTeX and HTML)
	Practical	Draw the tangent plane of the given surfaces, Use an incremental approximation to estimate the given functions, Find critical points and identify relative maxima, minima or saddle points.	B.Sc(H) Maths Sem-III	Multivariate Calculus
	Class Test	To take lab test related to the Practicals discussed so far.	B.Sc(H) Maths Sem-III	Multivariate Calculus & SEC-1 LAB (LaTeX and HTML)
	Theory	Limits and continuity, Types of discontinuities;	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Tutorial	Discuss questions of the theory done in the class	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Theory	Limit of a function, $\varepsilon\ \delta -$ definition of a limit, Infinite limits, Continuity and types of discontinuities; Differentiability of a function,	BA (P), Sem-1	Topics in Calculus
	Tutorial	Discuss questions of the theory done in the class	BA (P), Sem-1	Topics in Calculus
December	Practical	Chapter 15 (Exercises 10 and 11)	B.Sc. (H) Maths Sem-III	SEC-1 LAB (LaTeX and HTML)
	Practical	Draw the given regions and check whether they are of Type I or Type II.	B.Sc(H) Maths Sem-III	Multivariate Calculus
	Assignment	To be given assignment related to Syllabus.	B.Sc(H) Maths Sem-III	Multivariate Calculus & SEC-1 LAB (LaTeX and HTML)
	Theory	Differentiability of functions; Successive differentiation: Calculation of the nth derivatives, Leibnitz theorem; Partial differentiation, Euler's theorem on homogeneous functions.	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Tutorial	Discuss questions of the theory done in the class	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Theory	Successive differentiation: Calculation of the nth derivatives, Leibnitz theorem; Partial	BA (P), Sem-1	Topics in Calculus

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		differentiation, Euler's theorem on homogeneous functions. Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities;		
	Tutorial	Discuss questions of the theory done in the class	BA (P), Sem-1	Topics in Calculus
January	Theory	Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities; Expansion of functions: Taylor's theorem, Taylor's series, Maclaurin's series expansion of e^x, sin x , cos x , log(1 + x) and $(1 + x)^m$; Indeterminate forms.	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Tutorial	Discuss questions of the theory done in the class	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Theory	Taylor's theorem, Taylor's series, Maclaurin's series expansions of exp(x), sin x, cos x, log (1+x) and (1+x) ^ m, Indeterminate forms. Asymptotes (parallel to axes and oblique), Concavity and inflexion points, Singular points, Tangents at the origin and nature of singular points,	BA (P), Sem-1	Topics in Calculus
	Class Test	To take class test related to the topics covered in the class.	BA (P), sem 1, GE-1: Mathematics, Sem-1	Topics in Calculus & Fundamentals of Calculus
	Tutorial	Discuss questions of the theory done in the class	BA (P), Sem-1	Topics in Calculus
February	Theory	Concavity and inflexion points, Asymptotes (parallel to axes and oblique), Relative extrema, Tracing graphs of polynomial functions, rational functions, and polar equations.	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Tutorial	Discuss questions of the theory done in the class	GE-1: Mathematics, Sem-1	Fundamentals of Calculus
	Theory	Asymptotes (parallel to axes and oblique), Concavity and inflexion points, Singular points, Tangents at the origin and nature of singular points, Curve tracing (cartesian and polar equations). Reduction formulae and their applications.	BA (P), Sem-1	Topics in Calculus

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	Assignment	To take Assignment related to the topics covered in the class.	BA (P), sem 1, GE-1: Mathematics, Sem-1	Topics in Calculus & Fundamentals of Calculus
	Tutorial	Discuss questions of the theory done in the class	BA (P), Sem-1	Topics in Calculus

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SEMESTER WISE TEACHING PLAN
(2022-23)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. R. K. BUDHRAJA **Semester : III**

Department: MATHEMATICS

Month		Topics	Course	Paper Code/
August	**Theory**	Limits of Functions	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions
	Tutorials	Questions based on Limits of Functions	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions
September	**Theory**	Limits of Functions	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions
	Practicals	Practical 7- To draw surfaces and level curves. Practical 8-To draw surfaces and discuss whether limit exits or not as approaches to the given points. Find the limit, if it exists Practical 9-To Draw the tangent planes Practical 10- Use incremental approximations to	B.Sc.(Hons) Maths Sem III B	C7: Multivariate Calculus
	Tutorials	Questions based on Limits of Functions	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions
October	**Theory**	Continuous Functions, Uniform Continuity	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions

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	Practicals	Practical 11-To find critical points and identify relative maxima, relative minima or saddle points to surfaces, if it exists. Practical 12- To draw and check type-I and type-II regions Practical 2- discussing the limit of the functions Practical 3- discussing the limit Practical 4- discuss the continuity of the functions	B.Sc.(Hons) Maths Sem III B	C7: Multivariate Calculus
	Tutorials	Questions based on Continuous Functions & Uniform Continuity	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions
	<u>Assignment</u>	Based on Limits, Continuity & Uniform Continuity of Functions	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions
November	**Theory**	Differentiability of Functions, Mean Value Theorems, Taylor's Theorems, Maxima & Minima	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions
	Practicals	Practical 5- Rolles theorem Practical 6 – Lagranges theorem Practical 1- using epsilon-delta definition	B.Sc.(Hons) Maths Sem III B	C7: Multivariate Calculus
	Tutorials	Questions based on Differentiability of Functions, Mean Value Theorems, Taylor's Theorems, Maxima & Minima	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions
	<u>Class Test</u>	Based on whatever have been taught.	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions
	Theory	Taylor's Series & Maclaurin's Series Expansions	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions

December				
	Tutorials	Questions based on Taylor's Series & Maclaurin's Series Expansions	B.Sc.(Hons) Maths Sem III A	C5 : Theory of Real Functions

Dr. R. K. Budhraja

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Department of Mathematics
Sri Venkateswara College
Odd Semester Teaching Plan (July-November 2022)

Dr. Rahul Thakur

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Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Definition and examples of group action.	B.Sc.(H) Maths Sem-V Sec-A and B	BMATH512 Group Theory-II
AUGUST	**Theory**	Matrices, Basic concepts and algebraic operations, Types of matrices, transpose of a matrix, Symmetric and skew-symmetric matrices, Matrix multiplication and its properties, Inverse of a square matrix and its properties, Determinant and its properties, Cofactors, Matrix singularity, Adjoint matrix and calculation of inverse, Cramer's rule.	B.A.(P) Sem-V	GE-1 General Mathematics-1
	Theory	Permutation representations of group actions, Stabilizers and kernels of group actions.	B.Sc.(H) Maths Sem-V Sec-A and B	BMATH512 Group Theory-II
SEPTEMBER	**Theory**	An overview of number systems, Algebraic and transcedental numbers, Fundamental arithmetic operations, Hierarchy of operations and modular arithmetic, Euclidean algorithm, Prime numbers, Fundamental theorem of arithmetic, Euclid's lemma, Fermat numbers, Mersenne numbers and Mersenne primes, Prime testing method of Fermat, Statement and significance of the prime number theorem, Goldbach conjuctures, Twin primes, Uses of prime numbers, Perfect and amicable numbers.	B.A.(P) Sem-V	GE-1 General Mathematics-1
	Theory	Groups acting on themselves by left multiplication and consequences, Conjugacy in S_n.	B.Sc.(H) Maths Sem-V Sec-A and B	BMATH512 Group Theory-II

OCTOBER	**Theory**	Pythagoreans triplets and its properties, Statement and historic background of Fermat's last theorem, Multiplication principle, Permutation and combinations, Latin squares and magic squares, A brief introduction to the lives and information on the works of the following mathematicians: Aryabhata, Varahamihira, Brahmagupta.	B.A.(P) Sem-V	GE-1 General Mathematics-1
	Theory	Conjugacy classes, Class equation, p-groups, Sylow theorems and their applications	B.Sc.(H) Maths Sem-V Sec-A and B	BMATH512 Group Theory-II
NOVEMBER	**Theory**	A brief introduction to the lives and information on the works of the following mathematicians: Bhaskara I & II, Mahavira, Madhava, and Paramesvara.	B.A.(P) Sem-V	GE-1 General Mathematics-1
	Theory	Finite simple groups, Non-simplicity tests, Generalized Cayley's theorem, Index theorem, Embedding theorem and applications.	B.Sc.(H) Maths Sem-V Sec- A	BMATH512 Group Theory-II
	Theory	Applications of Sylow theorems and other questions related to the theory done in the class.	B.Sc.(H) Maths Sem-V Sec- B	BMATH512 Group Theory-II

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SEMESTER WISE TEACHING PLAN- 2021-22

SRI VENKATESWARA COLLEGE

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Name of the Faculty: Dr. Rajni Arora

Department: Mathematics

Semester: Odd

Month		Topics	Course	Paper Code/ Name
JULY	**Theory 1**	Introduction to Sample space, Probability set function.	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
	Practical	Demonstrating how to set up C++ programming environment for Windows/linux/Mac-OS. Demonstration of simple programs for printing messages like "Hello World".	B.Sc.(H) Maths Sem-V DSE-1	**C++ Programming for Mathematics**
AUGUST	**Theory 1**	Random variables, Probability mass/density function, Cumulative distribution function and its properties, Discrete and continuous random variables, and Transformations. Expectation of random variables, and some special expectations: Mean, Variance, Standard deviation, Moments and moment generating function, Characteristic function, The discrete distributions - Uniform, Bernoulli and binomial	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
	Theory 2	Partial differential equations: basic concepts and definitions.	B.Sc.(H) Maths Sem-II	**GE-3 Differential Equations**
	Practical	Program for finding sum of an arithmetic progression. Program for computing sin(x) using series expansion by using loops. Problems to learn use of iteration and selected based logic.	B.Sc.(H) Maths Sem-V DSE-1	**C++ Programming for Mathematics**
	Tutorials	To discuss the doubts of students and various exercise questions	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**

SEPTEMBER	**Theory 1**	The discrete distributions - negative Binomial, Geometric and Poisson, The continuous distributions - Uniform, Gamma, Exponential, Chi-square and Beta, Normal distribution, and normal approximation to the binomial distribution, Discrete Random vector, Joint cumulative distribution function and its properties	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
	Theory 2	First order Partial differential equations: Classification, Construction, Geometrical Interpretation, method of characteristics.	B.Sc.(H) Maths Sem-II	**GE-3 Differential Equations**
	Practical	1. Solution of first order ODE. 2. Solving and plotting solution of second order ODEs. 3. Solving and plotting solution of third order ODEs.	B.Sc.(H) Maths Sem-II	**GE-3 Differential Equations**
	Practical	Programs based on finding Greatest common divisor. Programs based on random number generation.	B.Sc.(H) Maths Sem-V DSE-1	**C++ Programming for Mathematics**
	Tutorials	To discuss the doubts of students and various exercise questions related to topics done so far.	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
	Assignment	Problems covering all topics done	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
OCTOBER	**Theory 1**	Joint probability mass/density function, Marginal probability mass function, and expectation of two random variables, Joint moment generating function, Conditional distributions and expectations, Correlation coefficient, Covariance	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
	Theory 2	General solution of first order PDEs, Canonical forms and method of separation of variables for first order PDEs. Classification of second order partial differential equations.	B.Sc.(H) Maths Sem-II	**GE-3** **Differential Equations**
	Practical	1. Solution of differential equation by variation of parameters. 2. Solving system of ODEs. 3. Solving Cauchy problem for first order PDEs.	B.Sc.(H) Maths Sem-II	**GE-3 Differential Equations**
	Practical	Programs based on Cartesian geometry using points (2 & 3-dimensional). Programs based on Pythagorean triples.	B.Sc.(H) Maths Sem-V DSE-1	**C++ Programming for Mathematics**

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	Tutorials	To discuss the doubts of students and various exercise questions	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
	<u>Mid Term Test</u>	Problems from all the topics covered till date	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
	<u>Mid Term Test</u>	Problems from all the topics covered till date.	B.Sc.(H) Maths Sem-II	**GE-3 Differential Equations**
NOVEMBER	**Theory 1**	Calculation of covariance from joint moment generating function, Independent random variables, Linear regression for two variables, and the method of least squares, Bivariate normal distribution; Chebyshev's theorem, Statement and interpretation of the strong law of large numbers, Central limit theorem and the weak law of large numbers	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
	Theory 2	Reduction of second order PDEs to canonical forms, solving second order PDEs with constant coefficients. Revision.	B.Sc.(H) Maths Sem-II	**GE-3 Differential Equations**
	Practical	1. Plotting characteristics of the first order PDEs. 2. Plotting integral surfaces of first order PDEs with initial data. 3. Revision	B.Sc.(H) Maths Sem-II	**GE-3 Differential Equations**
	Practical	Programs based on basic set algebra. Programs based on modulo arithmetic.	B.Sc.(H) Maths Sem-V DSE-1	**C++ Programming for Mathematics**
	Practical	Demonstration and installation of suitable environment for Python. Running instructions in Interactive interpreter and a Python Script.	All courses	**SEC-15** **Programming using Python**
	Tutorials	To discuss the doubts of students and previous years' question papers	B.Sc.(H) Maths Sem-V DSE-2	**Probability Theory and Statistics**
December	**Theory**	Revision and presentations.	B.Sc.(H) Maths Sem-II	**GE-3 Differential Equations**

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	Practical	Revision	B.Sc.(H) Maths Sem-II	**GE-3 Differential Equations**
	Practical	Basic principles of computers, using Python, Introduction to binary computation, I/O. Operators (unary, arithmetic, etc.), Data types, variables, expressions, and statements, Assignment statements, Strings and string operations, Control Structures: loops and decision	All courses	**SEC-15** **Programming using Python**
January	**Practical**	Practicals to demonstrate working on standard modules, use of packages; Defining Classes, Defining functions, Functions and arguments , Data structures and Object-oriented design, Data Structures, Error processing, Exception Raising and Handling Programming types	All courses	**SEC-15** **Programming using Python**
February	**Practical**	Object Oriented Programming, Object Oriented Design, Inheritance and Polymorphism.	All courses	**SEC-15** **Programming using Python**

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SEMESTER (ODD) WISE TEACHING PLAN 2022-23

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shahna

Department: Mathematics

Month		**Topics**	**Course**	**Paper Code/ Name**
JULY	**Theory**	Metric Spaces: Definitions and examples	B.Sc(H) Maths Sem-V A	Metric spaces, BMATH511
	Tutorial	Discuss exercise questions and doubts of theory classes.		
AUGUST	**Theory**	Sequences in metric spaces, Cauchy sequences, Complete metric spaces, open and closed balls, Neighbourhood, open set, Interior of a set, Limit point of a	B.Sc(H) Maths Sem-V A	Metric spaces, BMATH511
	Theory	Introduction of Functions of several variables,	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus
	Practical	1 Discuss the limit of the following functions using epsilon- delta definition.	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus
	Tutorial	Discuss exercise questions and doubts of theory classes.		
SEPTEMBER	**Theory**	Closed set, diameter of a set, Cantor's Theorem, Subspaces, dense sets, separable spaces, Continuous mappings, Sequential criteria and other characterizations of continuity	B.Sc(H) Maths Sem-V A	Metric spaces, BMATH511

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	Theory:	Level curves and surfaces, Limits and continuity, Partial differentiation, Higher order partial derivative, Tangent planes, Total differential and differentiability, Chain rule. Directional derivatives, The gradient, Maximal and normal property of the gradient, Tangent planes and normal lines	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus
	Practical	2. Discuss the limit of the given functions when x tends to 0. 3. Discuss the limit of the given functions when x tends to infinity. 4. Discuss the continuity of the functions at x = 0 in the Practical 2. 5. Illustrate the geometric meaning of Rolle's theorem of the functions on the given interval.	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus
	Assignment :	To give assignment to students of the above courses		
	Tutorial	Discuss exercise questions and doubts of theory classes.		
OCTOBER	**Theory**	Uniform continuity, Homeomorphism, Contraction mappings, Banach Fixed point theorem,	B.Sc(H) Maths Sem-V A	Metric spaces, BMATH511
	Theory:	Extrema of functions of two variables, Method of Lagrange multipliers, Constrained optimization problems, Definition of vector field, Divergence and curl. Double integration over rectangular and nonrectangular regions, Double integrals in polar coordinates, Triple integral over a parallelopiped and solid regions, Volume by triple integrals,	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus

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	Practical	6. Illustrate the geometric meaning of Lagrange's mean value theorem of the functions on the given interval. 7. Draw the surfaces and find level curves at the given heights. 8. Draw the surfaces and discuss whether limit exits or not. Find the limit, if it exists. 9. Draw the tangent plane to the given surfaces at the given point.	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus
	Assignment :	To give assignment to students of the above courses		
	Tutorial	Discuss exercise questions and doubts of theory classes.		
NOVEMBER	**Theory**	Connectedness, connectedness and continuous mappings	B.Sc(H) Maths Sem-V A	Metric spaces, BMATH511
	Theory:	Triple integration in cylindrical and spherical coordinates, Change of variables in double and triple integrals. Line integrals, Applications of line integrals: Mass and Work, Fundamental theorem for line integrals,	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus
	Practical	10. Use an incremental approximation to estimate the given functions at the given point and compare it with calculated value. 11. Find critical points and identify relative maxima, relative minima or saddle points to the given surfaces, if it exists	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus
	Test	**To take** internal lab test of the above practical.		
	Assignment	To give assignment to students of the above courses		
	Tutorial	Discuss exercise questions and doubts of theory classes.		

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DECEMBER	**Theory**:	Conservative vector fields, Green's theorem, Area as a line integral Surface integrals, Stokes' theorem, Gauss divergence theorem.	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus
	Practical	12. Draw the given regions D and check whether these regions are of Type I or Type II.	B.Sc(H) Maths Sem-III A	BMATH307-Multivariate Calculus

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2022-23 Odd Sem

Name of the Faculty: Mr. Sudhakar Yadav **Department: Mathematics**

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
July	**Theory**	Automorphism, Inner automorphism, Automorphism groups	B.Sc(H) Maths Sem-V B	C12- Group Theory-II
August	**Theory**	Introduction of group theory, symmetries of a square, Dihedral groups, definition and examples of groups. Examples of groups including permutation groups and quaternion groups (illustration through matrices), elementary properties of groups.	B.Sc(H) Maths Sem-III B	Group Theory-I
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to examples of groups including permutation groups and quaternion groups (illustration through matrices), elementary properties of groups. Subgroups and examples of subgroups, centralizer, normalizer, center of a group, product of two subgroups. Properties of cyclic groups, classification of subgroups of cyclic groups.	B.Sc(H) Maths Sem-III B	Group Theory-I

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Theory	Automorphism groups of finite and infinite cyclic groups. Characteristic subgroups, Commutator subgroup and its properties.	B.Sc(H) Maths Sem-V B	Group Theory-II
Practicals	Introduction to TeX and LaTeX, Typesetting a simple document	B.Sc(H) Maths Sem-III	SEC-1: LaTeX and HTML
Test	To take class test related to syllabus and lab test related to above Practicals.	B.Sc(H) Maths Sem-III B/V B	Group Theory-I / Group Theory- II

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September	**Theory**	Subgroups and examples of subgroups, centralizer, normalizer, center of a group, product of two subgroups. Properties of cyclic groups, classification of subgroups of cyclic groups. Cycle notation for permutations, properties of permutations, even and odd permutations, alternating group, properties of cosets, Lagrange's theorem and consequences including Fermat's Little theorem.	B.Sc(H) Maths Sem-III B	Group Theory-I
	Tutorial s	To discuss the doubt of students and various exercise questions and examples related to cycle notation for permutations, properties of permutations, even and odd permutations, alternating group, properties of cosets, Lagrange's theorem and consequences including Fermat's Little theorem.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Theory	Applications of factor groups to automorphism groups. External direct products of groups and its properties, The group of units modulo n as an external direct product, Applications to data security and electric circuits. Internal direct products.	B.Sc(H) Maths Sem-V B	Group Theory-II
	Assignm ents	To give assignment related to syllabus.	B.Sc(H) Maths Sem-III B/V B	Group Theory- I / Group Theory-II
	Practical s	Adding basic information to a document, Environments, Footnotes, Sectioning and displayed material, Accents of symbols, Mathematical typesetting (elementary and advanced): Subscript/Superscript, Fractions, Roots, Ellipsis, Mathematical symbols.	B.Sc(H) Maths Sem-III	SEC-1: LaTeX and HTML

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OCTOBER	**Theory**	External direct product of a finite number of groups, normal subgroups, factor groups.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Tutorial s	To discuss the doubt of students and various exercise questions and examples related External direct product of a finite number of groups, normal subgroups, factor groups,.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Theory	Classification of groups of order p^2 , : Statement of the Fundamental theorem of finite abelian groups, The isomorphism classes of Abelian groups	B.Sc(H) Maths Sem-V B	C12- Group Theory-II
	Practical s	Arrays, Delimiters, Multiline formulas, Spacing and changing style in math mode, Graphics in LaTeX, Simple pictures using PSTricks, Plotting of functions.	B.Sc(H) Maths Sem-III	SEC-1: LaTeX and HTML
	Test	To take internal test related to syllabus And internal lab test related to above Practicals.	B.Sc(H) Maths Sem-III B/V B/GE-III	C6- Group Theory-I / C12- Group Theory-II/ Latex and HTML

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November	**Theory**	Cauchy's theorem for finite abelian groups and group homomorphisms, Cayley's theorem, properties of isomorphism, First, Second and Third isomorphism theorems .	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to Properties of homomorphisms, Cayley's theorem, properties of isomorphisms, First, Second and Third isomorphism theorems.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Theory	Index theorem, Embedding theorem and applications, Simple Group, Simplicity of S_5 and revise whole syllabus, to discuss last previous year questions papers.	B.Sc(H) Maths Sem-V B	C12- Group Theory-II
	Practicals	Beamer presentation, HTML basics, Creating simple web pages, Adding images and links, Design of web pages.	B.Sc(H) Maths Sem-III	SEC-1: LaTeX and HTML
December	**Theory**	Revise whole syllabus, to discuss previous year questions papers.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to whole syllabus and discuss previous year questions papers	B.Sc(H) Maths Sem-IIIB	Group Theory-I

	Practicals	Revision of Practicals	B.Sc(H) Maths Sem-III	SEC-1: LaTeX and HTML

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-November, 2022

Name of the Faculty: **Prof. Swarn Singh**

Department: **Mathematics**

Semester: V

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Month		Topics	Course	Paper Code/Name
JULY	**Theory:**	To introduce the concepts of Algorithms, Convergence, Bisection Method and various problems related to these and to discuss various theorems related to convergence of the method	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Practicals:	Basic concepts of Mathematica and Practical (1) Bisection method	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Tutorials:			
AUGUST	**Theory:**	False position method, Fixed point iteration method, Newton's method, Secant method, LU decomposition, Gauss- Jacobi method, Gauss-Seidel method, SOR iterative method and to discuss various theorems related to convergence of these methods.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Practicals:	Practicals (2) Newton Raphson Method, (3) Secant method, (4) Regula Falsi Method (5) LU decomposition method	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Tutorials:			
SEPTEMBER	**Theory:**	Partial and Scaled Partial Pivoting, Lagrange and Newton interpolation, Piecewise linear interpolation, First and higher order approximation for first derivative, approximation for second derivative, Richardson extrapolation method and to discuss various theorems related to these methods.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Practicals:	Practicals: (6) Gauss-Jacobi method (7) SOR method, (8) Gauss Siedel method (9) Lagrange Interploation, (10) Newton Interpolation	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Tutorials:			
	Assignment	Assignment to be given related to syllabus.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis

OCTOBER	**Theory**	Numerical Integration by closed Newton-Cotes formulae: trapezoidal rule, Simson's rule and its error analysis,Euler's method to solve ODE's, Second order Runge- Kutta methods ,	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Practicals:	Practicals: (11) Trapezodial rule (12) Simpson's rule (13) Euler's method	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Tutorials:			
	Mid Term Test	To take internal Test based on the syllabus covered.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
		To take internal Lab Test based on the syllabus covered.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
NOVEMBER	**Theory:**	modified euler method, Heun's method and optimal RK2 method.and to revise whole syllabus. To discuss previous year questions papers some of which are available on my Blog https://numericalmaths.wordpress.com/	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Practicals:	Practical (14) Second order Runge-Kutta methods and revise all practicals	B.Sc.(Hons.)Maths Sem V	DSE-1 Numerical Analysis
	Tutorials:			

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SEMESTER WISE TEACHING PLAN
Odd Semester (July 2022 – Dec 2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pratima Vyas **Department:** Physics

Semester : III, V

Month	Course	Paper Code	Topics Covered
Aug	CC: Thermal Phys (Th)	32221302	**Zeroth and First Law of Thermodynamics:** Extensive and intensive Thermodynamic Variables, Thermodynamic Equilibrium, Zeroth Law of Thermodynamics & Concept of Temperature, Concept of Work & Heat, State Functions, First Law of Thermodynamics and its differential form, Internal Energy, First Law & various processes.
	CC: Thermal Phys (Lab)	32221302	As Listed in Syllabus.
	CC: SSP (Lab)	32221502	As Listed in Syllabus.
Sept	CC: Thermal Phys (Th)	32221302	Applications of First Law: General Relation between CP and CV, Work Done during Isothermal and Adiabatic Processes, Compressibility and Expansion Co-efficient. **Second Law of Thermodynamics:** Reversible and Irreversible process with examples. Conversion of Work into Heat and Heat into Work. Heat Engines. Carnot‟s Cycle, Carnot engine & efficiency. Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Carnot's Theorem. Applications of Second Law of Thermodynamics: Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale. **Entropy:** Concept of Entropy, Clausius Theorem. Clausius Inequality, Second Law of Thermodynamics in terms of Entropy. Entropy of a perfect gas. Principle of Increase of Entropy. Entropy Changes in Reversible and Irreversible processes with examples. Entropy of the Universe. Entropy Changes in Reversible and Irreversible Processes. Principle of Increase of Entropy. Temperature–Entropy diagrams for Carnot's Cycle. Third Law of Thermodynamics. Unattainability of Absolute Zero.
	CC: Thermal Phys (Lab)	32221302	As Listed in Syllabus.
	CC: SSP (Lab)	32221502	As Listed in Syllabus.
Oct	CC: Thermal Phys (Th)	32221302	**Thermodynamic Potentials:** Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb's Free Energy. Their Definitions, Properties and Applications. Magnetic Work, Cooling due to adiabatic demagnetization, First and second order Phase Transitions with examples, Clausius Clapeyron Equation and Ehrenfest equations. Maxwell's Thermodynamic Relations: Derivation of Maxwell‟s thermodynamic Relations and their applications, Maxwell's Relations: (1) Clausius Clapeyron equation, (2) Value of Cp-Cv, (3) Tds Equations, (4) Energy equations. **Kinetic Theory of Gases Distribution of Velocities:** Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas and its Experimental Verification. Mean, RMS and Most Probable Speeds. Degrees of Freedom.
	CC: Thermal Phys (Lab)	32221302	As Listed in Syllabus.

	CC: SSP (Lab)	32221502	As Listed in Syllabus.
Nov	CC: Thermal Phys (Th)	32221302	Law of Equipartition of Energy (No proof required). Specific heats of Gases. Molecular Collisions: Mean Free Path. Collision Probability. Estimation of Mean Free Path. Transport Phenomenon in Ideal Gases: (1) Viscosity, (2) Thermal Conductivity and (3) Diffusion. Brownian Motion and its Significance. **Real Gases:** Behavior of Real Gases: Deviations from the Ideal Gas Equation. Andrew's Experiments on CO2 Gas. Virial Equation. Critical Constants. Continuity of Liquid and Gaseous State. Vapor and Gas. Boyle Temperature. van der Waal‟s Equation of State for Real Gases. Values of Critical Constants. Law of Corresponding States.
	CC: Thermal Phys (Lab)	32221302	As Listed in Syllabus.
	CC: SSP (Lab)	32221502	As Listed in Syllabus.
Dec	CC: Thermal Phys (Th)	32221302	Comparison with Experimental Curves. p-V Diagrams. Free Adiabatic Expansion of a Perfect Gas. Joule-Thomson Porous Plug Experiment. Joule-Thomson Effect for Real and Van-der Waal Gases. Temperature of Inversion. Joule-Thomson Cooling.
	CC: Thermal Phys (Lab)	32221302	As Listed in Syllabus.
	CC: SSP (Lab)	32221502	As Listed in Syllabus.

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SEMESTER WISE TEACHING PLAN
Odd Semester (July 2022 – November 2022, November 2022 – February 2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Anunay K. Chaudhary **Department:** Physics

Semester : I/III

Month	Course	Paper Code	Topics Covered
July	CC – V: Mathematical Physics-2	32221301	**Fourier Series:** Periodic functions. Orthogonality of sine and cosine functions, Dirichlet Conditions (Statement only). Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients.
	CC – V: Mathematical Physics-2 ICT Lab	32221301	As Listed in Syllabus.
	SEC: Renewable Energy Lab	32223905	As Listed in Syllabus.
August	CC – V: Mathematical Physics-2	32221301	Even and odd functions and their Fourier expansions (Fourier Cosine Series and Fourier Sine Series). Application. Summing of Infinite Series. Parseval's Identity and its application to summation of infinite series. **Frobenius Method and Special Functions:** Singular Points of Second Order Linear Differential Equations and their importance. Frobenius method and its applications to differential equations: Legendre, Bessel, Hermite and Laguerre Differential Equations.
	CC – V: Mathematical Physics-2 ICT Lab	32221301	As Listed in Syllabus.
	SEC: Renewable Energy Lab	32223905	As Listed in Syllabus.
Sept.	CC – V: Mathematical Physics-2	32221301	Properties of Legendre Polynomials: Rodrigues Formula, Generating Function, Orthogonality. Simple recurrence relations. Expansion of function in a series of Legendre Polynomials. Bessel Functions of the First Kind: Generating Function, simple recurrence relations. Zeros of Bessel Functions (Jo(x) and J1(x)) and Orthogonality. **Some Special Integrals:** Beta and Gamma Functions and Relation between them.
	CC – V: Mathematical Physics-2 ICT Lab	32221301	As Listed in Syllabus.
	SEC: Renewable Energy Lab	32223905	As Listed in Syllabus.
October	CC – V: Mathematical	32221301	Expression of Integrals in terms of Gamma Functions.

	Physics-2		**Partial Differential Equations:** Solutions to partial differential equations (2 or 3 independent variables) using separation of variables: Laplace's Equation in problems of rectangular geometry.
	CC – V: Mathematical Physics-2 ICT Lab	32221301	As Listed in Syllabus.
	SEC: Renewable Energy Lab	32223905	As Listed in Syllabus.
Nov.	CC – V: Mathematical Physics-2	32221301	Solution of wave equation for vibrational modes of a stretched string, rectangular and circular membranes. Solution of 1D heat flow equation. (Wave/Heat equation not to be derived).
	CC – V: Mathematical Physics-2 ICT Lab	32221301	As Listed in Syllabus.
	SEC: Renewable Energy Lab	32223905	As Listed in Syllabus.
Dec.	DSC – 1: Mathematical Physics-1 ICT Lab		As Listed in Syllabus.
Jan.	DSC – 1: Mathematical Physics-1 ICT Lab		As Listed in Syllabus.
Feb.	DSC – 1: Mathematical Physics-1 ICT Lab		As Listed in Syllabus.

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SEMESTER WISE TEACHING PLAN
Odd Semester (July 2022 – November 2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Prof. K. Chandramani Singh **Department:** Physics

Semester : I/III/V

Month	Course	Paper Code	Topics Covered
July	CC: Quantum Mechanics and Applications	32221501	**Time dependent Schrodinger equation:** Time dependent Schrodinger equation and dynamical evolution of a quantum state; Properties of Wave Function. Interpretation of Wave Function: Probability and probability current densities in three dimensions; Conditions for Physical Acceptability of Wave Functions. Normalization. Linearity and Superposition Principles. Eigenvalues and Eigenfunctions. Position, momentum and Energy operators; commutator of position and momentum operators; Expectation values of position and momentum. Wave Function of a Free Particle.
	CC: Solid State Physics	32221502	As Listed in Syllabus.
	CC: Thermal Physics	32221302	As Listed in Syllabus.
August	CC: Quantum Mechanics and Applications	32221501	**Time independent Schrodinger equation:** Hamiltonian, stationary states and energy eigenvalues; expansion of an arbitrary wavefunction as a linear combination of energy eigenfunctions; General solution of the time dependent Schrodinger equation in terms of linear combinations of stationary states; Application to spread of Gaussian wave-packet for a free particle in one dimension; wave packets, Fourier transforms and momentum space wavefunction; Position-momentum uncertainty principle.
	CC: Solid State Physics	32221502	As Listed in Syllabus.
	CC: Thermal Physics	32221302	As Listed in Syllabus.
Sept.	CC: Quantum Mechanics and Applications	32221501	**General discussion of bound states in an arbitrary potential:** continuity of wave function, boundary condition and emergence of discrete energy levels; application to one-dimensional problem-square well potential; Quantum mechanics of simple harmonic oscillator: energy levels and energy eigenfunctions using Frobenius method; Hermite polynomials; ground state, zero point energy & uncertainty principle.
	CC: Solid State Physics	32221502	As Listed in Syllabus.
	CC: Thermal Physics	32221302	As Listed in Syllabus.
October	CC: Quantum Mechanics and Applications	32221501	**Quantum theory of hydrogen-like atoms:** time independent Schrodinger equation in spherical polar coordinates; separation of variables for second order partial differential equation; angular momentum operator & quantum numbers; Radial wavefunctions from Frobenius method; shapes of the probability densities for ground and first excited states; Orbital angular momentum quantum numbers l and m; s, p, d shells.
	CC: Solid State Physics	32221502	As Listed in Syllabus.

	CC: Thermal Physics	32221302	As Listed in Syllabus.
Nov.	CC: Quantum Mechanics and Applications	32221501	**Atoms in Electric and Magnetic Fields:** Electron angular momentum. Angular momentum quantization. Electron Spin and Spin Angular Momentum. Larmor's Theorem. Spin Magnetic Moment. Stern-Gerlach Experiment. Normal Zeeman Effect: Electron Magnetic Moment and Magnetic Energy.
	CC: Solid State Physics Lab	32221502	As Listed in Syllabus.
	CC: Thermal Physics Lab	32221302	As Listed in Syllabus.
Dec.	CC: Thermal Physics Lab	32221302	As Listed in Syllabus.

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SEMESTER WISE TEACHING PLAN
Odd Semester (July 2022 – Nov 2022,
Nov 2022 – Feb 2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Narender Kumar **Department:** Physics

Semester : I/III/V

Month	Course	Paper Code	Topics Covered
July	DSE: Nuclear and Particle Physics	32227504	**General Properties of Nuclei:** Constituents of nucleus and their Intrinsic properties, quantitative facts about mass, radii, charge density, matter density (experimental determination of each), binding energy, average binding energy and its variation with mass number, main features of binding energy versus mass number curve, N/Z plot, angular momentum, parity, magnetic moment, electric moments.
	DSE: Nuclear and Particle Physics (Tut)	32227504	**General Properties of Nuclei:** Constituents of nucleus and their Intrinsic properties, quantitative facts about mass, radii, charge density, matter density (experimental determination of each), binding energy, average binding energy and its variation with mass number, main features of binding energy versus mass number curve, N/Z plot, angular momentum, parity, magnetic moment, electric moments.
	DSE: AMP-1 (Lab)	32227502	As Listed in Syllabus.
	CC: QM (Lab)	32221501	As Listed in Syllabus.
Aug	DSE: Nuclear and Particle Physics	32227504	**Nuclear Models:** Liquid drop model approach, semi empirical mass formula and significance of its various terms, condition of nuclear stability, nucleon separation energies (up to two nucleons), Fermi gas model (degenerate fermion gas, nuclear symmetry potential in Fermi gas), evidence for nuclear shell structure and the basic assumptions of shell model. **Radioactivity decay:** Decay rate and equilibrium (Secular and Transient) (a) Alpha decay: basics of α-decay processes, theory of α-emission, Gamow factor, Geiger Nuttall law, α-decay spectroscopy, decay Chains.
	DSE: Nuclear and Particle Physics (Tut)	32227504	**Nuclear Models:** Liquid drop model approach, semi empirical mass formula and significance of its various terms, condition of nuclear stability, nucleon separation energies (up to two nucleons), Fermi gas model (degenerate fermion gas, nuclear symmetry potential in Fermi gas), evidence for nuclear shell structure and the basic assumptions of shell model. **Radioactivity decay:** Decay rate and equilibrium (Secular and Transient) (a) Alpha decay: basics of α-decay processes, theory of α-emission, Gamow factor, Geiger Nuttall law, α-decay spectroscopy, decay Chains.
	DSE: AMP-1 ICT (Lab)	32227502	As Listed in Syllabus.
	CC: QM ICT (Lab)	32221501	As Listed in Syllabus.
Sept	DSE: Nuclear and Particle Physics	32227504	(b) β-decay: energy kinematics for β-decay, β-spectrum, positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays emission from the excited state of the nucleus & kinematics, internal conversion.

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			Nuclear Reactions: Types of Reactions, units of related physical quantities, Conservation Laws, kinematics of reactions, Q-value, reaction rate, reaction cross section, Concept of compound and direct reaction, resonance reaction, Coulomb scattering (Rutherford scattering).
	DSE: Nuclear and Particle Physics (Tut)	32227504	(b) β-decay: energy kinematics for β-decay, β-spectrum, positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays emission from the excited state of the nucleus & kinematics, internal conversion. **Nuclear Reactions:** Types of Reactions, units of related physical quantities, Conservation Laws, kinematics of reactions, Q-value, reaction rate, reaction cross section, Concept of compound and direct reaction, resonance reaction, Coulomb scattering (Rutherford scattering).
	DSE: AMP-1 (Lab)	32227502	As Listed in Syllabus.
	CC: QM (Lab)	32221501	As Listed in Syllabus.
Oct	DSE: Nuclear and Particle Physics	32227504	**Interaction of Nuclear Radiation with matter:** Energy loss due to ionization (Bethe-Block formula), energy loss of electrons, Cerenkov radiation. Gamma ray interaction through matter (photoelectric effect, Compton scattering, pair production), neutron interaction with matter.
	DSE: Nuclear and Particle Physics (Tut)	32227504	**Interaction of Nuclear Radiation with matter:** Energy loss due to ionization (Bethe-Block formula), energy loss of electrons, Cerenkov radiation. Gamma ray interaction through matter (photoelectric effect, Compton scattering, pair production), neutron interaction with matter.
	DSE: AMP-1 (Lab)	32227502	As Listed in Syllabus.
	CC: QM (Lab)	32221501	As Listed in Syllabus.
Nov	DSE: Nuclear and Particle Physics	32227504	**Detector for Nuclear Radiations:** Gas detectors: estimation of electric field, mobility of particle for ionization chamber and GM Counter. Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT). Semiconductor Detectors (Si and Ge) for charge particle and photon detection (concept of charge carrier and mobility), neutron detector.
	DSE: Nuclear and Particle Physics (Tut)	32227504	**Detector for Nuclear Radiations:** Gas detectors: estimation of electric field, mobility of particle for ionization chamber and GM Counter. Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT). Semiconductor Detectors (Si and Ge) for charge particle and photon detection (concept of charge carrier and mobility), neutron detector.
	DSE: AMP-1 (Lab)	32227502	As Listed in Syllabus.
	CC: QM (Lab)	32221501	As Listed in Syllabus.
	GE – 1 : Mechanics Lab		As Listed in Syllabus.
Dec.	GE – 1 : Mechanics Lab		As Listed in Syllabus.
Jan.	GE – 1 : Mechanics Lab		As Listed in Syllabus.
Feb.	GE – 1 : Mechanics Lab		As Listed in Syllabus.

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SEMESTER WISE TEACHING PLAN
Odd Semester (Aug 2022 – Dec 2022, Nov 2022 – Feb 2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Prof. Anant Pandey **Department:** Physics

Semester : I/III/V

Month	Course	Paper Code	Topics Covered
Aug	Digital Systems and Applications (Th)	32221303	**Introduction to CRO:** Block Diagram of CRO. Electron Gun, Deflection System and Time Base. Deflection Sensitivity. Applications of CRO: (1) Study of Waveform, (2) Measurement of Voltage, Current, Frequency, and Phase Difference.
	Digital Systems and Applications (lab)	32221303	As Listed in Syllabus.
Sept	Digital Systems and Applications (Th)	32221303	**Digital Circuits:** Difference between Analog and Digital Circuits, Examples of linear and digital ICs, Binary Numbers, Decimal to Binary and Binary to Decimal Conversion, BCD, Octal and Hexadecimal numbers, AND, OR and NOT Gates (realisation using Diodes and Transistor), NAND and NOR Gates as Universal Gates, XOR and XNOR Gates and application as Parity Checkers. **Boolean algebra:** De Morgan's Theorems, Boolean Laws, Simplification of Logic Circuit using Boolean Algebra, Fundamental Products, Idea of Minterms and Maxterms, Conversion of Truth table into Equivalent Logic Circuit by (1) Sum of Products Method and (2) Karnaugh Map. **Data processing circuits:** Multiplexers, De-multiplexers, Decoders, Encoders.
	Digital Systems and Applications (lab)	32221303	As Listed in Syllabus.
Oct	Digital Systems and Applications (Th)	32221303	**Arithmetic Circuits:** Binary Addition. Binary Subtraction using 2's Complement, Half and Full Adders, Half & Full Subtractors, 4-bit binary Adder/Subtractor. **Sequential Circuits:** SR, D, and JK Flip-Flops. Clocked (Level and Edge Triggered) Flip-Flops. Preset and Clear operations. Race-around conditions in JK Flip-Flop. M/S JK Flip-Flop. **Timers:** IC 555 block diagram and applications: Astable multivibrator and Monostable multivibrator.
	Digital Systems and Applications (lab)	32221303	As Listed in Syllabus.
Nov	Digital Systems and Applications (Th)	32221303	**Shift registers:** Serial-in-Serial-out, Serial-in-Parallel-out, Parallel-in-Serial-out and Parallel-in- Parallel-out Shift Registers (only up to 4 bits). **Counters (4 bits):** Ring Counter. Asynchronous counters, Decade Counter. Synchronous Counter.

			Computer Organization: Input/Output Devices. Data storage (idea of RAM and ROM). Computer memory. Memory organization and addressing. Memory Interfacing. Memory Map. **Intel 8085 Microprocessor Architecture:** Main features of 8085. Block diagram. Components. Pin-out diagram. Buses. Registers. ALU. Memory.
	Digital Systems and Applications (lab)	32221303	As Listed in Syllabus.
	DSC – 2 : Mechanics Lab		As Listed in Syllabus.
Dec	Digital Systems and Applications (Th)	32221303	Stack memory. Timing and Control circuitry. Timing states. Instruction cycle, Timing diagram of MOV and MVI. **Introduction to Assembly Language:** 1 byte, 2 byte and 3 byte instructions.
	Digital Systems and Applications (lab)	32221303	As Listed in Syllabus.
	DSC – 2 : Mechanics Lab		As Listed in Syllabus.
Jan.	DSC – 2 : Mechanics Lab		As Listed in Syllabus.
Feb.	DSC – 2 : Mechanics Lab		As Listed in Syllabus.

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Odd Semester : August-December, 2022
(Till 3rd October, 2022)

Name of the Faculty: **Dr Manoj Giri**

Department: **Physics**

Semester: **Odd Semester (I & III)**

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Month		Topics	Course	Paper Code/Name
August	**Theory:**	Wave Optics: Electromagnetic nature of light. Definition and Properties of wave front. Huygens Principle. Interference: Interference: Division of amplitude and division of wavefront. Young's Double Slit experiment. Lloyd's Mirror and Fresnel's Biprism	B. Sc. (Hons)-Sem-III-GE	32225310/Waves and Optics -GE
		1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify λ2 – T Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating. 13. To determine the Resolving Power of a Plane Diffraction Grating. To determine the wavelength of laser light using diffraction grating.	B.Sc. (H) GE: Sem III	Waves and Optics: GE-LAB

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AUGUST	**Theory/ Practicals:**	Fossil fuels and Alternate Sources of energy: Fossil fuels and nuclear energy, their limitation, need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, Hydroelectricity	B. Sc. (Hons) Physics: Sem-III	SEC: Renewable Energy and Energy harvesting (32223905)
	Practicals:	1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne‟s constant flow method. 2. To determine the Coefficient of Thermal Conductivity of Cu by Searle‟s Apparatus. 3. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom‟s Method. 4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton‟s disc method. 5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT). 6. To study the variation of Thermo-emf of a Thermocouple with Difference of Temperature of its Two Junctions using a null method. And also calibrate the Thermocouple in a specified temperature range. 7. To calibrate a thermocouple to measure temperature in a specified Range using Op-Amp difference amplifier and to determine Neutral Temperature.	B.Sc. (Hons) Physics Sem III	CC-VI: Thermal Physics (32221302)

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	Practicals:	1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify λ2 – T Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating. 13. To determine the Resolving Power of a Plane Diffraction Grating. To determine the wavelength of laser light using diffraction grating.	B.Sc. (H) GE: Sem III	Waves and Optics: GE-LAB
SEPTEMBER	**Theory:**	Phase change on reflection: Stokes' treatment. Interference in Thin Films: parallel and wedge-shaped films. Newton's Rings: measurement of wavelength and refractive index. Diffraction: Fraunhofer diffraction-Single slit; Double Slit. Multiple slits and Diffraction grating. Fresnel Diffraction: Half-period zones.	B. Sc. (Hons)-Sem-III-GE	32225310/Waves and Optics -GE
		Solar energy: Solar energy, its importance, storage of solar energy, solar pond, non-convective solar pond, applications of solar pond and solar energy, solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell, absorption air conditioning. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun tracking systems	B.Sc. (Hons) Physics Sem III	SEC: Renewable Energy and Energy harvesting (32223905)
	Practicals:	1.To determine Mechanical Equivalent of Heat, J, by Callender and Barne"s constant flow method. 2.To determine the Coefficient of Thermal Conductivity of Cu by Searle"s Apparatus. 3.To determine the Coefficient of Thermal Conductivity of Cu by Angstrom"s Method. 4.To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton"s disc method. 5.To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT). 6.To study the variation of Thermo-emf of a Thermocouple with Difference of Temperature of its Two Junctions using a null method. And also calibrate the Thermocouple in a specified temperature range.	B.Sc. (Hons) Physics Sem III	CC-VI: Thermal Physics (32221302)

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		7.To calibrate a thermocouple to measure temperature in a specified Range using Op-Amp difference amplifier and to determine Neutral Temperature.		
		1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify λ2 – T Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating. 13. To determine the Resolving Power of a Plane Diffraction Grating. To determine the wavelength of laser light using diffraction grating.	B.Sc. (H) GE: Sem III	Waves and Optics: GE-LAB
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OCTOBER	**Theory:**	Presentations	B.Sc. (Hons) Physics Sem III	SEC: Renewable Energy and Energy harvesting (32223905)

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		Zone plate. Fresnel Diffraction pattern of a straight edge, a slit and a wire using half-period zone analysis.	B. Sc. (Hons)-Sem-III-GE	32225310/Waves and Optics -GE
	Practicals:	1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify λ2 – T Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating. 13. To determine the Resolving Power of a Plane Diffraction Grating. To determine the wavelength of laser light using diffraction grating.		Waves and Optics: GE-LAB
	Theory/ Practical:	1.To determine Mechanical Equivalent of Heat, J, by Callender and Barne‟s constant flow method. 2.To determine the Coefficient of Thermal Conductivity of Cu by Searle‟s Apparatus. 3.To determine the Coefficient of Thermal Conductivity of Cu by Angstrom‟s Method. 4.To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton‟s disc method. 5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT). 6.To study the variation of Thermo-emf of a Thermocouple with Difference of Temperature of its Two Junctions using a null method. And also calibrate the Thermocouple in a specified temperature range. 7.To calibrate a thermocouple to measure temperature in a specified Range using Op-Amp difference amplifier and to determine Neutral Temperature.	B.Sc. (Hons) Physics Sem III	CC-VI: Thermal Physics (32221302)
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NOVEMBER	**Theory:**		B.Sc. (Hons) Physics Sem III	SEC: Renewable Energy and Energy harvesting (32223905
			B. Sc. (Hons)- Sem-III-	32225310/ Waves and Optics – GE
	Practicals:	1.To determine Mechanical Equivalent of Heat, J, by Callender and Barne‟s constant flow method. 2.To determine the Coefficient of Thermal Conductivity of Cu by Searle‟s Apparatus. 3.To determine the Coefficient of Thermal Conductivity of Cu by Angstrom‟s Method. 4.To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton‟s disc method. 5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT). 6.To study the variation of Thermo-emf of a Thermocouple with Difference of Temperature of its Two Junctions using a null method. And also calibrate the Thermocouple in a specified temperature range. 7.To calibrate a thermocouple to measure temperature in a specified Range using Op-Amp difference amplifier and to determine Neutral Temperature.	B.Sc. (Hons) Physics Sem III	CC-VI: Thermal Physics (32221302)
	Practicals:	1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify λ2 – T Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating. 13. To determine the Resolving Power of a Plane Diffraction Grating. To determine the wavelength of laser light using diffraction grating.	B.Sc. (H) GE: Sem III	Waves and Optics: GE-LAB

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SEMESTER WISE TEACHING PLAN
Odd Semester (July 2022 – Feb 2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Garima Saxena **Department: Physics**

Semester: I/III/V

Month	**Course**	**Paper Code**	**Topics Covered**
July	TPH DSE – 2 : Advanced Mathematical Physics 1 Lab	32227502	As listed in the syllabus.
Aug.	TPH DSE – 2 : Advanced Mathematical Physics 1 Lab	32227502	As listed in the syllabus.
	SPH CC – V : Mathematical Physics 2 (Lab)	32221301	As listed in the syllabus.
Sept	TPH DSE – 2 : Advanced Mathematical Physics 1 Lab	32227502	As listed in the syllabus.
	SPH CC – V : Mathematical Physics 2 (Lab)	32221301	As listed in the syllabus.
Oct.	TPH DSE – 2 : Advanced Mathematical Physics 1 Lab	32227502	As listed in the syllabus.
	SPH CC – V : Mathematical Physics 2 (Lab)	32221301	As listed in the syllabus.
Nov.	TPH DSE –	32227502	As listed in the syllabus.

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	2 : Advanced Mathematical Physics 1 Lab		
	SPH CC – V : Mathematical Physics 2 (Lab)	32221301	As listed in the syllabus.
	FPH DSC – 1 : Mathematical Physics 1 (Theory)		Functions: Plotting elementary functions and their combinations, Interpreting graphs of functions using the concepts of calculus, Taylor's series expansion for elementary functions. Ordinary Differential E quations: First order differential equations of degree one and those reducible to this form, Exact and Inexact equations, Integrating Factor, Applications to physics problems Higher order linear homogeneous differential equations with constant coefficients, Wronskian and linearly independent functions. Non-homogeneous second order linear differential equations with constant coefficients, complimentary function, particular integral and general solution,
	FPH DSC – 1 : Mathematical Physics 1 (Lab)		Basic Elements of Python: The Python interpreter, the print statement, comments, Python as simple calculator, objects and expressions, variables (numeric, character and sequence types) and assignments, mathematical operators. Strings, Lists, Tuples and Dictionaries, type conversions, input statement, list methods. List mutability Formatting in the print statement. Control Structures: Conditional operations, if, if-else, if-elif-else, while and for Loops, indentation, break and continue, List comprehension. Functions: Inbuilt functions, user-defined functions, local and global variables, passing functions, modules, importing modules, math module, making new modules. Recommended List of Programs (At least two) (a) Make a python function that takes a number N as input and returns the value of factorial of N and compare with the output of math.factorial() method. Use this function to print the number of ways a set of m red and n blue balls can be arranged. (b) Generate random numbers (integers and floats) in a given range and calculate area and volume of regular shapes with random dimensions. (c) Generate data for coordinates of a projectile and plot the trajectory. Determine the range, maximum height and time of flight for a projectile motion.

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	SEC: Essentials of Python		Introduction: What can Python do? Why Python? Python Syntax compared to other programming languages, Python Installation. The print statement, Comments, Python Data Structures & Data Types, String Operations in Python, Simple Input & Output, Simple Output Formatting, Operators in python. Python Program Flow: Indentation, The If statement and its' related statement, An example with if and it's related statement, The while loop, The for loop, The range statement, Break &Continue, Assert, Examples for looping. Functions& Modules: Create your own functions, Functions Parameters, Variable Arguments, Scope of a Function, Function Documentations, Lambda Functions& map, n Exercise with functions, Create a Module, Standard Modules.
Dec.	SPH CC – V : Mathematical Physics 2 (Lab)	32221301	As listed in the syllabus.
	FPH DSC – 1 : Mathematical Physics 1 (Theory)		Determination of particular integral using method of undetermined coefficients and method of variation of parameters, Cauchy-Euler equation, Initial value problems. Applications to physics problems. Vector Algebra: Transformation of Cartesian components of vectors under rotation of the axes, Introduction to index notation and summation convention. Product of vectors – scalar symbols and vector only product – no rigorous of two, proof three and of properties). four vectors Invariance in index of notation scalar product using Kronecker Delta and Levi-Civita 3 rank tensor (as symbols only – no rigorous proof of properties) Invariance of scalar products under rotation transformation.
	FPH DSC – 1 : Mathematical Physics 1 (Lab)		NumPy Fundamentals: Importing Numpy, Difference between List and NumPy array, Adding, removing and sorting elements, creating arrays using ones(), zeros(), random(), arange(), linspace(). Basic array operations (sum, max, min, mean, variance), 2-d and 3-d arrays, matrix operations, reshaping and transposing arrays, savetxt() and loadtxt(), create a Pandas dataframe from an array and then write the data frame to a csv file. Plotting with Matplotlib: matplotlib.pyplot functions, Plotting of functions given in closed form as well as in the form of discrete data and making histograms. Recommended List of Programs (At least two) (a) Plot the displacement-time and velocity-time graph for

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			the undamped, under damped critically damped and over damped oscillator using matplotlib (b) Use recurrence relation for Legendre polynomials to generate and plot these polynomials for the first few orders using matplotlib. (c) To generate array of N random numbers drawn from a given distribution (uniform, binomial, poisson and gaussian) and plot them using matplotlib for increasing N to verify the distribution. Verify the central limit theorem. (d) To implement the transformation of physical observables under Galilean, Lorentz and Rotation transformation.
	SEC: Essentials of Python		Exceptions Handling: Errors, Exception handling with try, handling Multiple Exceptions, Writing your own Exception. File Handling: File handling Modes, Reading Files, Writing& Appending to Files, Handling File Exceptions, The with statement. Classes In Python : New Style Classes, Creating Classes, Instance Methods, Inheritance, Polymorphism, Exception Classes & Custom Exceptions. Generators and iterators: Iterators, Generators, The Functions any and all, With Statement, Data Compression. Data Structures: List Comprehensions, Nested List Comprehensions, Dictionary Comprehensions. Functions, Default Parameters, Variable Arguments, Specialized Sorts. Collections: namedtuple(), deque, ChainMap, Counter, OrderedDict, defaultdict, UserDict, UserList, UserString.
Jan	DSC-1: Mathematical Physics I (Theory)		**Vector Differential Calculus:** Scalar and vector fields, concept of directional derivative, the vector differential operator , gradient of a scalar field and its geometrical interpretation. Divergence and curl of a vector field and their physical interpretation. Laplacian operator. Vector identities. **Vector Integral Calculus:** Integrals of vector-valued functions of single scalar variable. Multiple integrals, Jacobian, Notion of infinitesimal line, surface and volume elements. Line, surface and volume integrals of vector fields. Flux of a vector field. Gauss divergence theorem, Green's and Stokes' Theorems (no proofs) and their applications.
	DSC-1: Mathematical Physics I		Least Square fitting: Algorithm for least square fitting and its relation to maximum likelihood for normally distributed data. Make Python function for least square

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	(Lab)		fitting, use it for fitting given data (x,y) and estimate the parameters a, b as well as uncertainties in the parameters for the different cases : (a) To find value of π and to integrate a given function using acceptance-rejection method. (b) Taylor's series expansion: To approximate the functions (e.g. exp(x), sin(x), cos(x), ln(1+x), etc.) by a finite number of terms of Taylor's series and discuss the truncation error. To plot the function as well the nth partial sum of its series for various values of n on the same graph and visualise the convergence of series using matplotlib.
	SEC: Essentials of Python		Writing GUIs in Python (Tkinter): Introduction, Components and Events, An Example GUI, The root Component, Adding a Button, Entry Widgets, Text Widgets, Check buttons. Python SQL Database Access: Introduction, Installation, DB Connection, Creating DB Table, INSERT, READ, UPDATE, DELETE operations, COMMIT & ROLLBACK operation, handling Errors. Network Programming: Introduction, A Daytime Server, Clients and Servers, The Client Program, The Server Program. Date and Time: Sleep, Program execution time, more methods on date/time. Filter, Map, Reduce, Decorators, Frozen set, Collections. Regular Expression: Split, Working with special characters, date, emails, Quantifiers, Match and find all, character sequence and substitute, Search method.
Feb	DSC-1: Mathematica l Physics I (Theory)		**Probability Distributions:** Discrete and continuous random variables, Probability distribution functions, Binomial, Poisson and Gaussian distributions, Mean and variance of these distributions.
	DSC-1: Mathematica l Physics I (Lab)		Numerical Differentiation: Left, right and central approximations for derivative of a function (a) Program to find the derivative of a function given in closed form. Plot both the function and derivative on the same graph. Plot the error as a function of step size on a log-log graph, study the behaviour of the plot as step size decreases and hence discuss the effect of round off error. (b) Applications e.g. determination of slope of tangent to a curve, points of extrema of a given function, etc. (c) Write program to calculate velocity and acceleration using given data of position at equidistant and small time intervals.
	SEC: Essentials of Python		Threads ESSENTIAL: Class and threads, Multi-threading, Synchronization, Treads Life cycle, use cases. Accessing API ESSENTIAL: Introduction, Facebook Messenger, Openweather. DJANGO: Django Overview, Django Installation, Creating a Project, Usage of Project in depth Discussion, Creating an Application, Understanding Folder Structure, Creating a Hello World Page, Database and Views, Static Files and Forms, API and Security.

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SEMESTER WISE TEACHING PLAN
Odd Semester (July 2022 – December 2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Ram Lal Awasthi **Department: Physics**

Semester : III/V

Month	Course	Paper Code	Topics Covered
July	DSE: AMP-1 (Th)	32227502	**Linear Vector Spaces Abstract Systems:** Binary Operations and Relations. Introduction to Groups and Fields. Vector Spaces and Subspaces. Linear Independence and Dependence of Vectors. Basis and Dimensions of a Vector Space. Change of basis. Homomorphism and Isomorphism of Vector Spaces. Linear Transformations.
	DSE: AMP-1 (Lab)	32227502	As Listed in Syllabus.
	DSE: Nuclear and Particle Physics (Th)	32227504	**Particle physics:** Particle interactions (concept of different types of forces), basic features.
	CC: QM (Lab)	32221501	As Listed in Syllabus.
Aug	DSE:AMP-1 (Th)	32227502	Algebra of Linear Transformations. Non-singular Transformations. Representation of Linear Transformations by Matrices. **Matrices, Addition and Multiplication of Matrices:** Null Matrices. Diagonal, Scalar and Unit Matrices. Upper- Triangular and Lower-Triangular Matrices. Transpose of a Matrix. Symmetric and Skew-Symmetric Matrices. Conjugate of a Matrix. Hermitian and Skew-Hermitian Matrices. Singular and Non-Singular matrices. Orthogonal and Unitary Matrices. Similar Matrices. Trace of a Matrix. Inner Product. **Eigen-values and Eigenvectors:** Finding Eigenvalues and Eigenvectors of a Matrix. Diagonalization of Matrices.
	DSE: AMP-1 (Lab)	32227502	As Listed in Syllabus.
	DSE: Nuclear and Particle Physics (Th)	32227504	Cosmic Rays, types of particles and its families, Conservation Laws (energy and momentum, angular momentum).
	DSE: Nuclear and Particle Physics (Tut)	32227504	Particle interactions (concept of different types of forces), basic features. Cosmic Rays, types of particles and its families, Conservation Laws (energy and momentum, angular momentum)
	CC: QM (Lab)	32221501	As Listed in Syllabus.
Sept	DSE: AMP-1 (Th)	32227502	Properties of Eigenvalues and Eigenvectors of Orthogonal, Hermitian and Unitary Matrices. Cayley-Hamiliton Theorem (Statement only). Finding inverse of a matrix using Cayley-Hamiltion Theorem. Use of Matrices in Solving ordinary second order differential equations and Coupled Linear Ordinary Differential Equations of first order. Functions of a Matrix. **Cartesian Tensors:** Transformation of Co-ordinates and fundamentals of Tensors. Einstein's Summation Convention. Relation between Direction Cosines. Algebra of Tensors: Sum, Difference and Product of Two Tensors. Contraction.
	DSE: AMP-1	32227502	As Listed in Syllabus.

	(Lab)		
	DSE: Nuclear and Particle Physics (Th)	32227504	Parity, baryon number, Lepton number, Isospin, Strangeness. Concept of quark model, color quantum number and gluons.
	DSE: Nuclear and Particle Physics (Tut)	32227504	Parity, baryon number, Lepton number, Isospin, Strangeness. Concept of quark model, color quantum number and gluons. Conservation of quantum numbers.
	CC: QM (Lab)	32221501	As Listed in Syllabus.
Oct	DSE: AMP-1 (Th)	32227502	Quotient Law of Tensors. Symmetric and Anti-symmetric Tensors. Invariant Tensors: Kronecker and Alternating Tensors. Association of Anti-symmetric Tensor of Order Two and Vectors. **Applications of Cartesian Tensors:** Vector Calculus using Cartesian Tensors: Scalar and Vector Products of 2, 3, 4 vectors. Gradient, Divergence and Curl of Tensor Fields. Tensor notation of Laplacian operator. Proof of Vector Identities involving scalar and vector products and vector identities involving Del operator using Tensor notation. Isotropic Tensors (Definition only). Tensorial Character of Physical Quantities. Moment of Inertia Tensor. Stress and Strain Tensors: Symmetric Nature. Elasticity Tensor. Generalized Hooke's Law.
	DSE: AMP-1 (Lab)	32227502	As Listed in Syllabus.
	DSE: Nuclear and Particle Physics (Th)	32227504	**Particle Accelerators:** Van-de Graaff generator (Tandem accelerator), Linear accelerator, Cyclotron, Synchrotrons (Principal, construction, working, advantages and disadvantages).
	DSE: Nuclear and Particle Physics (Tut)	32227504	Physics of particle acceleration, focusing, de-focusing, collision, Center of mass and lab frame of reference.
	CC: QM (Lab)	32221501	As Listed in Syllabus.
Nov	DSE: AMP-1 (Th)	32227502	**General Tensors:** Transformation of Co-ordinates. Contravariant & Covariant Vectors. Contravariant, Covariant and Mixed Tensors. Kronecker Delta and Permutation Tensors. Algebra of Tensors. Sum, Difference & Product of Two Tensors. Contraction. Quotient Law of Tensors. Symmetric and Anti- symmetric Tensors. Metric Tensor in cartesian, cylindrical, spherical coordinates.
	DSE: AMP-1 (Lab)	32227502	As Listed in Syllabus.
	DSE: Nuclear and Particle Physics (Th)	32227504	Accelerator facility available in India and abroad. Large hadron collider. SLAC. General concept of particle detection.
	DSE: Nuclear and Particle Physics (Tut)	32227504	Parameters and working of LHC and SLAC. Parameters and working or various kinds of particle detectors.
	CC: QM (Lab)	32221501	As Listed in Syllabus.
Dec.	GE- 11 : Waves and Optics	32225310	As Listed in Syllabus.

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SEMESTER WISE TEACHING PLAN
Odd Semester (July 2022 – Dec 2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Chandrabhan Dohare **Department: Physics**

Semester: III/V

Month	Course	Paper Code	Topics Covered
July	TPH CC-XII : Solid State Physics (Theory)	32221502	Crystal Structure: Solids: Amorphous and Crystalline Materials. Lattice Translation Vectors. Lattice with a Basis. Types of Lattices. Unit Cell, Symmetry and Symmetry Elements. Miller Indices. Reciprocal Lattice. Brillouin Zones. Diffraction of X-rays: single crystal and powder method. Bragg's Law, Laue Condition. Ewalds' construction. Atomic and Geometrical Factor. Simple numerical problem on SC, BCC, FCC.
Aug.	TPH CC-XII : Solid State Physics (Theory)		Elementary Lattice Dynamics: Lattice Vibrations and Phonons: Linear Monoatomic and Diatomic Chains. Acoustical and Optical Phonons. Qualitative Description of the Phonon Spectrum in Solids. Dulong and Petit's Law, Einstein and Debye theories of specific heat of solids. T3 law. Electrons in Solids: Electrons in metals- Introduction to Drude Model, Density of states (1-D, 2-D, 3-D) (basic idea),
	SPH CC – VII : Digital systems and application (Lab)		As listed in the syllabus.
Sept.	TPH CC-XII : Solid State Physics (Theory)		Elementary band theory: Kronig Penney model. Band Gap, direct and indirect bandgap. Effective mass, mobility, Hall Effect (Metal and Semiconductor). Magnetic Properties of Matter: Dia-, Para-, Ferri- and Ferromagnetic Materials. Classical Langevin Theory of dia– and Para- magnetism. Hunds's rule. Weiss's Theory of Ferromagnetism and Ferromagnetic Domains. Curie's law. B-H Curve. soft and hard material and Energy Loss Hysteresis.
	SPH CC – VII : Digital systems and application (Lab)		As listed in the syllabus.
Oct.	TPH CC-XII : Solid State Physics (Theory)		Dielectric Properties of Materials: Polarization. Local Electric Field in solids. Depolarization Field. Electric Susceptibility. Polarizability. Clausius Mossotti Equation. Classical Theory of Electric Polarizability. AC polarizability, Normal and Anomalous Dispersion. Complex Dielectric Constant. Langevin-Debye equation. Introduction to basics of phase transitions: Landau theory for ferromagnetic materials (No derivation).
	SPH CC – VII : Digital systems and application		As listed in the syllabus.

	(Lab)		
Nov.	TPH CC-XII : Solid State Physics (Theory)		Superconductivity: Experimental Results. Critical Temperature. Critical magnetic field. Meissner effect. Type I and type II Superconductors, London's Equation and Penetration Depth. Isotope effect. Idea of BCS theory (No derivation).
	SPH CC – VII : Digital systems and application (Lab)		As listed in the syllabus.
Dec.	SPH CC – VII : Digital systems and application (Lab)		As listed in the syllabus.

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SEMESTER WISE TEACHING PLAN
Odd Semester (Aug 2022 – Feb 2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Surendra Kumar **Department: Physics**

Semester: I/III

Month	**Course**	**Paper Code**	**Topics Covered**
Aug.	SPH CC – VI : Thermal Physics (Lab)	32221302	As listed in the syllabus.
	SIH GE – 11 : Waves and Optics (Lab)	32225310	As listed in the syllabus.
Sept.	SPH CC – VI : Thermal Physics (Lab)	32221302	As listed in the syllabus.
	SIH GE – 11 : Waves and Optics (Lab)	32225310	As listed in the syllabus.
Oct.	SPH CC – VI : Thermal Physics (Lab)	32221302	As listed in the syllabus.
	SIH GE – 11 : Waves and Optics (Lab)	32225310	As listed in the syllabus.
Nov.	SPH CC – VI : Thermal Physics (Lab)	32221302	As listed in the syllabus.
	SIH GE – 11 : Waves and Optics (Lab)	32225310	As listed in the syllabus.
	FPH DSC – 2 : Mechanics (Theory)		Fundamentals of Dynamics: Inertial and Non-inertial frames, Newton's Laws of Motion and their invariance under Galilean transformations. Momentum of variable mass system: motion of rocket. Dynamics of a system of particles. Principle of conservation of momentum. Impulse. Determination of Centre of Mass of discrete and continuous objects having cylindrical and spherical symmetry. Differential analysis of a static

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			vertically hanging massive rope Work and Energy: Work and Kinetic Energy Theorem. Conservative forces and examples (Gravitational and electrostatic), non-conservative forces and examples (velocity dependent forces e.g. frictional force, magnetic force), Potential Energy. Energy diagram. Stable, unstable and neutral equilibrium. Force as gradient of the potential energy. Work done by non-conservative forces. Collisions: Elastic and inelastic collisions between two spherical bodies. Kinematics of 2 to 2 scattering in centre of mass and laboratory frames.
	FPH DSC – 2 : Mechanics (Lab)		As listed in the syllabus.
Dec.	SPH CC – VI : Thermal Physics (Lab)	32221302	As listed in the syllabus.
	SIH GE – 11 : Waves and Optics (Lab)	32225310	As listed in the syllabus.
	FPH DSC – 2 : Mechanics (Theory)		Rotational Dynamics: Angular momentum of a particle and system of particles. Torque. Principle of conservation of angular momentum. Rotation about a fixed axis. Determination of moment of inertia of symmetric rigid bodies (rectangular, cylindrical and spherical) using parallel and perpendicular axes theorems. Kinetic energy of rotation. Motion involving both translation and rotation. Non-Inertial Systems: Non-inertial frames and fictitious forces. Uniformly rotating frame. Centrifugal force. Coriolis force and its applications.
	FPH DSC – 2 : Mechanics (Lab)		As listed in the syllabus.
Jan	DSC-2 Mechanics		**Unit 3:** Central Force Motion: Central forces, Law of conservation of angular momentum for central forces, Two-body problem and its reduction to equivalent one-body problem and its solution. Concept of effective potential energy and stability of orbits for central potentials of the form k r^n for n = 2 and -1 using energy diagram, discussion on trajectories for n=-2. Solution of the Kepler Problem, Kepler's Laws for planetary motion, orbit for artificial satellites. **Unit 4: Relativity:** Postulates of Special Theory of Relativity, Lorentz Transformations, simultaneity, length contraction, time dilation, proper length and proper time, life time of a relativistic particle (for example muon decay

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			time and decay length).
	CC-IX: Elements of Modern Physics	32221402	As listed in the syllabus.
	DSC-2 Mechanics Lab		As listed in the syllabus.
	GE - 16 : Thermal Physics (Lab)	32225415	As listed in the syllabus.
Feb	DSC-2 Mechanics		Space-like, time-like and light-like separated events, relativistic transformation of velocity and acceleration, variation of mass with velocity, mass-energy equivalence, transformation of energy and momentum.
	CC-IX: Elements of Modern Physics	32221402	As listed in the syllabus.
	DSC-2 Mechanics Lab		As listed in the syllabus.
	GE - 16 : Thermal Physics (Lab)	32225415	As listed in the syllabus.
March	GE - 11 : Electricity and Magnetism		Network Analysis: Superposition, Thevenin, Norton theorems and their applications in DC and AC circuits with more than one source, Maximum Power Transfer theorem for AC circuits.
	CC-IX: Elements of Modern Physics	32221402	As listed in the syllabus.
	DSC-5 : Electricity and Magnetism Lab		As listed in the syllabus.
	GE - 11 : Electricity and Magnetism (Lab)		As listed in the syllabus.
	GE - 16 : Thermal Physics	32225415	As listed in the syllabus.

	(Lab)		
April	GE - 11 : Electricity and Magnetism		Mathematical Preliminaries: Concept of scalar and vector fields, Gradient of a scalar field, Divergence and curl of vector fields and their physical interpretation, Conservative forces and Laplace and Poisson equations. Concept of a line integral of a scalar and vector field, surface integral of vector fields and volume integral, Gauss's theorem, Stoke's theorem. Electric Field and Electric Potential for continuous charge distributions: Electric field due to a line charge, surface charge and volume charge distributions.
	CC-IX: Elements of Modern Physics	32221402	As listed in the syllabus.
	DSC-5 : Electricity and Magnetism Lab		As listed in the syllabus.
	GE - 11 : Electricity and Magnetism (Lab)		As listed in the syllabus.
	GE - 16 : Thermal Physics (Lab)	32225415	As listed in the syllabus.

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SEMESTER WISE TEACHING PLAN
Odd Semester (Jan 2023 – April 2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Surendra Kumar Yadav **Department:** Physics

Semester: I

Month	Course	Paper Code	Topics Covered
Nov.	VAC: Financial Literacy		Financial Planning and Financial Products • Introduction to Saving • Time value of money • Management of spending and financial discipline
	GE 1: MECHANICS (Theory)		Recapitulation of Vectors and Ordinary Differential Equation: Vector algebra, scalar and vector product, gradient of a scalar field, divergence and curl of vectors field Ordinary Differential Equations: First order homogeneous differential equations, second order homogeneous differential equation with constant coefficients. Fundamentals of Dynamics: Review of Newton's laws of motion, dynamics of a system of particles, centre of mass, determination of centre of mass for discrete and continuous systems having spherical symmetry.
	DSC 3: Waves and Oscillations		As listed in the syllabus.
Dec.	VAC: Financial Literacy		Banking and Digital Payment • Banking products and services • Digitisation of financial transactions: Debit Cards {ATM Cards) and Credit Cards., Net banking and UPI, digital wallets • Security and precautions against Ponzi schemes and online frauds
	GE 1: MECHANICS (Theory)		Conservation of momentum and energy, Conservative and non-Conservative forces, work – energy theorem for conservative forces, force as a gradient of potential energy. Rotational Dynamics and Oscillatory Motion: Angular velocity, angular momentum, torque, conservation of angular momentum, Moment of inertia, Theorem of parallel and perpendicular axes, Calculation of moment of inertia of discrete and continuous objects (1-D and 2-D).
	DSC 3: Waves and Oscillations		As listed in the syllabus.
Jan			
	VAC: Financial Literacy		Investment Planning and Management • Investment opportunity and financial products • Insurance Planning: Life and non-life including medical insurance schemes
	GE 1: MECHANICS (Theory)		Idea of simple harmonic motion, Differential equation of simple harmonic motion and its solution, Motion of a simple pendulum and compound pendulum. **Gravitation:** Newton's Law of Gravitation, Motion of a particle in a central force field, Kepler's Laws

			(statements only), Satellite in circular orbit and applications, geosynchronous orbits **Elasticity :** Concept of stress and strain, Hooke's law, elastic moduli, twisting torque on a wire, tensile strength, relation between elastic constants, Poisson's ratio, rigidity modulus.
	DSC 3: Waves and Oscillations Lab		As listed in the syllabus.
Feb			
	VAC: Financial Literacy		Personal Tax • Introduction to basic Tax Structure in India for personal taxation • Aspects of Personal tax planning • Exemptions and deductions for individuals • e-filing
	GE 1: MECHANICS (Theory)		**Special Theory of Relativity:** Postulates of Special Theory of Relativity, Lorentz transformation, length contraction, time dilation, relativistic transformation of velocity, relativistic variation of mass, mass-energy equivalence.
	DSC 3: Waves and Oscillations Lab		As listed in the syllabus.

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SEMESTER WISE TEACHING PLAN
Odd Semester (Nov 2022 – Feb 2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sanjeev Kumar **Department:** Physics

Semester: I

Month	**Course**	**Paper Code**	**Topics Covered**
Nov.	VAC: Financial Literacy		Financial Planning and Financial Products • Introduction to Saving • Time value of money • Management of spending and financial discipline
	DSC 3: Waves and Oscillations (Theory)		Simple Harmonic Motion: Differential equation of simple harmonic oscillator, its solution and characteristics, energy in simple harmonic motion, linearity and superposition principle.
	DSC 3: Waves and Oscillations		As listed in the syllabus.
	GE-1: Mechanics (Lab)		As listed in the syllabus.
Dec.	VAC: Financial Literacy		Banking and Digital Payment • Banking products and services • Digitisation of financial transactions: Debit Cards {ATM Cards) and Credit Cards., Net banking and UPI, digital wallets • Security and precautions against Ponzi schemes and online frauds
	DSC 3: Waves and Oscillations (Theory)		Rotating vector representation of simple harmonic oscillation, motion of simple and compound pendulum (Bar and Kater's pendulum), loaded spring. Superposition of N collinear harmonic oscillations with (1) equal phase differences and (2) equal frequency differences, Beats Superposition of two perpendicular harmonic oscillations: Graphical and Analytical Methods. Lissajous Figures with equal and unequal frequencies, effect of variation of phase.
	DSC 3: Waves and Oscillations		As listed in the syllabus.
	GE-1: Mechanics (Lab)		As listed in the syllabus.
Jan			
	VAC: Financial Literacy		Investment Planning and Management • Investment opportunity and financial products • Insurance Planning: Life and non-life including medical insurance schemes
	DSC 3: Waves and Oscillations (Theory)		Damped and Forced Oscillations: **Damped Oscillations:** Equation of motion, dead beat motion, critically damped system, lightly damped system: relaxation time, logarithmic decrement, quality factor **Forced Oscillations:** Equation of motion, complete solution, steady state solution, resonance, sharpness of resonance, power dissipation, quality

			factor.
	DSC 3: Waves and Oscillations		As listed in the syllabus.
	GE-1: Mechanics (Lab)		As listed in the syllabus.
Feb			
	VAC: Financial Literacy		Personal Tax • Introduction to basic Tax Structure in India for personal taxation • Aspects of Personal tax planning • Exemptions and deductions for individuals • e-filing
	DSC 3: Waves and Oscillations (Theory)		**Coupled Oscillations:** Coupled oscillators, normal coordinates and normal modes, energy relation and energy transfer, di-atomic molecules, representation of a general solution as a linear sum of normal modes, normal modes of N coupled oscillators.
	DSC 3: Waves and Oscillations		As listed in the syllabus.
	GE-1: Mechanics (Lab)		As listed in the syllabus.

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kanwar Singh **Department: Sanskrit**

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
JULY	**Theory:**	UNIT I: INTRODUCTION TO SANSKRIT GRAMMAR AND SANGHYA PRAKARAN	B.A. 3RD YEAR (H)	C-12 SANSKRIT GRAMMAR
NOVEMBER		UNIT I: INTRODUCTION TO APPLIED SANSKRIT AND KARAK	B.A. 1ST YEAR (H) AECC	DSC-1 APPLIED SANSKRIT
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

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AUGUST DECEMBER	**Theory:**	UNIT I: SANGYA AND ACH SANDHI UNIT II: HAL SANDHI	B.A. 3RD YEAR (H)	C-12 SANSKRIT GRAMMAR
		UNIT I: INTRODUCTION TO SANSKRIT POETICS	B.A. 2ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
		UNIT I: LAT, LARIT LAKAR AND SHABDRUPA	B.A. 1ST YEAR (H) AECC	DSC-1 APPLIED SANSKRIT
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
SEPTEMBER JANUARY	**Theory:**	UNIT II: VISARGA SANDHI UNIT III: PRACTICE OF APPLICATIONS OF SANDHIS IN PRESCRIBED TEXTS LITERARY TEXTS	B.A. 3RD YEAR (H)	C-12 SANSKRIT GRAMMAR
		UNIT I: INTRODUCTION TO SANSKRIT POETICS UNIT II: FORMS OF KAVYA LITERATURE	B.A. 2ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
		UNIT II: KRIDANT PRATYA AND OTHER LAKARS UNIT III: SANDHI AND TIGANT VACHYA	B.A. 1ST YEAR (H) AECC	DSC-1 APPLIED SANSKRIT
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

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OCTOBER	**Theory:**	UNIT IV: AVAYIYBHAV AND TATPURUS SAMAS UNIT V: BAHUVRIHI AND DWANDVA SAMAS	B.A. 3RD YEAR (H)	C-12 SANSKRIT GRAMMAR
		UNIT III: SABDA SAKTI (POWER OF WORD) UNIT IV: RASA-SUTRA	B.A. 2ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
NOVEMBER		UNIT V: ALANKARA (FIGURES OF SPEECH) UNIT VI: CHANDASA (METRE)	B.A. 2ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
		UNIT VI: TAHADIT PRATYA	B.A. 3RD YEAR (H)	C-12 SANSKRIT GRAMMAR
DECEMBER		UNIT VI: CHANDASA (METRE)	B.A. 2ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
FEBRUARY		UNIT IV: SAMAS	B.A. 1ST YEAR (H) AECC	DSC-1 APPLIED SANSKRIT
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	Assignments:	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS.		
	Tests:	TESTS WILL BE TAKEN TIMELY.		

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SEMESTER WISE TEACHING PLAN
November 2022 - February 2023 (Odd semester)
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Name of the Faculty: Geeta Jayaram Sodhi
Department: Sociology
Semester: I (November 2022 - February 2023)

Month		Topic(s)	Course	Paper Code/Name
NOVEMBER	**Theory**	Thinking Sociologically	Core Course-01	Introduction to Sociology
	Practical	NA	NA	NA
	Tutorial	Nature of the Sociological Perspective	Core Course-01	Introduction to Sociology
DECEMBER	**Theory**	1.Emergence of Sociology and Social Anthropology 2. Social Groups	Core Course-01	Introduction to Sociology
	Practical	NA	NA	NA
	Tutorial	Contributions to the Development of Sociology	Core Course-01	Introduction to Sociology
	Assignment	What does it mean to think sociologically?	Core Course-01	Introduction to Sociology
JANUARY	**Theory**	1. Social Institutions 2. Culture	Core Course-01	Introduction to Sociology

	Practical	NA	NA	NA
	Tutorial	Concept of Culture	Core Course-01	Introduction to Sociology
	<u>Mid Term Test</u>	Topics: 1.Social Groups 2.Social Institutions	Core Course-01	Introduction to Sociology
FEBRUARY	**Theory**	1.Social Change	Core Course-01	Introduction to Sociology
	Practical	NA	NA	NA
	Tutorial	Features and Content of Culture	Core Course-01	Introduction to Sociology

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SEMESTER WISE TEACHING PLAN

July-December 2022 (Odd semester)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Geeta Jayaram Sodhi
Department: Sociology
Semester: V (July-December, 2022)

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Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Work in Historical Perspective	DSC 4	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	Discuss the nature of Work in Pre-industrial Society	DSC 4	Sociology of Work
AUGUST	**Theory**	1.Interlinking Work and Industry 2.Industrialism	DSC 4	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	Industrialisation and Industrialism	DSC 4	Sociology of Work

SEPTEMBER	**Theory**	1.Post-Industrial Society 2. Information Society 3. Alienation	DSC 4	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	A critical analysis of theory of Post-Industrialism	DSC 4	Sociology of Work
	Assignment	Critically examine the classical approaches to work.	DSC 4	Sociology of Work
OCTOBER	**Theory**	1.Gender dimension of Work 2. Unpaid Work and Forced Labour 3. Work in the Informal Sector	DSC 4	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	Features of Work in the Informal Sector Topics:1. Industrialism 2.Post-industrial Society	DSC 4 DSC 4	Sociology of Work Sociology of Work

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	Mid-Term Test	Topics: 1.Work in Pre-industrial Society 2.Unpaid Work and Forced labour		

NOVEMBER	**Theory**	Risk,Hazard and Disaster	DSC 4	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	Gender dimension of Work	DSC 4	Sociology of Work

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SEMESTER WISE TEACHING PLAN (2022-23)

ODD SEMESTER

SRI VENKATESWARA COLLEGE

ıe of the Faculty: Subas Mohapatra

Department: Sociology

Semester: III

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Sociology of religion; meaning and scope	Discipline Specific Elective- 02	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Sociology of religion; meaning and scope	Discipline Specific Elective- 02	Religion and Society
AUGUST	**Theory**	Sociology of Religion: Nature and scope Sacred and profane Religion and Rationalizat	Discipline Specific Elective- 02	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Sociology of Religion: Nature and scope Sacred and profane Religion and Rationalizat	Discipline Specific Elective- 02	Religion and Society

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SEPTEMBER	**Theory**	Rites of Passage Hinduism Budhism	Discipline Specific Elective- 02	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Rites of Passage Hinduism Budhism	Discipline Specific Elective- 02	Religion and Society
	Assignment (10 Marks)	Sociology of Religion: Nature and scope Sacred and profane Religion and Rationaliza	Discipline Specific Elective- 02	Religion and Society
OCTOBER	**Theory**	Islam Jainism Sikhism Christianity	Discipline Specific Elective- 02	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Islam Jainism Sikhism Christianity	Discipline Specific Elective- 02	Religion and Society
	Mid-SemesterExa	---------- -- Islam, Jainism Sikhism,Christianity		Religion and Society
	nation (10Marks)			

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NOVEMBER	**Theory**		Discipline Specific Elective- 02	
	Practical	NA	NA	NA
	Tutorial		Discipline Specific Elective- 02	

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SEMESTER WISE TEACHING PLAN (2020-21)

ODD SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Subas Mohapatra

Department: Sociology

Semester: I

Month		Topic(s)	Course	Paper Code/Name
JULY	**Theory**	Karl Marx Materialistic Conception of History	B.A. Programme Core Course-03	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Historical materialism	Core Course-03	Sociological Theories
AUGUST	**Theory**	Class and Class Struggle	Core Course-03	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Class and Class struggle	Core Course-03	Sociological Theories
SEPTEMBER	**Theory**	Emile Durkheim Forms of solidarity and Socialfact	Core Course-03	Sociological Theories

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	Practical	NA	NA	NA
	Tutorial	Emile Durkheim Forms of Solidarity and Social fact	Core Course-03	Sociological Theories
	Assignment (10Marks)	Division of labor / Historical Materialism	Core Course-03	Sociological Theories
OCTOBER	**Theory**	Max Weber Ideal Type and Social Action	Core Course-03	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Max Weber Ideal Type and Social Action	Core Course-03	Sociological Theories
	Mid-SemesterExamination (10Marks)	Topics: Karl Max, E. Durkheim, Max Weber	Core Course-03	Sociological Theories
NOVEMBER	**Theory**	Max Weber on Types of Authority	Core Course-03	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Max Weber on Types of Authority	Core Course-03	Sociological Theories

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SEMESTER WISE TEACHING PLAN
July-December 2022-23 (Odd semester)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. ABHIJIT KUNDU

Department: Sociology

Semester: ODD, July-November

PRINCIPAL (Acting)
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Month		Topic(s)	Course	Paper Code/Name
JULY	**Theory**	Contemporary Understanding of Power and Politics	HONOURS-III Sem	Core Course-05 POLITICAL SOCIOLOGY
	Practical	NA	NA	NA
	Tutorial	Liberalization and Political Imagination	Same	Same
AUGUST	**Theory**	Power and Subject_ Foucault Concepts of Power and Authority	Same	Same
	Practical	NA	NA	NA
	Tutorial	Critical Review of Classical understanding of Power	Same	Same
SEPTEMBER	**Theory**	Elite Theory -Elites and Ruling Classes	Same	Same

	Practical	NA	NA	NA
	Tutorial	-State as an Idea -Historical development of Citizenship - Ruling Class and	Same	Same
	<u>Assignment</u>	Discuss the scope and development of Political anthro and	Same	Same
OCTOBER	**Theory**	Forms of Democracy and State as a Structural Effect	Same	Same
	Practical	NA	NA	NA
	Tutorial	-Types of Democracy - Totalitarianism -State and Civil Society	Same	Same
	<u>Mid-Semester Examination</u>	TOPIC : State , Democracy and Civil Society	Same	Same
NOVEMBER	**Theory**	Everyday State and Local Structures of Power Post Liberalization State in India	Same	Same
	Practical	NA	NA	NA
	Tutorial	Examination of post-liberal State in India	Same	Same

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SEMESTER WISE TEACHING PLAN
July-December 2022-23 (Odd semester)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. ABHIJIT KUNDU

Department: Sociology

Semester: ODD (July-December)

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Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Materialist Conception of History	Honours V Sem	Core Course- 11/ Sociological Thinkers -I
	Practical	NA	NA	NA
	Tutorial	Biographical Sketch of Karl Marx	Same	Same
AUGUST	**Theory**	-Materialism and Dialectics -Capitalist Mode of Production	Same	Same
	Practical	NA	NA	NA
	Tutorial	-Base and Superstructure - Commodity and Surplus Value	Same	Same

SEPTEMBER	**Theory**	Max Weber-Methodology - Protestant Ethics and Capitalism	Same	Same
	Practical	NA	NA	NA
	Tutorial	-Social Action and Ideal Types.	Same	Same
	<u>Assignment</u>	Discuss the materialist interpretation of History	Same	Same
OCTOBER	**Theory**	Emile Durkheim and Positivism -Social Fact	Same	Same
	Practical	NA	NA	NA
	Tutorial _____ **<u>Mid-Semester Examination</u>**	- Characteristics of Social Facts _ Suicide as Social Facts _ Max Weber and Emile Dirkheim _____	Same _____ Same	Same _____ Same

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NOVEMBER	**Theory**	Nature of Solidarity -mechanical and organic	Same	Same
	Practical	NA	NA	NA
	Tutorial	Individual and Society	Same	Same

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SEMESTER WISE TEACHING PLAN

July-December 2022 (Odd semester)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: I (July-December, 2022)

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Month		Topic(s)	Course	Paper Code/Name
JULY	**Theory**	Introducing Sociology of India; Images and Ideas of India; pre-colonial image of India; colonial discourse	Core Course-02	Sociology of India I
	Practical	NA	NA	NA
	Tutorial	Colonial discourse	Core Course-02	Sociology of India I
AUGUST	**Theory**	Ideas of India I & II: Reading Gandhi and Ambedkar	Core Course-02	Sociology of India I
	Practical	NA	NA	NA
	Tutorial	Compare and contrast the ideas of Gandhi and Ambedkar	Core Course-02	Sociology of India I
SEPTEMBER	**Theory**	concept of caste and understanding the caste system; critique of caste; agrarian classes	Core Course-02	Sociology of India I

	Practical	NA	NA	NA
	Tutorial	features and critique of caste; agrarian structure	Core Course-02	Sociology of India I
	<u>Assignment (12.5 Marks)</u>	Discuss the views of Gandhi and Ambedkar on India	Core Course-02	Sociology of India I
OCTOBER	**Theory**	Village studies in India; profile and situation of Indian tribes; kinship system in India	Core Course-02	Sociology of India I
	Practical	NA	NA	NA
	Tutorial	Understanding the Indian village; contemporary issues and problems of Indian tribes; North and South Indian kinship	Core Course-02	Sociology of India I
	<u>Assignment (12.5 Marks)</u>	Topics: agrarian classes, caste, kinship, village	Core Course-02	Sociology of India I
NOVEMBER	**Theory**	Industry and labor; religion and society in India	Core Course-02	Sociology of India I
	Practical	NA	NA	NA
	Tutorial	Mapping the industrial working class; religious practices of Hindus, Sikhs and Muslims	Core Course-02	Sociology of India I

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July-December 2022 (Odd semester)

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Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: III (July-December, 2022)

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	The art of academic reading and writing; virtues of repetition; techniques for reading academic texts	SEC-01	Reading, Writing and Reasoning for Sociology
	Practical	NA	NA	NA
	Tutorial	Assignment 1. Reading and writing summary in 150 words Assignment 2. Reading and writing	SEC-01	Reading, Writing and Reasoning for Sociology
AUGUST	**Theory**	Grasping the whole: how to get an overview; Divide and conquer: taking texts apart (contd.)	SEC-01	Reading, Writing and Reasoning for Sociology
	Practical	NA	NA	NA
	Tutorial	Assignment 3: Reading and writing summary in 25 words with 2 keywords Assignment 4: Academic journal writing	SEC-01	Reading, Writing and Reasoning for Sociology

SEPTEMBER	**Theory**	Divide and conquer: taking texts apart (contd.); Getting outside help: recruiting extra resources	SEC-01	Reading, Writing and Reasoning for Sociology
	Practical	NA	NA	NA
	Tutorial	Assignment 5: Independent short essay with arguments. Assignment 6: Independent short essay with introduction and	SEC-01	Reading, Writing and Reasoning for Sociology
	In-Class Assignments (15 Marks)	06 Assignments as mentioned above.	SEC-01	Reading, Writing and Reasoning for Sociology
OCTOBER	**Theory**	How to begin writing academic prose; articles in books, journals, book reviews, review articles, critiques etc. (Contd.)	SEC-01	Reading, Writing and Reasoning for Sociology
	Practical	NA	NA	NA
	Tutorial	Assignment 7: Book review Assignment 8: Summary of book of non-academic/ leisure genre in 150 words	SEC-01	Reading, Writing and Reasoning for Sociology
	End-Semester Assignment	Essay on 3500-4000 words on a socially relevant theme of choice.		

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NOVEMBER	**Theory**	How to begin writing academic prose; articles in books, journals, book reviews, review articles, critiques etc. (Contd.)	SEC-01	Reading, Writing and Reasoning for Sociology
	Practical	NA	NA	NA
	Tutorial	Assignment 9: Writing an academic film review Assignment 10: The technique of	SEC-01	Reading, Writing and Reasoning for Sociology

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SEMESTER WISE TEACHING PLAN (2022-23)

ODD SEMESTER

SRI VENKATESWARA COLLEGE

e Faculty: DR. URMI BHATTACHARYYA
Department: SOCIOLOGY
Semester: V (DSE: Urban Sociology)

Month		Topic(s)	Course	Paper Code/Name
JULY	**Theory**	-Introducing Urban Sociology -The City in History	B.A. (H) DSE	Urban Sociology
	Practical	NA	NA	NA
	Tutorial	-Discussion and writing on concepts of community, city and neighborhood	B.A. (H) DSE	Urban Sociology
AUGUST	**Theory**	-Concepts: Urban, Urbanism and the city Cities and Capitalism -Urban theory and urban experience	B.A. (H) DSE	Urban Sociology
	Practical	NA	NA	NA
	Tutorial	-Assisting students on how to understand and write on the traditional approach to urbanism -How it changed with the development of capitalism	B.A. (H) DSE	Urban Sociology
SEPTEMBER	**Theory**	-Perspectives in Urban Sociology: City as Ecological, Political Economy, Network, City as Culture	B.A. (H) DSE	Urban Sociology

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	Practical	NA	NA	NA
	Tutorial	-Identifying the basic principles underlying Chicago School and the human ecological approach -recognize the theoretical distinctions between the different perspectives Discussions centering writing the term assignment	B.A. (H) DSE	Urban Sociology
	Assignment	By reflecting on the social transformations brought about by the development of capitalism and the money economy, write an essay elaborating on the Marxist approach to understanding urbanism.	B.A. (H) DSE	Urban Sociology
OCTOBER	**Theory**	-Movements and Settlements: Migration and Community -Politics of Urban Space: Culture and Leisure	B.A. (H) DSE	Urban Sociology
	Practical	NA	NA	NA
	Tutorial	-Course readings-related discussions on the ethnographic cases emphasizing on migration in the Indian context; and on the concepts of culture and identity in the urban space	B.A. (H) DSE	Urban Sociology
	Mid-Semester Examination	Theme: Write a note on the principle features underlying urbanism as a way of life	B.A. (H) DSE	Urban Sociology
NOVEMBER	**Theory**	-Caste, Class, Gender and the Politics of Urban Space	B.A. (H) DSE	Urban Sociology
	Practical	NA	NA	NA
	Tutorial	-Looking at how metropolitan areas are affected by differences of class, caste and gender	B.A. (H) DSE	Urban Sociology

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SEMESTER WISE TEACHING PLAN (2022-23)

ODD SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. URMI BHATTACHARYYA
Department: SOCIOLOGY
Semester: V (Sociological Research Methods I)

Month		Topic(s)	Course	Paper Code/Name
JULY	**Theory**	The Logic of Social Research - Sociological Imagination	B.A. (H) Core Course	Sociological Research Methods-I
	Practical	NA	NA	NA
	Tutorial	-Discussion on conceptualizing C.W.Mill's concept of Sociological Imagination	B.A. (H) Core Course	Sociological Research Methods-I
AUGUST	**Theory**	The Problem of Objectivity -positivism -Value Neutrality	B.A. (H) Core Course	Sociological Research Methods-I
	Practical	NA	NA	NA
	Tutorial	Discussions on what is value-free sociology and on the significance of value-neutrality Durkheim and Weber	B.A. (H) Core Course	Sociological Research Methods-I
SEPTEMBER	**Theory**	Reflexivity - Alvin Gouldner Methodological Perspectives: - Comparative Method	B.A. (H) Core Course	Sociological Research Methods-I

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	Practical	NA	NA	NA
	Tutorial	What is reflexivity? How does it connect with Weber's ideas of objectivity value-embededdness in sociology Introducing the history of the comparative method	B.A. (H) Core Course	Sociological Research Methods-I
	Assignment	On the possibility and relevance of objectivity in the social sciences	B.A. (H) Core Course	Sociological Research Methods-I
OCTOBER	**Theory**	The Feminist Method - Martin Hammersely Modes of Inquiry: Theory and Research Robert Merton	B.A. (H) Core Course	Sociological Research Methods-I
	Practical	NA	NA	NA
	Tutorial	How did the comparative method find a place in anthropology and sociology? Is there a distinct feminist methodology?	B.A. (H) Core Course	Sociological Research Methods-I
	Mid-Semester Examination	Theme: What are social facts? What are the rules for demonstrating proof for establishing such facts?	B.A. (H) Core Course	Sociological Research Methods-I
NOVEMBER	**Theory**	Analysing data: qualitative and quantitative Research design and Ethics	B.A. (H) Core Course	Sociological Research Methods-I
	Practical	NA	NA	NA
	Tutorial	Discussion on research design, techniques of data collection, ethics	B.A. (H) Core Course	Sociological Research Methods-I

SEMESTER WISE TEACHING PLAN (2022-23)

ODD SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty:Antasa Vairagya

Department: Sociology

Semester: III BA(Hons)

Month		Topic(s)	Course	Paper Code/Name
JULY	**Theory**	Gendering Sociology- Jackson and Scott	Core Course-07	Sociology of Gender
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
AUGUST	**Theory**	Gendering Sociology- Liz Stanley, Marilyn Strathern; Gender, Sex, Sexuality- Sherry Ortner, Rubin Gayle, Newton Esther	Core Course-07	Sociology of Gender
	Practical	NA	NA	NA
	Tutorial	Politics of Sexuality; Nature Vs Culture debate in Gender	Core Course-07	Sociology of Gender
	Assignment	How does Anthropology accommodates Gender Studies	Core Course-07	Sociology of Gender

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SEPTEMBER	**Theory**	Production of Masculinity and Femininity- Halberstam Judith, Alter Joseph, Patricia Uberoi; Class, Caste- WalbySylvia	Core Course-07	Sociology of Gender

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	Practical	NA	NA	NA
	Tutorial	Masculinity and Femininity	Core Course-07	Sociology of Gender
	Field Work	Gender Relations	Core Course-07	Sociology of Gender
OCTOBER	**Theory**	Caste, Class- Leela Dube, Sharmila Rege; Family, Work- Whitehead, Rajni Palriwal;, Power and Subordination- Candace	Core Course-07	Sociology of Gender
	Practical	NA	NA	NA
	Tutorial	Caste and Class; Family	Core Course-07	Sociology of Gender
	Mid-SemesterE mination	Topics: caste, family	Core Course-07	Sociology of Gender
NOVEMBER	**Theory**	Resistance and Movements- Kandiyoti Deniz, Hill- Collins Patricia, Radha Kumar	Core Course-07	Sociology of Gender
	Practical	NA	NA	NA
	Tutorial	Feminist Movements	Core Course-07	Sociology of Gender

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ODD SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: III BA (Hons)

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Unpacking Development- Henry Bernstein, Wolfgang Sachs, Rist Gilbert	Generic Elective 03	Rethinking Development
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
AUGUST	**Theory**	Unpacking Development- J. Ferguson; Theorizing Development- David Harrison, Andre Frank, Michael Redclift	Generic Elective 03	Rethinking Development
	Practical	NA	NA	NA
	Tutorial	Modernization and Development	Generic Elective 03	Rethinking Development

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SEPTEMBER	**Theory**	Theorizing Development- Nalini Vishwanathan, Kalyan Sanyal, Amartya Sen;	Generic Elective 03	Rethinking Development
	Practical	NA	NA	NA
	Tutorial	Environment and Development; Development as Freedom	Generic Elective 03	Rethinking Development
	Assignment	How is Development considered to be Freedom	Generic Elective 03	Rethinking Development
OCTOBER	**Theory**	Developmental Regimes in India- Pranab Bardhan, Partha Chatterjee; Issues in DevelopmentalPraxis- T. Scudder	Generic Elective 03	Rethinking Development
	Practical	NA	NA	NA
	Tutorial	Political Economy of Development	Generic Elective 03	Rethinking Development
	Mid-SemesterExamination			Development

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NOVEMBER	**Theory**	Issues in Developmental Praxis-Aradhana Sharma	Generic Elective 03	Rethinking Development
	Practical	NA	NA	NA
	Tutorial	Gender and Developme nt	Generic Elective 03	Rethinking Development

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ODD SEMESTER

SRI VENKATESWARA COLLEGE

:he Faculty: Dr. Nupurnima Yadav

Department: Sociology

Semester: Vth B.A Program

Paper: Generic Elective 01 Polity and Society in India

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	The political history of Independent India. State and democratic problem	Generic elective 01	Polity and Society in India
	Practical	NA	NA	NA
	Tutorial	Social character of Indian State	Generic elective 01	Polity and Society in India

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SEPTEMBER	**Theory**	Political Economy, Para Political Systems Indian Nationalism And Caste based politics in India	Generic elective 01	Polity and Society in India
	Practical	NA	NA	NA
	Tutorial	Idea of sub-nationalism	Generic elective 01	Polity and Society in India
	Assignment (10 Marks)	Discuss the social character of Indian state through its political history.		
OCTOBER	**Theory**	Party system and political participation	Generic elective 01	Polity and Society in India
	Practical	NA	NA	NA
	Tutorial	Vernacularization of politics in India	Generic elective 01	Polity and Society in India
	Mid-Examination (10 Marks)			

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NOVEMBER	**Theory**	Protest and Resistance in Indian politics	Generic elective 01	Polity and Society in India
	Practical	NA	NA	NA
	Tutorial	Mobilizations at the local level.	Generic elective 01	Polity and Society in India

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ODD SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Nupurnima Yadav

Department: Sociology

Semester: 5thB.A Prog.

Paper: SEC 03 Society through the Visual

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	Introduction to Sociological understanding of Visual -Visual Anthropology -Visual Sociology	SEC 03	Society through the Visual
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA

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SEPTEMBER	**Theory**	Reflexivity Film Making as an ethnographic research	SEC 03	Society through the Visual
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
	Assignment (10 Marks)			
OCTOBER	**Theory**	New techniques of observations and research Hypermedia	SEC 03	Society through the visual
	Practical	NA	NA	NA
	Tutorial **Mid-** **Project (10** **Presentation (10** **Marks)**	NA	NA	NA

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NOVEMBER	**Theory**	Qualitative research and positioning women researchers in visual anthropology	SEC 03	Society through the visual
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
ODD SEMESTER

Name of the Faculty: Niharika Jaiswal **Department: Sociology**

Semester : III Sociology of Religion

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	Religion and Sociology Beteille (2002) Durkheim (1995) Weber (2001)	Core Course 06	Sociology of Religion
	Practicals			
	Tutorials	What is unique to the sociological method while reading religion?		
SEPTEMBER	**Theory:**	Rationality Tambiah (1990) Smith (1998)	Core Course 06	Sociology of Religion
	Practicals:			
	Tutorials:			

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	<u>Assignment :</u>	Comment on the Durkhiemian and Weberian approach to Sociology of Religion?		
OCTOBER	**Theory:**	Elements of Religion Ritual Srinivas (1952) Durkheim (1995) Myth Malinoswski (1948)	Core Course 06	Sociology of Religion
	Practicals:			
	Tutorials:	Analyze the significance of 'myths' is maintaining social order?		
	<u>Test</u>	Describe the different kinds rites and rituals Durkheim elaborated on in his text, '*The Elementary Forms of Religious Life*'		
NOVEMBER	**Theory:**	Elements of Religion Body Hertz (1909) Time Evans Pritchard (1940)	Core Course 06	Sociology of Religion
	Practicals:			
	Tutorials:	How does body symbolize religious ideals?		

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DECEMBER	**Theory:**	Religion and State Marx (1843) Smith (1963)	Core Course 06	Sociology of Religion
	Practicals:			
	Tutorials:	To discuss the evolution of the idea of a secular state and the obstacles it faced within the Indian		

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SEMESTER WISE TEACHING PLAN (2022-23)
SRI VENKATESWARA COLLEGE
ODD SEMESTER

Name of the Faculty: Niharika Jaiswal Department: Sociology

Semester : V Environmental Sociology

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Envisioning Environmental Sociology What is environmental Sociology? **Reading:** MM Bell *'An Invitation to Environmental Sociology'*	DSE 03	ENVIRONMENTAL SOCIOLOGY
	Practicals			
	Tutorials	To analyze the development of Environmental Sociology within the larger discipline of Sociology.	DSE 03	ENVIRONMENTAL SOCIOLOGY

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AUGUST	**Theory:**	1. Realist-Constructionist Debate 2. Indian Environmentalism: Cultural Response **Reading:** J.A. Hannigan, *'Environmental Sociology'* T.Leahy, *'Sociology and the Environment'* R.Evanoff, *'Reconciling Realism and Constructivism in Environmental Ethics'* C.Key, *'Toward an Indigenous Indian Environmentalism'*	DSE 03	ENVIRONMENTAL SOCIOLOGY
	Practicals:			
	Tutorials:	To present the counter arguments of Indian Environmentalism with respect to its Western progression.	DSE 03	ENVIRONMENTAL SOCIOLOGY

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	Assignment :	How does realist and constructivist analyse an environmental issue?		
SEPTEMBER	**Theory:**	Theoretical approaches: 1. Treadmill of Production 2. Ecological modernisation 3. Risk 4. Ecofeminism and Feminist environmentalism **Readings:** K.A. Gould, Pellow and Schnaiberg, *'Interrogating Treadmill of Production'* A.P.Moll, *'Ecological Modernization and the Global Economy'* U.Beck, *'Living in the World Risk Society'* V.Shiva *'Women in Nature'* B.Aggarwal, '*Gender and the Environmental Debate: Lessons from India'*	DSE 03	ENVIRONMENTAL SOCIOLOGY
	Practicals:			
	Tutorials:	To discuss Ecological modernization and Risk Society as possible solution to the environmental crisis.		
	Assignment	Write Short notes on Treadmill of Production, Risk Society and Ecofeminism		
OCTOBER	**Theory:**	Theoretical Approaches: 1. Social Ecology Environmental Movements: 1. Chipko 2. Narmada	DSE 03	ENVIRONMENTAL SOCIOLOGY

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NOVEMBER	**Theory:**	Movements: Land Based Movements: Anti Mining and Seed	DSE 03	ENVIRONMENTAL SOCIOLOGY
	Tutorials:	To discuss the nature of resistance to environmental degradation within the Indian context.		

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MAY	**Theory:**	Corbridge and Harriss (2003) Tarlo (2003)	DSE 03	ENVIRONMENTAL SOCIOLOGY
	Practicals:			
	Tutorials:	How can one understand the practice of political institutions at the grassroot level?		

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN (2022-2023)

Teacher Name: Dr Chetan **Department: Statistics**

Semester: Odd Semester

First Year Semester I

Month		Topics	Course	Paper Code/Name
Ist Month	**Theory**	Introduction: Definition and scope of Statistics, concepts of statistical population and sample. Data: quantitative and qualitative, attributes, variables, scales of measurement (nominal, ordinal, interval and ratio).	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Practical	--	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Tutorials	--	--	--
II^{ed} Month	**Theory**		B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Practical	Graphical representation of data. Problems based on measures of central tendency, Problems based on measures of dispersion Presentation: tabular and graphic, including histogram and ogives. Measures of Central Tendency (Mathematical and Positional), Measures of Dispersion includes range, quartile deviation Karl Pearson correlation coefficient Partial and multiple correlations Spearman rank correlation with and without ties	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Tutorials	--	--	--

	Assignment	Assignment shall be given on different topics related with curriculum to each student.	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
III^{ed} Month	**Theory**	Measures of Dispersion include mean deviation, standard deviation, and coefficient of variation Moments, Skewness and Kurtosis. Definition, scatter diagram, simple, partial and multiple correlation, rank correlation.	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Practical	Problems based on combined mean and variance and coefficient of variation. Problems based on moments, skewness and kurtosis. Lines of regression, angle between lines and estimated values of variables. Correlation coefficient for a bivariate frequency distribution.	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Tutorials	--	--	--
	Test	Mock test shall be given on different topics related with curriculum.	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
IVth Month	**Theory**	Theory of attributes, consistency of data, independence and association of attributes, measures of association and contingency.	B.Sc. (Hons.) Statistics	STAT-C-101: Descriptive Statistics
	Practical	Checking consistency of data and finding association among attributes. Fitting of polynomials, exponential curves	B.Sc. (Hons.) Statistics	STAT-C-101: Descriptive Statistics
	Tutorials	--	--	--

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Second Year Semester III

Month		Topics	Course	Paper Code/Name
Aug. (Aug 16 onwards)	**Theory**	Estimation of population mean, confidence intervals for the parameters of a normal Distribution.	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Practical	Estimators of population mean. Confidence interval for the parameters of a normal distribution	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Tutorials	--	--	--
September	**Theory**	The basic idea of significance test, Null and alternative hypothesis, Type I & Type II errors, level of significance, Concept of pvalue, Tests of hypotheses for the parameters of a normal distribution	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Practical	Tests of hypotheses for the parameters of a normal distribution (one sample and two sample problems)	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Tutorials	--	--	--
	Assignment	Assignment shall be given on different topics related with curriculum to each student.	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
October	**Theory**	Tests of proportions, tests of association and goodness-of-fit using Chi-square Test, Yates' correction.	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Practical	Chi-square test of proportions, Chi-square tests of association, Chi-square test of goodness-of-fit, Test for correlation coefficient.	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Tutorials	--	--	--
November	**Theory**	Tests for the significance of correlation coefficient, Sign test for median, Sign test for symmetry, Wilcoxon two-sample test	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Practical	Sign test for median, Sign test for symmetry, Wilcoxon two-sample test.	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Tutorials	--	--	--

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Third Year Semester V

Month		Topics	Course	Paper Code/Name
Aug. (Aug 16 onwards)	**Theory**	Generalized least squares and it's Concepts	B.Sc. (Hons.) Statistics	STAT- DSE 2-(B): Econometrics
	Practical	--	B.Sc. (Hons.) Statistics	STAT- DSE 2-(B): Econometrics
	Tutorials	--	--	--
Sept.	**Theory**	Estimation under GLM and Aitken estimators Concept of Autocorrelation, Consequences of Auto-correlated Disturbances, Detection and solution of autocorrelation.	B.Sc. (Hons.) Statistics	STAT- DSE 2-(B): Econometrics
	Practical	Problems related to consequences of Autocorrelation, Diagnostics of Autocorrelation Estimation of GLM under Autocorrelation.	B.Sc. (Hons.) Statistics	STAT- DSE 2-(B): Econometrics
	Tutorials	--	--	--
Oct.	**Theory**	Concepts of heteroscedasticity, Efficiency of Aitken estimator with OLS estimator under heteroscedasticity..	B.Sc. (Hons.) Statistics	STAT- DSE 2-(B): Econometrics
	Practical	Problems related to consequences Heteroscedasticity, Diagnostics of Heteroscedasticity, Estimation of problems of GLM under Heteroscedastic disturbance terms.	B.Sc. (Hons.) Statistics	STAT- DSE 2-(B): Econometrics
	Tutorials	--	--	--
Nov.	**Theory**	Tests and solutions of heteroscedasticity Autoregressive and Lag models	B.Sc. (Hons.) Statistics	STAT- DSE 2-(B): Econometrics
	Practical	Problems related to General linear model under Aitken Estimation. Problems on Autoregressive and Lag models.	B.Sc. (Hons.) Statistics	STAT- DSE 2-(B): Econometrics
	Tutorials	--	--	--

Note: In addition to Teaching Plan, Seven to Eight Mentor Mentee Contact Classes (MMCC) per month with the allotted students.

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Dr Chetan
Assistant Professor (Statistics)

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Teaching Plan odd semester 2022-23

Name of the Faculty: Dr. Alok Kumar Singh

Department: Statistics

Semester: V

Month		Topics	Course	Paper Code/Name
JULY	**Theory:**	Overview of C, Constants, Variables and Data Types	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++ Programming**
	Practicals:	Plotting of a graph Roots of a quadratic equation (with imaginary roots also)	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++**
AUGUST	**Theory:**	Operators and Expressions, Managing Input and Output Operations, Decision Making and Branching, Develop programs to do statistical computing	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++ Programming**
	Practicals:	Sorting of an array and hence finding median Mean, Median and Mode of a Grouped Frequency Data Variance and coefficient of variation of a Grouped Frequency Data Preparing a frequency table	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++ Programming**
SEPTEMBER	**Theory:**	Decision Making and Looping, Develop programs to do statistical computing, Arrays, Develop programs to do statistical computing related to arrays, matrices etc, Character Arrays, Strings	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++ Programming**
	Practicals:	Value of n! using recursion Matrix addition, subtraction, multiplication Transpose and Trace Chi-square contingency table	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++ Programming**
	Assignment	Based on topic covered up to September		

OCTOBER	**Theory**	File Management in C, Develop programs to do statistical computing using files input/output files, User- defined Functions, Develop programs to do statistical computing using user defined functions, recursion.	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++ Programming**
	Practicals:	t-test for difference of means Paired t-test, F-ratio test	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++ Programming**
	<u>Mid Term Test</u>	Based on Unit 1 to Unit 2		
NOVEMBER	**Theory:**	Structure and Pointers, Develop programs to do statistical computing with the concept of structures and pointers, Dynamic Memory Allocation and the Preprocessor	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++ Programming**
	Practicals:	Multiple and Partial correlation. Compute ranks and then calculate rank correlation Fitting of lines of regression	**B.Sc. (Hons) Statistics**	**STAT-C-502 Statistical Computing Using C/C++ Programming**

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Odd semester, 2022-23

Name of the Faculty: Dr. Alok Kumar Singh
Department: Statistics
Semester: I

Paper: GE-I (Basic Statistics)

Month		Topics	Course	Paper Code/Name
November-2022	Theory	Introduction to statistics, development, importance and scope of statistics Measurement scales and types of data . Presentation of data by tables and graphs Measures of central tendency, cumulative frequency distributions	GE-1	GE-1, Basic Statistics
	Practicals	Graphical representation of data	GE-1	GE-1, Basic Statistics
	Tutorials	--	--	--
December-2022	Theory	Measures of Dispersion, Moments, skewness, kurtosis, cumulants, Bivariate data	GE-1	GE-1, Basic Statistics
	Practicals	Problems based on measures of central tendency	GE-1	GE-1, Basic Statistics
	Tutorials	--	--	--

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January-2023	Theory	Bivariate data, scatter diagram, principle of least squares and curve fitting, Pearson's correlation, rank correlation,		
	Practicals	Practicals based on measures of dispersion	GE-1	GE-1, Basic Statistics
	Assignment	Assignment based on Unit I and Unit II	GE-1	GE-1, Basic Statistics
	Tutorials	--	--	--
February-2023	Theory	Fitting of polynomials, exponential curves Karl Pearson correlation coefficient Partial and multiple correlations		
	Practicals	Regression, Multiple and partial correlation	GE-1	GE-1, Basic Statistics
	Assignment Test	Practical Assignment Test	GE-1	GE-1, Basic Statistics
	Tutorials	--	--	--

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Odd Semester -2022-23

Name of the Faculty: Dr. Dipika **Department: Statistics**
Semester: I, III, V

Month		Topics	Course	Paper Code/Name
July	**Theory**	Introduction to Operations Research, phases of O.R. Model building, various types of O.R. problems, Linear Programming Problem.	B.Sc. (H) Statistics	STAT-DSE-2(A): Operations Research
	Practicals			
August	**Theory**	Concept of population and sample, complete enumeration versus sampling, sampling and non-sampling errors. Types of sampling: non-probability and probability sampling, basic principle of sample survey.	. B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics
		Mathematical formulation of the L.P.P, Graphical method and Big-M method for L.P.P.	B.Sc. (H) Statistics	STAT-DSE-2(A): Operations Research
		Analysis of variance, One-way classification.	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Practicals		.	
	Tutorials			
September	**Theory**	Simple random sampling with and without replacement, definition and procedure of selecting a sample, estimates of: population mean, total and proportion, variances of these estimates, estimates of their variances and sample size determination. Stratified random sampling: Technique, estimates of population mean and total, variances of these estimates, proportional and optimum allocations and their	. B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics

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		comparison with SRS. Practical difficulties in allocation, estimation of gain in precision, post stratification and its performance, Collapsed strata, Systematic Sampling: Technique, estimates of population mean and total, k).×variances of these estimates (N = n*k)		
		Two-phase method for solving L.P.P.	B.Sc. (H) Statistics	STAT-DSE-2(A): Operations Research
		Two-way classification. Brief exposure of three basic principles of design of experiments, treatment, plot and block.	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Practicals	To select SRS with and without replacement, For a population of size 5, estimate population mean, population mean square and population variance. Enumerate all possible samples of size 2 by WR and WOR and establish all properties relative to SRS. For SRSWOR, estimate mean, standard error, the sample size, Stratified Sampling: allocation of sample to strata by proportional and Neyman's methods Compare the efficiencies of above two methods relative to SRS, Estimation of gain in precision in stratified sampling.	B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics
		Practical will be based on topics covered in theory classes.	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Tutorials			
OCTOBER	**Theory**	Comparison of systematic sampling with SRS and stratified sampling in the presence of linear trend and corrections. Circular systematic sampling (only definition), Introduction to ratio and regression methods of estimation, first approximation to the population mean and total (for SRS of large size), variances of these estimates and estimates of these variances, variances in terms of correlation coefficient for regression method of estimation and their comparison with SRS.	B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics

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		Special cases of L.P.P. Concept of Duality in L.P.P.	B.Sc. (H) Statistics	STAT-DSE-2(A): Operations Research
		Completely randomized design (CRD)	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Practical	Comparison of systematic sampling with stratified sampling and SRS in the presence of a linear trend and using end's correction, Ratio and Regression estimation: Calculate the population mean or total of the population. Calculate mean squares. Compare the efficiencies of ratio and regression estimators relative to SRS.	. B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics
		Practical will be based on topics covered in theory classes.	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Tutorials			
	Assignment	Assignments will be based on units I & II	B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics
		Assignments will be based on unsolved problems	B.Sc.(H) Statistics	STAT-DSE-2(A): Operations Research
		Assignments will be based on Two way ANOVA	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Test	Course covered up to mid-term break.	. B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics
			B.Sc.(H) Statistics	STAT-DSE-2(A): Operations Research
			Generic	STAT-GE-3:

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			Elective	Basics of Statistical Inference
NOVEMBER	Theory	Cluster sampling (equal clusters only) estimation of population mean and its variance, comparison (with and without randomly formed clusters).	. B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics
		Dual simplex method. Post-optimality analysis.	B.Sc. (H) Statistics	STAT-DSE-2(A): Operations Research
		Randomized complete block design (RCBD), Bioassay, Tests for the significance of correlation coefficient,	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Practicals	Cluster sampling: estimation of mean or total, variance of the estimate, estimate of intra-class correlation coefficient, efficiency as compared to SRS.	. B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics
		Practical will be based on topics covered in theory classes.	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Tutorials			
DECEMBER	Theory	Relative efficiency of cluster sampling with SRS in terms of intra class correlation. Concept of sub sampling.	. B.Sc.(H) Statistics	STAT-C-302: Survey Sampling and Indian Official Statistics
		Sign test for median, Sign test for symmetry, Wilcoxon two-sample test.	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Practicals	Practical will be based on topics covered in theory classes.	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	Theory	Concept of central tendency, Criteria for good measures of central tendency. Arithmetic mean: Definition, computation for ungrouped and grouped data, combined mean, weighted mean, merits and demerits. Median: Definition,	B.A. Program with Statistics as minor	

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JANUARY		computation for ungrouped and grouped data, graphical method, merits and demerits. Mode: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. Quartiles: Definition, computation for ungrouped and grouped data graphical method. Numerical problems. Concept of dispersion and measures of dispersion, absolute and relative measures of dispersion. Range and Quartile Deviation: definition for ungrouped and grouped data, and their coefficients, merits and demerits. Mean Deviation: Definition for ungrouped and grouped data, minimal property (statement only).		
	Practicals	Practical will be based on topics covered in theory classes.	B.A. Program with Statistics as minor	
	Assignments	Assignments will be based on units I & II	B.A. Program with Statistics as minor	
	Test	Course covered in theory classes	B.A. Program with Statistics as minor	
FEBRUARY	**Theory**	Standard deviation and Variance: definition for ungrouped and grouped data, coefficient of variation, combined variance and standard deviation for two groups, merits and demerits. Numerical problems.	B.A. Program with Statistics as minor	
	Practicals	Practical will be based on topics covered in theory classes.	B.A. Program with Statistics as minor	

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	SEMESTER WISE TEACHING PLAN
	SRI VENKATESWARA COLLEGE
	ODD SEMESTER 2022-23

Name of the Faculty: Dr. Nagendra Kumar Kalaparthi

Department: Statistics

Semester: I

Paper Name: Discipline Specific Core Course-1: **Descriptive Statistics**

Month	Theory/ Practical	Topic	Course	Paper Code/ Paper Name
January	**Theory**	**Data Visualization:** **Statistical Methods:** Definition and scope of Statistics, concepts of statistical population and sample **Types of Data:** Concepts of population and sample, quantitative and qualitative data, cross-sectional and time-series data, discrete and continuous data **Different types of scales:** Nominal, ordinal, interval and ratio. **Collection and Scrutiny of Data:** Primary data. Secondary data – its major sources. Complete enumeration. Construction of tables with one or more factors of classification, frequency distributions and cumulative frequency distributions and their graphical representations (Histograms, frequency polygon), stem and leaf displays.	B.Sc.(H) Statistics, Semester I	DSC: Descriptive Statistics
	Practical	Graphical representation of data- frequency polygon, histogram and ogive		
	Theory	**Measures of Central Tendency:** Mathematical and positional, partition values, **Measures of Dispersion:** range, quartile deviation, mean deviation, standard deviation, coefficient of variation, graphical representation of various measures of location and dispersion (Ogives, Histograms, Box Plot)	B.Sc.(H) Statistics,	

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		Moments: Raw moments, Central moments, Absolute moments, Factorial moments, Sheppard's corrections, skewness and kurtosis, Types of frequency distributions.	Semester I	DSC: Descriptive Statistics
	Practical	Practical based on arithmetic mean and to find missing frequencies given arithmetic mean, median and partition vales using formulae and to find them graphically, mode by using formula, graphically, method of grouping, combined mean and combined variance, quartile deviation using formula and graphically, mean deviation and standard deviation, coefficient of variation, moments about origin and moments about any arbitrary point, skewness based on mean, median, mode and standard deviation, central moments, skewness and kurtosis.	B.Sc.(H) Statistics, Semester I	
February	**Theory**	**Theory of attributes:** consistency and independence of data with special reference to attributes, **Association of attributes:** concept, Yules coefficient of Colligation and Coefficient of Colligation.	B.Sc.(H) Statistics, Semester I	DSC: Descriptive Statistics
	Practical	Practical based on fitting of polynomials, fitting of exponential curves, power curves, association and independence of attributes, fundamental set of class frequencies in attributes (find missing frequencies given fundamental set of class frequencies).		
	Theory	**Bivariate data:** Definition, scatter diagram, Karl Pearson's coefficient of correlation. Spearman's rank correlation coefficient (Introductory with interpretation). Principle of least squares and fitting of polynomials and exponential curves, lines of regression, properties of regression coefficients, angle between two regression lines, and residual variance.	B.Sc.(H) Statistics, Semester I	
	Practical	Practical based on Karl Pearson correlation coefficient, correlation coefficient for a bivariate frequency distribution, lines of regression, angle between lines and estimated values of variables. rank correlation with ties and rank correlation without ties.		

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN (2022-2023)

Teacher Name: Prof. M. K. Sukla **Department: Statistics**

Semester: Odd Semesters

Semester III

Month		Topics	Course	Paper Code/Name
Aug.	**Theory**	Introduction to Analysis of variance (ANOVA)	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Practical	Estimators of population mean. Confidence interval for the parameters of a normal distribution	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Tutorials	--	--	--
Sept.	**Theory**	Analysis of one way ANOVA, Analysis of tow way ANOVA, Basic principles of design of experiments, treatment, plot and block.	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Practical	Tests of hypotheses for the parameters of a normal distribution (one sample and two sample problems	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Tutorials	--	--	--
Oct.	**Theory**	Analysis of completely randomized design and Randomized complete block design	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Practical	Chi-square test of proportions, Chi-square tests of association, Chi-square test of goodness-of-fit, Test for correlation coefficient.	B.Sc. (Hons.) Statistics	STAT-GE-3: Basics of Statistical Inference
	Tutorials	--	--	--
Nov.	**Theory**	Basic of Bioassay	B.Sc. (Hons.) Statistics	STAT- DSE 2-(B): Econometrics
	Practical	Sign test for median,	B.Sc.	STAT- DSE

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		Sign test for symmetry, Wilcoxon two-sample test.	(Hons.) Statistics	2-(B): Econometrics
	Tutorials	--	--	--

Semester I

Month		Topics	Course	Paper Code/Name
Ist Month	**Theory**	Definition of Biveriate data and scatter diagram.	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Practical	--	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Tutorials	--	--	--
	Theory	Limits of function, continuous functions, properties of continuous Functions.	B.Sc. (Hons.) Statistics	STAT C-102 Calculus
	Practical	--	--	--
	Tutorials	Numerical based on the continuous functions and its properties.	B.Sc. (Hons.) Statistics	STAT C-102 Calculus
II^{ed} Month	**Theory**	Simple, partial and multiple correlation (Three Variable only).	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Practical	Graphical representation of data. Problems based on measures of central tendency, Problems based on measures of dispersion Presentation: tabular and graphic, including histogram and ogives. Measures of Central Tendency (Mathematical and Positional), Measures of Dispersion includes range, quartile deviation Karl Pearson correlation coefficient Partial and multiple correlations Spearman rank correlation with and without ties	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Tutorials	--	--	--
	Theory	L-Hospital's rule, Leibnitz rule for successive differentiation. Euler's theorem on homogeneous functions. Maxima and minima of functions of one and two variables.	B.Sc. (Hons.) Statistics	STAT C-102 Calculus
	Practical	--	--	--
	Tutorials	Numerical based on the L-Hospital's rule, Euler's theorem,	B.Sc. (Hons.)	STAT C-102 Calculus

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		and maxima and minima.	Statistics	
III^{ed} Month	**Theory**	Rank correlation. Simple linear regression, principle of least squares.	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Practical	Problems based on combined mean and variance and coefficient of variation. Problems based on moments, skewness and kurtosis. Lines of regression, angle between lines and estimated values of variables. Correlation coefficient for a bivariate frequency distribution.	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Tutorials	--	--	--
	Theory	Constrained optimization techniques (with Lagrange multiplier) along with some problems. Jacobian, concavity and convexity, points of inflexion of function, singular points.	B.Sc. (Hons.) Statistics	STAT C-102 Calculus
	Practical	--	--	--
	Tutorials	Numerical based on Lagrange multiplier, Jacobian, concavity and convexity, points of inflexion of function, singular points.	B.Sc. (Hons.) Statistics	STAT C-102 Calculus
IVth Month	**Theory**	Fitting of polynomials and exponential curves.	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Practical	Checking consistency of data and finding association among attributes. Fitting of polynomials, exponential curves	B.Sc. (Hons.) Statistics	STAT-GE-1: Statistical Methods
	Tutorials	--	--	--
	Theory	Theory of asymptotes (Only for Cartisian forms)	B.Sc. (Hons.) Statistics	STAT C-102 Calculus
	Practical	--	--	--
	Tutorials	Numerical based on asymptotes	B.Sc. (Hons.) Statistics	STAT C-102 Calculus

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

ODD SEMESTER 2022-23

Name of the Faculty: Dr. M.S.Ravikumar

Department: Statistics

Semester: I

Paper Name: Skill Enhancement Course (SEC): Advanced Spreadsheets Tools

Month	Theory/ Practical	Topic	Course	Paper Code/ Paper Name
January	**Theory**	Templates, Efficiency, and Risk, Data Validation; Functions and Power functions, Array Formulae, Tables, Advanced Range Names, What-if-analysis: Goal-seek. Data tables, and Scenario Manager; Data analysis Tool Pak: Descriptive Statistics, Moving averages, Histogram, Covariance, correlation, and Regression analysis; solver add-in. Problem Solving using Solver, Integrating excel with other tools: MS word, outlook, Power Point, Access, Power BI.	B.Sc.(H) Statistics, Semester I	SEC: Advanced Spreadsheets Tools
		Index and Match, Offset, Dynamic, Charting, Database functions, Text functions, and Error functions: IfError, IsError, Aggregate, Circular Reference, Formula Auditing, Floating-Point, Errors, Form Controls, Visual Basic. Recording Macros, Absolute and relative macros, editing macros, Use of spinner buttons and command buttons; Sub Procedure, Function Procedure; Working with Loops: Do_while loop, For_Next loop; Creating User Forms: Message Box, Input Box; If_Then_Else.		
		Conditional Formatting, Charts that Inspire Slicers, Sparklines, Graphics Tricks and Techniques, Worksheet Automation using Macros: Absolute and relative macros, editing macros, Creating new functions using macros,		

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		Use of spinner buttons and command buttons.		
	Practical	Descriptive Statistics, Standard Deviation, Variance, and Coefficient of Variation. Frequency Distribution, mode.mult, mode.sngl. Correlation and Regression analysis. Graphs drawing of Charts, Waterfall, Column, Line, Scatter, Histogram, Pie, if analysis, PivotTables.	B.Sc.(H) Statistics, Semester I	SEC: Advanced Spreadsheets Tools
February	**Theory**	Working with External Data, Advanced Uses of PivotTables, PowerPivot, Reporting with PowerPivot, Power query, Dashboard, Creating a spreadsheet in the area of: Loan and Lease statement; Ratio Analysis; Payroll Accounting; Capital Budgeting, Portfolio Management, Breakeven analysis, and Sensitivity analysis; Operations Management: Constraint, Forecasting & Trend Analysis optimization, Assignment Problems, Depreciation Accounting; Graphical representation of data; Frequency distribution and its statistical parameters; Correlation and Regression Analysis.	B.Sc.(H) Statistics, Semester I	SEC: Advanced Spreadsheets Tools
	Practical	Loan and Lease statement; Payroll Accounting; Capital Budgeting, Graphical representation of data; Frequency distribution and its statistical parameters; Correlation and Regression Analysis.	B.Sc.(H) Statistics, Semester I	SEC: Advanced Spreadsheets Tools

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
ODD SEMESTER 2022-2023

Name of the Faculty: Dr. Parul Saini and
Dr. Kalpana Yadav
Department: Statistics
Semester: I

Month		Topic	Course	Paper Code/ Name
December	**Theory**	Introduction to statistics, development, importance and scope of statistics Measurement scales and types of data. Presentation of data by tables and graphs Measures of central tendency, cumulative frequency distributions	GE-1	GE-1, Basic Statistics
	Practical	Graphical representation of data	GE-1	GE-1, Basic Statistics
January	**Theory**	Measures of Dispersion, Moments, skewness, kurtosis, cumulants, Bivariate data	GE-1	GE-1, Basic Statistics
	Practical	Problems based on measures of central tendency	GE-1	GE-1, Basic Statistics
February	**Theory**	Bivariate data, scatter diagram, principle of least squares and curve fitting, Pearson's correlation, rank correlation	GE-1	GE-1, Basic Statistics
	Practical	Practicals based on measures of dispersion	GE-1	GE-1, Basic Statistics
	Assignment	Assignment based on Unit I and Unit II	GE-1	GE-1, Basic Statistics
March	Theory	Fitting of polynomials, exponential curves Karl Pearson correlation coefficient Partial and multiple correlations	GE-1	GE-1, Basic Statistics
	Practicals	Regression, Multiple and partial correlation	GE-1	GE-1, Basic Statistics
	Assignment Test	Practical Assignment Test	GE-1	GE-1, Basic Statistics

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

ODD SEMESTER 2022-23

Name of the Faculty: Dr. Tanuja Sriwastava

Department: Statistics

Semester: I, III, V

Month		Topic	Course	Paper Code/ Name
July	Theory	Transportation Problem: Initial solution by North West corner rule, Least cost method and Vogel's approximation method (VAM), MODI's method to find the optimal solution special cases of transportation problem.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		Detrending: effect of elimination of trend on other components of a time series. Seasonal Component: Estimation of seasonal component by the methods of - simple averages, Ratio to Trend, Ratio to Moving Averages and Link Relative method.	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis
	Practical	1. Mathematical formulation of L.P.P and solving the problem using graphical method, Simplex technique and Charne's Big M method involving artificial variables.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		1. Fitting and plotting of modified exponential curve by different methods. 2. Fitting and plotting of Gompertz curve by different methods.	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis
August	Theory	Assignment problem: Hungarian method to find optimal assignment, special cases of assignment problem. Introduction to game theory, rectangular game, minimax - maximin principle.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		Deseasonalization. Cyclic Component: Harmonic Analysis. Random Component: Variate difference method. Stationary Time series	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis
	Practical	2. Identifying Special cases by Graphical and Simplex method and interpretation: a) Degenerate solution b) Unbounded solution c) Alternate solution d) Infeasible solution 3. Post-optimality: a) Addition of constraint b) Change in requirement vector c) Addition of new activity d) Change in cost vector 4. Allocation problem using Transportation model.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research

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		3. Fitting and plotting of logistic curve by different methods. 4. Fitting of trend by Moving Average Method for given extent and for estimated extent. 5. Fitting of trend by Spencer's 15-point and 21-point formulae.	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis
September	**Theory**	solution to rectangular game using graphical method, dominance and modified dominance property to reduce the game matrix. Solution to rectangular game with mixed strategy.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		Weak stationarity, autocorrelation function and the correlogram. Some Special Processes: Moving-average (MA) process and Autoregressive (AR) processes. Estimation of the parameters of AR (1) and AR (2). Autocorrelation functions of AR(1) and AR(2) processes.	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis
	Practical	5. Allocation problem using Assignment model. 6.Networking problem:a) Minimal spanning tree problem b) Shortest route problem	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		6. Measurement of Seasonal indices: a) Simple Averages method b) Ratio-to-Trend method c) Ratio-to-Moving Average method d) Link Relative method	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis
October	**Theory**	Inventory Management: ABC inventory system characteristics of inventory system. EOQ Model and its variations, with and without shortages,	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		Introduction to methods of Forecasting a time series. Forecasting by the methods of Exponential smoothing. Introduction to ARMA and ARIMA models.	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis
	Practical	7. Problems based on game matrix: a) Graphical solution to mx2 / 2xn rectangular game b) Mixed strategy 8. To find optimal inventory policy for EOQ models and its variations.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		7. Estimation of variance of the random component by variate difference method. 8. Forecasting by exponential smoothing.	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis
November	**Theory**	Quantity Discount Model with price breaks.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		Short-term forecasting methods Brown's discounted regression, Box-Jenkins method and Bayesian forecasting.	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis

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		Integral Calculus: Review of integration and definite integral. Differentiation under integral sign	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
	Practical	9. To solve all-units quantity discounts model.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		9. Plotting of Correlogram of moving average.	B.Sc. (H) Statistics, Semester V	STAT-DSE – 1 (A): Time Series Analysis
		Verification of Euler's Theorem.	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
December	**Theory**	Double integral, changes of order of integration. Beta and Gamma functions: Properties and relationship between them.	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
		Financial Planning and Financial Products	Semester I	VAC 1: Financial Literacy
	Practical	Practicals based on Applications of differentiation	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
		Numerical questions based on unit 1.	Semester I	VAC 1: Financial Literacy
January	**Theory**	Differential Equations: Exact differential equations. Differential equations of first order and first degree. Higher Order Differential Equations: Linear differential equations of order n, Homogeneous and non-homogeneous linear differential equations of order n with constant coefficients	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
		Banking and Digital Payment	Semester I	VAC 1: Financial Literacy
	Practical	Practicals based on Applications of Integration	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
		A project assigned to the students based on various financial products.	Semester I	VAC 1: Financial Literacy
February	**Theory**	Different forms of particular integrals. The Cauchy-Euler's equation of order n. Formation and solution of a partial differential equations. Equations easily integrable. Linear partial differential equations of first order.	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
		Investment Planning and Management	Semester I	VAC 1: Financial Literacy

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	Practical	Practicals based on Applications of Differential Equations	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
		A prroject related to building a dummy portfolio of stocks and tracking their returns.	Semester I	VAC 1: Financial Literacy
March	**Theory**	Homogeneous linear partial differential equations with constant coefficients. Different cases for complimentary functions and particular integrals.	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
		Personal Tax	Semester I	VAC 1: Financial Literacy
	Practical	Verify that the area under the curve is unity under the given p.d.f. and also calculate A.M, Median, Mode and St. Deviation	B.Sc. (H) Statistics, Semester I	DSC 3: Calculus
		Students may file a dummy IT return.	Semester I	VAC 1: Financial Literacy

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Odd –semester 2022-23

Name of the Faculty: Dr. Ramesh Kumar

Department: Statistics

Semester: III, V

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Month		Topics	Course	Paper Code/Name
July	**Theory:**	Introduction: Objective behind building econometric models	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics
	Practicals:	Problems based on estimation of General linear model	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics
AUGUST	**Theory:**	Definitions of random sample, parameter and statistic, sampling distribution of a statistic, sampling distribution of sample mean	Bachelor of Statistics (Hons.) Semester-III	STAT-C-301: Sampling Distributions
		nature of econometrics, model building, role of econometrics. General linear model (GLM).Estimation under linear restrictions	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics
	Practicals:	Practical based on Sampling distributions	Bachelor of Statistics (Hons.) Semester-III	STAT-C-301: Sampling Distributions
		Testing of parameters of General linear model, Forecasting of General linear mode	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics
SEPTEMBER	**Theory:**	sampling distribution of sample mean, standard errors of sample mean, sample variance and sample proportion. Null and alternative hypotheses, level of significance, Type I and Type II errors, their probabilities and critical region. Large sample tests, use of CLT for testing single proportion, difference of two proportions, single mean, difference of two means, standard deviation and difference of standard deviations by classical and p-value approaches	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS
		Heteroscedastic disturbances: Concept and efficiency of Aitken estimator	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics

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	Practicals:	Practical based on large sample tests , Problems related to consequences Heteroscedasticity, Diagnostics of Heteroscedasticity.	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS
	Assignment	Assignment related to testing of significance	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS
OCTOBER	**Theory**	Exact sampling distribution: Definition and derivation of pdf of $\chi 2$ with n degrees of freedom (d.f.) using mgf, nature of pdf curve for different degrees of freedom, mean, variance, mgf, cumulant generating function, mode, additive property and limiting form of $\chi 2$ distribution. Tests of significance and confidence intervals based on distribution. Exact sampling distributions: Student's and Fishers t-distribution, Derivation of its pdf, nature of probability curve with different degrees of freedom, mean, variance, moments and limiting form of t distribution.	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS
		Aitken estimator with OLS estimator under heteroscedasticity. Consequences of heteroscedasticity. Tests and solutions	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics
	Practicals:	Practical based on Sampling distributions Chi square distribution	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS
		Estimation of problems of General linear model under Heteroscedastic disturbance terms.	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics
	Mid Term Test	Test based on Unit-I and Unit-II	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS
		Unit-I	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics
NOVEMBER	**Theory:**	Derivation of distribution of sample correlation coefficient when population correlation coefficient is zero (Sawkin's Methods).Snedecore's Fdistribution: Derivation of pdf, nature of pdf nature of pdf curve with different degrees of freedom, mean, variance and mode. Distribution of 1/F(n1,n2). Relationship between t, F and $\chi 2$ distributions. Test of significance and confidence Intervals based on t and F. Limit laws: convergence in probability, almost sure convergence, convergence in mean square and convergence in distribution and their inter relations, Chebyshev's inequality, W.L.L.N., S.L.L.N. and their applications,	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS

		Tests and solutions of heteroscedasticity.	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics
	Practicals:	Test of significance and confidence intervals based on F distribution	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS
		Problems concerning specification errors as a reason for induction of Autocorrelation, Heteroscdasticity and Multicollinearity	Bachelor of Statistics (Hons.) Semester-V	STAT-DSE 2 –(B) Econometrics
December	**Theory:**	De-Moivre Laplace theorem, Central Limit Theorem (C.L.T.) for i.i.d. variates, applications of C.L.T. and Liapunov Theorem (without proof). Order Statistics: Introduction, distribution of the rth order statistic, smallest and largest order statistics. Joint distribution of rth and sth order statistics, distribution of sample median and sample range	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS
	Practicals:	Based on Central Limit theorem	Bachelor of Statistics (Hons.)	STAT-C-301: SAMPLING DISTRIBU-TIONS

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Odd Semester 2022-23

Name of Faculty: Dr. Veena Budhraja **Department: Statistics**
Semester: I, III, V

Month		Topics	Course	Paper Code/Name
JULY	**Theory:**	Probability Distributions: Generating functions, Bivariate probability generating functions	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory
		Real Analysis: Representation of real numbers as points on the line and the set of real numbers as complete ordered field. Bounded and unbounded sets, neighborhoods and limit points	B.Sc. (H) Statistics	STAT-C-303: Mathematical Analysis
	Practicals :	To find p_n from probability generating function	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory
	Tutorials:			
AUGUST	**Theory:**	Stochastic Process: Introduction, Stationary Process, Markov Chains: Definition of Markov Chain with examples, transition probability matrix, order of Markov chain, Markov chain as graphs	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory
		Supremum and infimum, derived sets, open and closed sets, sequences and their convergence, limits of some special sequences such as and Cauchy's general principle of convergence, Cauchy's first theorem on limits, monotonic sequences, limit superior and limit inferior of a bounded sequence.	B.Sc. (H) Statistics	STAT-C-303: Mathematical Analysis
	Practicals :	To form transition probability matrix for given problem	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory
	Practicals	Based on Some basic concept	B.Sc. (H) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Tutorials:			
SEPTEMBER	**Theory:**	Higher transition probabilities. Generalization of independent Bernoulli trials, classification of states and chains, Stability of Markov system,	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory

		Infinite series, positive termed series and their convergence, Comparison test, D'Alembert's ratio test, Cauchy's nth root test, Raabe's test. Gauss test, Cauchy's condensation test and integral test (Statementsand Examples only).	B.Sc. (H) Statistics	STAT-C-303: Mathematical Analysis
	Practicals :	To classify the state and to find the stability of Markovsystem	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory
		Plotting Graphs and Descriptive Statistics	B.Sc. (H) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Tutorials:			
	<u>Assignment</u>	Assignment on p.g.f's and Markov chain and Poissonprocess	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory
		Assignment based on neighborhoods, open set, closedset, sequences, series	B.Sc. (H) Statistics	STAT-C-303: Mathematical Analysis
OCTOBER	**Theory**	Poisson Process: postulates of Poisson process, properties of Poisson process, inter-arrival time,	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory
		Absolute convergence of series, Leibnitz's test for the convergence of alternating series, Conditional convergence. Review of limit, continuity and differentiability, uniform Continuity and boundedness of a function. Rolle's and Lagrange's Mean Value theorems. Taylor's theorem with lagrange's and Cauchy's form of remainder.	B.Sc. (H) Statistics	STAT-C-303: Mathematical Analysis
	Practicals :	To find birth and death process for different values of λ,and to find p_n for M/M/1 model	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory
	Practicals	Introduction to flow control: if(), for() and while() loop. Random number generation and sampling procedures,	B.Sc. (H) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Tutorials:			
	<u>Mid Term Test</u>	Unit I and Unit II		
NOVEMBER	**Theory:**	Pure birth process, Yule Furry process, birth and death process, pure death process,	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory

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		Taylor's and Maclaurin's series expansions of sinx,cosx, log (1+x)	B.Sc. (H) Statistics Semester III	STAT-C-303: Mathematical Analysis
	Practicals	Based on Ruin Problem	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processesand Queuing Theory
	Practicals	Simple statistical analysis using R software, import data, code editing	B.Sc. (H) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Tutorials:			

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN – 2022-23 (ODD SEMESTER)

Name of the Faculty: Prof S.Seenivasan
Department: Tamil
UGCF-Semester: I

2022 ODD Semester

Month	Theory/Practical	Topics	Course	Paper code/Name
November	**Theory**	**<u>Translation and Interpretation in Tamil</u>** History of Tamil Translation	**B.A Prog AEC Tamil Language**	
	Theory	**<u>An Introduction of Tamil Language</u>** Tamil Language : A Brief Introduction	**B.A Prog Tamil Discipline**	

Month	Theory/Practical	Topics	Course	Paper code/Name
December	**Theory** **Assignment**	**<u>Translation and Interpretation in Tamil</u>** Purpose, Problems& Usages of Translation	**B.A Prog AEC Tamil Language**	
	Theory **Assignment**	**<u>An Introduction of Tamil Language</u>** Introduction to Indian & Dravidian Languages	**B.A Prog Tamil Discipline**	
January	**Theory** **Mid-Term Test**	**<u>Translation and Interpretation in Tamil</u>** Source Language & Target Language	**B.A Prog AEC Tamil Language**	

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	Theory **Mid-Term Test**	**<u>An Introduction of Tamil Language</u>** History of Tamil Scripts	**B.A Prog Tamil Discipline**	
February	**Theory**	**<u>Translation and Interpretation in Tamil</u>** Interpretation – Person / Group	**B.A Prog AEC Tamil Language**	
	Theory	**<u>An Introduction of Tamil Language</u>** Origin and Development of Tamil Language	**B.A Prog Tamil Discipline**	
March	**Theory**	**<u>Translation and Interpretation in Tamil</u>** Practical Translation & Interpretation	**B.A Prog AEC Tamil Language**	
	Theory **Internal Exam**	**<u>An Introduction of Tamil Language</u>** Discussion & Conduct of Internal Examination	**B.A Prog Tamil Discipline**	

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN -2022-23 (ODD SEMESTER)

Name of the Faculty: Dr. S. Vivekananthan
Department: Tamil
CBCS Semester: III **2022 ODD Semester**

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	History of Ancient Tamil Lierature Three Sangams	B.A Prog Tamil Language	62081325
	Theory	Cultural Behavior of the Tamils Cultural Behavior	B.A Prog Tamil Discipline	62081327
August	Theory	History of Ancient Tamil Lierature Ettut-Thokai and Pathuppaattu	B.A Prog Tamil Language	62081325
	Theory	Cultural Behavior of the Tamils Customs and Social aspects of Tamils	B.A Prog Tamil Discipline	62081327

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September	**Theory** **Assignment**	**<u>History of Ancient Tamil Lierature</u>** **Ettut-Thokai and Pathuppaattu** **Sangam Literature**	**B.A Prog** **Tamil Language**	**62081325**
	Theory **Assignment**	**<u>Cultural Behavior of the Tamils</u>** **Customs and Social aspects of Tamils** **Festivals of the Tamils**	**B.A Prog** **Tamil Discipline**	**62081327**

Month	**Theory/Practical**	**Topics**	**Course**	**Paper code/Name**
October	**Theory** **Mid Term Test**	**<u>History of Ancient Tamil Lierature</u>** **Ethical Literature and major five Epics** **History of Ancient Tamil Lierature**	**B.A Prog** **Tamil Language**	**62081325**
	Theory **Mid Term Test**	**<u>Cultural Behavior of the Tamils</u>** **Festivals and Rituals** **Cultural Behavior of the Tamils**	**B.A Prog** **Tamil Discipline**	**62081327**
November	**Theory**	**<u>History of Ancient Tamil Lierature</u>** **Minor five Epics**	**B.A Prog** **Tamil Language**	**62081325**
	Theory	**<u>Cultural Behavior of the Tamils</u>** **Ballads and cultural issues**	**B.A Prog** **Tamil Discipline**	**62081327**

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN-2022-23(ODD SEMESTER)

Name of the Faculty: Dr. S. Vivekananthan
Department: Tamil
CBCS Semester: V **2022 ODD Semester**

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	Selected Texts : Novel & Short Story (Tamil) History of Tamil short Story	B.A Prog Tamil Discipline	62087504

August	**Theory**	**<u>Selected Texts : Novel & Short Story (Tamil)</u> First Five Short Stories**	**B.A Prog Tamil Discipline**	**62087504**
September	**Theory Assignment**	**<u>Selected Texts : Novel & Short Story (Tamil)</u> Second Five Short Stories Modern Short Stories in History of short story Literature**	**B.A Prog Tamil Discipline**	**62087504**
October	**Theory Mid Term Test**	**<u>Selected Texts : Novel & Short Story (Tamil)</u> <u>Last Two Short stories and cultural reflections of the fictions</u> <u>Short story and Novel</u>**	**B.A Prog Tamil Discipline**	**62087504**
November	**Theory**	**<u>Selected Texts : Novel & Short Story (Tamil)</u> Sociological perspectives in Short stories**	**B.A Prog Tamil Discipline**	**62087504**

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN- 2022-23 (ODD SEMESTER)

Name of the Faculty: Dr. S. Seenivasan
Department: Tamil
CBCS Semester: III

2022 ODD Semester

Month	Theory/Practical	Topics	Course	Paper code/Name

July	**Theory**	**<u>History of Ancient Tamil Literature</u>** **Tamil Bakthi Literature**	**B.A Prog** **Tamil Language**	**62081325**
	Theory	**<u>Cultural Behavior of the Tamils</u>** **Definition of Culture**	**B.A Prog** **Tamil Discipline**	**62081327**
August	**Theory**	**<u>History of Ancient Tamil Literature</u>** **Nayanmars in Bakthi Literature**	**B.A Prog** **Tamil Language**	**62081325**
	Theory	**<u>Cultural Behavior of the Tamils</u>** **Life style of Tamils**	**B.A Prog** **Tamil Discipline**	**62081327**
September	**Theory** **Assignment**	**<u>History of Ancient Tamil Literature</u>** **Azhvars in Bakthi Literature** **Bakthi Literature in Tamil**	**B.A Prog** **Tamil Language**	**62081325**
	Theory **Assignment**	**<u>Cultural Behavior of the Tamils</u>** **Social of Tamils** **Deities of the Tamils**	**B.A Prog** **Tamil Discipline**	**62081327**

Month	**Theory/Practical**	**Topics**	**Course**	**Paper code/Name**
October	**Theory** **Mid Term Test**	**<u>History of Ancient Tamil Literature</u>** **Saiva and Vaishnava Literature** **History of Ancient Tamil Literature**	**B.A Prog** **Tamil Language**	**62081325**
	Theory **Mid Term Test**	**<u>Cultural Behavior of the Tamils</u>** **History of Culture through Literature** **Cultural Behavior of the Tamils**	**B.A Prog** **Tamil Discipline**	**62081327**
November	**Theory**	**<u>History of Ancient Tamil Literature</u>** **Minor Literature in Tamil**	**B.A Prog** **Tamil Language**	**62081325**

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	Theory	**<u>Cultural Behavior of the Tamils</u>** **Tamil Medicines**	**B.A Prog** **Tamil Discipline**	**62081327**

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN-2022-23

Name of the Faculty: Dr. S. Seenivasan

Department: Tamil
CBCS Semester: V

2022 ODD Semester

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	Selected Texts : Novel & Short Story (Tamil) History of Tamil Novel Literature	B.A Prog Tamil Discipline	62087504
August	Theory	Selected Texts : Novel & Short Story (Tamil) Characterization of the Novel THAGANAM	B.A Prog Tamil Discipline	62087504
September	Theory Assignment	Selected Texts : Novel & Short Story (Tamil) Social History of the workers in Grave yards Thaganam Novel in History of Tamil Novel Literature	B.A Prog Tamil Discipline	62087504
October	Theory Mid Term Test	Selected Texts : Novel & Short Story (Tamil) Plot of Thganam Novel Modern Short story and Thaganam Novel	B.A Prog Tamil Discipline	62087504
November		Selected Texts : Novel & Short Story (Tamil) Cultural Reflections of Society in Thaganam	B.A Prog Tamil Discipline	62087504

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN – 2022-23 (ODD SEMESTER)

Name of the Faculty: Dr.K.Suresh
Department: Tamil
UGCF-Semester: I

2022-23 ODD Semester

Month	Theory/Practical	Topics	Course	Paper code/Name
November	**Theory**	**<u>Translation and Interpretation in Tamil</u>** History of Tamil Translation	**B.A Prog AEC Tamil Language**	
	Theory	**<u>An Introduction of Tamil Language</u>** Tamil Language : A Brief Introduction	**B.A Prog Tamil Discipline**	

Month	Theory/Practical	Topics	Course	Paper code/Name
December	**Theory** **Assignment**	**<u>Translation and Interpretation in Tamil</u>** Purpose, Problems& Usages of Translation	**B.A Prog AEC Tamil Language**	
	Theory **Assignment**	**<u>An Introduction of Tamil Language</u>** Introduction to Indian & Dravidian Languages	**B.A Prog Tamil Discipline**	
January	**Theory** **Mid-Term Test**	**<u>Translation and Interpretation in Tamil</u>** Source Language & Target Language	**B.A Prog AEC Tamil Language**	
	Theory **Mid-Term Test**	**<u>An Introduction of Tamil Language</u>** History of Tamil Scripts	**B.A Prog Tamil Discipline**	

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February	**Theory**	**<u>Translation and Interpretation in Tamil</u>** Interpretation – Person / Group	**B.A Prog** **AEC Tamil Language**	
	Theory	**<u>An Introduction of Tamil Language</u>** Origin and Development of Tamil Language	**B.A Prog** **Tamil Discipline**	
March	**Theory**	**<u>Translation and Interpretation in Tamil</u>** Practical Translation & Interpretation	**B.A Prog** **AEC Tamil Language**	
	Theory **Internal Exam**	**<u>An Introduction of Tamil Language</u>** Discussion & Conduct of Internal Examination	**B.A Prog** **Tamil Discipline**	

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SEMESTER WISE
TEACHING PLAN (2022-2023 ODD SEMESTER)
SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. SIRISHA EEDPUGANTI
Department: TELUGU
Semester : III

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Month		Topics	Course	Paper Code/
AUGUST	**Theory**	**Unit 1** Nannaya - *Kumarastra Vidyapradarshanam*	**II B.A (PROGRAM) /TELUGU**	**62081336/ Critical appreciation of Telugu Poetry: Select texts**
	Practicals	----------		
	Tutorials	TWO		
SEPTEMBER	**Theory:**	**Unit 1** Nannaya - *Kumarastra Vidyapradarshanamu* **Unit 2** Dhurjati - *Bhujanga*		
	Practicals:	----------		
	Tutorials:	FOUR		

	<u>Assignment :</u>	TWO		
OCTOBER	**Theory:**	**Unit 3** Molla - *Ashoka Vanamulo Janaki*.		
	Practicals:	----------		
	Tutorials:	FOUR		
	<u>Test</u>	TWO		
NOVEMBER	**Theory:**	**Unit 5** Madhunapantula Satyanarayana Sastry - *Kavyahomamu*.		
	Practicals:	----------		
	Tutorials:	FOUR		

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SEMESTER WISE
TEACHING PLAN (2022-2023 ODD SEMESTER)
SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. SIRISHA EEDPUGANTI
Department: TELUGU
Semester : III

Month		Topics	Course	Paper Code/
AUGUST	**Theory**	**Unit 1** History of Ancient Andhra, Land and People ..	**II B.A (PROGRAM) /TELUGU/ Discipline**	**62084303/ Social and Cultural History of Telugu people**
	Practicals	----------		
	Tutorials	TWO		
SEPTEMBER	**Theory:**	**Unit 4** Administrative Institutions, Trade and Religion, Literature and Art .		
	Practicals:	----------		
	Tutorials:	FOUR		

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	<u>Assignment :</u>	TWO		
OCTOBER	**Theory:**	**Unit 5** Social Reforms and Modernization during Colonial Rule.		
	Practicals:	----------		
	Tutorials:	FOUR		
	<u>Test</u>	TWO		
NOVEMBER	**Theory:**	**Unit 6** Formation of Andhra and Telangana: Cultural Identity and politics		
	Practicals:	----------		
	Tutorials:	FOUR		

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SEMESTER WISE
TEACHING PLAN (2022-2023 ODD SEMESTER)
SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. SIRISHA EEDPUGANTI
Department: TELUGU
Semester : V

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	**Unit 1** MODERN POETRY *1. Kanyaka* – Guraiada	**III B.A (PROGRAM) /TELUGU/ Discipline course**	**62087509/ Modern Telugu Poetry and Drama**
	Practicals	----------		
	Tutorials	ONE		
AUGUST	**Theory:**	**Unit 1** MODERN POETRY *2. Janmabhoomi* – Rayaprolu Venkata Subba Rao.		
	Practicals:	_____		
	Tutorials:	FOUR		

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	<u>Assignment :</u>	TWO		
SEPTEMBER	**Theory:**	**Unit 1** MODERN POETRY *4. Smasaanavaati* – Jashuva. *5.Daasabodha*- Gadiyaram Venkata Sesha Sastry		
	Practicals:	_____		
	Tutorials:	FOUR		
	<u>Test</u>	TWO		
OCTOBER	**Theory:**	*7.Mahaprasthanam* – SriSri. *8.Adviteeyam* – Balagangadhara Tilak **Unit 2** MODERN DRAMA		
	Practicals:	_____		
	Tutorials:	FOUR		

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NOVEMBER	**Theory:**	**UNIT 2** MODERN DRAMA *N.G.O* - Acarya Atreya		
	Practicals:	___		
	Tutorials:	TWO		

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SEMESTER WISE

TEACHING PLAN (2022-2023 ODD SEMESTER)

SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. SIRISHA EEDPUGANTI
Department: TELUGU
Semester : III

Month		Topics	Course	Paper Code/
AUGUST	**Theory**	**Unit 1** 1. Theory of Communication	**II B.COM (PROGRAM) /TELUGU**	**62081338/ Business Communication (Telugu)**
	Practicals			
	Tutorials	TWO		
SEPTEMBER	**Theory:**	Unit 2 1. Forms of Communication (a) Written Communication:		
	Practicals:			
	Tutorials:	FOUR		

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	Assignment:	TWO		
OCTOBER	**Theory:**	**Unit 3** Applications of Communication (a) Writing a Summer Project Report, Citing		
	Practicals:	----------		
	Tutorials:	FOUR		
	Test	TWO		
NOVEMBER	**Theory:**	**Unit 3** Applications of Communication (a) Writing a Summer Project Report, Citing References and Bibliographical		
	Practicals:	----------		
	Tutorials:	FOUR		

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SEMESTER WISE TEACHING PLAN (2022-2023 ODD SEMESTER)

SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. SIRISHA EEDPUGANTI
Department: TELUGU
Semester : I

Month		Topics	Course	Paper Code/
NOVEMBER	**Theory**	**Unit 1** Origin and Development of Telugu short story	**IB.A (PROGRAM) /TELUGU/ Discipline course**	**Study of literary texts: Telugu**
	Practicals	----------		
	Tutorials	TWO		
DECEMBER	**Theory:**	Unit -3 Select short stories Galivana by Palagummi Padma Raju		
	Practicals:	----------		
	Tutorials:	TWO		

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	Assignment:	ONE		
JANUARY	**Theory:**			
	Practicals:			
	Tutorials:			
	Test			
FEBRUARY	**Theory:**			
	Practicals:			
	Tutorials:			

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SEMESTER WISE
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SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. SIRISHA EEDPUGANTI
Department: TELUGU
Semester : I

Month		Topics	Course	Paper Code/
NOVEMBER	**Theory**	**Unit 1** Kavitrayam (Nannaya, Tikkana, Errana): An	**IB.COM (PROGRAM) /TELUGU/ GE**	**Telugu Literature and History: An**
	Practicals	----------		
	Tutorials	TWO		
DECEMBER	**Theory:**	**Unit 1** Kavitrayam (Nannaya, Tikkana, Errana): An Introduction Unit-3. Prabandha		
	Practicals:	----------		
	Tutorials:	TWO		

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	Assignment:	ONE		
JANUARY	**Theory:**			
	Practicals:			
	Tutorials:			
	Test			
FEBRUARY	**Theory:**			
	Practicals:			
	Tutorials:			

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SEMESTER WISE
TEACHING PLAN (2022-2023 ODD SEMESTER)
SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. SIRISHA EEDPUGANTI
Department: TELUGU
Semester : I

Month		Topics	Course	Paper Code/
NOVEMBER	**Theory**	**--------**	**IB.A (PROGRAM) IB.COM (PROGRAM) IB.A (HONS) /TELUGU/ AEC**	**Translation and Interpretation in Telugu**
	Practicals	----------		
	Tutorials			
DECEMBER	**Theory:**	**Unit -I** Translation and Interpretation: An introduction Translator, features of the translator, advantages of the translation	**IB.A (PROGRAM) IB.COM (PROGRAM) IB.A (HONS) /TELUGU/AEC**	**Translation and Interpretation in Telugu**
	Practicals:	----------		
	Tutorials:	----------		

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	Assignment:	ONE		
JANUARY	**Theory:**			
	Practicals:			
	Tutorials:			
	Test			
FEBRUARY	**Theory:**			
	Practicals:			
	Tutorials:			

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SEMESTER WISE TEACHING
PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Aarti Seherawat **Department: Zoology**

Semester : I/III/V

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Month		Topics	Course	Paper Code/Name
July	**Theory**	Unit 4: Applications of Biotechnology - Meta-genomics	BSc. Life Science V Sem	DSE 1 Animal Biotechnology
August	**Theory:**	Unit 4: Applications of Biotechnology - Meta-genomics - Introduction - Types	BSc. Life Science V Sem	DSE 1 Animal Biotechnology
		Unit 1: Nerve and Muscle -Structure of a neuron - Resting membrane potential - Graded potential -Origin of action potential and its propagation in myelinated and non-myelinated nerve fibres	BSc. Life Science III Sem	CC III Physiology and Biochemistry
	Practicals:	**SEC Medical Diagnostics:** - **Blood Pressure** - Blood Group	BSc. Life Science V Sem	SEC Medical Diagnostics
		- Plan of the syllabus and maintenance of record files. - Preparation of Haemin and Haemochromogen crystals from your own sample of blood	BSc. Life Science III Sem **(Batch I)**	CC III Physiology and Biochemistry
September	**Theory:**	Unit 4: Applications of Biotechnology - Molecular Diagnosis of genetic diseases - Cystic Fibrosis	BSc. Life Science V Sem	DSE 1 Animal Biotechnology
		Unit 1: Nerve and Muscle - Ultrastructure of skeletal muscle - Molecular and chemical basis of muscle contraction	BSc. Life Science III Sem	CC III Physiology and Biochemistry

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	Practicals:	- Preparation of Haemin and Haemochromogen crystals from your own sample of blood - Biochemistry of Carbohydrates. - Study of Permanent slides: Cartilage, bone, Spinal Cord, Liver, Pancreas, thyroid	BSc. Life Science III Sem **(Batch I)**	CC III Physiology and Biochemistry
		SEC Medical Diagnostics: - **Blood Glucose** - Haemoglobin Content	BSc. Life Science V Sem	SEC Medical Diagnostics
October	**Theory:**	Unit 4: Applications of Biotechnology - Molecular diagnosis of Sickle cell anaemia - Recombinant DNA in medicines	BSc. Life Science V Sem	DSE 1 Animal Biotechnology
		Unit5: Cardiovascular system - Structure of Heart, Origin and conduction of the cardiac impulse	BSc. Life Science III Sem	CC III Physiology and Biochemistry
	Practicals:	- Demonstration of salivary amylase activity under optimal conditions. - Study of permanent slides: Liver, kidney, Lung.	BSc. Life Science III Sem **(Batch I)**	CC III Physiology and Biochemistry
		SEC Medical Diagnostics: - Abnormal Urine constituents - DLC - ECG - CT, MRI, X-ray	BSc. Life Science V Sem	SEC Medical Diagnostics
	Test:	Unit 4, 1, 2	BSc. Life Science V Sem	DSE 1 Animal Biotechnology

November	**Theory:**	Unit 4: Applications of Biotechnology - Recombinant Insulin - Recombinant Human Growth Hormone - Gene Therapy	BSc. Life Science V Sem	DSE 1 Animal Biotechnology
		Unit 5: Cardiovascular system - Cardiac cycle	BSc. Life Science III Sem	CC III Physiology and Biochemistry

		Unit 1: Introduction to Ecology - Autecology and Synecology - Laws of limiting factors	BSc. Zoology Hons. I Sem	DSC 3 Concepts of Ecology
	Practicals:	- Estimation of Total Protein in given solutions by Lowry's Method - Study of permanent slides: Pitutary, adrenal Gland, Duodenum,	BSc. Life Science III Sem **(Batch I)**	CC III Physiology and Biochemistry
		SEC Medical Diagnostics: - **Mock Test** - **Revision**	BSc. Life Science V Sem	SEC Medical Diagnostics
		- Study of whole mount of Euglena, Amoeba, Noctiluca, Paramecium, Binary fission in Paramecium and Conjugation in Paramecium.	**B.Sc (H)** **Zoology Sem I**	**Non-chordata**
	Assignment:	Cardiac Cycle	BSc. Life Science III Sem **(Batch I)**	CC III Physiology and Biochemistry
December	**Theory**	Unit 1: Introduction to Ecology - Study of Physical Factors Unit 5: Ecosystem - Types of Ecosystem - Food Chains - Ecological pyramids and Efficiencies	BSc. Zoology Hons. I Sem	DSC 3 Concepts of Ecology
	Practicals:	- Repetition of Salivary amylase - Haemin and Haemochromogen crystals - Mock Practical Exam	BSc. Life Science III Sem **(Batch I)**	CC III Physiology and Biochemistry
		- Examination of pond water collected from different places to observe diversity in Protista. - Study of Sycon, *Hyalonema, Euplectella, Spongilla*, T.S. of Sycon, L.S. of Sycon - Study of *Obelia, Physalia, Millepora, Aurelia, Tubipora, Corallium, Alcyonium, Gorgonia, Metridium/Adamsia, Pennatula, Fungia, Meandrina, Madrepora*.	**B.Sc (H)** **Zoology Sem I**	**Non-chordata**
January	**Theory**	**Unit 5:** - Nitrogen cycle Unit 4: Community - Characteristics	BSc. Zoology Hons. I Sem	DSC 3 Concepts of Ecology

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	Practicals:	- Specimen/slide of any one Ctenophore. - Study of adult *Fasciola hepatica*, *Taenia solium* and their life stages (Slides/microphotographs). - Study of adult *Ascaris lumbricoides* and its life stages (Slides/microphotographs).	**B.Sc (H) Zoology Sem I**	**Non-chordata I**
February	**Theory**	**Unit 4: Community** - Ecotone - Edge effect - Succession	BSc. Zoology Hons. I Sem	DSC 3 Concepts of Ecology
	Practicals	▪ Examination of soil samples collected from different places to observe diversity in nematodes ▪ To submit a Project Report on the life cycle of any one parasite or pathogen/corals/coral reefs.	**B.Sc (H) Zoology Sem I**	**Non-chordata I**
March	**Theory**	**Unit 4: Community** - Succession - Types with examples.	BSc. Zoology Hons. I Sem	DSC 3 Concepts of Ecology
	Practicals	▪ To submit a Project Report on the life cycle of any one parasite or pathogen/corals/coral reefs. ▪ Revision and Mock exam	**B.Sc (H) Zoology Sem I**	**Non-chordata I**

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Planner: Odd Semester 2022-2023 (July – November)

Name of the Faculty: Dr. Ajaib Singh

Department: Zoology

Semester: I/III/V

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Month		Topics	Course	Paper Code/Name
July	Theory	**Animal Biotechnology** Cloning vectors: plasmids, cosmids, phagemids, phage lambda	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Mendel's laws of inheritance	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Demonstration of lymphoid organs.	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical -Preparation of Liquid culture medium (LB) and raise culture of *E.coli.* -Genomic DNA isolation from *E.coli*	B.Sc. (P) Life Sciences Semester V (Batch II)	**DSE-1/Animal Biotechnology**
August	Theory	**Animal Biotechnology** Cloning vectors: M13, BAC, YAC, MAC and expression vectors.	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Exception to Mendel's law, Co-dominance,Incomplete dominance	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Histological study of spleen,	B.Sc. (Hons.) Zoology Sem	**ZH DSE Course-VIII/**

		thymus and lymph nodes through slides/ photographs Preparation of stained blood film to study various types of blood cells. Repetition of these experiments	V TZH	**Immunology**
		Animal Biotechnology - Plasmid DNA isolation from *E.coli* -Agarose gel electrophoresis -Restriction digestion of Lambda DNA with EcoRI and HindIII (Demonstration) -Construction of Linear restriction map from the data provided.	B.Sc. (P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
September	Theory	**Animal Biotechnology** Restriction enzymes, nomenclature, type II. Construction of genomic and cDNA library. Screening by colony and plaque hybridization.	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Multiple alleles, lethal alleles, sex lethals	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Ouchterlony's double immuno-diffusion method. ABO blood group determination. Cell counting and viability test from spleenocytes of farm bred animals/cell lines. Repetition of these practicals	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology- DSE - Construction of circular restriction map from the data provided To study following techniques through photographs: -PCR	B.Sc. (P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**

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		-DNA sequencing (Sanger's Method) -Western blotting		
October	Theory	**Animal Biotechnology** DNA modification enzymes, Sequencing techniques, PCR, DNA Microarray **(Internal Assessment – Test and Assignment)**	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Genetic interactions, Epistasis, Pleiotropy **(Internal Assessment – Test and Assignment)**	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Demonstration of: (a) ELISA (b) Immunoelectrophoresis Repetition of Practical from July-September	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology To study following techniques through photographs: -Southern blotting -DNA fingerprinting and case studies (Photographs only to study crime, or paternity cases)	B.Sc.(P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
November	Theory	**Animal Biotechnology** Southern, Northern, Western Blotting, Transformation techniques	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Extrachromosomal Inheritance	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Detection of complement activity using haemolysis of antibody coated SRBC and standard serum Repetition of these practicals Repetition of all practicals, and finalization of continuous assessment.	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**

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		Conduct of Mock examination.		
		Animal Biotechnology Evaluation of Practical File and Practice and repetition of practical; Conduct of mock practical examination	B.Sc.(P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**

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SEMESTER WISE TEACHING PLAN (2022-23)
July 2022-March 2023, SRI VENKATESWARA COLLEGE

PRINCIPAL (Acting)
Sri Venkateswara College
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Name of the Faculty: Dr. Amarjeet Singh **Department:** Zoology

Semester: Odd (I/III/V)

Month		Topics	Course	Paper Code/Name
JULY, 2022	Theory:	**Unit VI: Biological rhythms:** Types and properties of biological rhythms	B.Sc. (H) Biological Sciences Semester V	BS-DSE 1 Animal Behavior and Chronobiology
AUGUST, 2022	Theory:	**Unit VI: Biological rhythms:** Circadian rhythms, Tidal rhythms	B.Sc. (H) Biological Sciences Semester V	BS-DSE 1 Animal Behavior and Chronobiology
		Unit 8: Lipid metabolism: Basic structure and physiological significance of fatty acids, structure and significance of storage and structural lipids	B.Sc. (P) Life Sciences Semester III	LS Core III: Physiology and Biochemistry
SEPTEMBER, 2022	Theory:	**Unit VI: Biological rhythms:** Lunar rhythms, Role of zeitgebers in entrainment, Role of melatonin	B.Sc. (H) Biological Sciences Semester V	BS-DSE 1 Animal Behavior and Chronobiology
		Unit 8: Lipid metabolism: Biosynthesis (FAS and synthesis reactions, regulation) and β-oxidation of palmitic acid (activation of fatty acids and oxidation with bioenergetics, regulation)	B.Sc. (P) Life Sciences Semester III	LS Core III: Physiology and Biochemistry
OCTOBER, 2022	Theory:	**Unit VI: Biological rhythms:** Relevance of biological clocks, endogenous and exogenous sleep disorders	B.Sc. (H) Biological Sciences Semester V	BS-DSE 1 Animal Behavior and Chronobiology
		Mid Term Exam of DSE 1 Animal Behavior and Chronobiology (B.Sc. Hons Biological Sciences Sem V)		
		Unit 10: Enzymes: Introduction (basics of classification, properties and functions), Mechanism of action (understanding of basic concepts, Induced Fit Theory), Enzyme Kinetics (Michaelis Menten equation for single enzyme single	B.Sc. (P) Life Sciences Semester III	LS Core III: Physiology and Biochemistry

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		substrate reactions, Line Weaver Burke Plot)		
NOVEMBER, 2022	Theory:	**Unit VI: Biological rhythms:** Chronotherapy	B.Sc. (H) Biological Sciences Semester V	BS-DSE 1 Animal Behavior and Chronobiology
		Unit 10: Enzymes: Inhibition and Regulation (types of Inhibition, allosteric enzymes, covalently regulated enzymes) **Unit 9: Protein metabolism:** Structure, classification and properties of amino acids, basics of protein structure; Transamination, Deamination, Glutamine formation, Glucose alanine cycle	B.Sc. (P) Life Sciences Semester III	LS Core III: Physiology and Biochemistry
		Mid-Term Exam and assignment for Physiology and Biochemistry (B.Sc. Prog. Life Sciences) **Assignment Topic:** Urea Cycle and its regulation		
		Unit V: Cell Division: Mitosis, Meiosis, Cell cycle and its regulation	B.Sc. (H) Zoology Semester I	DSC-2 Biology of Cell: Structure and Function
		Unit 5: Ecological and physiological responses to light: Light pollution and its impacts on environment, ecosystems, and wildlife, Light as an inducer for biosynthesis/activation of enzymes, hormones and other biomolecules (Vitamin D, Melatonin), Morphological and physiological color change in animals.	B.Sc. (H) Biological Sciences Semester I	BS-DSC-102 Photobiology
	Practical:	• Syllabus overview, general instructions, and maintenance of lab record. • Microscopy: Compound microscope: principle, components, and handling; Phase contrast microscope; Electron microscope; Differential Interference Contrast (DIC) Microscope. • Principle and types of cell	B.Sc. (H) Zoology Semester I	DSC-2 Biology of Cell: Structure and Function

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		fixation and staining; Cell fractionation. • To study prokaryotic cells by Gram staining and eukaryotic cell (cheek cells) by hematoxylin/methylene blue.		
		• Syllabus overview, general instructions, and maintenance of lab record. • Demonstration of Etiolation and de-etiolation • To study light penetration in water using Secchi disc. • To demonstrate the effect of light on soil fauna using Berlese Funnel Setup. • Measurement of light using Luxmeter under various conditions.	B.Sc. (H) Biological Sciences Semester I	BS-DSC-102 Photobiology
		• Syllabus overview, general instructions, and maintenance of lab record. • *Amoeba, Euglena, Paramecium, Sycon, Euplectella, Obelia, Physalia, Aurelia,* Metridium, larval stage of *Taenia solium*, Male and female *Ascaris lumbricoides*.	B.Sc. (P) Life Sciences, Semester I Batch 1	ZOO-DSC-01 Diversity of animals
DECEMBER, 2022	Theory:	**Unit 9: Protein metabolism:** Urea cycle	B.Sc. (P) Life Sciences Semester III	LS Core III: Physiology and Biochemistry
		Unit VI: Introduction to Cell Signaling: Cell signaling through G-pretein coupled receptor (GPCR) and role of secondary messenger:cAMP and protein kinase A	B.Sc. (H) Zoology Semester I	DSC-2 Biology of Cell: Structure and Function
		Unit 4: Photoperiodism: Animal responses to changing photoperiodism, Morphological, Anatomical, Physiological and	B.Sc. (H) Biological Sciences Semester I	BS-DSC-102 Photobiology

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		behavioral adaptations to extreme light conditions in animals **Unit 2: Bioluminescence and Photoreception:** Photoreception in animals, evolution of eyes		
	Practical:	• To study the effect of hypotonic, isotonic, and hypertonic solutions on cell permeability. • Preparation of a temporary slide of squashed and stained onion root tip to study various stages of mitosis. • Study the effect of colchicine on mitosis at 24 hrs and 48 hrs.	B.Sc. (H) Zoology Semester I	DSC-2 Biology of Cell: Structure and Function
		• To study the effect of light and darkness on the chromatophores of fish. • To study structure of chloroplast-through photographs. • To test/survey for color blindness using Ishihara charts. • Separation of Chloroplast pigments by Paper Chromatography/Chemical Separation of Chloroplast pigments.	B.Sc. (H) Biological Sciences Semester I	BS-DSC-102 Photobiology
		• Study of museum specimens: *Aphrodite, Nereis, Chaetopterus, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra.*	B.Sc. (P) Life Sciences, Semester I Batch 1	ZOO-DSC-01 Diversity of animals
January, 2023	Theory:	**Unit IV: Nucleus:** Structure of nucleus, Nuclear envelope, nuclear pore complex, Transport of molecules across nuclear membrane, nucleosome, nucleolus; Chromatin: euchromatin, heterochromatin	B.Sc. (H) Zoology Semester I	DSC-2 Biology of Cell: Structure and Function

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		Mid Semester Exam DSC-2 Biology of Cell: Structure and Function Syllabus covered till this duration		
		Unit 2: Bioluminescence and Photoreception: Color vision and visual processing in the human eye **Unit 1: Introduction to Light and Life:** Latitudinal Diversity gradient. Altitudinal and latitudinal variations in light intensity and photoperiod	B.Sc. (H) Biological Sciences Semester I	BS-DSC-102 Photobiology
		Mid Semester Exam BS-DSC-102 Photobiology Syllabus covered till this duration		
	Practical:	• Study of various stages of meiosis through permanent slides. • Preparation of stained mount to show the presence of Barr body in human female blood cells/cheek cells. • Cytochemical demonstration of DNA by Feulgen reaction. • Cytochemical demonstration of mucopolysaccharides by PAS reaction.	B.Sc. (H) Zoology Semester I	DSC-2 Biology of Cell: Structure and Function
		• To study various Bioluminescent organisms using photographs-Photinus pyralis, Aequorea Victoria, Vampire squid, Anglerfish, Lanternfish, Viperfish, Black dragonfish, Omphalotus nidiformes • To study the effect of Light intensity and CO2 concentration on the rate of Photosynthesis • Diel vertical migration	B.Sc. (H) Biological Sciences Semester I	BS-DSC-102 Photobiology

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		using photographs.		
		• *Chiton, Dentalium, Pila, Unio, Octopus, Pentaceros, Echinus, Cucumaria, Antedon* • Study of following specimens, general characteristics and classification: *Balanoglossus, Amphioxus, Herdmania*.	B.Sc. (P) Life Sciences, Semester I Batch 1	ZOO-DSC-01 Diversity of animals
February, 2023	Theory:	**Unit III: Cytoskeleton:** Structure and Functions: Microtubules, Microfilaments, and Intermediate filaments	B.Sc. (H) Zoology Semester I	DSC-2 Biology of Cell: Structure and Function
		Unit 1: Introduction to Light and Life: Light as an ecological factor affecting distribution, physiological processes of animals (Zoo geography), in terrestrial and aquatic ecosystems	B.Sc. (H) Biological Sciences Semester I	BS-DSC-102 Photobiology
	Practical:	• Cytochemical demonstration of proteins by Mercuric Bromophenol Blue/Acid Fast Green. • Mock Exam.	B.Sc. (H) Zoology Semester I	DSC-2 Biology of Cell: Structure and Function
		• Demonstration of Hill's Reaction and study the effect of Light intensity (any 2 light conditions) • Revision and Mock Exam	B.Sc. (H) Biological Sciences Semester I	BS-DSC-102 Photobiology
		• Study of following specimens, general characteristics and classification up to order: *Petromyzon, Pristis, Exocoetus, Hippocampus, Hyla, Salamander Ichthyophis/Uraeotyphlu, Naja, Viper, Hydrophis, Chameleon, Uromastix, Milvus, Anas, Psittacula, Loris, Pteropus, Sorex*	B.Sc. (P) Life Sciences, Semester I Batch 1	ZOO-DSC-01 Diversity of animals

		• Submission of report on an excursion to a Sanctuary/Biodiversity Park. • Revision and Mock		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Anita Verma **Department: Zoology**

Semester: I, III (Odd Semester)

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	Syllabus overview. Scope of studying the course. **Unit 3: Nervous System:** • Structure of neuron, Resting membrane potential, Origin of action potential and its propagation across the myelinated and unmyelinated nervefibers.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
	Practicals	• Syllabus overview, general instructions and maintenance of labrecord. • Preparation of temporary mounts:nerve cells • Demonstration of the unconditioned reflex action (Deep tendon reflex suchas knee jerk reflex).	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
		• Syllabus overview, general instructions and maintenance of labrecord. • ABO blood group determination. • To measure the blood pressure using Sphygmomanometer. • To determine the blood clotting and bleeding time.	B.Sc. Life Sciences III Semester	Medical diagnostics, SEC
SEPTEMBER	**Theory**	**Unit 3: Nervous System:** • Types of synapse, Synaptic transmission, Neuromuscular junction;Physiology of hearing and vision.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
	Practicals:	• Preparation of temporary mounts: squamous epithelium • Recording of simple muscle twitch with electrical stimulation (or Virtual) • Study of permanent slides of mammalian skin, cartilage, bone, spinal cord, nerve Cell.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
		• To estimate the blood glucose level by GOD-POD method. • To calculate the blood cells count byDLC method.	B.Sc. Life Sciences III Semester	Medical diagnostics, SEC
	Assignment:	Students will be asked to make assignment which will allow them to understand the topic in detail.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)

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OCTOBER	**Theory**	**Unit 4: Muscle:** • Histology of different types of muscle; Ultrastructure of skeletal muscle.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
	Practicals	• Preparation of temporary mounts: striated muscle fibres • Study of permanent slides of Pituitary, Pancreas, Testis, Ovary, Adrenal, Thyroid and Parathyroid • Demonstration of technique of microtomy to have hands-on experience and learning of the technique.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
		• To determine the different abnormal constituents of urine. • To study the different medical techniques: CT-SCAN, MRI, X-RAY, ULTRASOUND.	B.Sc. Life Sciences III Semester	Medical diagnostics, SEC
NOVEMBER	**Theory**	**Unit 4: Muscle:** • Molecular and chemical basis of muscle contraction; Characteristics of muscle twitch; Motor unit, Summationand tetanus.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
	Mid-Term Exam	The entire topics covered so far.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
	Practicals:	• Continued: Demonstration of technique of microtomy to have hands-on experience and learning of the technique. • Revision • Evaluation of students on their performance in practical and Record • Mock Practical Test • Submission of practical files • Submission and evaluation of a Project report on methods of contraception in male and female.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
		• Interpretation of ECG • Detecting defects of color vision by Ishihara charts.	B.Sc. Life Sciences III Semester	Medical diagnostics, SEC
		• Syllabus overview, general instructions and maintenance of lab record. • To measure the blood pressure using Sphygmomanometer • Preparation of temporary mounts: neurons and blood film	GE	Human Physiology
DECEMBER	**Theory:**	Revision.	B.Sc. (H) Zoology, SemIII	Physiology: C&C Systems (CC-VI)
	Practicals:	• Revision and Final Practical Exam	B.Sc. (H) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
		• Revision and Final Practical Exam	B.Sc. Life Sciences IIISem	Medical diagnostics, SEC
		• ABO blood group determination • Preparation of haemin and haemochromogen cystals	GE	Human Physiology
JANUARY	**Practicals**	• Haemoglobin estimation • Study of permanent slides of Stomach, Duodenum, Liver, Lung, Kidney,Pancreas, Testis, Ovary	GE	Human Physiology
FEBRUARY	**Practicals**	• Revision and Final Practical Exam	GE	Human Physiology

SEMESTER WISE TEACHING PLAN
(Odd semester)

Sri Venkateswara College

July-December, 2022

PRINCIPAL (Acting)
Sri Venkateswara College
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Name of the Faculty: Dinesh Raj Pant
Department: Zoology
Semester (I/III/V)
Theory:
B.Sc. (P) Life Sciences Semester V **(DSE I- Animal Biotechnology) Section A**
B.Sc. (H) Zoology Semester III (**CC VII- Fundamentals of Biochemistry**)
B.Sc. (H) Zoology Semester V (**CC XI/ Molecular Biology**)
B.Sc. (P) Life Sciences Semester I **(DSE 1- Biodiversity of Animals) Batch I**

Practical:
B.Sc. (P) Life Sciences Semester V **(DSE I- Animal Biotechnology) Batch I**
B.Sc. (P) Life Sciences Semester III (**Medical Diagnostics, SEC)**

Month		Topics	Course	**Paper Code/Name**
July	Practical	-Syllabus discussion, how to make and maintain the Practical record. -Plan/designing of experiment. -Introduction to the Practical -Preparation of Liquid culture medium (LB) and raise culture of *E.coli.* -Genomic DNA isolation from *E.coli*	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
	Theory	Syllabus Discussion and Introduction to Biotechnology	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
August	Practical	- Plasmid DNA isolation from *E.coli* -Agarose gel electrophoresis -Restriction digestion of Lambda DNA with EcoRI and HindIII (Demonstration) -Construction of Linear restriction map from the data provided.	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
	Theory	Production of cloned and transgenic animals: Nuclear	B.Sc. (P) Life	**DSE-1/Animal Biotechnology**

		Transplantation, Retroviral Method, DNA microinjection	Sciences Semester V (Batch I)	
September	Practical	- Construction of circular restriction map from the data provided -To study following techniques through photographs: -PCR -DNA sequencing (Sanger's Method) -Western blotting	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
	Theory	Applications of transgenic animals: Production of pharmaceuticals, production of donor organs, knockout mice. Production of transgenic plants: Agrobacterium mediated transformation.	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
	Practical	-To estimate the blood glucose level by GOD-POD method. -To calculate the blood cells count byDLC method.	B.Sc. (P) Life Science Semester III	**Medical Diagnostics**
October	Practical	To study following techniques through photographs: -Southern blotting -DNA fingerprinting and case studies (Photographs only to study crime, or paternity cases)	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
	Theory	Applications of transgenic plants: insect and herbicide resistant plants.	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
	Practical	-To determine the different abnormal constituents of urine. -To study the different medical techniques: CT-SCAN, MRI, X-RAY, ULTRASOUND.	B.Sc. (P) Life Science Semester III	**Medical Diagnostics**
	Theory	Genetic code, Degeneracy of the genetic code and Wobble Hypothesis; Process of protein	B.Sc. (Hons) Zoology Semester V	**CC XI/ Molecular Biology**

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		synthesis in prokaryotes: Ribosome structure and assembly in prokaryotes, fidelity of protein synthesis, aminoacyl tRNA synthetases and charging of tRNA;		
	Theory	Nomenclature and classification; Cofactors; Specificity of enzyme action; Isozymes; Mechanism of enzyme action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions.	B.Sc. (Hons) Zoology Semester III	**CC VII/ Fundamentals of Biochemistry**
November	Practical	-Evaluation of Practical File. -Practice and repetition of practical. -Conduct of mock practical examination	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
	Theory	Applications of Biotechnology and interpretation topics studied	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
	Practical	-Interpretation of ECG. -Detecting defects of color vision by Ishihara charts.	B.Sc. (P) Life Science Semester III	**Medical Diagnostics**
	Theory	Proteins involved in initiation, elongation and termination of polypeptide chain; Inhibitors of protein synthesis; Difference between prokaryotic and eukaryotic translation	B.Sc. (Hons) Zoology Semester V	**CC XI/ Molecular Biology**
	Theory	Derivation of Michaelis-Menten equation, Concept of Km and Vmax, Lineweaver-Burk plot; Multi-substrate reactions; Enzyme inhibition; Allosteric enzymes and their kinetics; Regulation of enzyme action	B.Sc. (Hons) Zoology Semester III	**CC VII/ Fundamentals of Biochemistry**
	Theory (NEP)	Introduction to the syllabus	B.Sc. (P) Life science Semester I Section A	**DSE01/ Diversity of Animals**
	Theory	Introduction to the syllabus	B.Sc. (P)	**DSE01/**

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	(NEP)		Life science Semester I Section B	**Diversity of Animals**
December	Theory (NEP)	Five Kingdom classification, Binomial nomenclature, Hierarchy of classification	B.Sc. (P) Life science Semester I Section A	**DSE01/ Diversity of Animals**
	Theory (NEP)	Five Kingdom classification, Binomial nomenclature, Hierarchy of classification	B.Sc. (P) Life science Semester I Section B	**DSE01/ Diversity of Animals**

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July 2022- December 2022

Name of the Faculty: Dr. Mansi Verma
Department: Zoology
Semester: V (Odd Semester)

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Month		Topics	Course	Paper Code/Name
July	**Practicals**	**Molecular Biology** Study of Polytene chromosomes from Chironomous/ Drosophila larvae.	B.Sc. (H) Zoology	CC-XI Molecular Biology
AUGUST	**Theory**	Nomenclature and classification of Enzymes	B.Sc. (H) Zoology Semester III	Fundamentals of Biochemistry
		Introduction to GMOs	B.Sc (P) Life Science Semester V	Animal Biotechnology DSE
		Salient features of DNA and RNA	B.Sc. (Hons.) Zoology Semester V	Molecular Biology
	Practicals	**PHYSIOLOGY AND BIOCHEMISTRY** 1. Preparation of hemin and hemochromogen crystals. B.Sc Life Science SLS Sem III LS Core III		
		Molecular Biology 2. Preparation of liquid culture medium (LB) and raise culture of E. coli. 3. Preparation of solid culture medium (LB) and growth of E. coli by spreading and streaking. 4. Estimation of the growth kinetics of E. coli by turbidity method	B.Sc. (H) Zoology	CC-XI Molecular Biology

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SEPTEMBER	**Theory**	Cofactors; Specificity of enzyme action; Isozymes; Mechanism of enzyme action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Derivation of Michaelis-Menten equation,	B.Sc. (H) Zoology Semester III	Fundamentals of Biochemistry
		Agrobacterium mediated transformation and other methods of plant transformation	B.Sc (P) Life Science Semester V	Animal Biotechnology DSE
		Watson and Crick model of DNA; DNA Replication in prokaryotes and eukaryotes, mechanism of DNA replication,Semi-conservative, bidirectional and semi-discontinuous replication, RNA priming,	B.Sc. (Hons.) Zoology Semester V	Molecular Biology
	Practicals:	**Molecular Biology** 5.Demonstration of antibiotic sensitivity/resistance of E. coli to antibiotic pressure and interpretation of results. 6. Quantitative estimation of salmon sperm/calf thymus DNA using colorimeter (Diphenylamine reagent) or spectrophotometer (A260 measurement). 7. To understand working of the lac operon in the presence/absent	**B.Sc. (H) Zoology Semester V**	**Molecular Biology CC XI**
		PHYSIOLOGY AND BIOCHEMISTRY 2. Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland. 3. Study of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage. SLS Sem III LS Core III	B.Sc Life Science	
	Assignment:			
OCTOBER	**Theory**	Concept of Km and Vmax, Lineweaver-Burk plot; Multi-substrate reactions; Enzyme inhibition; Allosteric enzymes and their kinetics;	B.Sc. (H) Zoology Semester III	Fundamentals of Biochemistry
		Transgenic animals : retroviral method, microinjection, embryonic stem cells	B.Sc (P) Life Science Semester V	Animal Biotechnology DSE

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		ds-DNA, replication of telomeres, Unit 3:Transcription 10 RNA polymerase and transcription Unit, mechanism of transcription in prokaryotes and eukaryotes,	B.Sc. (Hons.) Zoology Semester V	Molecular Biology

	Practicals	**Molecular Biology** 8. Study and interpretation of electron micrographs/ photograph showing: DNA replication, Transcription, Split genes.	B.Sc (H) Zoology Semester V	Molecular Biology
		PHYSIOLOGY AND BIOCHEMISTRY 4. Qualitative tests to identify functional groups of carbohydrates in given solutions (Glucose, Fructose, Sucrose, Lactose) 5. Estimation of total protein in given solutions by Lowry's method.	B.Sc Life Science	SLS Sem III LS Core III
NOVEMBER	**Theory**	Regulation of enzyme action; numericals practice, Nucleic acids	B.Sc. (H) Zoology Semester III	Fundamentals of Biochemistry
		Genetically modified animals and cloning, Dolly , polly Applications of transgenic animals .insect	B.Sc (P) Life Science Semester V	Animal Biotechnology DSE
		asynthesis of rRNA and mRNA, transcription factors Unit 5: Post Transcriptional Modifications and Processing of Eukaryotic RNA 6 Structure of globin mRNA; Split genes: concept of introns and exons splicing mechanism, alternative splicing, exon shuffling, and RNA editing, Processing of tRNA Revision		Molecular Biology
	Practicals:	**PHYSIOLOGY AND BIOCHEMISTRY** 6. Study of activity of salivary amylase under optimum conditions. **Revision exercises and test**	B.Sc Life Science SLS Sem III	LS Core III
		Molecular Biology Mock and Final Exam	B.Sc. (H) Zoology Sem V	Molecular Biology CC XI

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July 2022- December 2022

Name of the Faculty: Dr. Namita Nayyar
Department: Zoology
Semester: III, V (Odd Semester)

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Month		Topics	Course	Paper Code/Name
July	**Practicals**	**Molecular Biology** Study of Polytene chromosomes from Chironomous/ Drosophila larvae.	B.Sc. (H) Zoology	CC-XI Molecular Biology
AUGUST	**Theory 3 periods per week**	**Unit 1: Introduction to Chordates** General characteristics and outline classification.	B.Sc. (H) Zoology	CC-V Diversity of Chordata
	Theory 1 period per week	**Unit 1**: Introduction to Medical Diagnostics and its Importance	B.Sc. (H) Zoology	SEC Medical Diagnostics
	Theory 1 period per week	**Unit 1**: Introduction to Medical Diagnostics and its Importance	B.Sc. Life Sciences	SEC Medical Diagnostics
	Practicals	**Diversity of Chordata** • **Protochordata:** *Balanoglossus*, *Herdmania*, *Branchiostoma*, Colonial Urochordata, Sections of *Balanoglossus* through proboscis and branchiogenital regions, Sections of *Amphioxus* through pharyngeal, intestinal and caudal regions. Permanent slide of *Herdmania* spicules.	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V
		Molecular Biology 2. Preparation of liquid culture medium (LB) and raise culture of E. coli. 3. Preparation of solid culture medium (LB) and growth of E. coli by spreading and streaking. 4. Estimation of the growth kinetics of E. coli by turbidity method	B.Sc. (H) Zoology	CC-XI Molecular Biology
		SEC: Medical Diagnostics 1. ABO blood group typing. 2. Estimation of haemoglobin content using Sahli's haemoglobinometer.	B.Sc. (H) Zoology	SEC Medical Diagnostics

SEPTEMBER	**Theory**	**Unit 8: Aves** General characteristics and classification up to order; Archaeopteryx- a connecting link; Flight adaptations and migration in birds	B.Sc. (H) Zoology Semester III	Diversity of Chordata CC V
		Unit 2: Medical Diagnostics of Body Fluids Blood composition, Blood bank, Transfusion of blood, RBC, WBC and platelet count using haemocytometer, Erythrocyte Sedimentary Rate (E.S.R), Packed Cell Volume (P.C.V.), Analysis of urine, sputum, faeces and semen(sperm count)	B.Sc. (H) Zoology Semester III	Medical Diagnostics SEC
		Unit 2: Medical Diagnostics of Body Fluids Blood composition, Blood bank, Transfusion of blood, RBC, WBC and platelet count using haemocytometer, Erythrocyte Sedimentary Rate (E.S.R), Packed Cell Volume (P.C.V.), Analysis of urine, sputum, faeces and semen(sperm count)	B.Sc (P) Life Science Semester III	Medical Diagnostics SEC
	Practicals:	**Diversity of Chordates** • **Agnatha:** *Petromyzon*, *Myxine* • **Fish:** *Scoliodon*, *Sphyrna*, *Pristis*, *Torpedo*, *Chimaera*, *Mystus*, *Heteropneustes*, *Labeo*, *Exocoetus*, *Echeneis*, *Anguilla*, *Hippocampus*, *Tetrodon/ Diodon*, *Anabas,* Flat fish • **Amphibia:** *Ichthyophis/Ureotyphlus*, *Necturus*, *Bufo*, *Hyla*, *Alytes*, *Salamandra*.	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V
		Molecular Biology 5.Demonstration of antibiotic sensitivity/resistance of E. coli to antibiotic pressure and interpretation of results. 6. Quantitative estimation of salmon sperm/calf thymus DNA using colorimeter (Diphenylamine reagent) or spectrophotometer (A260 measurement). 7. To understand working of the lac operon in the presence/absent	**B.Sc. (H) Zoology Semester V**	**Molecular Biology CC XI**
		Meidical Diagnostics 3. Analysis of urine for abnormal constituents. 4. Total leucocytes count from blood. 5. Measurement of blood pressure under normal and stress condition. 6. Estimation of blood glucose/cholesterol by kit.	**B.Sc (H) Zoology Semester III**	**Medical Diagnostics SEC**
	Assignment:	Affinities of Spenodon OR Origin of Chordata	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V

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OCTOBER	**Theory**	Unit 9: Mammals General characters and classification up to order; Affinities of Prototheria; Adaptive radiation with reference to locomotory appendages	B.Sc. (H) Zoology Semester III	Diversity of Chordata CC V
		Unit 3: Medical Diagnostics of Non-infectious Diseases Causes, types, symptoms, complications, diagnosis and prevention of Diabetes (Type I and Type II), Hypertension (Primary and secondary), Diagnosis and detection of types of tumors (Benign/Malignant) and metastasis, FNAC.	B.Sc. (H) Zoology Semester III	Medical Diagnostics SEC
		Unit 3: Medical Diagnostics of Non-infectious Diseases Causes, types, symptoms, complications, diagnosis and prevention of Diabetes (Type I and Type II), Hypertension (Primary and secondary), Diagnosis and detection of types of tumors (Benign/Malignant) and metastasis, FNAC.	B.Sc. Life Sciences Semester III	Medical Diagnostics SEC

	Mid-Term Exam	The entire topics covered so far.	B.Sc. (H) Zoology Semester III	Diversity of Chordata
	Practicals	• **Reptilia:** *Chelone*, *Trionyx*, *Hemidactylus*, *Varanus*, *Uromastix*, *Chamaeleon*, *Ophiosaurus*, *Draco*, *Bungarus*, *Vipera*, *Naja*, *Hydrophis*, *Zamenis*, *Crocodylus*; Key for Identification of poisonous and non poisonous snakes • **Aves:** Study of six common birds from different orders. Types of beaks and claws.	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V
		Molecular Biology 8. Study and interpretation of electron micrographs/ photograph showing: DNA replication, Transcription, Split genes.	B.Sc (H) Zoology Semester V	Molecular Biology

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		Medical Diagnostics 7. Determination of bleeding time/clotting time 8. Detecting defects of colour vision by Ishihara Charts. 9. Interpretation of ECG	B.Sc. (Hons) Zoology, Semester-III	Medical Diagnostics SEC
NOVEMBER	**Theory**	**Unit 10: Zoogeography** Zoogeographical realms, Theories pertaining to distribution of animals, Plate tectonic and Continental drift theory, distribution of vertebrates in different realms	B.Sc. (H) Zoology Semester III	Diversity of Chordata CC V
		Revision of difficult topics **Discussion of Assignments**	B.Sc (H) Zoology Semester III	Medical Diagnostics SEC
		Revision of difficult topics **Discussion of Assignments**	B.Sc (P) Life Sciences Semester III	Medical Diagnostics SEC
	Practicals:	• **Mammalia:** *Sorex*, Bat (Insectivorous and Frugivorous), *Funambulus*, *Loris*, *Herpestes*, *Erinaceous*. • Study of Weberian ossicles of *Mystus*, pecten from fowl head and brain of fowl. MOCK	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V
		Molecular Biology Mock and Final Exam	B.Sc. (H) Zoology Sem V	Molecular Biology CC XI
		Medical Diagnostics **MOCK and discussion**	B.Sc (H) Zoology Sem III	Medical Diagnostics SEC
DECEMBER	**Theory:**	• Revision.	B.Sc. (H) Zoology Sem III & B.Sc Life Science Sem III	Diversity of Chordata (CC V) Medical Diagnostics (SEC) & Medical Diagnostics (SEC)
	Practicals:	• Power point presentation on study of any two animals from two different classes by students • Mock Exam.	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Nawaz Alam Khan **Department: Zoology**

Semester: III (Odd Semester)

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	Syllabus overview. Scope of studying the course. **Unit 7: Carbohydrate Metabolism:** • Basic structure and physiological significance of Monosaccharides, Disaccharides, Homo and Heteropolysaccharides.	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III
	Practicals	• **Protochordata:** *Balanoglossus*, *Herdmania*, *Branchiostoma*, Colonial Urochordata, Sections of *Balanoglossus* through proboscis and branchiogenital regions, Sections of *Amphioxus* through pharyngeal, intestinal and caudal regions. Permanent slide of *Herdmania* spicules.	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V
SEPTEMBER	**Theory**	**Unit 7: Carbohydrate Metabolism:** • Glycolysis (Preparatory and Payoff phases, regulation, fates of pyruvate), Kreb's Cycle (formation of Acetyl CoA, reactions of cycle, regulation), Pentose phosphate pathway (Oxidative and Non-oxidative Phases), Gluconeogenesis (Bypass reactions, regulation and reciprocal coordination of glycolysis and gluconeogenesis.	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III
	Practicals:	• **Agnatha:** *Petromyzon*, *Myxine* • **Fish:** *Scoliodon*, *Sphyrna*, *Pristis*, *Torpedo*, *Chimaera*, *Mystus*, *Heteropneustes*, *Labeo*, *Exocoetus*, *Echeneis*, *Anguilla*, *Hippocampus*, *Tetrodon/ Diodon*, *Anabas,* Flat fish • **Amphibia:** *Ichthyophis/Ureotyphlus*, *Necturus*, *Bufo*, *Hyla*, *Alytes*, *Salamandra*.	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V
	Assignment:	Topic: Hormonal control of menstrual cycle.	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III
OCTOBER	**Theory**	**Unit 7: Carbohydrate Metabolism:** • Glycogen Metabolism (Glycogenolysis, Glycogenesis and its coordinated regulation), Review of Electron Transport Chain (Basics of electron transfer reactions, Universal Electron Acceptors without detailed structures, electron flow through complexes, Chemiosmotic theory, basics of ATP synthesis). **Unit 6: Reproduction and Endocrine Glands:** • Physiology of male reproduction:	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III

		hormonal control of spermatogenesis.		
	Mid-Term Exam	The entire topics covered so far.	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III
	Practicals	• **Reptilia:** *Chelone*, *Trionyx*, *Hemidactylus*, *Varanus*, *Uromastix*, *Chamaeleon*, *Ophiosaurus*, *Draco*, *Bungarus*, *Vipera*, *Naja*, Hydrophis, *Zamenis*, *Crocodylus*; Key for Identification of poisonous and non-poisonous snakes • **Aves:** Study of six common birds from different orders. Types of beaks and claws.	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V
NOVEMBER	**Theory**	**Unit 6: Reproduction and Endocrine Glands:** • Physiology of female reproduction: hormonal control of menstrual cycle. Structure and function of pituitary, thyroid, Parathyroid, pancreas and adrenal gland.	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III
	Practicals:	• **Mammalia:** *Sorex*, Bat (Insectivorous and Frugivorous), *Funambulus*, *Loris*, *Herpestes*, *Erinaceous*. • Study of Weberian ossicles of *Mystus*, pecten from fowl head and brain of fowl.	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V
DECEMBER	**Theory:**	• Revision.	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III
	Practicals:	• Power point presentation on study of any two animals from two different classes by students • Mock Exam.	B.Sc. (Hons) Zoology, Semester-III	Diversity of Chordates CC-V

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Nawaz Alam Khan **Department: Zoology**

Semester: I (Odd Semester)

Month		Topics	Course	Paper Code/Name
NOVEMBER	**Theory**	Syllabus overview. Scope of studying the course. **Unit 1: Fundamentals of Emotional Intelligence** • Nature and Significance • Models of emotional intelligence: Ability, Trait and Mixed • Building blocks of emotional intelligence: self-awareness, self-management, social awareness, and relationship management.	Undergraduate, Semester-I (VAC-I)	Emotional Intelligence VAC-I
	Practicals	• Syllabus overview, general instructions and maintenance of lab record. • Microscopy: Compound microscope: principle, components and handling; Phase contrast microscope; Electron microscope; Differential Interference Contrast (DIC) Microscope. • Principle and types of cell fixation and staining; Cell fractionation. • To study prokaryotic cells by Gram staining and eukaryotic cell (cheek cells) by hematoxylin/methylene blue.	B.Sc. (Hons) Zoology, Semester-I	Biology of Cell: Structure and Function DSC-II
		• Syllabus overview, general instructions and maintenance of lab record. • Determination of population density in a natural or a hypothetical community by quadrate method and calculation of Shannon-Weiner diversity index.	B.Sc. (Hons) Zoology, Semester-I	Concept o f Ecology DSC-III
		• Students will practice self-management techniques to regulate emotions such as • Mindfulness • Conditioned relaxation response • Boundary setting • Any other.	Undergraduate, Semester-I (VAC-I)	Emotional Intelligence VAC-I
DECEMBER	**Theory**	**Unit 2: Personal Competence** • Self Awareness: Observing and recognizing one's own feelings, Knowing one's strengths and areas of development. • Self Management: Managing emotions, anxiety, fear, and anger.	Undergraduate, Semester-I (VAC-I)	Emotional Intelligence VAC-I

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	Practicals:	• To study the effect of hypotonic, isotonic, and hypertonic solutions on cell permeability. • Preparation of a temporary slide of squashed and stained onion root tip to study various stages of mitosis. • Study the effect of colchicine on mitosis at 24 hrs and 48 hrs.	B.Sc. (Hons) Zoology, Semester-I	Biology of Cell: Structure and Function DSC-II
		• Study of life tables and plotting of survivorship curves of different types from hypothetical/ real data. • Study of an aquatic ecosystem: a) Phytoplankton and zooplankton b) Measurement of temperature, turbidity/penetration of light, determination of pH.	B.Sc. (Hons) Zoology, Semester-I	Concept o f Ecology DSC-III
		• Students will practice self-management techniques to regulate emotions such as • Mindfulness • Conditioned relaxation response • Boundary setting • Any other.	Undergraduate, Semester-I (VAC-I)	Emotional Intelligence VAC-I
JANUARY	**Theory**	**Unit 3: Social Competence** • Social Awareness: Others' Perspectives, Empathy and Compassion • Relationship Management: Effective communication, Collaboration, Teamwork, and Conflict management.	Undergraduate, Semester-I (VAC-I)	Emotional Intelligence VAC-I
	Practicals	• Study of various stages of meiosis through permanent slides. • Preparation of stained mount to show the presence of Barr body in human female blood cells/cheek cells. • Cytochemical demonstration of DNA by Feulgen reaction. • Cytochemical demonstration of mucopolysaccharides by PAS reaction.	B.Sc. (Hons) Zoology, Semester-I	Biology of Cell: Structure and Function DSC-II
		• Study of an aquatic ecosystem: c) Dissolved oxygen content (Winkler's method), chemical oxygen demand. d) Free carbon dioxide and alkalinity. • Study of ten endemic animals of India with slides/pictures/videos.	B.Sc. (Hons) Zoology, Semester-I	Concept o f Ecology DSC-III
		• Students will practice various techniques of relationship management such as engaging with: • Display of empathy • Effective communication • Teamwork • Conflict resolution • Any other • If required, students can share their experiences in the form of a project report.	Undergraduate, Semester-I (VAC-I)	Emotional Intelligence VAC-I
	Project Report:	• Report on a visit to a National Park/Biodiversity Park/Wildlife Sanctuary.	B.Sc. (Hons) Zoology, Semester-I	Concept o f Ecology DSC-III

FEBRUARY	**Theory**	**Unit 4: Emotional Intelligence: Measurement and Development** • Measures of emotional intelligence • Strategies to develop and enhance emotional intelligence.	Undergraduate, Semester-I (VAC-I)	Emotional Intelligence VAC-I
	Practicals:	• Cytochemical demonstration of proteins by Mercuric Bromophenol Blue/Acid Fast Green. • Mock Exam.	B.Sc. (Hons) Zoology, Semester-I	Biology of Cell: Structure and Function DSC-II
		• Study of ten endemic animals of India with slides/pictures/videos. • Mock Exam.	B.Sc. (Hons) Zoology, Semester-I	Concept o f Ecology DSC-III
		• Students will practice various techniques of relationship management such as engaging with: • Display of empathy • Effective communication • Teamwork • Conflict resolution • Any other • If required, students can share their experiences in the form of a project report.	Undergraduate, Semester-I (VAC-I)	Emotional Intelligence VAC-I

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Planner: Odd Semester 2022-23 (July–November)

Name of the Faculty: Prof. Om Prakash
Department: Zoology
Semester: I/III/V

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Theory:
B.Sc. (H) Zoology Semester V (**ZH DSE Course-VIII/ Immunology)**
Practical:
B.Sc. (P) Life Sciences Semester V **(DSE I- Animal Biotechnology) Batch I and Batch II**
B.Sc. (H) Zoology Semester V (**ZH DSE Course-VIII/ Immunology)**
B.Sc. (H) Zoology Semester III (**CC VII- Fundamentals of Biochemistry**)

Month		Topics	Course	Paper Code/Name
July	**Theory**	**Immunology** **Unit2: Innate and Adaptive Immunity** **Anatomical barriers, Inflammation, Cell and molecules involved in innate Immunity,**	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
	Practicals	**Immunology** Demonstration of lymphoid organs.	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical -Preparation of Liquid culture medium (LB) and raise culture of *E.coli.* -Genomic DNA isolation from *E.coli*	B.Sc. (P) Life Sciences Semester V (Batch II)	**DSE-1/Animal Biotechnology**
		Fundamentals of biochemistry Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical. -Paper chromatography of amino acids -Qualitative tests of functional groups in carbohydrates	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of biochemistry**
August	**Theory**	Unit 2 Adaptive Immunity (Cell-mediated and Humoral), Passive immunity; Active: Artificial and Natural Immunity, Immunological Tolerance	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**

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	Practicals	**Immunology** Histological study of spleen, thymus and lymph nodes through slides/ photographs Preparation of stained blood film to study various types of blood cells. Repetition of these experiments	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology - Plasmid DNA isolation from *E.coli* -Agarose gel electrophoresis -Restriction digestion of Lambda DNA with EcoRI and HindIII (Demonstration) -Construction of Linear restriction map from the data provided.	B.Sc. (P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
		Fundamentals of biochemistry Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical. -Paper chromatography of amino acids -Qualitative tests of functional groups in carbohydrates	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of biochemistry**
September	**Theory**	**Immunology** Unit 3: Antigen Antigenicity and immunogenicity, Immunogens, Adjuvants and haptens, Factors influencing immunogenicity, B and T-Cell epitopes	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
	Practicals	**Immunology** Ouchterlony's double immuno-diffusion method. ABO blood group determination. Cell counting and viability test from spleenocytes of farm bred animals/cell lines. Repetition of these practicals	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology- DSE - Construction of circular restriction map from the data provided To study following techniques through photographs: -PCR -DNA sequencing (Sanger's Method) -Western blotting	B.Sc. (P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
		Fundamentals of Biochemistry Qualitative tests of functional groups in proteins Action of salivary amylase under optimum conditions Effect of pH on the action of salivary amylase. Effect of temperature on the action of salivary amylase To understand the preparation and roles of two important biological buffer systems; phosphate and bicarbonate; Preparation of buffer and determination of pH	B.Sc. (Hons.) Zoology Sem III	**CC VII/ Fundamentals of Biochemistry**

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October	**Theory**	**Immunology** **Unit4: Immunoglobulins** Structure and functions of different classes of immunoglobulins, Antigenic determinants on Immunoglobulins, Antigen-antibody interactions (Precipitation reactions, Agglutination reactions, Immunofluorescence and ELISA), Polyclonal sera, Hybridoma technology: Monoclonal antibodies in therapeutics and diagnosis **Unit 5: Major Histocompatibility Complex** Structure and functions of MHC molecules (MHC I and II), Endogenous and exogenous pathways of antigen processing and presentation	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
	Practicals	**Immunology** Demonstration of: (a) ELISA (b) Immunoelectrophoresis Repetition of Practical from July-September	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology To study following techniques through photographs: -Southern blotting -DNA fingerprinting and case studies (Photographs only to study crime, or paternity cases)	B.Sc.(P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
		Fundamentals of biochemistry Effect of inhibitors on the action of salivary amylase Demonstration of proteins separation by SDS-PAGE	B.Sc. (Hons.) Zoology Sem III	**CC VII/ Fundamentals of biochemistry**
Mid Term Test		**Test of Immunology** From all units taught	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
November	**Theory**	**Immunology** **Unit 9: Vaccines** 5 Various types of vaccines.	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
	Practicals:	**Immunology** Detection of complement activity using haemolysis of antibody coated SRBC and standard serum Repetition of these practicals Repetition of all practicals, and finalization of continuous assessment. Conduct of Mock examination.	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology Evaluation of Practical File and Practice and repetition of practical; Conduct of mock practical examination	B.Sc.(P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**

		Fundamentals of Biochemistry Quantitative tests: Determination of ascorbic acid – DCPIP method or estimation of calcium titration method.	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of Biochemistry**
	Practicals	Repetition of important Practicals and preparation of students for the final practical Examination. Conduct final practical exam.	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of Biochemistry**

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Planner: (Odd Semester 2022-2023)

July-Dec, 2022

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Name of the Faculty: Dr. P.Jayaraj
Department: Zoology
Semester: I/III/V

Month		Topics	Course	Paper Code/Name
August	**Theory**	**GROWTH AND REPRODUCTION (THEORY)** ● Unit 2 Pre Fertilization Changes ● Pre- fertilization events- gametogenesis- spermatogenesis and oogenesis	B.Sc. (H) Biological Science Zoology Sem V TBS	BS-C11
		● **IMMUNOLOGY** **Unit6: Cytokines** Properties and functions of cytokines **Unit7: Complement System** Components and pathways of complement activation	B.Sc. (Hons.) Zoology Sem V TZH	VIII
		MOLECULAR BIOLOGY **Unit 6: Gene Regulation** Transcription regulation in prokaryotes: Principles of transcriptional regulation with examples from *lac* operon and *trp* operon; Overview of transcription regulation in eukaryotes: Activators, repressors, enhancers,	B.Sc. (Hons.) Zoology Sem V TZH	CCXI
		Cell Biology Unit V: Signal transduction mechanism: intracellular signal transduction pathways,	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6
	Practicals	● **GROWTH AND REPRODUCTION** ● Study of whole mounts of frog - early developmental stages	**B.Sc. (H) Biological Science Zoology Sem V TBS**	BS-C11

		Cell Biology 1. Estimation of cell size by micrometry. 2. To study plasmolysis and deplasmolysis in cell.	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6
		PHYSIOLOGY AND BIOCHEMISTRY 1. Preparation of hemin and hemochromogen crystals.	B.Sc Life Science SLS Sem III	LS Core III
September	**Theory**	• **GROWTH AND REPRODUCTION** • types of eggs in animals • Unit 3 Post Fertilization Changes and Early Development • Post Fertilization Events; Types of Cleavages; Blastula;	**B.Sc. (H) Biological Science Zoology Sem V TBS**	BS-C11
		IMMUNOLOGY • Biological consequences of complement activation	B.Sc. (Hons.) Zoology Sem V TZH	VIII
		Cell Biology Unit V: GPCR, protein kinase associated receptors.	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6

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	Practicals:	**GROWTH AND REPRODUCTION** Study of whole mounts of chick- early developmental stages	**B.Sc. (H) Biological Science Zoology Sem V TBS**	BS-C11
		Cell Biology 3. To identify Gram positive and Gram negative bacteria by Gram staining. 4. Preparation of temporary slides of the following (any two): i. Cytochemical staining of polysaccharides by PAS ii. Cytochemical staining of proteins by Bromophenol blue iii. Cytochemical staining of mitochondria by Janus Green B.	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6
		PHYSIOLOGY AND BIOCHEMISTRY 2. Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland. 3. Study of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage.	B.Sc Life Science SLS Sem III	LS Core III
October	**Theory**	• **GROWTH AND REPRODUCTION** • Fate Maps, • Morphogenetic movements during gastrulation; • Gastrulation in frog and chick and human	**B.Sc. (H) Biological Science Zoology Sem V TBS**	BS-C11

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		IMMUNOLOGY **Unit9: Immune Dysfunction** Hypersensitivity: Gell and Coombs' classification and various types of hypersensitivities	B.Sc. (Hons.) Zoology Sem V TZH	VIII
		Cell Biology Unit VI: Cell cycle and regulation, programmed cell death and cancer: Overview of cell cycle. Regulation: Various check points and the role of cyclins and Cdks	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6
	Practical	**PHYSIOLOGY AND BIOCHEMISTRY** 4. Qualitative tests to identify functional groups of carbohydrates in given solutions (Glucose, Fructose, Sucrose, Lactose) 5. Estimation of total protein in given solutions by Lowry's method.	B.Sc Life Science SLS Sem III	LS Core III
		• Study of section of chick embryo through selective developmental stages	**B.Sc. (H) Biological Science Zoology Sem V** **TBS**	BS-C11
		5. Study of ultastructure of cell (Plasma membrane, Nucleus, Nuclear Pore Complex, • Chloroplast, Mitochondrion, Golgi bodies, Lysosomes)	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6
<u>Mid Term Test</u>	**GROWTH AND REPRODUCTION** • Written test on topic covered before the mid semester break IMMUNOLOGY • Written test on topic covered before the mid semester break	**B.Sc. (H) Biological Science Zoology Sem V** • **TBS**	BS-C11	BS-C11
		B.Sc. (Hons.) Zoology Sem V • TZH	DSE-9	**ZH GE-VI**

		B.Sc. (Hons.) Zoology Sem V TZH	CC-XI	BS-C11

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November	**Theory**	**GROWTH AND REPRODUCTION** • Placenta: Functions and types • Unit 4 Differentiation Organogenesis: • **Formation of CNS, Organogenesis of secondary girth**	**B.Sc. (H) Biological Science Zoology Sem V TBS**	BS-C11
		IMMUNOLOGY Autoimmunity: Brief account with reference to Hashimoto's Thyroiditis (Organ Specific) and Rheumatoid arthritis (Systemic).Immunodeficiency: Brief account with reference to SCID (Primary) and AIDS (Secondary)	B.Sc. (Hons.) Zoology Sem V TZH	DSE9
		Cell Biology Unit VI: Cell cycle and regulation, programmed cell death and cancer: Programmed Cell Death.Biology and elementary knowledge of development and causes of cancer.	B.Sc (Hons.) Biological Science SZH Sem III	BS C-6
	Practicals:	• **GROWTH AND REPRODUCTION** Videos showing selective embryonic events like cleavage; gastrulation 5. Measurement of animal/plant cell size using ocular and stage micrometer.	**B.Sc. (H) Biological Science Zoology Sem V TBS**	BS-C11
		Cell Biology 6. Study of different stages of mitosis by temporary preparation/ permanent slides of onion root tips. 7. Study of different stages of meiosis by temporary preparation /permanent slides. **MID TERM TEST**	B.Sc (Hons.) Biological Science SBH Sem III	BS C-6
		PHYSIOLOGY AND BIOCHEMISTRY 6. Study of activity of salivary amylase under optimum conditions. **Revision exercises and test**	B.Sc Life Science SLS Sem III	LS Core III
December	**Theory**			

		Cell Biology Salient features of transformed cells. Tumor viruses, oncogenes and suppressor genes	B.Sc (Hons.) Biological Science SBH Sem III	
		PHYSIOLOGY AND BIOCHEMISTRY **Revision exercises and test**	B.Sc Life Science SLS Sem III	LS Core III
		Cell biology practicals **Revision exercises and test**		BS C-6

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pooja Vijay
Department: Zoology
Semester: V (Odd Semester)

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Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	**Unit 1: Introduction to Animal Behaviour** Origin and history of Ethology; Pioneers of Modern Ethology: Karl von Frisch, Ivan Pavlov, Konrad Lorenz, Niko Tinbergen; tools, techniques and methods used in studying animal behaviour **Unit 3: Social and Sexual Behaviour** Altruism, Inclusive fitness, Hamilton's rule	B.Sc. (Hons) Zoology, Semester-V	Animal Behaviour and Chronobiology DSE-I
	Theory	**Unit I: Introduction to Animal Behaviour and Chronobiology** Origin, history and significance of ethology: Brief profiles of Karl von Frisch, Ivan Pavlov, Konrad Lorenz, Niko Tinbergen, Franz Halberg	B.Sc. (Hons) Biological sciences, Semester-V	Animal Behaviour and Chronobiology DSE-2
SEPTEMBER	**Theory**	**Unit 3: Social and Sexual Behaviour** Insects' society (Example: Honey bee); Foraging in honey bee and advantages of the waggle dance. Sexual Behaviour: Asymmetry of sex, Sexual dimorphism, Mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice), Courtship behaviour; Parental care, sexual conflict in parental care.	B.Sc. (Hons) Zoology, Semester-V	Animal Behaviour and Chronobiology DSE-I
	Assignment:	Topic: Role of Altruism, Inclusive fitness and Hamilton's rule in Evolution of behaviour	B.Sc. (Hons) Zoology, Semester-V	Animal Behaviour and Chronobiology DSE-I

	Theory	**Unit IV: Social Behavior and Sociobiology** Haplodiploidy in honeybees; polyethism vs polymorphism; Dance as means of communication; Experiments to prove distance and direction component of dance, learning ability in honey bee, swarming and formation of new hive/queen,	B.Sc. (Hons) Biological sciences, Semester-V	Animal Behaviour and Chronobiology DSE-2
	Assignment:	Topic: Discuss experiments to prove direction component of dance and learning ability in honey bee,	B.Sc. (Hons) Biological sciences, Semester-V	Animal Behaviour and Chronobiology DSE-2
OCTOBER	**Theory**	**Unit 4: Introduction to Chronobiology** Historical developments in chronobiology, Biological oscillation: the concept of Average, amplitude, phase and period. Adaptive significance of biological clocks	B.Sc. (Hons) Zoology, Semester-V	Animal Behaviour and Chronobiology DSE-I

	Theory	**Unit IV: Social Behavior and Sociobiology** Altruism and Reciprocal altruism, Hamilton‟s rule and inclusive fitness with suitable examples. **Unit V: Sexual Behavior** Asymmetry of sex, Sexual dimorphism mate choice	B.Sc. (Hons) Biological sciences, Semester-V	Animal Behaviour and Chronobiology DSE-2
	Mid-Term Exam	The entire topics covered so far.	B.Sc. (Hons) Zoology, Semester-V	Animal Behaviour and Chronobiology DSE-I
		The entire topics covered so far.	B.Sc. (Hons) Biological sciences, Semester-V	Animal Behaviour and Chronobiology DSE-2

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NOVEMBER	**Theory**	**Unit 5: Biological Rhythm** Characteristics of biological rhythms; Short-and Long-term rhythms; Circadian rhythms; Tidal rhythms and Lunar rhythms; Concept of synchronization and masking; Photic and non-photic zeitgebers; Circannual rhythms; Photoperiod and regulation of seasonal reproduction of vertebrates; Role of melatonin. **Unit 6: Biological Clocks** Relevance of biological clocks; Chronopharmacology, Chronomedicine, Chronotherapy	B.Sc. (Hons) Zoology, Semester-V	Animal Behaviour and Chronobiology DSE-I
	Theory	**Unit V: Sexual Behavior** Intra-sexual selection (male rivalry: competition, territoriality, infanticide), Inter-sexual selection (female choice); Consequences of mate choice for female fitness, Reproductive behaviour pattern (Courtship, mating system and Parental care)	B.Sc. (Hons) Biological sciences, Semester-V	Animal Behaviour and Chronobiology DSE-2
DECEMBER	**Theory:**	• Revision	B.Sc. (Hons) Zoology, Semester-V	Animal Behaviour and Chronobiology DSE-I
		• Revision	B.Sc. (Hons) Biological sciences, Semester-V	Animal Behaviour and Chronobiology DSE-2

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pooja Vijay
Department: Zoology
Semester: III (Odd Semester)

Month		Topics	Course	Paper Code/Name
SEPTEMBER	Practical	• Syllabus overview, general instructions and maintenance of lab record. • Study of the stored grain pests from slides/photographs (*Sitophilus oryzae, Trogoderma granarium, Callosobruchus chinensis*and *Tribolium castaneum*): their identification, habitat and food sources, damage caused and control. Preparation of temporary mounts of the above stored grain pests. • Ascorbic acid estimation in food by titrimetry	B.Sc. (Hons) Zoology, Semester-III	GE-VI Food, Nutrition and Health
OCTOBER	Practical	• Estimation of Calcium in foods by titrimetry • To detect adulteration in a) Ghee b) Sugars c) Tea leaves and d) Turmeric • Study of nutrition labelling on selected foods	B.Sc. (Hons) Zoology, Semester-III	GE-VI Food, Nutrition and Health

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NOVEMBER	Practical	• Estimation of Lactose in milk and diagnosis of lactose intolerance by measuring hydrogen gas during expiration. • Undertake computer aided diet analysis and nutrition counselling for different age groups. • Identify nutrient rich sources of foods (fruits and vegetables), their seasonal availability and price • Visit to Mother Diary Plant, Patparganj	B.Sc. (Hons) Zoology, Semester-III	GE-VI Food, Nutrition and Health
DECEMBER	Practical	• Submission of Project report on visit to Mother Diary Patparganj • Revision and Mock exam	B.Sc. (Hons) Zoology, Semester-III	GE-VI Food, Nutrition and Health

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pooja Vijay
Department: Zoology
Semester: I (Odd Semester)

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Month		Topics	Course	Paper Code/Name
NOVEMBER	Practical	Amoeba,Euglena, Paramecium, Sycon, Euplectella, Obelia, Physalia, Aurelia, Metridium, larval stage of Taenia solium, Male and female Ascaris lumbricoides.	B.Sc. Life Sciences Batch B Sem 1	Diversity of Animals
	Theory	Unit 1: Communication - Introduction	Sem I	Personality Development and Communication (SEC)
DECEMBER	Practical	Study of museum specimens: *Aphrodite, Nereis, Chaetopterus, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra.*	B.Sc. Life Sciences Batch B Sem 1	Diversity of Animals
	Theory	Unit 1: Verbal communication - Visual - Silent mode Symbols and signs	Sem I	Personality Development and Communication (SEC)
JANUARY	Practical	▪ *Chiton, Dentalium, Pila, Unio, Octopus, Pentaceros, Echinus, Cucumaria, Antedon.* ▪ Study of following specimens, general characteristics and classification: Balanoglossus, Amphioxus, Herdmania.	B.Sc. Life Sciences Batch B Sem 1	Diversity of Animals
	<u>Assignment</u>	• Powerpoint presesntation on any topic from the syllabus	B.Sc. Life Sciences Batch B Sem 1	Diversity of Animals
	<u>Theory</u>	**Unit 2:** Business cases and presentations - Letters - Circulars - Memos - Report writing Visual aids	Sem I	Personality Development and Communication (SEC)

	Mid Term Test	• Topics covered till then	B.Sc (H) Zoology Sem I	Non-chordata I
FEBRUARY	Practical	▪ Study of following specimens, general characteristics and classification up to order: *Petromyzon, Pristis, Exocoetus, Hippocampus, Hyla, Salamander Ichthyophis/Uraeotyphlus, Naja, Viper,Hydrophis, Chameleon, Uromastix, Milvus, Anas, Psittacula, Loris, Pteropus, Sorex* ▪ Submission of report on an excursion to a Sanctuary/ Biodiversity Park. ▪ Revision	B.Sc. Life Sciences Batch B Sem 1	Diversity of Animals
	Practicals	Unit 3: Barriers to communications - Body Language - Feedback - Work conflict Management Unit 4: Negotiations - Skills - Types - Selling skills	Sem I	Personality Development and Communication (SEC)
MARCH	Theory	▪ Revision	B.Sc (H) Zoology Sem I	Non-chordata I
	Practical	▪ Submission of report on an excursion to a Sanctuary/ Biodiversity Park. ▪ Revision and Mock exam	B.Sc. Life Sciences Batch B Sem I	Diversity of Animals

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SEMESTER WISE TEACHING PLAN(Odd)
Sri Venkateswara College
July-December, 2022

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Name of the Faculty: Dr. Preeti Khandelwal
Department: Zoology
Semester (I/III/V)
Theory:
B.Sc. (H) Zoology Semester III (**CC VII- Fundamentals of Biochemistry**)
B.Sc. (H) Semester III **(GEIII-Food, Nutrition and Health)**
NEP-Generic Elective-Semester I (**GE I- Human Physiology**)

Practical:
B.Sc. (P) Life Sciences Semester V **(DSE I- Animal Biotechnology) Batch I and Batch III**
B.Sc. (H) Zoology Semester III (**CC VII- Fundamentals of Biochemistry**)

Month		Topics	Course	Paper Code/Name
July	**Practical**	Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical -Preparation of Liquid culture medium (LB) and raise culture of *E.coli.* -Genomic DNA isolation from *E.coli*	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
		Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical -Preparation of Liquid culture medium (LB) and raise culture of *E.coli.* -Genomic DNA isolation from *E.coli*	B.Sc. (P) Life Sciences Semester V (Batch III)	**DSE-1/Animal Biotechnology**
August	**Theory**	**Unit 3- Proteins:** Amino Acids: Structure, Classification and General properties of α-amino acids. Difference between Essential and non-essential α-amino acids.	B.Sc. (H) Zoology Semester III	**CC VII/ Fundamentals of Biochemistry**
		Unit 3: Health Introduction to Health-Definition and concept of health.	B.Sc.(H) Semester III	**GEIII/ Food, Nutrition and Health**
	Practical	Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical. -Paper chromatography of amino acids -Qualitative tests of functional groups in carbohydrates	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of biochemistry**

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		- Plasmid DNA isolation from *E.coli* -Agarose gel electrophoresis -Restriction digestion of Lambda DNA with EcoRI and HindIII (Demonstration) -Construction of Linear restriction map from the data provided.	B.Sc. (P) Life Sciences Sem V (Batch I)	**DSE-1/Animal Biotechnology**
		- Plasmid DNA isolation from *E.coli* -Agarose gel electrophoresis -Restriction digestion of Lambda DNA with EcoRI and HindIII (Demonstration) -Construction of linear restriction map from the data provided	B.Sc. (P) Life Sciences Sem V (Batch III)	**DSE-1/Animal Biotechnology**
September	**Theory**	**Unit 3: Proteins** Introduction to simple and conjugate proteins. General properties of α-amino acid. Physiological importance of essential and non-essential α-amino acids. Proteins:Bonds stabilizing protein structure;	B.Sc. (H) Zoology Semester III	**CC VII/ Fundamentals of Biochemistry**
		Unit 3: Health Major nutritional deficiency diseases – (kwashiorkor and marasmus), deficiency disorders, their causes, symptoms, treatment, prevention and govt. programs if any. Life style related diseases-hypertension, diabetes mellitus and Obesity- their causes and prevention through dietary and lifestyle modifications	B.Sc. Semester III	**GEIII/ Food, Nutrition and Health**
	Practical	- Construction of circular restriction map from the data provided To study following techniques through photographs: -PCR -DNA sequencing (Sanger's Method) -Western blotting	B.Sc. (P) Life Sciences Sem V (Batch I)	**Animal Biotechnology-DSE**
		- Construction of circular restriction map from the data provided To study following techniques through photographs: -PCR -DNA sequencing (Sanger's Method) -Western blotting	B.Sc. (P) Life Sciences Sem V (Batch III)	**Animal Biotechnology-DSE**
		Qualitative tests of functional groups in proteins Action of salivary amylase under optimum conditions Effect of pH on the action of salivary amylase. Effect of temperature on the action of salivary amylase To understand the preparation and roles of two important biological buffer systems;	B.Sc. (Hons.) Zoology Sem III	**CC VII/ Fundamentals of Biochemistry**

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		phosphate and bicarbonate; Preparation of buffer and determination of pH		
	Assignment	*Physiological importance of essential and non-essential α-amino acids.*	*B.Sc. (H) Zoology Semester III*	***CC VII/ Fundamentals of Biochemistry***
		Social Health problems-Smoking, alcoholism, drug dependence and Acquired Immuno Deficiency Syndrome (AIDS)- their causes, treatment and prevention	*B.Sc. Semester III*	***GEIII/ Food, Nutrition and Health***
October	**Theory**	**Unit 3: Proteins** Levels of organization in protein motifs, folds and domains. Immunoglobulins: Basic structure, Classes and function, Antigenic Determinants, **Unit 4: Nucleic acids:** Structure: purines and Pyrimidines, Nucleosides, Nucleotides, Nucleic acids, Cot curves, base pairing	B.Sc. (H) Zoology Semester III	**CC VII/ Fundamentals of Biochemistry**
		Unit 3: Health Social Health Problems- Smoking, alcoholism, Drug dependence and acquired immune deficiency syndrome (AIDS)- their causes, treatment and prevention Common ailments: Cold, cough and fevers, their causes and treatment **Unit 2: Nutritional Biochemistry** Carbohydrates, lipids, proteins- their dietary sources and roles	B.Sc.(Hons) Semester III	**GEIII/ Food, Nutrition and Health**
	Practical	To study following techniques through photographs: -Southern blotting -DNA fingerprinting and case studies (Photographs only to study crime, or paternity cases)	B.Sc.(P) Life Sciences Sem V (Batch I)	**Animal Biotechnology-DSE**
		To study following techniques through photographs: -Southern blotting -DNA fingerprinting and case studies (Photographs only to study crime, or paternity cases)	B.Sc.(P) Life Sciences Sem V (Batch III)	**Animal Biotechnology-DSE**
		Effect of inhibitors on the action of salivary amylase Demonstration of proteins separation by SDS-PAGE	B.Sc. (Hons.) Zoology Sem III	**CC VII/ Fundamentals of biochemistry**
		Unit 3: Proteins *Amino Acids: Structure, Classification and General properties of α-amino acids.* *Difference between Essential and non-essential α-amino acid*	*B.Sc. (H) Zoology Semester III*	***CC VII/ Fundamentals of Biochemistry***

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	Mid Term Test	*Physiological importance of essential and non-essential α-amino acids.* *Proteins- Bond stabilizing protein structure: levels of organization in proteins, Denaturation* ***Unit 4: Nucleic acids*** *Structure: Purines and Pyrimidines, Nucleosides and Nucleotides.*		
		Major nutritional deficiency diseases- Protein Energy Malnutrition (Kwashiorkar and Marasmus), Vitamin A deficiency disorders, Iron deficiency disorders, iodine deficiency disorders-their causes, symptoms, treatment, prevention and government programs, if any. *Social Health problems-Smoking, alcoholism, drug dependence and Acquired Immuno Deficiency Syndrome (AIDS)- their*	*B.Sc.(H) Semester III*	***GEIII/ Food, Nutrition and Health***
November	**Theory**	**Unit 4:** Denaturation and Renaturation of DNA, Types of DNA and RNA, Complementarity of DNA, Hypo-Hyperchromaticity of DNA	B.Sc. (H) Zoology Semester III	**CC VII/ Fundamentals of Biochemistry**
		Unit 2: Nutritional Biochemistry Carbohydrates, lipids, proteins- their dietary sources and roles Vitamins- their dietary sources and importance Minerals – their biological functions.	B.Sc.(H) Semester III	**GEIII/ Food, Nutrition and Health**
	Theory (NEP)	**Unit 5: Cardiovascular System** Structure of Heart, Cardiac Cycle	NEP – Generic Elective (Semester I)	**GEI/ Human Physiology**
	Practical	Evaluation of Practical File and Practice and repetition of practical; Conduct of mock practical examination	B.Sc.(P) Life Sciences Sem V (Batch I)	**DSE-1/Animal Biotechnology**
		Evaluation of Practical File and Practice and repetition of practical; Conduct of mock practical examination	B.Sc.(P) Life Sciences Sem V (Batch III)	**DSE-1/Animal Biotechnology**
		Quantitative tests: Determination of ascorbic acid – DCPIP method or estimation of calcium titration method. Repetition of experiments	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of Biochemistry**
		Revision: Unit 3 and Unit 4	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of Biochemistry**

December	**Theory**	**Unit 2: Nutritional Biochemistry** Dietary fibre- Definition, their dietary sources and nutritional importance Elementary idea of Probiotics, Prebiotic and Organic food	B.Sc.(H) Semester III	**GEIII/ Food, Nutrition and Health**
	Theory (NEP)	**Unit 5: Cardiovascular System** Cardiac Cycle, Composition of Blood **Unit 6: Renal Physiology** Functional anatomy of kidney **Unit 3: Digestion and Absorption of Food** Structure and Function of digestive system *Assignment*:**Unit4: Respiratory Physiology** Structure and Function of respiratory tract and lungs; Ventilation, external and internal respiration; Transport of oxygen and carbon dioxide in blood	NEP – Generic Elective (Semester I)	**GEI/ Human Physiology**
	Practical	Evaluation of Practical File and Practice and repetition of practical; Conduct of mock practical examination	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of Biochemistry**
January, 2023	**Theory (NEP)**	**Unit 3: Digestion and Absorption of Food** Structure and Function of digestive system; Digestion and absorption of carbohydrates, fats and protein. *-Internal Assessment test*	NEP – Generic Elective (Semester I)	**GEI/ Human Physiology**
15th February, 2023	**Theory (NEP)**	**Unit4: Respiratory Physiology** Structure and Function of respiratory tract and lungs; Ventilation, external and internal respiration; Transport of oxygen and carbon dioxide in blood	NEP – Generic Elective (Semester I)	**GEI/ Human Physiology**

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-December 2022, (Session 2021-22)

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Name of the Faculty: Dr. Rajendra Phartyal

Department: Zoology

Semester: III, V: Theory: B.Sc (P) Life Science SEM III Batch A and B (CC III: Physiology and Biochemistry), B.Sc. H . Biological Science Sem III (BS-C7 Ecology), B.Sc. H . Zoology Sem V (CC XII: Principles of Genetics)
Practicals:, B.Sc (P) Life Science SEM III Batch 2 (CC III: Physiology and Biochemistry), B.Sc. H . Biological Science Sem III (BS-C7 Ecology), BSc (H) Zoology Semester III (Physiology: Controlling And Coordinating Systems)

Month		Topics	Course	Paper Code/Name
July	**Theory**	General Introduction to Mutations Unit, Types of gene mutations	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
August	**Theory:**	Physiology of digestion in the alimentary canal	B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry
		Population: Unitary and Modular populations; Metapopulation: Density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion;	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Mutagens: Physical and Chemical, Molecular basis of spontaneous and induced mutations	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
	Practicals:	-Haemin and Haemochromogen Crystals - Study of activity of salivary amylase.	B.Sc (P) Life Science SEM III Batch II	CC III: Physiology and Biochemistry
		Syllabus overview, general instructions and maintenance of lab record. • To study biotic interactions using specimens/ photographs/ permanent slides of • Parasitic angiosperms, Saprophytic angiosperms, root nodules, velamen roots and • lichens	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Syllabus overview, general instructions and maintenance of lab record. • Preparation of temporary mounts: nerve cells Demonstration of the unconditioned reflex action (Deep tendon reflex such as knee jerk reflex)	BSc (H) Zoology Semester III	Physiology: Controlling And Coordinating Systems CC VI

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September	**Theory:**	Absorption of carbohydrates, proteins, lipids	B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry
		carrying capacity, population dynamics (exponential and logistic growth equation and patterns), r and K selection, density-dependent and independent population regulation; Niche concept, Population interactions: Positive and negative interactions; Competition .	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Chromosomal aberrations: Variations in number and structure. Detection of mutations in Drosophila: CLB method, attached X method	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
	Practicals:	Qualitative tests to identify functional groups of carbohydrates in given solutions (Glucose, Fructose, Sucrose, Lactose) -Estimation of total protein in given solutions by Lowry's method.	B.Sc (P) Life Science SEM III Batch II	CC III: Physiology and Biochemistry
		• To understand the principle and working of ecological instruments such as Anemometer, Hygrometer, Luxmeter, Rain gauge, turbidity meter, pH meter, Soil thermometer, Min-Max thermometer. • To observe and record microclimatic variations (light intensity, temperature and wind velocity) at different sites in the campus. • To determine a minimal quadrat area for sampling and determine density, frequency and abundance of the vegetation by quadrat method	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		• Preparation of temporary mounts: squamous epithelium • Recording of simple muscle twitch with electrical stimulation (or Virtual) • Study of permanent slides of mammalian skin, cartilage, bone, spinal cord, nerve Cell.	BSc (H) Zoology Semester III	Physiology: Controlling And Coordinating Systems CC VI
		ASSIGNMENT	B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry
		ASSIGNMENT	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		ASSIGNMENT	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics

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October	**Theory:**	Pulmonary ventilation, Respiratory volumes and capacities, Transport of Oxygen and carbon dioxide in blood-	B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry
		Gause's Principle for competition with laboratory and field examples, Lotka-Volterra equation for predation Social, reproductive and territorial behavior, Evolution of optimal life history, Tradeoffs, semelparity and iteroparity.	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Basis of sex determination: Genetic and environmental	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
	Practicals:	Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland. Study of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage.	B.Sc (P) Life Science SEM III Batch II	CC III: Physiology and Biochemistry
		• Plotting of survivorship curves from hypothetical life table data. • To estimate dissolved oxygen content of given water sample using Winkler's method. • To determine soil texture, soil density, bulk density, particle density and pore space. • To determine pH, Cl, SO4 , NO3, base deficiency, organic matter, cation exchange capacity in the soil.	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		• Preparation of temporary mounts: striated muscle fibres • Study of permanent slides of Pituitary, Pancreas, Testis, Ovary, Adrenal, Thyroid and Parathyroid • Demonstration of technique of microtomy to have hands-on experience and learning of the technique.	BSc (H) Zoology Semester III	Physiology: Controlling And Coordinating Systems CC VI
	<u>Mid Term Test</u>		B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry
			B.Sc. H . Biological Science Sem III	Ecology BS-C7
			B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
November	**Theory**	Structure of nephron, Mechanism of Urine formation, Counter-current Mechanism	B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry

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		reproductive structure and mating system Ecological factors (abiotic and biotic): temperature, light	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Sex determination in Drosophila and Man; Mechanism of dosage compensation.	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
		Mid Term Test	B.Sc (P) Life Science SEM III Batch A and B	B.Sc (P) Life Science SEM III Batch A and B
		Mid Term Test	B.Sc. H . Biological Science Sem III	B.Sc. H . Biological Science Sem III
	Practicals:	Revision of all Practicals and Mock Practical exam	B.Sc (P) Life Science SEM III Batch II	CC III: Physiology and Biochemistry
		• Revision of minimal quadrat and determination of density /frequency /abundance of the vegetation by quadrat method • Revision of Dissolved Oxygen • Revisision of Soil Parameters • Mock Practical	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		• Continued: Demonstration of technique of microtomy to have hands-on experience and learning of the technique. • Revision • Evaluation of students on their performance in practical and Record • Mock Practical Test • Submission of practical files • Submission and evaluation of a Project report on methods of contraception in male and female.	BSc (H) Zoology Semester III	Physiology: Controlling And Coordinating Systems CC VI
December	**Theory:**	Revision and FINAL EXAM	B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry
		Revision and FINAL EXAM	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Revision and FINAL EXAM	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
	Practicals:	• Revison and • Final Practical Assessment	B.Sc (P) Life Science SEM III Batch II	CC III: Physiology and Biochemistry

		• Revision and • Final Practical assessment	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		• Revision and • Final Practical assessment	BSc (H) Zoology Semester III	Physiology: Controlling And Coordinating Systems CC VI

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
July-December, 2022

PRINCIPAL (Acting)
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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Richa Misra

Department: Zoology

Semester: III, V (Odd)

Month		Topics	Course	Paper Code/Name
JULY	**Theory: (2 periods)**	Introduction to Mendelian Genetics, Polygenic Inheritance	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Instructions for maintaining records Exercise No. 3: Pedigree analysis of some human inherited traits.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Instructions for maintaining records, Introduction to Animal Behavior and overview of exercises	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	Practicals:	Instructions for maintaining records, Introduction to Animal Behavior and overview of exercises	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
AUGUST	**Theory: (2+1+2) periods**	Introduction to Reproductive Physiology	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Introduction to Chordates & Pisces, Classification	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
		Polygenic Inheritance, Transposable Genetic elements	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Exercise No. 7: Study of human karyotype Exercise No. 1: Simulation exercises using beads or seeds to study the Mendel's laws and gene interactions Exercise No. 2: Verification of Mendelian ratios using Chi-square analysis/test. Exercise No. 6: Linkage maps based on data from *Drosophila* crosses.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		To study behavioural response of woodlice to dry and wet conditions. To study geotaxis behavior and understand habituation To study circadian functions in humans, instructions for recording daily activity for report	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		To study behavioural response of woodlice to dry and wet conditions To study geotaxis behavior and understand habituation To study circadian functions in humans, instructions for recording daily activity for report	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
SEPTEMBER	**Theory:**	Unit 5: Male and female reproductive system, disorders	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Unit 5: Pisces (General characteristics, Migration, Osmoregulation)	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
		Unit 8: Transposable Genetic elements, Unit 2: Linkage, Crossing Over and Chromosomal	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals	Exercise No. 2: Verification of Mendelian ratios using Chi-square analysis/test. Revision	B. Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics

		Exercise No. 6: Linkage maps based on data from *Drosophila* crosses. Revision Exercise No. 5: Linkage maps based on data from conjugation.		
		Nest and nesting behavior of birds and social insects, Courtship behavior of birds and insects,	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Nest and nesting behavior of birds and social insects, Phototaxis behavior in insect larvae	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	Assignment	Topics for presentation assigned to students related to disorders affecting the various tissues, bone, muscles, nervous, reproductive and endocrine system	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		1) How Drosophila melanogaster is used as a model organism? 2) Highlight any 1 area of research related to implication of transposons.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
OCTOBER	**Theory**	Methods of contraception, Unit 6: Endocrine system	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Unit5: Swim bladder in Fish Unit 6: Amphibia (General characteristics, classification)	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
		Unit 7: Recombination in Bacteria and viruses	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Exercise 4: Use of probability in solving problems in genetics.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		Study of actogram construction of locomotor activity of mouse; Visit to Sultanpur National Park and observation of bird behaviour	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Study of actogram construction of locomotor activity of mouse; Visit to Sultanpur National Park and observation of bird behaviour	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	Mid Term Test	Test questions in DU exam pattern of covered topics	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
NOVEMBER	**Theory:**	Discussion of Mid-term Test paper and previous year question papers,	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		Endocrine system	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Origin of Tetrapoda, Parental care in Amphibians	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
	Practicals:	Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		Revision exercises and test, viva for practical exams Report submission	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Revision exercises and test, viva for practical exams, Report submission	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	Mid Term Test	Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
DECEMBER	**Theory:**	Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Discussion of Mid-term Test paper and previous year question papers	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-Nov, 2022-2023
(Odd Semester)

Dr. Riyaz Bakshi
Department of Zoology
Semester-III & V

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Month		Topics	Course	Paper Code/Name
August	**Theory**	Unit 1: Basic concept of food and nutrition Food Components and food-nutrients. Concept of a balanced diet.	Undergraduate sem.-III	GE-III, Food Nutrition& health
		Unit 1: Introduction to Medical Diagnostics and its Importance Unit 2: Diagnostics Methods Used for Analysis of Blood Blood composition, Preparation of blood smear and Differential Leucocyte Count (D.L.C) using Leishman's stain.	B.Sc. Life Sciences Sem. V	SEC-Medical Diagnostics
		Unit 1: Introduction to Medical Diagnostics and its Importance Unit 2: Diagnostics Methods Used for Analysis of Blood Blood composition, Preparation of blood smear and Differential Leucocyte Count (D.L.C) using Leishman's stain, Platelet count using haemocytometer, Erythrocyte Sedimentary Rate (E.S.R), Packed Cell Volume (P.C.V.)	B.Sc. (Hons.) Zoo. Sem. III	SEC-Medical Diagnostics
	PRACTICALS	Medical Diagnostics • ABO blood group determination • To measure the blood pressure using sphygmomanometer • To determine the blood clotting and bleeding time	B.Sc. Life Sciences Sem. V	Medical diagnostic s SEC
		Medical Diagnostics • ABO blood group determination • To measure the blood pressure using sphygmomanometer To determine the blood clotting and bleeding time	B.Sc. (Hons.) Zoology Sem. III (SZH)	Medical diagnostics SEC
September	**Theory**	1. Nutrient needs and dietary pattern for various groups- adults, pregnant and nursing mothers, infants, school children, adolescents and elderly. Brief account of food spoilage: Causes of food spoilage and their preventive measures	Undergraduate sem.-III	GE-III, Food Nutrition& health
		Platelet count using haemocytometer, Erythrocyte Sedimentary Rate (E.S.R), Packed Cell Volume (P.C.V.) Unit 3: Diagnostic Methods Used for Urine Analysis Urine Analysis: Physical characteristics; Abnormal constituents	B.Sc. Life Sc. Sem. V	SEC-Medical Diagnostics

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		Unit 3:Diagnostic Methods Used for Urine Analysis Urine Analysis: Physical characteristics; Abnormal constituents Unit 4:Non-infectious Diseases Causes, types, symptoms, complications, diagnosis and prevention of Diabetes (Type I and Type II), Hypertension (Primary and secondary), Testing of blood glucose using Glucometer/Kit	B.Sc. (Hons.) Zoo. Sem. III	SEC-Medical Diagnostics
	Practicals:	Medical Diagnostics • To estimate the blood glucose level by GOD-POD method • To calculate the Blood cells count throughTLC & DLC method	B.Sc. Life Sciences Sem. V	SEC-Medical Diagnostics
		Medical Diagnostics • To estimate the blood glucose level by GOD-POD method To calculate the Blood cells count throughTLC & DLC method	B.Sc. (Hons.) Zoology Sem. III (SZH)	SEC-Medical Diagnostics
October	**Theory**	Unit 4: Food hygiene: Potable water- sources and methods of purification at domestic level. Food and Water borne infections: Bacterial infection: Cholera, typhoid fever, dysentery; Viral infection: Hepatitis, Poliomyelitis, Protozoan infection: amoebiasis, giardiasis;	Undergraduate sem.-III	GE-III, Food Nutrition& health
		Unit 4:Non-infectious Diseases Causes, types, symptoms, complications, diagnosis and prevention of Diabetes (Type I and Type II), Hypertension (Primary and secondary), Testing of blood glucose using Glucometer/Kit	B.Sc. Life Sciences Sem V	SEC-Medical Diagnostics
		Unit 5:Infectious Diseases 3 Causes, types, symptoms, diagnosis and prevention of Tuberculosis and Hepatitis	B.Sc. (Hons.) Zoo. Sem III	SEC-Medical Diagnostics
	Practical	Medical Diagnostics • To determine the different abnormal constituents of urine • To study the different medical techniques: CT-SCAN, MRI, X-RAY,ULTRASOUND	B.Sc. Life Sciences Sem V	SEC-Medical Diagnostics
		Medical Diagnostics • To determine the different abnormal constituents of urine To study the different medical techniques: CT- SCAN, MRI, X-RAY,ULTRASOUND	B.Sc. (Hons.) Zoology Sem III (SZH)	SEC-Medical Diagnostics
	<u>Assignment</u>	Students will be asked to make assignment which will allow them to understand the topic in detail	Undergraduate sem.-III	GE-III, Food Nutrition& health
		Students will be asked to make assignment which will allow them to understand the topic in detail	B.Sc. Life Sciences Sem V	SEC-Medical Diagnostics
		Students will be asked to make assignment which will allow them to understand the topic in detail	B.Sc. (Hons.) Zoo. Sem III	SEC-Medical Diagnostics

	Mid Term Test	Test will include all the topics covered	Undergraduate sem.-III	GE-III, Food Nutrition& health
		Test will include all the topics covered	B.Sc. Life Sciences Sem V	Medical diagnostics SEC
		Test will include all the topics covered	B.Sc. (Hons.) Zoo. Sem III	SEC-Medical Diagnostics
November	**Theory:**	1.Parasitic infection: taeniasis and ascariasis their transmission, causative agent, sources of infection, symptoms and prevention	Undergraduate sem.-III	GE-III, Food Nutrition& health
		Unit 6:Tumours Types (Benign/Malignant), Detection and metastasis; Medical imaging: X-Ray of Bone fracture, PET, MRI and CT Scan (using photographs).	B.Sc. Life Sciences Sem V	SEC-Medical Diagnostics
		Unit 6:Tumours Types (Benign/Malignant), Detection and metastasis; Medical imaging: X-Ray of Bone fracture, PET, MRI and CT Scan (using photographs).	B.Sc. (Hons.) Zoo. Sem III	SEC-Medical Diagnostics
	Practicals:	Interpretation of ECG, Detecting defects of color vision by Ishihara charts	B.Sc. Life Sciences Sem V	SEC-Medical Diagnostics
		Interpretation of ECG, Detecting defects of color vision by Ishihara charts	B.Sc. (Hons.) Zoology Sem III (SZH)	SEC-Medical Diagnostics
December	**Theory:**	Revision of all covered portion and discussion	B.Sc. Life Sc. & Zoo(H) and Undergraduate sem.-III	SEC-Medical Diagnostics & GE-III, Food Nutrition& health
	Practicals:	Revision/ mock exam	B.Sc. Life Sc. & B.Sc. Zoo(H)	SEC-Medical Diagnostics

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr.Riyaz Ahmad Bakshi

PRINCIPAL (Acting)
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Dhaula Kuan, New Delhi-110021

Department: Zoology Semester: I (Odd Semester)

Month		Topics	Course	Paper Code/Name
NOVEMBER	**Practical**	Preparation of Haemin and haemochromogen crystals.	Undergraduate, Semester-I	GE-III, Human Physiology
DCEMBER	**Practical**	Preparation of temporary mount of neurons and blood cells(blood film preparation)	Undergraduate, Semester-I	GE-III, Human Physiology
JANUARY	**Practical**	Determination of ABO blood group and Recording of blood pressure using Sphygmomanometer.	Undergraduate, Semester-I	GE-III, Human Physiology,

FEBRUARY	**Practical**	**Examination and detailed study of permanent histology sections of mammalian-Stomach, Duodenum, Liver and Lungs**.	Undergraduate, Semester-I	GE-III, Human Physiology
MARCH	**Practical**	**Examination and detailed study of permanent histology sections of mammalian-Kidney, Panceas, Testis and ovary**	Undergraduate, Semester-I	GE-III, Human Physiology
APRIL	**Practical**	**Revision and Mock test**	Undergraduate, Semester-I	GE-III, Human Physiology

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
August–December, 2022-2023

Name of the Faculty: Dr. Sadqua Shameem

Department: Zoology

Semester: I/III/V (Odd Semester)

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Month		Topics	Course	Paper Code/Name
AUGUST	**Theory:**	**Unit 2:** Medical Diagnostics of Body Fluids - Blood composition, Blood bank.	SLS - Medical Diagnostics	**LSSEC-3** Medical Diagnostics
	Practical:	- Plan of the syllabus and maintenance of record files. - Preparation of Haemin and Haemochromogen crystals from your	B.Sc. Life Sciences Sem III (Batch1)	**LS Core III** Physiology and Biochemistry
SEPTEMBER	**Theory:**	- **Unit 2:** Medical Diagnostics of Body Fluids- Transfusion of blood, RBC, WBC and platelet count using haemocytometer Erythrocyte Sedimentary Rate (E.S.R), Packed Cell Volume (P.C.V.)	SLS - Medical Diagnostics	**LSSEC-3** Medical Diagnostics
	Practical:	- Preparation of Haemin and Haemochromogen crystals from your own sample of blood - Biochemistry of Carbohydrates. - Study of Permanent slides: Cartilage, bone, Spinal Cord, Liver, Pancreas, thyroid *With continuous evaluation* - Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem III (Batch1)	**LS Core III** Physiology and Biochemistry
OCTOBER	**Theory:**	**Unit 2:** Medical Diagnostics of Body Fluids Analysis of urine,sputum, faeces and semen(sperm count) **Unit 4:** Diagnostics Microbiology - Methods to diagnose and isolate infectious agents of diseases like Tuberculosis, Hepatitis	SLS - Medical Diagnostics	**LSSEC-3** Medical Diagnostics

	Practical:	- .Demonstration of salivary amylase activity under optimal conditions. - Study of permanent slides: Liver, kidney, Lung. *With continuous evaluation* - Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem III (Batch1)	LS Core III Physiology and Biochemistry
NOVEMBER	**Theory:**	**Unit 4:** Diagnostics Microbiology - Methods to diagnose and isolate infectious agents of diseases AIDS.	SLS - Medical Diagnostics	**LSSEC-3** Medical Diagnostics
	Practical:	- Estimation of Total Protein in given solutions by Lowry's Method - Study of permanent slides: Pitutary, adrenal Gland, Duodenum, *With continuous evaluation* - Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem III (Batch1)	**LS Core III** Physiology and Biochemistry
	<u>Mid Term Test</u>	Test questions in DU exam pattern of covered topics.	SLS - Medical Diagnostics	**LSSEC-3** Medical Diagnostics

DECEMBER	**Theory:**	Revision	SLS - Medical Diagnostics	**LSSEC-3** Medical Diagnostics
	Practical:	- Repetition of Salivary amylase - Haemin and Haemochromogen crystals - Mock Practical Exam	B.Sc. Life Sciences Sem III (Batch1)	**LS Core III** Physiology and Biochemistry

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
November - February, 2022-2023

Name of the Faculty: Dr. Sadqua Shameem

Department: Zoology

Semester: I (Odd Semester)

Month		Topics	Course	Paper Code/Name
NOVEMBER	**Theory:**	**Unit VI:** Applied Ecology- Ecology in wildlife conservation and management, Protected areas: National Parks, Biosphere reserves and Sanctuaries; Restoration ecology, Principles of Environmental impact assessment.	B.Sc. (Hons.) Zoology Sem I	**DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)** Concepts of Ecology
		Unit I: Tissues - Types of Tissues; Structure and Function of Epithelial, Connective, Muscular and Nervous tissues.	GENERIC ELECTIVES (GE-1)	GENERIC ELECTIVES (GE-1): Human Physiology
		Unit III Introduction to Animal Life Forms - Introduction to animal diversity, Basic Taxonomy , Linnaean system of classification, Whittaker's five kingdom classification, ICZN Rules, General Characteristics of Non-Chordata and Chordata.	B.Sc. (Hons.) Biological Science Sem I	**DSC-103:** Diversity in Life forms I
	Practicals:	- Plan of the syllabus and maintenance of record files. - **Study of following specimens:** *Euglena, Paramecium, Sycon, , Tubipora,Taenia solium, Ascaris Phertima, Hirudanaria, Peripatus, Scolopendra, Julus, Cancer, Daphnia, Apis, Pila, Dentalium, Octopus, Asterias* *With continuous evaluation.* Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Biological Science Sem I	**DSC-103:** Diversity in Life forms I

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	Practicals:	- Plan of the syllabus and maintenance of record files. - General Characteristics and Classification up to classes: Protista, Porifera, Cnidaria,Platyhelminthes, Nemathelminthes. Study of museum specimens: Amoeba,Euglena, Paramecium, Sycon, Euplectella, Obelia, Physalia, Aurelia, Metridium, larval stage of Taenia solium, Male and female Ascaris lumbricoides. - *With continuous evaluation.* Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem I **(Batch - II)**	**Course Code :** ZOO-DSC-01 Diversity of Animals
DECEMBER	**Theory:**	**Unit II:** Population - Unitary and Modular populations; Unique and group attributes of population: density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion; Exponential and logistic growth, equations and patterns, r and k strategies; Intraspecific population regulation: density-dependent and independent factors.	B.Sc. (Hons.) Zoology Sem I	**DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)** Concepts of Ecology
		Unit II: Functioning of Excitable Tissue (Nerve and Muscle) - Propagation of nerve impulse (myelinated and non-myelinated nerve fibre); Mechanism of muscle contraction (Sliding filament theory).	GENERIC ELECTIVES (GE-1):	GENERIC ELECTIVES (GE-1): Human Physiology
		Unit IV: Non-Chordata Taxonomy and Diversity - Study of General Characteristics and Classification up to classes Protista, Porifera, Cnidaria. Platyhelminthes.	B.Sc. (Hons.) Biological Science Sem I	**DSC-103:** Diversity in Life forms I
	Practicals:	- **Dissections / Virtual demonstration:** *Nervous system of Cockroach, Salivary apparatus and Ovary of Cockroach.* - Study of adult *Fasciola hepatica, Taenia solium* and their life stages (Slides/micro-photographs). - Visit to Biodiversity park, *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Biological Science Sem I	**DSC-103:** Diversity in Life forms I
		General Characteristics and Classification up to classes: Annelida, Arthropoda, Mollusca, Echinodermata. Study of museum specimens: Aphrodite, Nereis, Chaetopterus, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra, Chiton, Dentalium, Pila, Unio, Octopus,	B.Sc. Life Sciences Sem I **(Batch - II)**	**Course Code :** ZOO-DSC-01 Diversity of Animals

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		Pentaceros, Echinus, Cucumaria, Antedon. *With continuous evaluation* Evaluation of students on their performance in practical and Record		
	Assignment:	Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Zoology Sem I	**DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)** Concepts of Ecology
		Separate questions will be given to students from previous year question paper	GENERIC ELECTIVES (GE-1):	GENERIC ELECTIVES (GE-1): Human Physiology
		Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Biological Science Sem I	**DSC-103:** Diversity in Life forms I
JANUARY	**Theory:**	**Unit III:** Species Interactions - Types of species interactions, Interspecific competition: Lotka-Volterra model of competition, Gause's Principle with laboratory and field examples, Niche concept; Predation: Lotka-Volterra equations. Species Interactions - Functional and numerical responses, Predator defense mechanisms.	B.Sc. (Hons.) Zoology Sem I	**DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)** Concepts of Ecology
		Unit IV: Respiratory Physiology **-** Structure and function of respiratory tract and lungs; Ventilation. **Unit VII: Reproductive Physiology -** Structure of testis and ovary; Spermatogenesis and Oogenesis.	GENERIC ELECTIVES (GE-1)	GENERIC ELECTIVES (GE-1): Human Physiology
		Unit IV: Non-Chordata Taxonomy and Diversity - Study of General Characteristics and Classification up to classes Aschelminthes, Annelida, Arthropoda. Mollusca.	B.Sc. (Hons.) Biological Science Sem I	**DSC-103:** Diversity in Life forms I
	Practicals:	-Study of following permanent Slides. o T.S. and L.S. of *Sycon*. o Crustacean larvae (W.M. Mysis, W.M. Megalopa, W.M. Zoaea). -To study faunal composition of water samples (Lucky drop method). *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Biological Science Sem I	**DSC-103:** Diversity in Life forms I
		-Study of following specimens, general characteristics and classification: Balanoglossus, Amphioxus, Herdmania	B.Sc. Life Sciences Sem I	**Course Code :** ZOO-DSC-01 Diversity of

		-Study of following specimens, general characteristics and classification up to order: Petromyzon, Pristis, Exocoetus, Hippocampus, Hyla, Salamander Ichthyophis/Uraeotyphlus, Naja, Viper,Hydrophis, Chameleon, Uromastix, Milvus, Anas, Psittacula, Loris, Pteropus, Sorex *With continuous evaluation* .Evaluation of students on their performance in practical and Record	**(Batch - II))**	Animals
	Mid Term Test	Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Zoology Sem I	**DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)** Concepts of Ecology
		Test questions in DU exam pattern of covered topics	B.Sc. Life Sciences Sem I	GENERIC ELECTIVES (GE-1): Human Physiology
		Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Biological	**DSC-103:** Diversity in Life forms I
FEBRUARY	**Theory**	**Unit III:** Resource partitioning. Revision	B.Sc. (Hons.) Zoology Sem I	**DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)** Concepts of Ecology
		Revision	B.Sc. Life Sciences Sem II	GENERIC ELECTIVES (GE-1): Human Physiology
		Unit IV: Non-Chordata Taxonomy and Diversity - Study of General Characteristics and Classification up to classes Echinodermata Revision	B.Sc. (Hons.) Biological Science Sem I	**DSC-103:** Diversity in Life forms I
	Practicals:	- Revision - Submission of File and Biodiversity parks report, containing photographs with appropriate write up - Mock test	B.Sc. (Hons.) Biological Science Sem I	**DSC-103:** Diversity in Life forms I
		- Revision - Submission of File and Excursion report, containing photographs with appropriate write up - Mock test	B.Sc. Life Sciences Sem I **(Batch - II)**	**Course Code :** ZOO-DSC-01 Diversity of Animals

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

July-Dec, 2022 (Odd Semester)

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Name of the Faculty: Dr. Shefali Gulliya
Department: Zoology
Semester: III/V

Month		Topics	Course	Paper Code/Name
August	**Theory**	Transcription regulation in prokaryotes: Principles of transcriptional regulation with examples from lac operon and trp operon;	B.Sc (H) Zoology Sem V	CCXI Molecular Biology
		Structure and Biological importance: with emphasis on aldose, ketose, chiral centre, polarised light and Fischer nomenclature,	B.Sc (H) Zoology Sem III	Fundamentals of Biochemistry CCVII
		Structure and functions of endoplasmic reticulum and Golgi apparatus, protein trafficking,	B.Sc(Hons.) Biological Science SBS Sem III	BS C-6 Cell Biology
September	**Theory**	Overview of transcription regulation in eukaryotes: Activators, repressors, enhancers, silencer elements;	B.Sc (H) Zoology Sem V	CCXI Molecular Biology
		Cyclization reaction of glucose, anomers, pyranose, furanose, glycosidic linkage; Structure and Significance: Physiologically important saturated and unsaturated fatty acids	B.Sc (H) Zoology Sem III	Fundamentals of Biochemistry CCVII
		Coated vesicles in cellular transport processes, GERL. Structure, polymorphic form and functions of lysosomes.	B.Sc(Hons.) Biological Science SBS Sem III	BS C-6 Cell Biology
	Practical	Syllabus overview, general instructionsand maintenance of lab record. Study of the stored grain pests from slides/photographs (Sitophilus oryzae, Trogoderma granarium, Callosobruchuschinensisan dTriboliumcastaneum): their identification, habitat and food sources, damage caused and control. Preparation of temporary mounts of the above stored grain pests.	General Elective	GE-VI Food, Health & Nutrition

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		Ascorbic acid estimation in food by titrimetry		
October	**Theory**	Gene silencing and Genetic imprinting, Pyrimidine dimerization and mismatch repair	B.Sc (H) Zoology Sem V	CCXI Molecular Biology
		Reducing and non-reducing sugars: monosaccharides, disaccharides, polysaccharides and Glycoconjugates	B.Sc (H) Zoology Sem III	Fundamentals of Biochemistry CCVII
		Structure and function of peroxisomes. Signaling molecules and their receptors,	B.Sc(Hons.) Biological Science SBS Sem III	BS C-6 Cell Biology
		Applications of transgenic animals: Production of Pharmaceuticals	B.Sc. Life Sciences Section B Sem V	DSE-I Animal Biotechnology
	Practical	Estimation of Calcium in foods by titrimetry To detect adulteration in a) Ghee b) Sugars c) Tea leaves and d) Turmeric Study of nutrition labelling on selected foods	General Elective	GE-VI Food, Health & Nutrition
			B.Sc. Life Sciences Batch II Sem III	CC-III Physiology and Biochemistry
	Mid Term Test	Test questions in DU exam pattern of covered topics	B.Sc (H) Zoology Sem V	CCXI Molecular Biology
		Test questions in DU exam pattern of covered topics	B.Sc (H) Zoology Sem III	Fundamentals of Biochemistry CCVII
		Test questions in DU exam pattern of covered topics	B.Sc(Hons.) Biological Science SBS Sem III	BS C-6 Cell Biology
November	**Theory**	Ribo-switches; RNA interference: miRNA and siRNA Revision	B.Sc (H) Zoology Sem V	CCXI Molecular Biology
		Tri-acylglycerols, Phospholipids, Glycolipids, Steroids	B.Sc (H) Zoology Sem III	Fundamentals of Biochemistry CCVII
		Functions, brief introduction of the six types of signaling pathways, intracellular signal transduction pathways, GPCR	B.Sc(Hons.) Biological Science SBS Sem III	BS C-6 Cell Biology
		Knockout mice Revision	B.Sc. Life Sciences Section B Sem V	Animal Biotechnology

	Practical	Estimation of Lactose in milk and diagnosis of lactose intolerance by measuring hydrogen gas during expiration. Undertake computer aided diet analysis and nutrition counselling for different age groups. Identify nutrient rich sources of foods (fruits and vegetables), their seasonal availability and price Visit to Mother Diary Plant, Patparganj	General Elective	GE-VI Food, Health & Nutrition
			B.Sc. Life Sciences Batch II Sem III	CC-III Physiology and Biochemistry
December	**Theory**	Revision	B.Sc (H) Zoology Sem III	Fundamentals of Biochemistry CCVII
		Revision	B.Sc(Hons.) Biological Science SBS Sem III	BS C-6 Cell Biology
	Practical	Submission of Project report on visit to Mother Diary Patparganj Revision and Mock exam	General Elective	GE-VI Food, Health & Nutrition
			B.Sc. Life Sciences Batch II Sem III	CC-III Physiology and Biochemistry

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Nov-Mar, 2022-2023 (Odd Semester)

Name of the Faculty: Dr. Shefali Gulliya
Department: Zoology
Semester: I

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Month		Topics	Course	Paper Code/Name
November	**Theory**	Prokaryotic and Eukaryotic cells; Various models of plasma membrane structures	**B.Sc (H) Zoology Sem I**	**Biology of Cell: Structure**
	Practical	Study of whole mount of Euglena, Amoeba, Noctiluca, Paramecium, Binary fission in Paramecium and Conjugation in Paramecium.	**B.Sc (H) Zoology Sem I**	**Non-chordata**
		-Plan of the syllabus and maintenance of record files. General Characteristics and Classification up to classes: Protista, Porifera, Cnidaria,Platyhelminthes, Nemathelminthes. -Study of museum specimens: Amoeba,Euglena, Paramecium, Sycon, Euplectella, Obelia, Physalia, Aurelia, Metridium, larval stage of Taeniasolium, Male and female Ascarislumbricoides. With continuous evaluation. Evaluation of students on their performance in practical and Record	**B.Sc. Life Sciences Sem I (Batch - II)**	**ZOO-DSC-01 Diversity of Animals**
December	**Theory**	Transport across membranes: active and passive transport, facilitated transport; Cell-cell junctions, structures, and functions: Tight junctions, adherens junctions, gap junctions.	**B.Sc (H) Zoology Sem I**	**Biology of Cell: Structure**
	Practical	▪	**Dr. nawaz**	
		General Characteristics and Classification up to classes: Annelida, Arthropoda, Mollusca, Echinodermata. Study of museum specimens: Aphrodite, Nereis, Chaetopterus, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra, Chiton, Dentalium, Pila, Unio, Octopus, Pentaceros, Echinus, Cucumaria,	**B.Sc. Life Sciences Sem I (Batch - II)**	**ZOO-DSC-01 Diversity of Animals**

		Antedon. *With continuous evaluation*Evaluation of students on their performance in practical and Record		
January	**Theory**	Structure and Functions: Endoplasmic Reticulum (ER), Golgi apparatus, Signal hypothesis, Vesicular transport from ER to Golgi apparatus, Protein sorting and transport from Golgi apparatus, Coated Vesicles, Lysosomes	**B.Sc (H) Zoology Sem I**	**Biology of Cell: Structure**
	Practical	▪	**B.Sc (H) Zoology Sem I**	
		-Study of following specimens, general characteristics and classification: Balanoglossus, Amphioxus, Herdmania -Study of following specimens, general characteristics and classification up to order: Petromyzon, Pristis, Exocoetus, Hippocampus, Hyla, Salamander Ichthyophis/Uraeotyphlus, Naja, Viper,Hydrophis, Chameleon, Uromastix, Milvus, Anas, Psittacula, Loris, Pteropus, Sorex *With continuous evaluation*.Evaluation of students on their performance in practical and Record	**B.Sc. Life Sciences Sem I (Batch - II)**	**ZOO-DSC-01 Diversity of Animals**
	<u>Assignment</u>	• Written assignment on any topic from the syllabus	**B.Sc (H) Zoology Sem I**	**Biology of Cell: Structure**
	<u>Mid Term Test</u>	• Topics covered till then	**B.Sc (H) Zoology Sem I**	**Biology of Cell: Structure**
February	**Theory**	▪ Peroxisomes. Structure of Mitochondria, Semiautonomous nature, Endosymbiotic hypothesis; Respiratory chain, Chemiosmotic hypothesis, ATP Synthase.	**B.Sc (H) Zoology Sem I**	**Biology of Cell: Structure**
	Practical	▪		
		- Revision - Submission of File and Excursion report, containing photographs with appropriate write up - Mock test	**B.Sc. Life Sciences Sem I (Batch - II)**	**ZOO-DSC-01 Diversity of Animals**
March	**Theory**	▪ Revision	**B.Sc (H) Zoology Sem I**	**Biology of Cell: Structure**
	Practical		**B.Sc (H) Zoology Sem I**	

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Nov-Mar, 2022-2023 (Odd Semester)

Name of the Faculty: Dr. Vagisha Rawal
Department: Zoology
Semester: I/III/V

Month		Topics	Course	Paper Code/Name
November	**Theory**	**Unit I: Introduction to Non-chordates** General characteristics of non-chordates and basis of classification. Unit II: Protists General characteristics and classification; Life cycle of Plasmodium vivax; Locomotion and reproduction in Protista.	**B .Sc (H) Zoology Sem I**	**Non-chordata**
		Unit II: Protista to Pseudocoelomates Characteristics of acoelomates and pseudocoelomates. Locomotory organelles and locomotion in Protozoa,	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		Unit II: Protista to Pseudocoelomates Characteristics of acoelomates and pseudocoelomates. Locomotory organelles and locomotion in Protozoa.	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
	Practical	Study of whole mount of Euglena, Amoeba, Noctiluca, Paramecium, Binary fission in Paramecium and Conjugation in Paramecium.	**B.Sc (H) Zoology Sem I**	**Non-chordata**
		Amoeba,Euglena, Paramecium, Sycon, Euplectella, Obelia, Physalia, Aurelia, Metridium, larval stage of Taenia solium, Male and female Ascaris lumbricoides.	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**

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		Amoeba,Euglena, Paramecium, Sycon, Euplectella, Obelia, Physalia, Aurelia, Metridium, larval stage of *Taenia solium*, Male and female *Ascaris lumbricoides*.	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
December	**Theory**	**Unit II: Protists** General characteristics and classification; Life cycle of *Plasmodium vivax* and reproduction in Protista.	**B.Sc (H) Zoology Sem I**	**Non-chordata**
		Unit II: Protista to Pseudocoelomates Canal system in Porifera, Polymorphism in Cnidaria (Hydrozoa), Life cycle of *Taenia solium* and its Parasitic adaptations.	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		Unit II: Protista to Pseudocoelomates Canal system in Porifera, Polymorphism in Cnidaria (Hydrozoa), Life cycle of *Taenia solium* and its Parasitic adaptations.	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
	Practical	▪ Examination of pond water collected from different places to observe diversity in Protista. ▪ Study of Sycon, *Hyalonema, Euplectella, Spongilla*, T.S. of Sycon, L.S. of Sycon. ▪ Study of *Obelia, Physalia, Millepora, Aurelia, Tubipora, Corallium, Alcyonium, Gorgonia, Metridium/Adamsia, Pennatula, Fungia, Meandrina, Madrepora*.	**B.Sc (H) Zoology Sem I**	**Non-chordata**
		Study of museum specimens: *Aphrodite, Nereis, Chaetopterus, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra.*	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		Study of museum specimens: *Aphrodite, Nereis, Chaetopterus, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra*	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
January	**Theory**	**Unit III: Porifera** Introduction to Parazoa; General characteristics and classification; Canal system in sponges. Unit IV: Cnidaria and Ctenophora Introduction to Metazoa; General characteristics and classification; Polymorphism in Cnidaria; Corals and coral reefs.	**B.Sc (H) Zoology Sem I**	**Non-chordata**
		Unit III: Coelomates General features of coelomates, Metamerism in Annelida, Vision in Arthropoda, Metamorphosis in Insects.	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**

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		Unit III: Coelomates General features of coelomates, Metamerism in Annelida, Vision in Arthropoda, Metamorphosis in Insects.	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
	Practical	▪ Specimen/slide of any one Ctenophore. ▪ Study of adult *Fasciola hepatica*, *Taenia solium* and their life stages (Slides/microphotographs). ▪ Study of adult *Ascaris lumbricoides* and its life stages (Slides/microphotographs).	**B.Sc (H) Zoology Sem I**	**Non-chordata I**
		▪ *Chiton, Dentalium, Pila, Unio, Octopus, Pentaceros, Echinus, Cucumaria, Antedon.* ▪ Study of following specimens, general characteristics and classification: Balanoglossus, Amphioxus, Herdmania.	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		▪ *Chiton, Dentalium, Pila, Unio, Octopus, Pentaceros, Echinus, Cucumaria, Antedon*. ▪ Study of following specimens, general characteristics and classification: *Balanoglossus, Amphioxus, Herdmania.*	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
	<u>Assignment</u>	• Powerpoint presesntation on any topic from the syllabus	**B.Sc (H) Zoology Sem I**	**Non-chordata I**
		• Powerpoint presesntation on any topic from the syllabus	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		• Powerpoint presesntation on any topic from the syllabus	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
	<u>Mid Term Test</u>	• Topics covered till then	**B.Sc (H) Zoology Sem I**	**Non-chordata I**
		▪ Topics covered till then	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		▪ Topics covered till then	**B.Sc. Life Sciences Batch B Sem 1**	**Diversity of Animals**

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February		Unit V: Platyhelminthes and Nemathelminthes General characteristics and classification; Parasitic adaptations of Helminthes; Life cycle of *Taenia solium* and *Ascaris lumbricoides.*	**B.Sc (H) Zoology Sem I**	**Non-chordata I**
		Unit III: Coelomates Torsion and detorsion in Gastropoda. Pearl Formation, Watervascular system in Asteroidea	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		Unit III: Coelomates Torsion and detorsion in Gastropoda. Pearl Formation, Watervascular system in Asteroidea	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
	Practical	▪ Examination of soil samples collected from different places to observe diversity in nematodes ▪ To submit a Project Report on the life cycle of any one parasite or pathogen/corals/coral reefs.	**B.Sc (H) Zoology Sem I**	**Non-chordata I**
		▪ Study of following specimens, general characteristics and classification up to order: *Petromyzon, Pristis, Exocoetus, Hippocampus, Hyla, Salamander Ichthyophis/Uraeotyphlus, Naja, Viper,Hydrophis, Chameleon, Uromastix, Milvus, Anas, Psittacula, Loris, Pteropus, Sorex* ▪ Submission of report on an excursion to a Sanctuary/ Biodiversity Park. ▪ Revision	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		▪ Study of following specimens, general characteristics and classification up to order: *Petromyzon, Pristis, Exocoetus, Hippocampus, Hyla, Salamander Ichthyophis/Uraeotyphlus, Naja, Viper,Hydrophis, Chameleon, Uromastix, Milvus, Anas, Psittacula, Loris, Pteropus, Sorex*	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
March	**Theory**	▪ Revision	**B.Sc (H) Zoology Sem I**	**Non-chordata I**
		▪ Revision	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		▪ Revision	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**
	Practical	▪ To submit a Project Report on the life cycle of any one parasite or pathogen/corals/coral reefs. ▪ Revision and Mock exam	**B.Sc (H) Zoology Sem I**	**Non-chordata I**

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		▪ Submission of report on an excursion to a Sanctuary/ Biodiversity Park. ▪ Revision and Mock exam	**B.Sc. Life Sciences Batch A Sem 1**	**Diversity of Animals**
		▪ Submission of report on an excursion to a Sanctuary/ Biodiversity Park. ▪ Revision and Mock exam	**B.Sc. Life Sciences Batch B Sem I**	**Diversity of Animals**

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
July-November, 2022

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Name of the Faculty: Prof. Vartika Mathur

Department: Zoology

Semester: V (Odd)

Month		Topics	Course	Paper Code/Name
JULY	**Theory: (1+1 periods)**	Introduction to Animal Behaviour · Origin and history of Ethology;	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour &
		Introduction to Animal Behaviour · Origin and history of Ethology;	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour &
	Practicals:	Instructions for maintaining records Exercise No. 3: Pedigree analysis of some human inherited traits.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Instructions for maintaining records, Introduction to Animal Behavior and overview of exercises	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	Practicals:	Instructions for maintaining records, Introduction to Animal Behavior and overview of exercises	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
AUGUST	**Theory: (1+1) periods**	Brief profiles of famous scientists, Proximate and ultimate causes of behaviour, Methods and recording of a behaviour Patterns of Behavior: Innate behavior, Instinct, Stimulus filtering, Sign stimuli, Code breakers	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Brief profiles of famous scientists, Proximate and ultimate causes of behaviour, Methods and recording of a behaviour Mechanisms of Behavior: Innate behavior, Instinct, Stimulus filtering, Sign stimuli, Code breakers	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	Practicals:	Exercise No. 7: Study of human karyotype Exercise No. 1: Simulation exercises using beads or seeds to study the Mendel's laws and gene interactions Exercise No. 2: Verification of Mendelian ratios using Chi-square analysis/test. Exercise No. 6: Linkage maps based on data from *Drosophila* crosses.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		To study behavioural response of woodlice to dry and wet conditions. To study geotaxis behavior and understand habituation To study circadian functions in humans, instructions for recording daily activity for report	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		To study behavioural response of woodlice to dry and wet conditions To study geotaxis behavior and understand habituation To study circadian functions in humans, instructions for recording daily activity for report	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
SEPTEMBER	**Theory (1+1) periods**	Social and Sexual Behaviour Social Behaviour: Concept of Society; Communication and the senses; Insects' society with Honey bee as example; Foraging in honey bee and advantages of the	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology

		waggle dance.		
		Patterns of Behavior Reflexes: Types of reflexes, reflex path, characteristics of reflexes (latency, after discharge, summation, fatigue, inhibition) and its comparison with complex behavior. Orientation: Primary and secondary orientation; kinesis-orthokinesis, klinokinesis; taxistropotaxis and klinotaxis, menotaxis (light compass orientation). Learning: Associative learning, classical and operant conditioning, Habituation, Imprinting	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	Practicals	Exercise No. 2: Verification of Mendelian ratios using Chi-square analysis/test. Revision Exercise No. 6: Linkage maps based on data from *Drosophila* crosses. Revision Exercise No. 5: Linkage maps based on data from conjugation.	B. Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		Nest and nesting behavior of birds and social insects, Courtship behavior of birds and insects,	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Nest and nesting behavior of birds and social insects, Phototaxis behavior in insect larvae	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	<u>Assignment</u>	Animal behavior and chronobiology · Topic: Role of altruism, inclusive fitness and Hamilton's rule in evolution of behaviour	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Animal behavior and chronobiology · Topic: Discuss experiments to prove direction component if dance and learning ability in honey	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
OCTOBER	**Theory (1+1) periods**	Patterns of Behaviour · Stereotyped Behaviours (Orientation, Reflexes); Individual Behavioural patterns; Instinct vs. Learnt Behaviour; Associative learning, classical and operant conditioning, Habituation, Imprinting.	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Social Behavior and Sociobiology: Concept of Society, Degree of sociality, Insects' society with Honey bee as example	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	Practicals:	Exercise 4: Use of probability in solving problems in genetics.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		Study of actogram construction of locomotor activity of mouse; Visit to Sultanpur National Park and observation of bird behaviour	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Study of actogram construction of locomotor activity of mouse; Visit to Sultanpur National Park and observation of bird behaviour	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	<u>Mid Term Test</u>	Test questions in DU exam pattern of covered topics	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Test questions in DU exam pattern of covered topics	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
NOVEMBER	**Theory (1+1) periods**	Discussion of IA paper, Revision of topics	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Discussion of IA paper, Revision of topics	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
	Practicals:	Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics

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		Revision exercises and test, viva for practical exams Report submission	B.Sc. (H) Zoology 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology
		Revision exercises and test, viva for practical exams, Report submission	B.Sc. (H) Biological Sciences 3rd year Sem V	DSE-I/ Animal Behaviour & Chronobiology

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SRI VENKATESWARA COLLEGE

EVEN SEMESTER
2022-2023

TEACHING PLANS

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2022-23)

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
		Unit II: Cloning vectors for prokaryotes and eukaryotes: Cloning vectors based on E. coli plasmids, pBR322, pUC8, pGEM3Z. Cloning vectors based on M13 and λ bacteriophage, and in vitro packaging. Vectors for yeast, Ti-plasmid, and retroviral vectors, high capacity vectors BAC and YAC.	B Sc (H) Biochemistry III Year Semester VI	C-13 Genetic Engeenering and Biotechnology
January/ April	Theory	Unit IV: Biosynthesis, Degradation of Purine and Pyrimidine Nucleotides De novo synthesis of purine and pyrimidine nucleotides, regulation and salvage pathways. Digestion of nucleic acids, degradation of purine and pyrimidine nucleotides..	B. Sc (H) Biochemistry II Year Semester IV	C-10 Metabolism of Amino Acids and Nucleotides
		Unit II: Enzyme kinetics: Relationship between initial velocity and substrate concentration, equilibrium constant, steady state kinetics, mono-substrate reactions. Derivation of Michaelis-Menten equation; other enzyme plots like Lineweaver-Burk plot, Eadie-Hofstee and Hanes plot. Determination of Km Vmax and Kcat, specificity constant.	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes
	Practical	Exercise1: To hydrolyze DNA and separate nucleotide bases by paper chromatography Exercise2: To plot ultraviolet absorption spectrum of DNA	B. Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization Replication and Repair
		Exercise1: 1. Assay to determine activity and specific activity of an enzyme. Exercise2: Progress curve for an enzyme	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2022-23)

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
		Unit II: Cloning vectors for prokaryotes and eukaryotes: Cloning vectors based on E. coli plasmids, pBR322, pUC8, pGEM3Z. Cloning vectors based on M13 and λ bacteriophage, and in vitro packaging. Vectors for yeast, Ti-plasmid, and retroviral vectors, high capacity vectors BAC and YAC.	B Sc (H) Biochemistry III Year Semester VI	C-13 Genetic Engeenering and Biotechnology
January/ April	Theory	Unit IV: Biosynthesis, Degradation of Purine and Pyrimidine Nucleotides De novo synthesis of purine and pyrimidine nucleotides, regulation and salvage pathways. Digestion of nucleic acids, degradation of purine and pyrimidine nucleotides..	B. Sc (H) Biochemistry II Year Semester IV	C-10 Metabolism of Amino Acids and Nucleotides
		Unit II: Enzyme kinetics: Relationship between initial velocity and substrate concentration, equilibrium constant, steady state kinetics, mono-substrate reactions. Derivation of Michaelis-Menten equation; other enzyme plots like Lineweaver-Burk plot, Eadie-Hofstee and Hanes plot. Determination of Km Vmax and Kcat, specificity constant.	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes
	Practical	Exercise1: To hydrolyze DNA and separate nucleotide bases by paper chromatography Exercise2: To plot ultraviolet absorption spectrum of DNA	B. Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization Replication and Repair
		Exercise1: 1. Assay to determine activity and specific activity of an enzyme. Exercise2: Progress curve for an enzyme	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2022-23)

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
February/ May		Unit III: Introduction of DNA in cells, selection for recombinants and clone identification: Uptake of DNA by cells. Selection and identification for transformed cells, insertional inactivation, blue-white selection. Transfection. Chemical and physical methods of DNA introduction into cells. The problem of selection, direct selection, marker rescue.	B Sc (H) Biochemistry III Year Semester VI	C-13 Genetic Engeenering and Biotechnology
	Theory	Unit IV: Inhibitors of nucleotide metabolism. Disorders of purine and pyrimidine metabolism, Lesch-Nyhan syndrome, Gout, SCID, adenosine deaminase deficiency.	B. Sc (H) Biochemistry II Year Semester IV	C-10 Metabolism of Amino Acids and Nucleotides
		Unit II: Enzyme inhibition: Types of bisubstrate reactions (sequential-ordered and random, ping pong reactions), examples. Reversible inhibition and irreversible inhibition. Structural analogs (allopurinol, methotrexate). Mechanism based inhibitors (β-lactam antibiotics).	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes
	Practical	Exercise 3: Determination of DNA conc by A260nm	B. Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization Replication and Repair
		Exercise 3: Partial purification of an enzyme using Ammonium sulfate fractionation. Exercise 4: Effect of pH on enzyme activity .	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2022-23)

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
March/ June	Theory	Unit III: Identification of recombinant phages, cDNA and Genomic libraries, identification of a clone from a gene library, colony and plaque hybridization probing, Southern and Northern hybridization, methods based on detection of the translation product of the cloned gene.	B Sc (H) Biochemistry III Year Semester VI	C-13 Genetic Engeenering and Biotechnology
		Unit V: Deoxyribonucleotides and Synthesis of Nucleotide Triphosphate and Co-enzymes: Biosynthesis of deoxyribonucleotides and its regulation, conversion to triphosphates, biosynthesis of coenzyme nucleotides.	B. Sc (H) Biochemistry II Year Semester IV	C-10 Metabolism of Amino Acids and Nucleotides
		Unit IV: Applications of enzymes: Enzymes as reagents (glucose oxidase, cholesterol oxidase); Marker enzymes in diagnostics (SGPT, SGOT, creatine kinase, alkaline and acid phosphatases)	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes
	Practical	Exercise 4: DNA estimation by Diphenylamine method	B. Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization Replication and Repair
		Exercise 5: Effect of temperature on enzyme activity Exercise 6:Determination of Km and Vmax of an enzyme using Lineweaver-Burk plot	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2022-23)

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
April /July	Theory	Unit IV: Expression of cloned genes :Vectors for expression of foreign genes in *E. coli,* cassettes and gene fusions. Hybrid promoters: trc, tac, λ pL and T7 promoter. Challenges in producing recombinant protein in *E. coli.* Production of recombinant protein by eukaryotic cells. Fusion tags such as, poly-histidine, glutathione, maltose binding protein.	B Sc (H) Biochemistry III Year Semester VI	C-13 Genetic Engeenering and Biotechnology
		Unit III: Precursor Functions of Amino Acids: Biosynthesis of creatine and creatinine, polyamines (putresine, spermine, spermidine), catecholamines (dopamine, epinephrine, norepinephrine) and neurotransmitters (serotonin, GABA). Porphyrin biosynthesis, catabolism and disorders of porphyrin metabolism.	B. Sc (H) Biochemistry II Year Semester IV	C-10 Metabolism of Amino Acids and Nucleotides
		Unit IV: Enzyme linked immunoassay; Enzyme therapy (streptokinase); Enzymes in research. Immobilized enzymes.	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes
	Practical	Exercise 5: Determination of the melting temperature of DNA Exercise 6: Isolation of chromosomal DNA from E coli cells	B. Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization Replication and Repair
		Exercise 7: Calculation of inhibitory constant (Ki) for an enzyme. Exercise 8: Immobilization of enzyme using calcium alginate beads	B Sc (H) Biochemistry I Year Semester II	DSC-4 Enzymes

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic year 2022-2023

Name of the Faculty: Dr.Nandita Narayanasamy Department: BIOCHEMISTRY

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name	Mode of teaching
Jan 2022	**Theory**	Historical Perspective, Innate and Adaptive Immunity, Hematopoiesis, cells of the immune system, primary and secondary lymphoid organs and tissues. Anatomical barriers, cell types of innate immunity, soluble molecules and membrane associated receptors (PRR), connections between innate and adaptive immunity, localized and systemic response.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunology	Chalk and talk, ppts and GCR
		Defining nutrition, role of nutrients. Unit of energy, Food energy, SDA. Energy expenditure and its components, Energy Balance, Recommended Nutrient Intakes (RNI) and Recommended Dietary Allowances for different age groups	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Chalk and talk, ppts and GCR
		Introduction to immunology, Understanding Body fluids Anatomy of Heart. Heartbeat Coordination: Cardiac action potential and Pacemaker potential.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Chalk and talk, ppts and GCR
		Historical Perspective, Innate and Adaptive Immunity, Hematopoiesis, cells of the immune system,. Anatomical barriers, cell types of innate immunity, soluble molecules and membrane associated receptors (PRR), connections between innate and adaptive immunity, localized and systemic response	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS-C-13 Immunobiology	Chalk and talk, ppts and GCR
		Regional food traditions of India, Concept of Dosha and Prakriti, Ayurvedic principles of food habits, Factors determining food quality in ayurveda	Sem I	VAC Ayurveda and Nutrition	Chalk and talk, ppts and GCR
	Practicals	Introduction to immunology practicals, DID, SRID, Immuno electrophoresis . .	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunology	Laboratory exercises.
		Introduction to immunology practicals, DID, SRID,	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS C-13	Laboratory exercises.
		Introduction to hematology, Determination of hematocrit, ESR, Bleeding time, clotting time, estimation of hemoglobin and Total RBC Count.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Laboratory exercises.

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February	**Theory**	primary and secondary lymphoid organs and tissues. Inflammation	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunology	Chalk and talk, ppts and GCR
		primary and secondary lymphoid organs and tissues. Inflammation	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS C-13: Immunobiology	Chalk and talk, ppts and GCR
		Food sources of carbohydrates, Review functions of carbohydrates. Factors affecting Digestion, absorption and utilization. Glycemic index and glycemic load. Dietary fiber and role of fibre in health. Role of Gut microbiome in maintaining health. Role of pre and probiotics in nutritive health	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Chalk and talk, ppts and GCR
		Cardiac cycle. Cardiac output and its regulation. The role of blood vessels in circulation: Arteries, Veins and Blood capillaries.Cardiovascular disorders: Ichemic heart disease, Myocardial infraction, Atherosclerosis, Congestive heart disease.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Chalk and talk, ppts and GCR
		Principles of Diet: Aharavidhi vidhan, Sattvic, Rajasi, Tamasic foods, Incompatible food (Viruddha Ahara), Pathya; Apathya; Viprita Ahaar, Lifestyle Management with Dincharya and Ritucharya Application of Ayurvedic diets to stress linked food behaviour	Sem I	VAC Ayurveda and Nutrition	Chalk and talk, ppts and GCR
	Practicals:	Elisa, Dot-blot and Agglutination test to determine blood group and Antibody titer	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunology	Laboratory exercises.
		Immuno-electrophoresis, Dot blot and revision exercises	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Laboratory exercises.
		Calculation of hematological indices,Serum protein electrophoresis, Total leukocyte count and evaluation 1	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Laboratory exercises.
March	**Theory**	General organization and inheritance of MHC, structure, distribution and role of MHC class I and class II proteins, pathways of antigen processing and presentation	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunology	Chalk and talk, ppts and GCR
		.General organization and inheritance of MHC, structure, distribution and role of MHC class I and class II proteins, pathways of antigen processing and presentation	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS C-13: Immunobiology	Chalk and talk, ppts and GCR
		Structure of Skeletal, smooth and cardiac muscle, Molecular mechanisms of skeletal muscle contraction: role of troponin, tropomyosin, and calcium in contraction, excitation-contraction coupling. Smooth muscle contraction and its control. Excitation-contraction coupling in cardiac muscle	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Chalk and talk, ppts and GCR

	Practicals	Isolation of PBMNCs	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunolgy	Laboratory exercises.
		Isolation of PBMNCs	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS C-13: Immunobiology	Laboratory exercises.
		Differential leukocyte count	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Laboratory exercises.
	TEST	Test on Innate immunity, Inflammation, Cells and organs of immune responses	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunology	
		Test on basics of nutritionand energy metabolism	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	
		Test on Antigens and Antibodies, Innate immunity, Inflammation, Cells and organs of immune responses	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS C-13: Immunobiology	
		Test on Body fluids and the cardiovascular system	B.Sc. BIOLOGICAL Sc (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	
April	**Theory**	Structure and role of T cell receptor (TCR) and co-receptor, T cell development, generation of receptor diversity, selection and differentiation General properties of effector T cells, cytotoxic T cells (Tc), natural killer cells; NK - T cells and antibody dependent cellular cytotoxicity (ADCC). Self-tolerance and possible mechanisms of induction of autoimmunity, Organ specific and systemic autoimmune diseases Immunological basis of graft rejection, clinical manifestations, immunosuppressive therapy and privileged sites.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunology	Chalk and talk, ppts and GCR
		Structure and role of T cell receptor (TCR) and co-receptor, T cell development, generation of receptor diversity, selection and differentiation General properties of effector T cells, cytotoxic T cells (Tc), natural killer cells; NK - T cells and antibody dependent cellular cytotoxicity (ADCC). Self-tolerance and possible mechanisms of induction of autoimmunity, Organ specific and systemic autoimmune diseases Immunological basis of graft rejection, clinical manifestations, immunosuppressive therapy and privileged sites.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS C-13: Immunobiology	Chalk and talk, ppts and GCR

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		Essential Fatty Acids; Functions of EFA, RDA, – excess and deficiency of EFA. Dietary implications of fats and oils, Combination ratios of n6 and n3, MUFA, PUFA and SFA Factors affecting Digestion, absorption and utilization. Importance of the following: a) Omega – fatty acids. Omega 3/ omega 6 ratio b) Phospholipids c) Cholesterol in the body d) Mono, Polyunsaturated and Saturated Fatty Acids. Calcium, Iron and Copper Distribution in the body digestion, Absorption, Utilization , Transport, Excretion, Balance, Deficiency, Toxicity, Sources, RDA. Iodine, Fluoride, Mg, Cu, Zn, Se, Manganese, Chromium, Molybdenum Distribution in the human body, Physiology, Function, deficiency, Toxicity and Sources	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Chalk and talk, ppts and GCR
		Central Nervous system. Peripheral Nervous system. Blood brain barrier and CSF. Structure and maintenance of neurons. Functional classes of neurons. Membrane potentials: Resting Membrane Potential, Graded potentials, Action potential. Synapse: excitatory and inhibitory. Temporal and spatial summation. Neurotransmitters and neuromodulators (definition with examples). Somatic sensation: definition and cellular pathways of pain transmission and modulation. Physiology of EEG, sleep. Learning and memory.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Chalk and talk, ppts and GCR
	Practicals:	Revision exercises, isolation of IgG from serum, Viva Voce	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunology	Laboratory exercises.
		. Assessment of morphological defenses in plants, revision exercises and evaluation.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Laboratory exercises.
		Electrophoretic separation of LDH isozymes from serum. Revision exercises, case-studies and evaluation 2	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Laboratory exercises.
MAY	**Theory**	Sex determination, organization of the male and female genital tract, spermatogenesis, oogenesis, sperm capacitation , fertilization, placentation and parturition.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Chalk and talk, ppts and GCR

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shalini Sen **Department: Biochemistry**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1. Restriction and modification systems, restriction endonucleases and other enzymes used in manipulating DNA molecules. 2. Ligation of DNA molecules. DNA ligase, sticky ends, blunt ends, linkers and adapters, homopolymer tailing	BSc.(H) Biochemistry Semester VI	BCH-C13/Genetic Engineering and Biotechnology
		1.Role of drugs, vaccines, hygiene and sanitation in prevention, transmission control and treatment of infectious diseases. Structure of viruses, Baltimore system for virus classification	BSc.(H) Biochemistry Semester VI	BCH DSE-4 Molecular Basis of Infectious Diseases
	Practicals	1. Gram staining of bacterial cultures. 2. Acid-fast staining of bacterial cultures.	BSc.(H) Biochemistry Semester VI	BCH DSE-4 Molecular Basis of Infectious Diseases

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FEBRUARY	**Theory:**	3. Synthetic oligonucleotides. 4.Unit V: Fundamentals of polymerase chain reaction, Types of PCR; hot start, multiplex, reverse transcriptase PCR and Nested PCR, quantitative PCR, Primer, designing for PCR. Cloning PCR products.	BSc.(H) Biochemistry Semester VI	BCH-C13/Genetic Engineering and Biotechnology
		2.Overview of viral virulence factors and host pathogen interactions; Detailed study of AIDS: history, causative agent, pathogenesis, diagnostics, drugs	BSc.(H) Biochemistry Semester VI	BCH DSE-4 Molecular Basis of Infectious Diseases
	Practicals:	3. Preparation of temporary mount of a fungus. 4. Antimicrobial susceptibilty by Kirby Bauer method.	BSc.(H) Biochemistry Semester VI	BCH DSE-4 Molecular Basis of Infectious Diseases
	Assignment	Based on the syllabus covered.		

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Month		Topics	Course	Paper Code/Name
MARCH	**Theory:**	DNA sequencing by Sanger's method including Automated Sanger's DNA sequencing. Introduction to Next Generation Sequencing.	BSc.(H) Biochemistry Semester VI	BCH-C13/Genetic Engineering and Biotechnology
		3.Other viral diseases including hepatitis, Influenza (Antigenic shift and antigenic drift), Rabies, Dengue and Polio; Chicken Pox, Herpes Virus	BSc.(H) Biochemistry Semester VI	BCH DSE-4 Molecular Basis of Infectious Diseases
		DNA transfer to E.coli. Various methods of gene transfer.	P.G.Diploma in Mol.and Biochemical Technology	PGDMB 202 Recombinant DNA Technology-II
	Practicals:	5. Microbroth Dilution Assay to determine MIC of kanamycin 6. Widal test for typhoid	BSc.(H) Biochemistry Semester VI	BCH- DSE-4 Molecular Basis of Infectious Diseases
		Determination of phage titre by plaque counting	P.G.Diploma in Mol.and Biochemical Technology	PGDMB L205 Recombinant DNA Technology-II
	Mid-term tests	Based on course covered so far		

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APRIL	**Theory:**	4.Detailed study of Malaria: history, causative agents, vectors, life cycle, Host parasite interactions, diagnostics, drugs, vaccine development Other diseases including Leishmaniasis and Amoebiasis, Giardiasis and Trypanosomas. 1.Expression vectors (lac promoter, tryptophan promoter, Lambda cI promoter, arabinose promoter based) optimization of protein expression(using upstream and downstream signals) Fusion proteins, cell-free translation systems, RNAi vectors. 2.Biolistics, protoplast mediated, electroporation.	BSc.(H) Biochemistry Semester VI PG Diploma In Molecular &Biochemical Technology	BCH DSE-4 Molecular Basis of Infectious Diseases PGDMB 202 Recombinant DNA Technology-II
	Practicals:	Observing permanent slides of pathogens Presentations of review of research papers 1.Preparation of competent cells of *E.coli* 2.Transformation of competent E.coli cells with plasmid DNA.	BSc.(H) Biochemistry Semester VI PG Diploma In Molecular &Biochemical Technology	BCH DSE-4 Molecular Basis of Infectious Diseases PGDMB L205 Recombinant DNA Technology-II
	Term-end examination	For Semester VI		
MAY	**Theory:**	3.DNA sequencing (dideoxy chain termination, chemical degradation, pyrosequencing, shotgun sequencing and contig assembly.	PG Diploma In Molecular &Biochemical Technology	PGDMB 202 Recombinant DNA Technology-II

	Practicals:	3.To study the effect of alkaline phosphatase on plasmid recircularization 4. To amplify a gene using PCR.	PG Diploma In Molecular &Biochemical Technology	PGDMB L205 Recombinant DNA Technology-II
	Assignment	Presentations on review of Research papers		
JUNE	**Theory:**	5.Gene therapy	PG Diploma In Molecular &Biochemical Technology	PGDMB 202 Recombinant DNA Technology-II
	Practicals:	Repetition of experiments	PG Diploma In Molecular &Biochemical Technology	PGDMB L205 Recombinant DNA Technology-II
	Class Tests	Group discussions		
JULY	**Term-end exams**			

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
EVEN SEMESTER

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Name of the Faculty: Dr. VANDANA MALHOTRA
Department: BIOCHEMISTRY

- **B.Sc (Hons) Biochemistry**

Semester: II/IV/VI

Teaching Mode: Offline

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit I: Infectious diseases: an Introduction** Classification of infectious diseases, Nosocomial infections; Patterns of Disease; Measuring infectious disease frequency; Past and present emerging and re-emerging infectious diseases and pathogens. Source, reservoir and transmission of pathogens. Safety measure when working with pathogen biosafety levels, infection and evasion	B.Sc. BIOCHEMISTRY Hons.) III Year, Sem VI	CBCS: BCH DSE 4 Molecular Basis of Infectious Diseases
		UNIT I: Structure of DNA Building blocks of DNA structure, Watson and Crick model, features of the double helix, various forms of DNA, denaturation and renaturation of DNA, hyperchromicity, melting temperature, factors affecting T_m of DNA molecules. Supercoiling of DNA, linking number, topoisomerases and their classification. Topoisomerase inhibitors and their clinical importance.	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C-9: Gene Organization, Replication and Repair
	Practical	• Gram Staining • Acid Fast Staining • MIC determination using Kirby Bauer /Alamar Blue assay	B.Sc. BIOCHEMISTRY (Hons.) III Year, Sem VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Preparation of Reagents • Plasmid DNA Isolation • Restriction Digestion • Calculation of MW of DNA fragment by Agarose Gel Electrophoresis (Value Added)	B.Sc. BIOCHEMISTRY Hons.) III Year, SemVI	CBCS: BCH C13 Genetic Engineering and Biotechnology
		• Estimation of Urea • Estimation of Uric Acid	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C10 Metabolism of Amino acids and Nucleotides
	Assignments & Quiz	Related to the topics covered so far.		
FEBRUARY	**Theory**	**Unit III: Diseases caused by bacteria** Classification of bacterial pathogens based on structure and nutritional requirements; Overview of bacterial virulence factors and host pathogen interactions; detailed study	B.Sc. BIOCHEMISTRY Hons.) III Year, SemVI	CBCS: BCH DSE 4 Molecular Basis of Infectious Diseases

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		of tuberculosis: History, causative agent, molecular basis of host specificity, infection and pathogenicity, diagnostics, therapeutics and vaccines, drug resistance and implications on public health. Other bacterial diseases - virulence factors, host pathogen interaction, symptoms, diagnosis, vaccines and drugs against - Typhoid, Diphtheria, Pertussis, Tetanus, Botulism Cholera, Anthrax and Pneumonia		
		UNIT V: Molecular basis of mutations Importance of mutations in evolution of species. Types of mutations - transition, transversion, frame shift mutations. DNA damage by hydrolysis, alkylation, oxidation and radiation. Mutations caused by base analogs and intercalating agents, Ames test.	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C-9: Gene Organization, Replication and Repair
	Practical	• MIC determination using Kirby Bauer /Alamar Blue assay • WIDAL Test for Typhoid	B.Sc. BIOCHEMISTRY (Hons.) III Year, Sem VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Preparation for media and LB agar plates for Transformation • Transformation of competent *E. coli* cells with plasmid DNA • Calculation of Transformation efficiency	B.Sc. BIOCHEMISTRY Hons.) III Year, SemVI	CBCS: BCH C13 Genetic Engineering and Biotechnology
		• Estimation of Creatinine • Estimation of SGOT & SGPT	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C10 Metabolism of Amino acids and Nucleotides
	Assignments	• Related to the topics covered		
March	**Theory**	**Unit III. Diseases caused by bacteria (Contd.)**	B.Sc. BIOCHEMISTRY Hons.) III Year, Sem VI	CBCS: BCH DSE 4 Molecular Basis of Infectious Diseases
		Unit 4. Transposition, the three classes of transposable elements-DNA transposons, virus-like retrotransposons and poly-A retrotransposons, DNA transposition by cut and paste and replicative mechanism.	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C-9: Gene Organization, Replication and Repair
	Practical	• To prepare temporary mount of fungi and identify through staining • Isolation and enumeration of bacteriophages (PFU) from water/sewage sample	B.Sc. BIOCHEMISTRY (Hons.) III Year, Sem VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Polymerase Chain Reaction • Repeat experiment	B.Sc. BIOCHEMISTRY Hons.) III Year, SemVI	CBCS: BCH C13 Genetic Engineering and Biotechnology

		• Estimation of Bilirubin • Repeat experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C10 Metabolism of Amino acids and Nucleotides
Mid-term Class Tests and Assignment Submission				
April	**Theory**	**Unit III. Diseases caused by bacteria (Contd.)** **UNIT VI: Diseases caused by fungi** Fungal diseases such as Candidiasis, Sporotrichosis, Aspergillosis and Ring worm: general disease characteristics, medical importance, pathogenesis, diagnosis, and treatment	B.Sc. BIOCHEMISTRY (Hons.) III Year, Sem VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		Unit 4. Contd.	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C-9: Gene Organization, Replication and Repair
	Practical	• Research and presentation on current trends in infectious diseases	B.Sc. BIOCHEMISTRY (Hons.) III Year, SemVI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Blue-White Selection • Repeat experiment	B.Sc. BIOCHEMISTRY Hons.) III Year, SemVI	CBCS: BCH C13 Genetic Engineering and Biotechnology
		• Assay for Glutamate Dehydrogenase • Repeat experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C10 Metabolism of Amino acids and Nucleotides
Final Practical and Theory Exams				

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN AY 2022-23 (Even SEM)

Name of the Faculty: Dr. Kameshwar Sharma YVR, Assistant Professor (AL-12)
Department: Biochemistry
Semester: II/IV/VI (Even Semester)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Bioinformatics** ✓ Overview of Bioinformatics and its applications in biology. ✓ Databases & types of biological databases. ✓ Structure and Sequence Databases with examples. **Metabolism & Integration** Unit – I Introduction to Metabolism ✓ Principles of bioenergetics, standard free energy change, ✓ metabolic roles of ATP, phosphorylgroup transfer, nucleotidyl group transfer. ✓ Experimental approaches to study of metabolism; primary and secondary metabolism. ✓ Energetics. ✓ Classification of organisms based on utilization of carbon and energy sources.	**B.Sc(H) Biochemistry Sem IV** **B.Sc. Hons Biological Science Sem IV**	**SEC Bioinformatics** **Metabolism & Integration**
		Photosynthesis • Introduction - Photosynthetic Complex - Light Reaction	**B.Sc(H) Biochemistry Sem V**	**BC DSE-II Plant Biochemistry**

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	Practical	**Bioinformatics – Practical** • Introduction to Bioinformatics • J mol/Pymol and Java **Metabolism and Integration – Practical** ➢ Estimation of Random Blood Glucose (GOD-POD) ➢ Estimation of O-GTT ➢ Estimation of Urea **Plant Biochemistry - Practical** Induction of hydrolytic enzymes proteinases /amylases/lipase during germination	**B.Sc(H) Biochemistry Sem IV** **B.Sc. Hons Biological Science Sem IV** **B.Sc(H) Biochemistry Sem VI**	**SEC Bioinformatics** **Metabolism & Integration** **Plant Biochemistry**
	Tutorials			

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FEBRUARY	**Theory:**	**Bioinformatics** **Sequence alignment & phylogeny** ✓ Similarity, identity and homology. ✓ Concept of Alignment – local and global alignment, pairwise and multiple sequence alignments, ✓ amino acid substitution matrices (PAM and BLOSUM), BLAST and CLUSTALW, ✓ Definition of phylogeny and its importance, ✓ Methods of Phylogenetic tree generation, Phylip	**B.Sc(H) Biochemistry Sem IV**	**SEC Bioinformatics**
		Metabolism & Integration Unit II: Carbohydrate and Lipid Metabolism ✓ **Carbohydrates metabolism –** ✓ Glycolysis, alcoholic and lactic acid fermentation, ✓ Pasteur Effect, ✓ gluconeogenesis, Cori cycle, glucose-alanine cycle, ✓ futile cycle.TCA cycle, ✓ HMP shunt ✓ glycogen metabolism.	**B.Sc. Hons Biological Science Sem IV**	**Metabolism & Integration**
		Photosystem Continuation... Photophosphorylation,	**B.Sc. Hons. Biochemistry Sem V**	**BC DSE II Plant Biochemistry**

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Practicals:	Bioinformatics – Practical ✓ BLAST suite of tools for pairwise alignment ✓ Multiple sequence alignment (CLUSTALW/TCoffee) and construction of guide trees ✓ Gene prediction using GENSCAN/GLIMMER	**B.Sc(H) Biochemistry Sem IV**	**SEC Bioinformatics**
	Metabolism and Integration – Practical ➢ Estimation of Bilirubin ➢ Estimation of Creatinine	**B.Sc. Hons Biological Science Sem IV**	**Metabolism and Integration**
	Plant Biochemistry – Practical ➢ Extraction and assay of urease from Jack bean; ➢ Estimation of carotene/ascorbic acid/phenols/tannins in fruits and vegetables	**B.Sc(H) Biochemistry Sem VI**	**Plant Biochemistry**
Tutorials:	**Class Tests / assignments**		

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MARCH	**Theory:**	**Bioinformatics** Genomics ✓ Introduction to genomics, comparative and functional genomics, ✓ gene structure in prokaryotes and eukaryotes, ✓ Genome annotation, gene prediction approaches and tools **Metabolism & Integration** Unit II: Lipid Metabolism ✓ Mobilization of triglycerides, metabolism of glycerol, ✓ β-oxidation of saturated, monounsaturated and poly-unsaturated fatty acids,	**B.Sc(H) Biochemistry Sem IV** **B.Sc. Hons Biological Science Sem IV**	**SEC Bioinformatics** **Metabolism & Integration**
	Theory	**Plant Biochemistry** Carbon Assimilation, Photorespiration	**B.Sc(H) Biochemistry Sem V**	**BC DSE-II Plant Biochemistry**

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	Practical	**Bioinformatics – Practical** ✓ Primary sequence analyses (Protparam) and Secondary structure prediction (GOR, nnPredict). ✓ Tertiary structure prediction (SWISSMODEL) and Protein structure evaluation - Ramachandran map (PROCHECK	**B.Sc(H) Biochemistry Sem IV**	**SEC Bioinformatics**
		Metabolism and Integration – Practical ➢ Estimation of Total Cholesterol	**B.Sc. Hons Biological Science Sem IV**	**Metabolism and Integration**
		Plant Biochemistry - Practical ➢ Separation of photosynthetic pigments by TLC	**B.Sc(H) Biochemistry Sem VI**	**Plant Biochemistry**
	Tutorials	Assignments / Tests		
	<u>Test</u>	**MID TERM Exams**		

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APRIL	**Theory:**	**Bioinformatics** **Protein sequence, structure prediction and analysis** ✓ Protein Structure - Primary, Secondary and Tertiary structure, ✓ Protein structure prediction methods: Homology modeling, ✓ Fold recognition and ab-initio methods, ✓ Ramachandran plot.	**B.Sc(H) Biochemistry Sem IV**	**SEC Bioinformatics**
		Metabolism & Integration Unit II: Lipid Metabolism ✓ Even and odd chain fatty acids. ✓ Ketogenesis and significance, ✓ Biosynthesis of C-16 palmitic acid, ✓ brief overview of cholesterol metabolism ✓ lipoprotein cycle	**B.Sc. Hons Biological Science Sem IV**	**Metabolism & Integration**
		Plant Biochemistry ✓ Photorespiration ✓ C4 Cycle ✓ CAM cycle ✓ Regulation	**B.Sc(H) Biochemistry Sem VI**	**Plant Biochemistry**

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	Practical	**Bioinformatics – Practical** ✓ Tertiary structure prediction (SWISSMODEL) and Protein structure evaluation - Ramachandran map (PROCHECK	**B.Sc(H) Biochemistry Sem IV**	**SEC Bioinformatics**
		Metabolism and Integration – Practical ➢ Estimation of TG ➢ Estimation of SGOT and SGPT	**B.Sc. Hons Biological Science Sem VI**	**Metabolism & Integration**
		Plant Biochemistry - Practical ➢ Culture of plants (explants); ➢ Revision of practicals, ➢ Mock Practical Examination	**B.Sc(H) Biochemistry Sem VI**	**Plant Biochemistry**

DR. KAMESHWAR SHARMA YVR
Assistant Professor (AL-12)
Department of Biochemistry **(Dated: 6th May, 2023)**

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SEMESTER WISE TEACHING PLAN 2021-22
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. NIMISHA SINHA
Department: BIOCHEMISTRY

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	**Unit 3: Respiration:** Overview of glycolysis, Alternative reactions of glycolysis, Regulation of plant glycolysis, Translocation of metabolites across mitochondrial membrane, TCA cycle, Alternative NAD(P)H oxidative pathways; Cyanide resistant respiration. No. of HOURS: 8	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		Unit 2 Genes and genomic organization No. of HOURS: 10 Genome sequence and chromosome diversity, definition of a gene, organization of genes in viruses, bacteria, animals and plants. Nucleosome structure and packaging of DNA into higher order structures.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
		Gastrointestinal and hepatic physiology - Histology of the gastrointestinal tract. Propulsion and motility of food and digested material. Enteric reflexes. Secretory functions of the gastrointestinal tract, digestion and absorption of macronutrients and micronutrients..	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-8 Human Physiology
	Practical	Isolation of Plasmid DNA Restriction enzyme digestion of plasmid DNA and size estimation of fragments. Isolation of plasmid DNA from *E.coli* and restriction enzyme digestion and molecular weight determination	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	CBCS: BCH C- Genetic Engg, and Biotechnology
		Estimation of serum urea. Estimation of serum uric acid.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		Anthropometric assessment for nutritional status of a healthy individual and in case studies of Kwashiorkor, Marasmus and/or Obesity. Determination of lipid profile	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
	Assignments	Related to the topics covered so far.		
FEBRUARY	Theory	**Unit 3: Biological Nitrogen fixation** by free living and in symbiotic association, structure and function of enzyme Nitrogenase. Nitrate assimilation: Nitrate and Nitrite reductase.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry

		UNIT III: Replication of DNA No. of hours: 16 General features of replication, the chemistry of DNA synthesis, DNA polymerase, the replication fork, enzymes and proteins in DNA replication, E coli DNA polymerases, stages of replication-initiation, elongation and termination, origin of replication, relationship between replication and cell division	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
		Peptic ulcer, Sprue, Celiac disease, IBD, regurgitation. Anatomy of the hepatic lobule and blood flow into the liver. Formation and secretion of bile. Enterohepatic cycle, detoxification in liver. Jaundice, liver cirrhosis and fatty liver	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-8 Human Physiology
	Practical	Designing of primers for any selected genes. Demonstration of PCR technique.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH C- Genetic Engg, and Biotechnology
		Estimation of serum creatinine Assay of serum transaminases – SGOT and SGPT. **Continuous evaluation**	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		3. Determination of oxidative stress: TBARS, antioxidant enzymes in hemolysate. 4. Estimation of vitamin in drugs/food/serum.	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
	Assignments	Related to the topics covered		
MARCH	Theory	Unit 3 (contd) Primary and secondary ammonia assimilation in plants; ammonia assimilation by Glutamine synthetase-glutamine oxoglutarate amino transferase (GS-GOGAT) pathway. Seed storage proteins in legumes and cereals. Unit 6: Cell and tissue culture techniques, types of cultures: organ and explants culture, callus culture, cell suspension culture and protoplast culture.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		UNIT III: Replication of DNA contd. Replication in eukaryotes, end replication problem, telomerase, various modes of replication. Comparison of replication in prokaryotes and eukaryotes. Inhibitors of DNA replication and applications in medicine.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-09: Gene Organization Replication and Repair
		Renal physiology - Anatomy of the kidney and the nephron. Regulation of renal blood flow. Cell biology of the Bowmans' capsule. Physiology of glomerular filtration and GFR. Tubular processing of the glomerular filtrate. Micturition.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-8 Human Physiology
	Practical	Preparation of competent cells by calcium chloride method Transformation of E coli cells with plasmid DNA	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH C- Genetic Engg, and Biotechnology
		Estimation of Glutamate Dehydrogenase enzyme in the serum. Repeat of any previous experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES

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		5. Estimation of minerals in drugs/food/serum. 6. Estimation of glycosylated haemoglobin.	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
APRIL	Theory	**Unit 6: Plant regeneration pathways:** organogenesis and somatic embryogenesis. Applications of cell and tissue culture and somoclonal variation.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		UNIT IV: Recombination and transposition of DNA **No. of hours: 12** Homologous recombination, biological role and models for homologous recombination, proteins and enzymes in homologous recombination, site-specific recombination, serine and tyrosine recombinases.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
		Regulation of ion and water balance. Urine concentration: The counter current multiplier system. Blood buffer systems, renal responses to acidosis and alkalosis. Assessment of kidney function. Glomerular nephritis. Dialysis: Hemodialysis and peritoneal dialysis. Diuretics.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-8 Human Physiology
	Practical	Blue white selection Repeat any previous experiment	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH C-Genetic Engg, and Biotechnology
		Case studies Repeat any previous experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		Determination of nutritive value of foods Revision of any previous experiment	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
MID TERM TEST AND ASSIGNMENT SUBMISSION				

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Name of the Faculty: Dr.Ravindra Varma Polisetty
Department: Biochemistry **Even Semester : II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	1. Review of functions of proteins in the body, Digestion and absorption. 2. Essential and Nonessential amino acids. Complete protein, Amino Acid Availability, Antagonism, Toxicity and Imbalance. 3. Amino acid complementation and Supplementation in foods. 4. Effects of deficiency.Food source and Recommended Dietary Allowances for different age group.Amino acid pool.NPU, Biological Value, Nitrogen balance.PEM and Kwashiorkor.	TBS	DSE-2 Nutritional Biochemistry
		1. Carbohydrates metabolism - Glycolysis, alcoholic and lactic acid fermentation, Pasteur Effect, gluconeogenesis, Cori cycle, glucose-alanine cycle, futile cycle.TCA cycle, HMPshunt, glycogen metabolism.	SBS	C-10 Metabolism and Integration
	Practicals	1. Estimation of serum urea. 2. Estimation of Random Blood Glucose – Glucose Oxidase method	SBS	C-10 Metabolism and Integration
		1. Assays based on precipitation reactions - Ouchterlony double immunodiffusion (DID) 2. Mancini radial immunodiffusion (SRID).	TBCH	C-14 Immunology
		1. Sequence retrieval (protein and gene) from NCBI and Molecular file formats - FASTA, GenBank/Genpept. 2. Structure download (protein and DNA) from PDB and Molecular viewer by visualization software (Pymol / Rasmol/Jmol)	SBCH	SEC-2 Bioinformatics
	Tutorials			
FEBRUARY	Theory:	1. Vitamin A, D, E, K Dietary sources, RDA, Adsorption, Distribution, Metabolism and excretion (ADME),Deficiency.Role of Vitamin A as an antioxidant, in Visual cycle, dermatology and immunity.Role of Vitamin K in Gamma carboxylation.Role of Vitamin E as an antioxidant. Extra- skeletal role of Vitamin D and its effect on bone physiology. 2. Hypervitaminosis.Vitamin C- Dietary sources, RDA, Adsorption, Distribution, Metabolism and excretion (ADME); role as cofactor in	TBS	DSE-2 Nutritional Biochemistry

		amino acid modifications. 1. Protein catabolism – Transamination and deamination, Urea cycle, glycogenic and ketogenic amino acids, secondary metabolites from amino acids.	SBS	C-10 Metabolism and Integration
	Practicals:	1. Estimation of serum creatinine. 2. Estimation of bilirubin . 1. Assays based on agglutination reactions - Blood typing (active) & passive agglutination. 2. Enzyme linked immunosorbent assay (ELISA) & DOT ELISA 1. BLAST suite of tools for pairwise alignment Multiple sequence alignment (CLUSTALW/TCoffee) and construction of guide trees	SBS TBCH SBCH	C-10 Metabolism and Integration C-14 Immunology SEC-2 Bioinformatics
	Assignments	Assignments-1		
MARCH	Theory:	1. The B Complex vitamins- Dietary sources, RDA, Adsorption, Distribution, Metabolism and excretion (ADME); Thiamine-TPP roe in metabolism and deficiency disease; Niacin-Metabolic interrelation between tryptophan, Niacin and NAD/ NADP; Vitamin B6-conversion to Pyridoxal Phosphate. Role in metabolism, Biochemical basis for deficiency symptoms; Vitamin B12 and folate- metabolic role, homocysteine cycle, Biochemical basis for deficiency symptoms. 1. Components, properties and function of electron transport system, chemiosmotic hypothesis, inhibitors and uncouplers, Shuttle systems.	TBS SBS	DSE-2 Nutritional Biochemistry C-10 Metabolism and Integration
	Practicals:	1. Estimation of Oral Glucose tolerance test (O-GTT). 2. Determination of Lipid Profile: Total Cholesterol (TC), High DensityLipoproteins (HDL) and Triglycerides (TG). 1. Isolation of lymphocytes from blood / spleen. 2. Purification of immunoglobulins from serum 5. Gene prediction using GENSCAN/GLIMMER 6. Primary sequence analyses (Protparam) and Secondary structure prediction (GOR, nnPredict).	SBS TBCH SBCH	BCH C-10 Metabolism and Integration C-14 Immunology SEC-2

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				Bioinformatics
	Tutorials:			
	Test	Class Test		
APRIL	Theory:	2. Nutrient interactions affecting ADME of drugs. Drug induced nutrient deficiency: Alcohol, Antibiotics, Antimalarial drugs. Role of microbiome in maintaining Nutritive health. 3. Neutraceuticals and Food as medicine: turmeric, garlic, ginger, cumin, asafoetida. 1. Nucleotide metabolism – De novo and salvage pathway, porphyrin catabolism. 2. Metabolic changes during starve-feed cycle, exercise, diabetes and alcohol abuse, xenobiotic metabolism.	TBS SBS	DSE-2 Nutritional Biochemistry C-10 Metabolism of Amino Acids and Nucleotides
	Practicals:	1. Estimation of SGPT and SGOT in serum/plasma sample. 1. Purification of immunoglobulins from serum 1. Tertiary structure prediction (SWISSMODEL) and Protein structure evaluation - Ramachandran map (PROCHECK	SBS TBCH SBCH	C-10 Metabolism of Amino Acids and Nucleotides C-14 Immunology SEC-2 Bioinformatics
	Tutorials:			
MAY	Theory:	Examinations		
	Practicals:			
	Tutorials:			

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sarika Yadav **Department: BIOCHEMISTRY**

Semester: II/IV/VI (2022-23) (Even Semester)

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Overview of Nitrogen and Amino Acid Metabolism: Nitrogen cycle, incorporation of ammonia into biomolecules. Digestion and absorption of dietary proteins. Role of essential and non-essential amino acids in growth and development. Protein calorie malnutrition - Kwashiorkar and Marasmus, Nitrogen balance.	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-10 Metabolism of Amino Acids and Nucleotides
		Components of blood: Plasma - Composition, SPE - electrophoretic pattern of serum proteins, major plasma proteins and their role, Erythrocytes- erythropoiesis, function and metabolism,	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-8: Human Physiology
		Complement activation by classical, alternate and MB lectin pathway, biological consequences of complement activation, regulation and	B.Sc. Biochemistry (H) III Yr, Sem VI	LOCF CBCS C-14: Immunology
	Practical	**Practicals**		
		Determination of Packed Cell Volume, Bleeding Time and Clotting time. b. Preparation of blood smear and estimation of differential leucocyte count	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-8: Human Physiology
		Induction of hydrolytic enzymes proteinases /amylases/lipase during germination	B.Sc. Biochemistry (H) III Yr, Sem VI	LOCF CBCS DSE- 5 Plant Biochemistry
		Anthropometric assessment for nutritional status of a healthy individual and in case studies of Kwashiorkor, Marasmus and/or	B. Sc (H) Biological Science, III Yr,	Nutritional Biochemistry (DSE-7)
FEB	**Theory**	Metabolic fates of amino groups. Transamination, role of pyridoxal phosphate, glucose-alanine cycle, Kreb's bicycle, urea cycle, its regulation and inherited defects of urea cycle. Gamaglutamyl cycle. Catabolism and Biosynthesis of Amino Acids: Catabolic pathways of individual amino acids. Glucogenic and ketogenic amino acids.	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-10 Metabolism of Amino Acids and Nucleotides
		Leukocytes, Platelets- structure and function; Hemostasis and its molecular mechanism, role of platelets in coagulation, role of vitamin K in coagulation, Anticlotting and fibrinolytic systems. Anemias: definition and types (Hemolytic, hemorrhagic, megaloblast, pernicious, iron deficiency and aplastic	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-8: Human Physiology

		Structure, classes and subclasses of immunoglobulins (Ig, Ig fold), effector functions of antibody, antigenic determinants on Ig, Ig super family. Monoclonal antibodies production and applications	B.Sc. Biochemistry (H) III Yr, Sem VI	LOCF CBCS C-14: Immunology
	Practical:	Enumeration of Blood cells: RBC and WBC counting, Calculation of blood Indices. d. Estimation of hemoglobin; Determination of total iron binding capacity	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-8: Human Physiology
		Extraction and assay of urease from Jack bean; Estimation of carotene/ascorbic acid/phenols/tannins in fruits and vegetables	B.Sc. Biochemistry (H) III Yr, Sem VI	LOCFCBCS DSE- 5 Plant Biochemistry
		Determination of oxidative stress: TBARS, antioxidant enzymes in hemolysate. Estimation of vitamin in drugs/food/serum	B. Sc (H) Biological Science, III Yr, Sem VI	Nutritional Biochemistry (DSE-7)
MARCH	**Theory**	Metabolism of one carbon units. Disorders of amino acids metabolism, phenylketonuria, alkaptonuria, maple syrup urine disease, methyl malonic acidemia (MMA), homocystinuria, and Hartnup's disease. (TEST and ASSIGNMENTS)	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-10 Metabolism of Amino Acids and Nucleotides
		Respiratory physiology - Organization of the pulmonary system, site of gas exchange, Ventilation and lung mechanics. Inspiration, Expiration, (TEST and ASSIGNMENTS)	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-8: Human Physiology
		Biology of the B Lymphocyte & Humoral Immunity No. of hours: 10 Dreyer-Bennett hypothesis, multigene organization of Ig locus, (TEST and ASSIGNMENTS)	B.Sc. Biochemistry (H) III Yr, Sem VI	LOCF CBCS C-14: Immunology
	Practical	Separation of isoenzymes of LDH by electrophoresis.	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-8: Human Physiology
		Separation of photosynthetic pigments by TLC	B.Sc. Biochemistry (H) III Yr, Sem VI	LOCF CBCS DSE- 5 Plant Biochemistry
		Estimation of minerals in drugs/food/serum.; Determination of nutritive value of foods.	B. Sc (H) Biological Science, III Yr, Sem VI	Nutritional Biochemistry (DSE-7)
APRIL	**Theory**	Integration of Metabolism: Integration of metabolic pathways (carbohydrate, lipid and amino acid metabolic pathways), tissue specific metabolism (brain, muscle, and liver).	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-10 Metabolism of Amino Acids and Nucleotides

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		Lung compliance and its determinants. Lung Volumes and Capacities. Transport of oxygen and carbon dioxide in blood. Haldane and Bohr's effect. Transport of hydrogen ions between tissues and lungs. Control of respiration. Hering-Breuer reflex. Asthma, Chronic Obstructive Pulmonary Disease (COPD), Hypoxia, Emphysema	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-8: Human Physiology
		mechanism of V region DNA rearrangement, mechanisms of antibody diversity. Antigen independent phase of B cell maturation and selection, humoral response – T-dependent and T-independent response, anatomical distribution of B cell populations	B.Sc. Biochemistry (H) III Yr, Sem VI	LOCF CBCS C-14: Immunology
	Practical	Pulmonary function tests, spirometry and measurement of blood pressure. Case studies: Renal clearance, ECG, LFT, EEG;	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-8: Human Physiology
		Culture of plants (explants); Revision of practicals, Mock Practical Examination	B.Sc. Biochemistry (H) III Yr, Sem VI	LOCF CBCS DSE- 5 Plant Biochemistry
		Estimation of glycosylated haemoglobin; Revision of practicals, Mock Practical Examination	B. Sc (H) Biological Science, III Yr, Sem VI	Nutritional Biochemistry (DSE-7)
May 2023	**Practical**	Practical Examination	B.Sc. Biochemistry (H) II Yr, Sem IV	LOCF CBCS C-8: Human Physiology
		Practical Examination	B.Sc. Biochemistry (H) III Yr, Sem VI	LOCF CBCS DSE- 5 Plant Biochemistry
		Practical Examination	B. Sc (H) Biological Science, III Yr, Sem VI	Biochemistry (DSE-7)

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Name of the Faculty: Mr. Lakshay Malhotra
Department: Biochemistry **Even Semester: II/IV/VI**

Month		Topics	Teaching Mode	Course	Paper Code/Name
MARCH	Theory:	1. General characteristics of enzymes; 2. Nature of enzymes - protein and non-protein (ribozymes – RNaseP, self-splicing introns, abzymes).	Offline (Board and presentation)	FBCH	BCH-DSC-201: Enzymes
		1. The complement system (Overview) 2. Classical & alternate pathway, Lectin pathway 3. Regulation of the pathway Biological consequences of complement activation	Offline (Board and presentation)	PGD	PGD MB 203: Immunology II
	Practicals:				
APRIL	Theory:	1. Co-factor and prosthetic group, apoenzyme, holoenzyme. 2. Classification and nomenclature of enzymes. 3. Enzyme activity, specific activity, units to express enzyme activity. 4. Features of enzyme catalysis, factors affecting the rate of chemical reactions, collision theory, activation energy and transition state theory.	Offline (Board and presentation)	FBCH	BCH-DSC-201: Enzymes
		1. Cytokine's properties, function of IL -1 to IL-5, IL-10, Il-12, IFNs, TNFs, cytokine receptors and signal transduction mediated by them 2. cytokine related diseases 3. Hypersensitivity I 4. Hypersensitivity II 5. Hypersensitivity III 6. Hypersensitivity IV	Offline (Board and presentation)	PGD	PGD MB 203: Immunology II
		1. Introduction, sources, functions, deficiencies, Structures of monosaccharides and disaccharides: 2. glucose, fructose, galactose; lactose, maltose, sucrose, maltitol, concept of reducing and non-reducing sugars	Offline (Board and presentation		SEC: Essential Food Nutrient

	Practicals:	1. Estimation of blood glucose in serum using ortho toluidine method 2. Estimation of blood glucose in serum using GOD-POD method (Glucose oxidase and Peroxidase)	Offline (Board and presentation)	FBCH	BCH-DSC-202: Metabolism of Carbohydrates
		1. Differentiate prokaryotic and eukaryotic cells and visualization of animal, plant cell, bacteria cells by light microscope	Offline (Board and presentation)	FBCH	BCH-DSC-203: Basic Concepts of Cell Biology
MAY	Theory:	1. Enzyme assays-discontinuous, continuous, coupled assays; 2. Catalysis, reaction rates 3. Catalytic power and specificity of enzymes (concept of active site), Fischer's lock and key hypothesis, Koshland's induced fit hypothesis. 4. Metal activated enzymes and metalloenzymes 5. General features - proximity and orientation, strain and distortion	Offline (Board and presentation)	FBCH	BCH-DSC-201: Enzymes
		1. active and passive immunization 2. attenuated & inactivated vaccines 3. new approaches to vaccine development 4. oncogenes 5. tumor antigens, induction of immune response, immunotherapy for tumors	Offline (Board and presentation)	PGD	PGD MB 203: Immunology II
		1. Role of carbohydrates as sweeteners in food; lactose intolerance, galactosemia, 2. dental plaque, overview of carbohydrate metabolism 3. Introduction, sources, functions, deficiencies, protein structure (primary, secondary and tertiary) 4. physico-chemical & functional properties of proteins, food proteins: animal and plant proteins.	Offline (Board and presentation)		SEC: Essential Food Nutrient
	Practicals:	1. Sugar fermentation by microorganisms. 2. Assay of salivary amylase.		FBCH	BCH-DSC-202: Metabolism of Carbohydrates
		1. Study of Mitosis and Identification of different stages of mitosis in onion root tip. 2. Study of Meiosis and Identification of different stages of meiosis in grasshopper testis.		FBCH	BCH-DSC-203: Basic Concepts of Cell Biology
		1. Separation and Identification of amino acids by thin layer chromatography. 2. Determination of absorption maxima (λmax)			GE-2

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		3. Calculate molar extinction coefficient of the given sample			
	Mid-term				
JUNE	Theory:	1. acid-base and covalent catalysis (chymotrypsin). Coenzymes (TPP, NAD, pyridoxal phosphate) in enzyme catalyzed reactions. 2. Control of activities of single enzymes and metabolic pathways, feedback inhibition, allosteric modulation (aspartate transcarbamoylase), regulation by reversible covalent modification (glycogen phosphorylase and glycogen synthase). 3. Zymogen (chymotrypsinogen). Isoenzymes - properties and physiological significance (lactate dehydrogenase).	Offline (Board and presentation)	FBCH	BCH-DSC-201: Enzymes
		1. T cell receptor, T cell accessory membrane molecules 2. thymic selection of T cell repertoire 3. organization and rearrangement of TCR genes 4. cell mediated immune response: generation of cytotoxic cells, CTL mediated cytotoxicity, response of NK cells			PGD MB 203: Immunology II
		1. Introduction, sources, functions, deficiencies, classification (fatty acids, phospholipids, fats & oils,waxes) 2. common fatty acids present in oils and fats, Omega- 3,6,9 fatty acids, trans fats, 3. chemical properties: iodine value, saponification value, effect of frying on fats, changes in fats and oils 4. rancidity, lipolysis, flavor reversion, auto-oxidation and its prevention.			BCH-DSC-203: SEC: Essential Food Nutrient
	Practicals:	1. Estimation of G-6 P by G6PDH 2. Continuous assay of Lactate Dehydrogenase		FBCH	BCH-DSC-202: Metabolism of Carbohydrates
		1. Micrographs of different cell components (dry lab). 2. Cells as experimental models: Study life cycle of one animal model drosophila/ zebrafish/ nematode. 3. Cytochemical staining of any one biomolecule (Protein/Polysaccharide/RNA)		FBCH	BCH-DSC-203: Basic Concepts ff Cell Biology
		1. Preparation of cell free extract from *E.coli* 2. Separation of molecules by gel filtration chromatography 3. Demonstration off PAGE and Agarose gel electrophoresis			GE-2
	Assignment				
JULY	Theory:	1. Vitamins: Introduction, classification: fat-soluble vitamins & water-soluble vitamins.			SEC: Essential Food Nutrient

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		2. Minerals: Introduction, classification: macrominerals (Ca, P, Mg) & microminerals (Se, Fe, I, Co, Zn, Cu, Se, Cr). 3. Role of vitamins and minerals in food chemistry			
	Practicals:				

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2022-23)

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Name of the Faculty: Sidhartha Taritla Department: Biochemistry

Month		Topics	Course	Paper code/Name
March	Theory	Introduction to microscopy	FBCH	Basic Concepts of Cell Biology
		Introduction to electrophoresis	PG Diploma	Biophysical Techniques
		Introduction to yeast transformation	PG Diploma	Recombinant DNA technology
April	Theory	Light microscopy - Principle Bright-field microscope I. Applications II. Advantages and disadvantages Phase contrast Microscope I. Principle II. Applications III. Advantages and disadvantages Inverted Microscope I. Applications II. Advantages and disadvantages Histochemical staining I. Fixation II. Processing III. Embedding IV. Sectioning V. Mounting	FBCH	Basic Concepts of Cell Biology
		Native and SDS PAGE, reducing and non-reducing gels, Detection of protein bands on the gels - Coomassie blue staining, silver staining, fluorescence staining. Molecular weight determination by SDS PAGE, Recovery of proteins from the gel Affinity Staining	PG Diploma	Biophysical Techniques
		Methods of gene transformation in yeast	PG Diploma	Recombinant DNA technology
		Human Ecology and happiness lectures I. Definition/factors of happiness II. Physical, emotional, and psychological well-being of happiness III. Physiological and hormonal basis of happiness IV. Coping with stress: A life-saving	VAC	The Art of Being Happy

		skill		
	Practical	1. Estimation of blood glucose in serum using ortho toluidine method 2. Estimation of blood glucose in serum using the GOD-POD method (Glucose oxidase and Peroxidase)	FBCH	Metabolism of Carbohydrates
		1. Assay to determine the activity and specific activity of an enzyme. 2: Progress curve for an enzyme	FBCH	DSC-4 Enzymes
		1. Differentiate prokaryotic and eukaryotic cells and visualization of animal, plant cell, and bacteria cells by light microscope.	FBCH	Basic Concepts of Cell Biology
May	Theory	Prokaryotic and Eukaryotic cells (Plant and Animal cells) Structural features: Nucleus, Nuclear envelope, Nuclear Pore Complex, Nuclear import and export of biomolecules, Endoplasmic Reticulum (Rough and smooth), Golgi Apparatus, lysosomes, Mitochondria, Chloroplast, and Peroxisomes. Cell division - Mitosis and meiosis	FBCH	Basic Concepts of Cell Biology
		Two-dimensional Gel electrophoresis, Gradient gel electrophoresis, Differential gel electrophoresis, Agarose gel electrophoresis, Pulse gel electrophoresis	PG Diploma	Biophysical Techniques
		Different methods of gene transfer in yeast, YIp, YEp, YCp, TRp, and shuttle vectors	PG Diploma	Recombinant DNA technology
		Indological theories of happiness I) Panch Kosh Theory and the idea of wellbeing II) Idea of self and other III) Hierarchy and stages of happiness	VAC	The Art of being Happy
	Practical	1. Sugar fermentation by microorganisms. 2. Assay of salivary amylase.	FBCH	Metabolism of Carbohydrates
		3: Partial purification of an enzyme using Ammonium sulfate fractionation.	FBCH	DSC-4 Enzymes

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		4: Effect of pH on enzyme activity.		
		1. Study of Mitosis and Identification of different stages of mitosis in the onion root tip. 2. Study of Meiosis and Identification of different stages of meiosis in grasshopper testis.	FBCH	Basic Concepts of Cell Biology
June	Theory	Types of Internalization of Procedures in the Cell, Endocytosis and Phagocytosis. Extracellular matrix proteins, cell-matrix interactions, cell-cell interactions, adherence junctions, tight junctions, gap junctions, desmosomes, hemidesmosomes, focal adhesion and plasmodesmata.	FBCH	Basic Concepts of Cell Biology
		Blotting Techniques Southern blotting, factors affecting DNA transfer, Northern blotting, Western blot, colony and plaque lift, dot blot	PG Diploma	Biophysical Techniques
		DNA markers VNTR and DNA fingerprinting	PG Diploma	
	Practical	1. Estimation of G-6 P by G6PDH 2. Continuous assay of Lactate Dehydrogenase	FBCH	Metabolism of Carbohydrates
		1: Effect of temperature on enzyme activity 2: Determination of Km and Vmax of an enzyme using Lineweaver-Burk plot	FBCH	DSC-4 Enzymes
		1. Micrographs of different cell components (dry lab). 2. Cells as experimental models: Study the life cycle of one animal model drosophila/ zebrafish/ nematode. 3. Cytochemical staining of any one biomolecule (Protein/Polysaccharide/RNA)	FBCH	Basic Concepts of Cell Biology
		Happiness cross-cultural contexts I) Culture and happiness II) Interpersonal relationship:	VAC	The Art of Being Happy

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		comparative perspective III) Towards self-actualization		
July	Theory	Introduction to cytoskeletal proteins. Structure, assembly The function of microtubules, microfilaments, and intermediate filaments	FBCH	Basic Concepts of Cell Biology
		Radioactive materials Types, precautions for handling methods of measurements and applications Autoradiography	PG Diploma	Biophysical Techniques
		SNP's, RFLP	PG Diploma	Recombinant DNA technology
		Local and global perspective of happiness I) Measuring happiness: Key indicators II) Happiness index III) India in global happiness indices	VAC	The Art of Being Happy
	Practical			
		7: Calculation of inhibitory constant (Ki) for an enzyme. 8: Immobilization of enzyme using calcium alginate beads	FBCH	DSC-4 Enzymes

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE(2022-23 Even)

Name of the Faculty: Dr. Shukla Saluja

Department: Botany **Semester : II/IV/VI**

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Plant identification, Classification, Nomenclature; Biosystematics. Ecosystems (Structure; Processes; Trophic organisation;)	B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics CC-9: Ecology
	Practicals	Ex.1: Study of vegetative and floral characters terminology for families description. Ex.2: Study of vegetative and floral characters for family-Brassicaceae (description). Ex.3: Study of vegetative and floral characters for family-Solanaceae(description). Ex.4: Study of vegetative and floral characters for family-Lamiaceae (description). 1.Determination of osmotic potential of plant cell sap by plasmolytic method. 2. Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte. 3. To study the effect of the environmental factor light on transpiration by excised twig. Preparation of Murashige and Skoogs Media, Demonstration of *in vitro* sterilization and inoculation methods using leaf and nodal explants, Study of in vitro micropropagation, construction of restriction maps of linear and circular DNA from the data provided	B.Sc. Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-III) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Tutorials	----------		
FEB	**Theory:**	Field inventory; Functions of Herbarium; Important herbaria and botanical gardens of the world and India; ; Virtual herbarium; E-flora; Documentation: Flora, Monographs, Journals; Keys: Single access and Multi-access Food chains and Food webs; Ecological pyramids.	B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics CC-9: Ecology

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	Practicals:	Ex.5: Study of vegetative and floral characters for family-Asteraceae (description). Ex.6: Study of vegetative and floral characters for family-Euphorbiaceae (description). Ex.7: Study of vegetative and floral characters for family-Liliaceae (description). 4. To Study Hill's reaction. 5. To study the activity of catalase. 6. Comparison of the rate of respiration in any two parts of a plant. 7. To study the effect of pH and enzyme concentration. Study of in vitro organogenesis and in vitro embryogenesis, study of anther, endosperm and embryo culture, study of artificial seeds, isolation of protoplasts, study of methods of gene transfer – Agrobacterium tumefaciens mediated gene transfer, electroporation, microinjection, microprojectile bombardment.	B.Sc. Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-III) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Assignment	Assignment topics will be distributed according to the syllabi		
MAR	**Theory:**	Principles and rules (ICN); Ranks and names; Typification, author citation, valid publication, rejection of names, principle of priority and its limitations; Names of hybrids. Functional aspects of ecosystem - Principles and models of energy flow; Production and productivity; Ecological efficiencies	B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics CC-9: Ecology

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	Practicals:	Ex.8: Study of vegetative and floral characters for family-Myrtaceae(description). Ex.9: Study of vegetative and floral characters for family-Apiaceae(description). 1.To study the effect of light intensity on O2 evolution in photosynthesis. 2.Setup- Demonstration experiments of Bolting. Study of steps of genetic engineering for production of Bt cotton, Golden rice, Flavr Savr tomato through photographs, isolation of plasmid DNA, Restriction digestion	B.Sc. Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-III) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Tutorials:	---------		
APR	**Theory:**	Major contributions of Theophrastus, Bauhin, Tournefort, Linnaeus, Adanson, de Candolle, Bessey, Hutchinson, Takhtajan and Cronquist Classification systems of Bentham and Hooker (upto series) and Engler and Prantl (upto series); Brief reference of Angiosperm Phylogeny Group (APG III) classification. Biogeochemical cycles; Cycling of Carbon, Nitrogen and Phosphorus. edible vaccines;Industrial enzymes (Aspergillase, Protease, Lipase); Gentically Engineered Products–Human Growth Hormone; Humulin; Biosafety concerns.	B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics CC-9: Ecology CC-14: Plant Biotechnology
	Practicals:	Ex.10: Study of vegetative and floral characters for family-Ranunculaceae (description). Ex.11: Study of vegetative and floral characters for family-Poaceae(description). 1.Setup- Demonstration experiments of Suction due to transpiration. 2. Effect of auxins on rooting. 3.Hydroponics (using a photograph). 4. To demonstrate the delay of senescence by cytokinins. 5. To study the phenomenon of seed germination (effect of light and darkness) gel electrophoresis of plasmid DNA, Calculate the percentage similarity between different cultivars of a species using RAPD profile. Construct a dendrogram and interpret results.	Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-III) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Tutorials:	---------		
	<u>Test</u>	Practical test will be conducted and evaluated as per the date sheet		

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SEMESTER WISE TEACHING PLAN
(MARCH-JULY 2023)
SRI VENKATESWARA COLLEGE

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Name of the Faculty: Dr. Manoj Thakur

Department: BOTANY **Semester: II/IV/VI**

Month		**Topics**	**Course**	**Paper Code/Name**
March	**Theory**	Microbial world, Growth, and nutrition of microbes with reference to nutritional media.	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction
		Various modes of DNA replication, including rolling circle, θ (theta) mode of replication, replication of linear ds-DNA. Replication of the 5'end of linear chromosome (end replication problem & Telomerase).	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		DNA fingerprinting in plants, Genetic Engineering Techniques: Gene cloning vectors (pUC 18, pBR322, BAC, YAC	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practicals	Study of Viruses: Electron micrographs / Models - T-Bacteriophage and TMV; specimens/digital resources/ Line drawings of Lytic and Lysogenic Cycle	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction
		DNA isolation from cauliflower heads. Quantification of unknown DNA by diphenylamine reagent.	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		Study of economically important plants: Wheat, Gram, Soybean, Black pepper, Clove Tea, Cotton, Groundnut	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology

		through specimens, sections and micro chemical tests		
	Tutorials:			
April	**Theory**	Recombination (conjugation, transformation, and transduction	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction
		Transcription in prokaryotes and eukaryotes; Understanding the steps in process of transcription: Initiation, Elongation and Termination. Enzymes and factors involved in transcription. Processing and modification of RNA, Split genes-concept of introns and exons, Splicing pathways, group I & group II intron splicing, Spliceosome and assembly of the spliceosome machinery, Alternative splicing, Eukaryotic mRNA processing (5' cap, 3' poly A tail) ; Ribozymes, RNA Editing	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		Construction of genomic and C-DNA libraries; screening for gene of interest by DNA probe hybridisation, complementation	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practicals	Gram staining to differentiate between Gram-positive and Gram-negative bacteria.	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction
		Study of structures of: prokaryotic RNA polymerase and eukaryotic RNA polymerase II through photographs Study of the following through photographs: Assembly of Spliceosome machinery.	B.Sc. (Hons.) Botany Sem IV	Molecular Biology

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		Splicing mechanism in group I & group II introns; Ribozymes and Alternative splicing Understanding the regulation of lactose (lac) operon (positive & negative regulation) and tryptophan (trp) operon (Repression and De-repression & Attenuation) through photographs. Understanding the mechanism of RNAi by photographs.		
		Study through photographs: Anther culture, somatic embryogenesis, endosperm, and embryo culture; micropropagation	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Tutorials:			
MAY	**Theory**	Discovery, General characteristics; Types - Archaebacteria, Eubacteria, Wall less forms (Mycoplasma, Phytoplasma and Spheroplasts); Cell structure; Nutritional types; Reproduction - vegetative, asexual.	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction
		Classes dispersed for the preparations of final theory exams and practical's	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		Classes dispersed for the preparations of final theory exams and practical's	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practicals	Histochemical staining to observe Arbuscular Mycorrhizal Fungi (AMF) colonization in Roots. Study of Bacteria: Electron micrographs of bacteria; Types of Bacteria from temporary/permanent slides. Endospore, Binary fission, Conjugation, Root nodule through specimens/digital resources.	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction

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		(Weeks: 02) 3. Study of Plant Growth Promoting Rhizobacteria (PGPR) through specimens/digital resources (at least three).		
		Conduct of Mock test for internal assessment and Final practical examination	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		Conduct of Mock test for internal assessment and Final practical examination	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Tutorials:			
June	Theory	General account of bacterial diseases of plants (Citrus canker, Angular leaf spots of cotton). Economic importance of viruses with reference to vaccine production, role in research, medicine and diagnostics and agriculture. Economic importance of bacteria with reference to their role in agriculture and industry (fermentation and medicine).	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction
	Practicals	Study of Rhizobium from root nodules of a leguminous plant. Isolation of Anabaena from Azolla leaves. Histochemical staining to observe Arbuscular Mycorrhizal Fungi (AMF) colonization in roots. Study of bacterial diseases (Citrus canker, Angular leaf spots of cotton) and viral diseases of plants (mosaic and vein clearing disease) through specimens/digital resources	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction
July	Theory	Conduct of Internal examination for the internal assessment	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction
	Practicals	Conduct of Mock test for internal assessment and Final	B.Sc. (Hons.) Botany	Microbiology and Plant

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		practical examination	Sem II	Microbe interaction

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SEMESTER WISE TEACHING PLAN
(January-March 2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Manoj Thakur

Department: BOTANY **Semester: I/IV/VI**

Month		Topics	Course	Paper
JANUARY	**Theory**	General characteristic features, cell structure, asexual reproduction, and modes of gene transfer (conjugation, transformation, and transduction), brief introduction to Archaebacteria. Pteridophytes: General characteristic features and reproduction, broad classification, evolutionary trends in Pteridophytes.	B.Sc. (Hons.) Botany Sem I	Plant diversity and evolution
		Unit 1. Nucleic acids as carriers of genetic information 3 lectures: Historical perspective; Experiments that established nucleic acids (DNA & RNA) as the carrier of genetic information: Griffith's, Hershey & Chase, Avery, McLeod & McCarty and Fraenkel- Conrat's experiment.	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		Molecular techniques: Blotting techniques (Southern, Northern and Western), PCR	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practical	To study *Selaginella* (morphology, WM of strobilus and spores), *Equisetum* (morphology, WM of spores), *Pteris* (morphology, tease mount of sporangia and spores). To study *Cycas* (morphology, leaf, leaflet anatomy, coralloid root, bulbils, megasporophyll and microsporophyll); *Pinus* (morphology of dwarf shoot, needle anatomy, male and female cones, WM pollen grains).	B.Sc. (Hons.) Botany Sem I	Plant diversity and evolution
		• Study of experiments establishing nucleic acid as genetic material (Avery et al, Griffith's, Hershey & Chase's and Fraenkel & Conrat's experiments) through photographs • Study of DNA replication through photographs: Modes of replication - Rolling circle, Theta and semi-discontinuous; Semiconservative model of replication (Messelson and Stahl's experiment); Telomerase assisted end-replication of linear DNA • Preparation of LB medium and raising E. coli	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		Study of molecular techniques: PCR, Blotting techniques, AGE and PAGE.	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Tutorials			

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February	**Theory:**	Affinities of Bryophytes with pteridophytes, general account of Adiantum, Selaginella. General characteristic features and reproduction, Concept of natural, artificial, and phylogenetic system of classification. Affinities with Gymnosperms.	B.Sc. (Hons.) Botany Sem I	Plant diversity and evolution
		Unit 3. Central Dogma and Genetic Code Key experiments establishing-The Central Dogma, Genetic code (salient features & experiments that deciphered the correlation between mRNA codon and amino acid). Unit 4. The Replication of DNA: Mechanism - initiation, elongation and termination, Kornberg's discovery; Enzymes and other proteins involved in DNA replication; General principles – bidirectional, semiconservative, and semi discontinuous replication (Replisome), RNA priming (primase & Primosome);	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		Molecular DNA markers (RAPD, RFLP, SNPs), DNA Sequencing Techniques	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practical:	To study variation in leaf venations in dicots and monocots (at least two specimens each). To study the types of inflorescences in angiosperms (through specimens). To study the types of fruits in angiosperms (through specimens).	B.Sc. (Hons.) Botany Sem I	Plant diversity and evolution
		Numerical based on DNA re-association kinetics (melting profiles and Cot curves) Study of structures of: tRNA (2D and 3D)	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		Familiarization with basic equipment's in tissue culture; Laminar Flow and Autoclave	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
March	**Theory:**	Conduct of final practical examinations and the dispersal of the classes for the preparatory leaves of Final theory exams	B.Sc. (Hons.) Botany Sem I	Plant Diversity and Evolution
		Various modes of DNA replication, including rolling circle, θ (theta) mode of replication, replication of linear ds-DNA. Replication of the 5'end of linear chromosome (end replication problem & Telomerase).	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
		DNA fingerprinting in plants, Genetic Engineering Techniques: Gene cloning vectors (pUC 18, pBR322, BAC, YAC	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practicals:	Conduct of final practical internal examinations for the assessment followed by dispersal of the classes for the preparatory leaves of Final theory exams	B.Sc. (Hons.) Botany Sem I	Plant Diversity and Evolution

	DNA isolation from cauliflower heads. Quantification of unknown DNA by diphenylamine reagent.	B.Sc. (Hons.) Botany Sem IV	Molecular Biology
	Study of economically important plants: Wheat, Gram, Soybean, Black pepper, Clove Tea, Cotton, Groundnut through specimens, sections and micro chemical tests	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
Tutorials:			

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SEMESTER WISE TEACHING PLAN (2021-2022)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Muthabathula Prajna **Department: Botany**

Semester: II

Month		Topics	Course	Paper code/ Name
MARCH	**Theory**	• Mendel's principles of inheritance; Chromosomal theory of inheritance • Incomplete dominance and codominance.	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology
	Practicals	• To study mitosis in *Allium cepa* through squash preparation of root tips. • To study meiosis in *Allium cepa* through smear preparation of anthers.	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology
APRIL	**Theory**	• Multiple allelism; Lethal alleles (dominant and recessive lethals); deviations of mendelian Dihybrid ratio (Epistatic Interactions - dominant, recessive, duplicate dominant, duplicate recessive, duplicate gene interactions, dominant-recessive); Polygenic inheritance; Numericals based on above; extra chromosomal inheritance (chloroplast inheritance) variegation In 4 o'clock plant; mitochondrial inheritance: petite mutants in yeast); maternal effect (shell coiling in snails).	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology
	Practicals	• To study meiosis in *Allium cepa* through smear preparation of anthers. • To study incomplete dominance and deviations of Mendelian dihybrid ratio (12:3:1, 9:3:4, 9:7, 15:1, 13:3)	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology
MAY	**Theory**	• Discovery: Linkage and crossing over; Recombination frequency; two factor crosses; sex linkage map of rII locus in phage; Central dogma. • History: Mutation types with	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology

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		examples (spontaneous and induced; somatic and germinal; biochemical mutations)		
	Practicals	• Human genetics: a) study of autosomal and sex-linked dominant & recessive inheritance through pedigree analyses. b) ABO blood group testing using kits, c) to study the syndromes (Down's, Kleinfelter's and Turner's through karyotypes.	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology
JUNE	**Theory**	• Types of mutations (point mutations (base mutations); transitions and transversion; deletion and frameshift mutations; misensse and nonsense mutations); Molecular basis of mutations; Mutagens-physical (UV and X-rays), chemical mutagens (base analogs, deaminating, alkylating and intercalating agents and transposons. • Genetic code	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology
	Practicals	• To study chromosomal aberrations: reciprocal translocation through squash preparations of *Rhoeo* anthers. Complex translocation ring, quadrivalents, lagging chromosomes, dicentric/ inversion bridge through permanent slides. • To prepare LB medium , inoculate and maintain (spread plate, streak plate, pour plate & serial dilution methods) *E. coli* cultures.	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology
JULY	**Theory**	• Structure and types of RNA; Transcription and Translation in prokaryotes; Transcription, RNA Processing and Translation in Eukaryotes.	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology
	Practicals	• To isolate genomic DNA from cauliflower and *E. coli*. Visualize using agarose gel electrophoresis. • To estimate DNA by diphenylamine method.	B.Sc. (P.) Life Sciences Sem II	Genetics and Molecular Biology

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SEMESTER WISE TEACHING PLAN (2021-2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Muthabathula Prajna **Department: Botany**

Semester: IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	• Scope and importance of medicinal plants in the traditional systems of medicine and modern medicine importance of preventive and holistic healing in the Indian traditional systems of medicine. Ayurveda: history origin fundamental doctrine and concepts of Pancha mahabhutas and tridoshas in relation to health and disease. • Therapeutic and pharmaceutical uses of important plants used in the Ayurveda system of medicine. Concept of Rasayanadrugs.	B.Sc.(P.) Life Sciences Sem IV	Medicinal Botany
		• Molecular basis of mutations, types of mutations – transitions, transversions, frameshift mutations. • DNA damage by hydrolysis, alkylation, oxidation and radiation. • Mutations caused by base analogs and intercalating agents. • Ames test	B. Sc. (P.) Biological Sciences Sem IV	Molecular Biology
		• Metabolic pathway database (KEGG, EcoCyc, and MetaCyc), small molecule databases (PubChem, Drug Bank, ZINC, CSD).	B.Sc. (H.) Botany Sem VI	Bioinformatics
	Practicals	• Identification and medicinal value of locally available medicinal plants in the field.	B.Sc.(P.) Life Sciences Sem IV	Medicinal Botany
		• Ultraviolet absorption spectrum of DNA/RNA • Determination of DNA concentration by A260nm	B. Sc. (P.) Biological Sciences Sem IV	Molecular Biology
	Tutorials			

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FEBRUARY	**Theory:**	• Siddha origin, concepts, therapeutic and pharmaceutical uses of important plants used in Siddha system of medicine. Unani: History, concept of Umoor-e-Tabiya (Fundamentals of physique), therapeutic and pharmaceutical uses of plants used in Unani system of medicine. • Neutraceuticals and Polyherbal formulations.	B.Sc.(P.) Life Sciences Sem IV	Medicinal Botany
		• Replication errors and their repair, mismatch repair system. • Repair of DNA damage-direct reversal of DNA damage, base excision repair, nucleotide exciscion repair, translesion DNA synthesis.	B. Sc. (P.) Biological Sciences Sem IV	Molecular Biology
		• Structure viewers (Ras Mol, J mol). Sequence annotation; Data retrieval systems (SRS, Entrez).	B.Sc. (H.) Botany Sem VI	Bioinformatics
	Practicals	• Study of organoleptic, macroscopic, and microscopic paprameters of any two plant drugs. Sections and powder evaluation (*Catheranthus & Mentha*). • Isolation of bioactive compounds in the lab and phytochemical analysis of the crude extract of various parts of medicinal plants (*Azadirachta indica*). • E-presentations	B.Sc.(P.) Life Sciences Sem IV	Medicinal Botany
		• Quantitative estimation of DNA by DPA method • Quantitative estimation of RNA by orcinol method	B. Sc. (P.) Biological Sciences Sem IV	Molecular Biology
	Tutorials:			

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MARCH	**Theory:**	• Plants used for the treatment of hepatic disorders Cardiac disease in fertility diabetes blood pressure cancer and skin diseases role of AYUSH, NMPB and AIIA in the promotion of medicinal plants. • Adulteration of herbal drugs evaluation and standardization of crude drugs fundamentals of pharmacognosy. Organoleptic microscopic and phytochemical evaluation of plant drugs. • Conservation of endangered and endemic medicinal plants. Red Data list criteria.	B.Sc.(P.) Life Sciences Sem IV	Medicinal Botany
		• Principles of gene regulation, negative and positive regulation, concept of operons, regulatory proteins, activators, repressors, DNA binding domains. • Regulation of gene expression in Bacteria, lac operon and trp operon, induction of SOS response, synthsis of ribosomal proteins.	B. Sc. (P.) Biological Sciences Sem IV	Molecular Biology
		• Functional genomics (genome-wide and high throughput approaches to gene and protein function)	B.Sc. (H.) Botany Sem VI	Bioinformatics
	Practicals:	• Isolation of bioactive compounds in the lab and phytochemical analysisof the crude extract of various parts of medicinal plants (*Aegle marmelos*). • Study of ingredients and medicinal uses of common polyherbal formulations used in the traditional systems of medicine. • E-presentations	B.Sc.(P.) Life Sciences Sem IV	Medicinal Botany
		• Quantitative estimation of RNA by orcinol method	B. Sc. (P.) Biological Sciences Sem IV	Molecular Biology

	Tutorials:			
APRIL	**Theory:**	• In situ conservation, Biosphere Reserves, National Parks, Sacred groves. Exsitu conservation: Botanic Gardens, National Gene Banks, plant cell, tissue and organ culture, cryopreservation. Role of NBPGR, CIMAP, JNTBGRI and RRL. • General aspects of cultivation and propagation of medicinal plants. WHO guidelines of good Agricultural and Cultivation Practices (GACP). Objectives of the nursery, classification and important components of nursery. Greenhouse Technology. Propagation through cuttings Layering, Grafting and budding.	B.Sc.(P.) Life Sciences Sem IV	Medicinal Botany
		• Overview of regulation of gene expression in eukaryotes, heterochromatin, euchromatin, chromatin remodeling, DNA binding activators and co-activators. • Regulation of galactose metabolism in Yeast, Riboswitches. • RNA interference, SiRNA and miRNA.	B. Sc. (P.) Biological Sciences Sem IV	Molecular Biology
		• Protein structure prediction and analysis- Levels of protein structure. Gene prediction methods and tools.	B.Sc. (H.) Botany Sem VI	Bioinformatics
	Practicals:	• Isolation of bioactive compounds in the lab and phytochemical analysisof the crude extract of various parts of medicinal plants (*Withania somnifera*). • Field visit to Sunder Nursery, Nizamuddin. • E-presentations	B.Sc.(P.) Life Sciences Sem IV	Medicinal Botany

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		• Identification of nucleotide bases by paper chromatography • Isolation of chromosomal DNA and to assess the purity by A260/A280 Ratio	B. Sc. (P.) Biological Sciences Sem IV	Molecular Biology
	Tutorials:			

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shantanu Mandal **Department: Botany**
Semester: II 2023-24 (March to July) Even Semester

Month		Topics	Course	Paper Code/Name
March	**Theory:**	**Unit 1: Introduction** Identification, Classification (types) and Nomenclature, Phylogeny; Major contributions - Parasara, Charaka, Theophrastus, Bauhin, Tournefort, Linnaeus, Adanson, de Candolle, Bessey, Hutchinson, Takhtajan, Bremer, MW Chase.	B.Sc. (H) Botany Semester II	**Plant Systematics**
	Practicals:	**Description of Suggested Families** ➢ Apiaceae, Study of Viruses: Electron micrographs / Models - T-Bacteriophage and TMV; specimens/digital resources/ Line drawings of Lytic and Lysogenic Cycle.	B.Sc. (H) Botany Semester II B.Sc. (H) Botany Semester II	**Plant Systematics** **Microbiology and Plant-Microbe Interactions**
	Tutorials	----------		
April	**Theory:**	**Unit 2: Resources in Plant Identification** Literature (Floras, Manuals, *Icones*, Monographs, Revisions, Journals, e-resources); Herbaria and Botanical gardens (in brief).	B.Sc. (H) Botany Semester II	Plant Systematics
	Practical	**Description of Suggested Families** ➢ Apocynaceae, ➢ Asteraceae, ➢ Brassicaceae, ❖ Gram staining to differentiate between Gram-positive and Gram-negative bacteria.	B.Sc. (H) Botany Semester II B.Sc. (H) Botany Semester II	Plant Systematics Microbiology and Plant-Microbe Interactions
	Tutorials:			
May	**Theory:**	**Unit 3: Systematics - An Interdisciplinary Science** • Relevance of palynology, cytology, phytochemistry molecular data (cp.DNA, mt.DNA, nuclear DNA)PCR amplification, sequence data analysis); three examples from each with emphasis on application in resolving taxonomic problems - details of techniques to be excluded)	B.Sc. (H) Botany Semester II	Plant Systematics

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	Practicals	➢ Histochemical staining to observe Arbuscular Mycorrhizal Fungi (AMF) colonization in Roots. Study of Bacteria: Electron micrographs of bacteria; Types of Bacteria from temporary/permanent slides. Endospore, Binary fission, Conjugation, Root nodule through specimens/digital resources. ➢ Study of Plant Growth Promoting Rhizobacteria (PGPR) through specimens/digital resources (at least three). **List of Suggested Families** ➢ Euphorbiaceae, ➢ Fabaceae, ➢ Lamiaceae	B.Sc. (H) Botany Semester II B.Sc. (H) Botany Semester II	Microbiology and Plant Microbe interaction Plant Systematics
June	**Theory:**	**Evolution of Angiosperms** ➢ Concept of a primitive flower (Euanthial theory and Pseudanthial theory); Basal Living Angiosperms; Herbaceous origin; Coevolution of angiosperms with animals.	B.Sc. (H) Botany Semester II	Plant Systematics
	Practicals	• Study of Rhizobium from root nodules of a leguminous plant. • Isolation of Anabaena from Azolla leaves. • Histochemical staining to observe Arbuscular Mycorrhizal Fungi (AMF) colonization in roots. • Study of bacterial diseases (Citrus canker, Angular leaf spots of cotton) and viral diseases of plants (mosaic and vein clearing disease) through specimens/digital resources **List of Suggested Families** ➢ Liliaceae, ➢ Malvaceae, ➢ Poaceae, ➢ Ranunculaceae,	B.Sc. (Hons.) Botany Sem II B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction Plant Systematics
July	**Theory:**	➢ Revision classes and Conduct of Internal examination for the internal assessment	B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction
	Practicals	➢ Conduct of Mock test for internal assessment, and Final practical examination **List of Suggested Families** ➢ Solanaceae ➢ Conduct of Mock test for internal assessment, and Final practical examination	B.Sc. (Hons.) Botany Sem II B.Sc. (Hons.) Botany Sem II	Microbiology and Plant Microbe interaction Plant Systematics

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shantanu Mandal **Department: Botany**

Semester: I 2023-24 (January to March) Odd Semester

Month		Topics	Course	Paper Code/Name
January	**Theory**	➢ **Unit 3: Microscopy, sample and slide preparation:** Microscopes (Dissecting, Compound and Electron microscopes), Fixation and Preservation (for light and electron microscopy); staining, mounting; basic introduction to other types of microscopes (Confocal, Fluorescence).	B.Sc. (H) Botany Semester I	**Basic Laboratory and Field Skills in Plant Biology**
		➢ **Unit 4: Measurements and calculations:** Units of measurements and conversion from one unit to another, measurement of volumes of liquids, Weighing, calculations: scientific notations, powers, logarithm and fractions.	B.Sc. (H) Botany Semester I	**Basic Laboratory and Field Skills in Plant Biology**
	Practicals	➢ Working of instruments -light microscope, autoclave, laminar air flow, spectrophotometer, centrifuge, gel electrophoresis unit (Agarose & Poly acrylamide). ➢ Temporary peel mount slide preparation and staining (safranin and acetocarmine). ➢ Calculate cell size using micrometer ➢ Calculate number of cells (pollen/spores) using haemocytometer	B.Sc. (H) Botany Semester I	**Basic Laboratory and Field Skills in Plant Biology**
		❖ **Algae:** Study of vegetative and reproductive structures of (a) *Nostoc* (b) *Volvox* (c) *Spirogyra* through temporary preparations and permanent slides ❖ Study of vegetative and reproductive structures of (a) *Rhizopus,* (b) *Penicillium*, and (c) *Agaricus* through temporary preparations and permanent slides/specimens/photographs ❖ Study of (a) *Marchantia* morphology of thallus, W.M. rhizoids and scales, V.S. thallus through gemma cup, W.M. gemmae (all temporary slides), V.S. antheridiophore, archegoniophore, L.S. sporophyte (all permanent slides), (b) *Funaria*: detailed study and classification from W.M. rhizoids, operculum, peristome, spores and permanent slides of archegonia, antheridia and capsule. ❖ Study of *Pteris:* T. S. of Rachis, V.S. of Sporophyll and W.M. of sporangium.	B.Sc. (Prog.) Life Science Semester I	**Plant Diversity and Systematics**
	Tutorials	----------		

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February	**Theory:**	**Unit 5: Solutions and Buffers** ➢ Molarity, Molality, Normality, percent solution, stock solution, standard solution, dilution, dilution series, pH, acids and bases, buffers - phosphate, Tris- acetate, Tris-Cl and Citrate buffer. ➢ **Internal Test and Assignment collection**	B.Sc. (H) Botany Semester I	**Basic Laboratory and Field Skills in Plant Biology**
	Practicals:	➢ Preparation of LB medium, growth and maintenance of bacterial cultures (liquid - serial dilution method; and semi-solid cultures - streak, spread and pour plates) ➢ Isolation of genomic DNA from *E. coli* and plant leaf material, Agarose gel electrophoresis ➢ Calculation of mean, mode, median, standard deviation using data set (collected from experiments 5 and 6). ➢ Using software to draw tables, graphs and calculating descriptive statistics (Microsoft Excel) ❖ **Gymnosperms:** Study of *Pinus* morphology of long & dwarf shoot, male and female cones (specimens) and T.S. of needle (permanent slides only). ❖ Taxonomic study of characters of 1 plant from each of the following families (any four): Malvaceae, Solanaceae, Asteraceae, Fabaceace, and Liliaceae. ➢ **Practical file collection and correction** ➢ **Mock test for practical examination**	B.Sc. (H) Botany Semester I B.Sc. (Prog.) Life Science Semester I	**Basic Laboratory and Field Skills in Plant Biology** **Plant Diversity and Systematics**
	Tutorials:	----------		
	Test	**Practical test conducted for semester I** **Practical test conducted for semester I**	B.Sc. (H) Botany Semester I B.Sc. (Prog.) Life Science Semester I	**Basic Laboratory and Field Skills in Plant Biology** **Plant Diversity and Systematics**
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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Dr. Shantanu Mandal **Department: Botany**

Semester: IV/VI 2023-24 (January to April) Even Semester

Month		Topics	Course	Paper Code/Name
January	**Theory**	➢ **Unit 2: Identification** Field inventory; Herbarium Techniques; Functions of Herbarium; Important herbaria and botanical gardens of the world and India; Virtual Herbarium; E-flora: Flora, Monographs, Journals; Keys: Single Access and Multi-access.	B.Sc. (H) Botany Semester IV	**Plant Systematics**
		➢ **Unit 2: The Structure and organisation of the genetic material** DNA Structure: Miescher to Watson and Crick- a historic perspective.DNA structure , salient features of double helix ; Types of DNA: A,B & Z conformations .	B.Sc. (H) Botany Semester IV	**Molecular Biology**
		➢ Unit 5: **Applications of Biotechnology** Engineering plants to overcome abiotic (drought and salt stress) and biotic stress Pest resistant (Bt-cotton) and herbicide resistant plants (RoundUp Ready soybean)	B.Sc. (H) Botany Semester VI	**Plant Biotechnology**
	Practicals	• Ranunculaceae- *Delphinium* • Brassicaceae- *Brassica, Alyssum/ Iberis* • Umbelliferae-*Coriandrum*	B.Sc. (H) Botany Semester VI	**Plant Systematics**
	Tutorials	----------		
February	**Theory:**	➢ Unit 3 **Systematics-an interdisciplinary science** Evidence from palynology, cytology, phytochemistry [Alkaloids, Phenolics, Glucosides, terpenes and Semantides (in brief)] and molecular data (cp.DNA, mt-DNA, nuclear DNA, PCR amplification, sequence data analysis)	B.Sc. (H) Botany Semester IV	**Plant Systematics**
		➢ **Unit 2: The Structureand organisation of the genetic material** Genome complexity: Concept of C-value paradox, denaturation and renaturation, *Cot* curves; Organization of DNA- in Prokaryotes, Viruses & Eukaryotes. Organelle DNA -- mitochondria and chloroplast DNA; Chromatin structure- Nucleosome, Euchromatin, Heterochromatin- Constitutive and Facultative heterochromatin .	B.Sc. (H) Botany Semester IV	**Molecular Biology**
		Unit 5: **Applications of Biotechnology (16 lectures)** Transgenic crops with improved quality traits (FlavrSavr tomato. Golden rice); Improved horticultural varieties (Moondust carnations); Role of transgenics in bioremediation (Superbug).	B.Sc. (H) Botany Semester VI	**Plant Biotechnology**

	Practicals:	• Solanaceae- *Solanum nigrum,Withania sominifera* • Lamiaceae- *Salvia/Ocimum* • Liliaceae- *Asphodelus/ Lilium/ Allium*	B.Sc. (H) Botany Semester IV	**Plant Systematics**
	Tutorials:	----------		
March	**Theory:**	➢ Unit 5: **Botanical nomenclature (10 lectures)** Principles and rules (ICN); Ranks and names; Typification, author citation, valid publication, rejection of names, principle of priority and its limitations; Names of hybrids and cultivated plants.	B.Sc. (H) Botany Semester IV	**Plant Systematics**
		➢ RNA : types of RNA molecules , structure and function of mRNA, tRNA and rRNA ➢ tryptophan synthesis (Repression-Derepression and Attenuation) in *E.coli;*	B.Sc. (H) Botany Semester IV	**Molecular Biology**
		Unit 6 ➢ Molecular farming (Plants as bioreactors) for edible vaccines, antibodies, polymers, biodegradable plastics (PHA), biomass utilization andindustrial enzymes) (- amylase, phytase, lignocelluloses degrading enzymes); Biosatety concerns.	B.Sc. (H) Botany Semester VI	**Plant Biotechnology**
	Practicals:	➢ Poaceae- *Triticum/ Hordeum/ Avena/ Poa* ➢ Malvaceae-*Abutilon/ Hibiscus/ Sida* ➢ Solanaceae- *Solanum nigrum,Withania sominifera* (Revision)	B.Sc. (H) Botany Semester IV	**Plant Systematics**
	Tutorials			
	Assignment:	Given to all students for respective papers		
April	**Theory:**	➢ **Unit 8: Phylogeny of Angiosperms (11 lectures)** Cladistics: Terms and concepts (primitive and advanced, homology and analogy, parallelism and convergence, monophyly, Paraphyly, polyphyly and clades). Methodology of Cladistics, Methods of illustrating evolutionary relationships (phylogenetic tree, cladogram) Origin and evolution of angiosperms.	B.Sc. (H) Botany Semester IV	**Plant Systematics**
		❖ Eukaryotes: Gene silencing: Methylation, RNAi, Imprinting.	B.Sc. (H) Botany Semester IV	**Molecular Biology**
		➢ Unit 6 Molecular farming : Biomass utilization andindustrial enzymes) (- amylase, phytase, lignocelluloses degrading enzymes); Biosatety concerns	B.Sc. (H) Botany Semester VI	**Plant Biotechnology**

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	Practicals:	• Euphorbiaceae-Euphorbia hirta/ E.milli, Jatropha • Asteraceae- Sonchus/ Launaea, Veronia/ Ageratum, Elipta/ Tridax • Apocyanaceae- Catharanthus roseus/Cascabala thevitea/Tabernemontana sp. • Revision of Practical • Practical file submission and correction • Practical mock test	B.Sc. (H) Botany Semester IV	**Plant Systematics**
	Tutorials			
	Test	Conducted for all papers Semester IV and VI		

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SEMESTER WISE TEACHING PLAN (2022- 23)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Madhu Raina **Department: Botany**
Semesters: I and IV

JANUARY	**Theory**	• Diagnostic features of angiosperms • Structure of flower, types of inflorescence • Characteristic features of Bryophytes, Pteridophytes and Gymnosperms • Morphology and reproduction of *Marchantia, Funaria*, *Pteris* and *Pinus* • Morphology, reproduction of *Rhizopus, Penicillium* and *Agaricus*	B.Sc.(P.) Life Sciences Sem I	Plant Diversity and Systematics
		• Climate change and global warming • Threats to biodiversity and habitat degradation • Genomics and modern medicine • Genetically engineered crops • Artificial intelligence and robotics • Big Data Analytics • Citizen science and science communication • Science of natural disasters and their management • Public Health: Nutrition, Hygiene, Physical and Mental Health, Vaccines and Antibiotics, Anti-microbial resistance • Green Revolution, White Revolution • IT Revolution, eGovernance	B.Sc.(P.) Life Sciences Sem I	Value Added Course: Science and Society
		• Electrophoresis-principle and basic concept • Gel electrophoresis • Discontinuous gel electrophoresis • PAGE, SDS-PAGE • Native and denaturing gels • Buffer systems • Agarose gel electrophoresis	B.Sc. (P.) Life Sciences Sem IV	Biochemical Techniques (B.Sc. (H) Biological Science)

	Practicals	• Virus • Bacteria • Algae • Fungi • Gymnosperms	B.Sc.(P.) Life Sciences Sem I	Plant Diversity and Systematics
		• Height of college building • Isolation of DNA • Transpiration and photosynthesis in plants • Observing flora and fauna of campus	B.Sc.(P.) Life Sciences Sem I	Value Added Course: Science and Society
		• Current status of ecotourism • Different practices to integrate ecotourism programme • Plant identification holding ecotourism attraction • Basic elements of ecotourism • Checklist of birds and animals • Development of suitable messages to educate target groups • Survey and identification of target groups for ecotourism	Sem I	Sustainable Ecotourism and Entrepreneurship
		• Determination of osmotic potential of plant cell sap • Effect of light on transpiration of excised twig	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Tutorials			
FEBRUARY	**Theory**	• General account of Lichens • General characteristics of Blue, Green, Brown and red algae • Morphology, reproduction and classification of *Nostoc, Volvox* and *Spirogyra*	B.Sc. (P.) Life Sciences Sem I	Plant Diversity and Systematics
		• Clean Energy, Renewable Energy • Space Science and Exploration • Evolution, Ecology and Environment • Contribution of women scientists in science • Water harvesting structures and practices • use of natural environment-friendly designs and materials	B.Sc. (P.) Life Sciences Sem I	Value Added Course: Science and Society

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		• Agriculture including domestication of plants and animals • Rational thinking and experimental designs, myths vs facts		
		• Electrophoresis of proteins and nucleic acids, detection and identification • Molecular weight determination • Iso-electric focusing of proteins	B.Sc. (P.) Life Sciences Sem IV	Biochemical Techniques (B.Sc. (H) Biological Science)
	Practicals:	• Lichens • Bryophytes • Pteridophytes • Herbarium Techniques • Taxonomic studies of four families	B.Sc.(P.) Life Sciences Sem I	Plant Diversity and Systematics
		• Visit to science laboratories in college campus • Visit to botanical and zoological museums • Nature walk • Assignments given to students	Sem I	Value Added Course: Science and Society
		• Tourist spending patterns and track preferences • Sustainable ecotourism development programme • Development of ecotourism activities • Strategic alliances and partnerships. • Stories development • Assignments allotted to students	Sem I	Sustainable Ecotourism and Entrepreneurship
		• Calculation of stomatal index and frequency of a mesophyte and a xerophyte • Study Hills Reaction • Study activity of catalase • Study effect of pH and Enzyme concentration on activity of catalase	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Tutorials			

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SEMESTER WISE TEACHING PLAN (2022- 23)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Madhu Raina **Department: Botany**
Semesters: II and IV

MARCH	**Theory**	• Characteristic features of DNA • Semi-conservative replication experiments • DNA replication in *E. coli*	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
		• Principle of centrifugation • Basic rules of centrifugation • Sedimentation coefficient • Different types of Centrifugation and types of rotors	B.Sc.(P.) Life Sciences Sem IV	Biochemical Techniques (B.Sc. (H) Biological Science)
	Practicals	• Mitosis in *Allium*	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
		• Study the effect of light intensity on oxygen evolution in photosynthesis • Compare rate of respiration in any two parts of a plant • Bolting- demonstration • Effect of auxin on rooting – Demonstration	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Tutorials:	•		
APRIL	Theory	• Classical and molecular concept of gene • Benzer's cis-trans complementation analyses • Map of rII locus in phage • Central Dogma	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
		• Differential, density gradient, isopycnic and zonal centrifugation • Centrifugation application	B.Sc.(P.) Life Sciences Sem IV	Biochemical Techniques (B.Sc. (H) Biological Science)
	Practicals	• Mitosis in *Allium* • Meiosis in *Allium*	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
		• Flexibility Training • Muscular strength Training • Endurance Training	Sem II	Value Added Course: Fit India
		• Vegetation sampling and IVI calculation	Sem II	SEC: Green Belt Development for Smart Cities
		• Hydroponics	B.Sc. (P.) Life Sciences Sem	Plant Physiology

		• Demonstration of delay of senescence • Study the phenomenon of seed germination (effect of light and darkness)	IV	and Metabolism
	Tutorial:			

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Name of the Faculty: Dr. K. Prasad **Department: Botany**
Semester: I

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	• Angiosperms - Diagnostic features, Structure of flower Angiosperms • Types of Inflorescences Systematics - Aims, fundamental components of systematics description, identification, nomenclature, phylogeny and biosystematics.	B.Sc. (P) life Sciences Sem 1	Plant diversity and Systematics
		• Field skills: Identification, collection, cataloguing. • Preservation of plant specimens • Herbarium and Museum • Basic culturing techniques: Basic culture media (LB, YEB, MS); Liquid and solid culture media	B.Sc. (H) Botany Semester I	Basic Laboratory and Field Skills in Plant Biology
	Practicals	• Study of vegetative and reproductive structures of Volvox and Spirogyra through temporary slides • Study of vegetative and reproductive structures of Rhizopus, Penicillium and Agaricus through temporary preparations and permanent slides/specimens/photographs • Study of Marchantia morphology of thallus, W.M. rhizoids and scales, V.S. thallus through gemma cup, W.M. gemmae (all temporary slides); V.S. Antheridiophore, archegoniophore, L.S. sporophyte (all permanent slides). • Herbarium technique (mounting of a properly dried and pressed specimens of any wild plant on the herbarium sheet with herbarium label. • Taxonomic study of characters of Malvaceae (Hibiscus rosa-sinensis)	B.Sc. (P) life Sciences Sem 1	Plant diversity and Systematics
		• Working of instruments -light microscope, autoclave, laminar air flow, spectrophotometer, centrifuge, gel electrophoresis unit (Agarose & Poly acrylamide).	B.Sc. (H) Botany Semester I	Basic Laboratory and Field Skills in Plant Biology

		• Temporary peel mount slide preparation and staining (safranin and acetocarmine). • Calculate cell size using micrometer Calculate number of cells (pollen/spores) using haemocytometer		
		• Visit to science laboratories in college campus • Visit to botanical and Zoological museums • Nature walk' • Assignments given to students	B.Sc. (P) life sciences Sem 1	Value added course: Science and Society
FEBRUARY	Theory	• Systematics in practices – Taxonomic hierarchy: concept of taxa and categories • Botanical nomenclature: principles and rules, type method, author citation, valid publication, rejection of names, principle of priority and its limitations • Names of hybrids and cultivars	B.Sc. (P) life Sciences Sem 1	Plant diversity and Systematics
		• Culture techniques: planting (streak, spread & pour), replica plating • Serial dilution • Data collection, statistical analysis and interpretation: Fundamentals of data collection, data types: primary and secondary • Methods of data collection, sample, sampling methods – merits and demerits • Classification-tabulation and presentation of data • Descriptive statistics: Mean, mode, median, Variance, Standard deviation and errors • Coefficient of variation	B.Sc. (H) Botany Semester I	Basic Laboratory and Field Skills in Plant Biology
	Practicals	• Funaria: detailed study and classification from W.M. rhizoids, operculum, peristome, spores and permanent slides of archegonia, antheridia and capsule • Study of Pinus morphology of long and dwarf shoot, male and female cones (specimens) and T.S. of needle (permanent slides only) • Taxonomic study of characters of Solanaceae (Solanum nigrum), Asteraceae (Tagetus erecta), Fabaceae (Trigonella foenum-graecum) and Liliaceae (lily)	B.Sc. (P) life Sciences Sem 1	Plant diversity and Systematics

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		• Preparation of LB medium, growth and maintenance of bacterial cultures (liquid - serial dilution method; and semi-solid cultures - streak, spread and pour plates) • Isolation of genomic DNA from E. coli and plant leaf material, Agarose gel electrophoresis • Calculation of mean, mode, median, standard deviation using data set (collected from experiments 5 and 6). • Using software to draw tables, graphs and calculating descriptive statistics (Microsoft Excel)	B.Sc. (H) Botany Semester I	Basic Laboratory and Field Skills in Plant Biology
		• Height of college building • Isolation of DNA • Transpiration and photosynthesis in plants • Observing flora and fauna of campus	B.Sc. (P) life sciences Sem 1	Value added course: Science and Society
MARCH	Theory	• Systems of classification - classification: Artificial, Natural and Phylogenetic • An outline of Bentham and Hooker (up to series only); merits and demerits • Engler and Prantls (up to subclasses); merits and demerits • APG system of classification	B.Sc. (P) life Sciences Sem 1	Plant diversity and Systematics
		• Difference between sample and population mean • Basic computer skills for biology: MS-Word, PowerPoint, Excel • Introduction to Biological databases	B.Sc. (H) Botany Semester I	Basic Laboratory and Field Skills in Plant Biology
	Practicals	• Practical test conducted for semester I	B.Sc. (P) life Sciences Sem 1	Plant diversity and Systematics
		• Practical test conducted for semester I	B.Sc. (H) Botany Semester I	Basic Laboratory and Field Skills in Plant Biology
		• Practical test conducted for semester I	B.Sc. (P) life sciences Sem 1	Value added course: Science and Society

Teacher's Signature

Teacher in charge

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SEMESTER WISE TEACHING PLAN (2022-2023)
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Name of the Faculty: Dr. K. Prasad **Department: Botany**
Semester: II

Month		Topics	Course	Paper Code/Name
March	Theory	• Systems of Classification: Taxonomic hierarchy	B.Sc. (H) Botany Semester II	Plant systematics
		• Viruses: Discovery	B.Sc. (H) Botany Semester II	Microbiology and plant microbe interactions
		• Mendelian genetics and extrachromosomal inheritance Weeks: Mendel's principles of inheritance; chromosomal theory of inheritance	B.Sc. programmes	Genetics and molecular Biology
		• Gymnosperms: Position of Gymnosperms in five kingdom classification.	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
	Practicals	• *Cycas*: T.S (temporary mount) leaf, specimen: male cone and megasporophyll; T.S. corolloid root (temporary mount), T.S. microsporophyll, L.S. ovule (permanent slides)	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
		-	SEC Semester II	Green Belt development for smart cities
April	Theory	• Concept of species (morphological, biological and evolutionary); • Classification systems - Bentham and Hooker (up to series), Engler and Prantl (up to sub-class) • Angiosperm Phylogeny Group (APG) classification (major clades).	B.Sc. (H) Botany Semester II	Plant systematics
		• Classification (Baltimore); General structure with special reference to viroids and prions, DNA and RNA viruses • General account and mechanism of replication, lytic and lysogenic cycle	B.Sc. (H) Botany Semester II	Microbiology and plant microbe interactions
		• Incomplete dominance and codominance; multiple allelism; lethal alleles (dominant and recessive lethals); • deviations of Mendelian dihybrid ratio (Epistatic interactions-dominant, recessive, duplicate dominant, duplicate recessive, duplicate gene interaction, dominant- ecessive);	B.Sc. programmes	Genetics and molecular Biology

		polygenic inheritance; numericals based on above; • extrachromosomal inheritance (Chloroplast inheritance: variegation in Four O` clock plant; Mitochondrial inheritance: petite mutants in yeast); Maternal effect (shell coiling in snails).		
		• General characteristics, Outline classification and economic importance. Morphology, structure and reproduction of *Pinus* and *Ginkgo*. • Evolutionary tendencies in Gymnosperms-a comparative study	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
	Practicals	• *Pinus*: Study of morphology, dwarf and long shoots, male and female cone, T.S. needle (temporary mount), L.S. male and female cone (permanent slides).	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
		• Vegetation sampling and IVI calculation	SEC Semester II	Green Belt development for smart cities
May	Theory	• Approaches in Systematics: Terms and concepts (primitive and advanced, homology and analogy, parallelism and convergence, monophyly, paraphyly, polyphyly, clades and grades). • Phenetics - Principles, Methodology, Characters; Selection of OTUs, Character weighing and Coding; Cluster analysis; Phenogram.	B.Sc. (H) Botany Semester II	Plant systematics
		• General account of viral diseases of plants (mosaic and vein clearing disease)	B.Sc. (H) Botany Semester II	Microbiology and plant microbe interactions
		• Structure & Function of the gene: Classical and molecular concept of gene - Benzer's cis-trans complementation analyses & fine map of rII locus in phage, Central Dogma. • Variation in chromosome number and structure: Haploidy, polyploidy, autopolyploidy (examples: banana, watermelon), allopolyploidy (ancestry of wheat) and aneuploidy (Down's, Turner's and Klinefelter's syndromes)	B.Sc. programmes	Genetics and molecular Biology

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		• Plant taxonomy: Angiosperm systematics: Fundamental concept of Plant Taxonomy (Identification, nomenclature, classification); Taxonomic resources; Herbarium- functions and important herbaria of India and world, Botanical gardens,	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
	Practicals	• Study the characteristic features of any one member of the family: (a) Malvaceae (b) Fabaceae/Lamiaceae (c) Euphorbiaceae	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
		• Measuring Tree Basal Area, Height and Canopy Cover to estimate green cover of an area • Understanding of Instruments for measuring microclimatic variables viz., light, wind, temperature, humidity and precipitation • Estimation of Total Carbon stock of an area.	SEC Semester II	Green Belt development for smart cities
June	Theory	• Cladistics - Principles, Methodology, Characters; Selection of EUs, Character weighing and Coding; Cluster analysis; Cladogram • Evolution of Angiosperms: Concept of a primitive flower (Euanthial theory and Pseudanthial theory); Basal Living Angiosperms	B.Sc. (H) Botany Semester II	Plant systematics
		• Plant-Microbe interactions: General account of Plant-microbe interactions; Plant growth promoting rhizobacteria (PGPR); Mechanism of nitrogen fixation by Cyanobacteria and Rhizobia; Types of mycorrhizal association with plants	B.Sc. (H) Botany Semester II	Microbiology and plant microbe interactions
		• Deletion; Duplication (Bar eye in Drosophila); Inversion (paracentric and pericentric); Translocation (Rhoeo, Oenothera; Robertsonian translocation, Familial Down Syndrome and cancer). • Regulation of gene expression: Prokaryotes Inducible and repressible systems, negative and positive control of lactose operon and tryptophan operon.	B.Sc. programmes	Genetics and molecular Biology

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		• Flora, monographs and keys (Single-access and multi-access) • Classification: Historical background of plant classification; Artificial (Linnaeus), Natural (Bentham and Hooker),	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
	Practicals	• Study the characteristic features of any one member of the family: (f) Asteraceae (e) Liliaceae • Mounting of a properly dried and pressed specimen of any wild plant with herbarium label (to be submitted on the herbarium sheet with appropriate label)	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
		• Understanding methods for selection of plants according to pollutant load of both air and water (includes field survey) • Assessing air pollution tolerance of plant species using APTI (Air pollution tolerance index). • Use Open Source Softwares for mapping the GPS points and generating a cover map. • Measurement of Dissolved Oxygen (DO) from treated wastewater.	SEC Semester II	Green Belt development for smart cities
July	Theory	• Herbaceous origin; Coevolution of angiosperms with animals.	B.Sc. (H) Botany Semester II	Plant systematics
		• Ectomycorrhiza and Endomycorrhiza and their effects on plant growth	B.Sc. (H) Botany Semester II	Microbiology and plant microbe interactions
		• Eukaryotes - Transcriptional gene silencing - Role of chromatin, DNA methylation, histone modifications; cis-acting elements (promoters & enhancers/silencers), trans-acting factors; Post-transcriptional gene regulation (RNA interference/ PTGS), role of small RNAs, Epigenetics.	B.Sc. programmes	Genetics and molecular Biology
		• Phylogenetic system of classification; APG system	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
	Practicals	• Practical test conducted for semester I	B.Sc. Biological Science Structure Semester II	Diversity of Life Forms-II
		• Measurement of BOD and TDS from tank and treated pond. • Determination of total dissolved and suspended solids in water.	SEC Semester II	Green Belt development for smart cities

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Teacher in charge

SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. K. Prasad **Department: Botany**
Semester: VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	• Basic concepts of sequence alignment: Similarity, identity and homology • Alignment: local and global alignment, pairwise and multiple sequence alignments, alignment algorithms.	TBH/ DSE-IV	Bioinformatics
	Practicals	• Sequence retrieval (protein and gene) from NCBI • Structure download (protein and gene) from PDB • Molecular file formats – FASTA, GeneBank, Genpept, GCG, CLUSTAL, Swiss-port	TBH/ DSE-IV	Bioinformatics
FEBRUARY	Theory	• Methods of Alignment: DOT matrix, Dynamic programming, BLAST and FASTA • Scoring matrices/amino acid substitution matrices (PAM and BLOSUM) and CLUSTALW	TBH/ DSE-IV	Bioinformatics
	Practicals	• Molecular viewer by visualization software. • Translate a nucleotide sequence and select the correct reading frame of the polypeptide from the output sequences. • Predict the structure of protein from its amino acid sequence	TBH/ DSE-IV	Bioinformatics
MARCH	Theory	• Phylogenetic analysis: Construction of phylogenetic tree, dendrograms • Methods of construction of phylogenetic trees – maximum parsimony	TBH/ DSE-IV	Bioinformatics
	Practicals	• BLAST suite of tools for pairwise alignment • Sequence homology and Gene annotation	TBH/ DSE-IV	Bioinformatics
April	Theory	• Methods of construction of phylogenetic trees – maximum likelihood and distance methods	TBH/ DSE-IV	Bioinformatics

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	Practicals	• Generating phylogenetic tree using PHYLIP and MEGA X • Gene prediction using GENSCAN and GLIMMER • Practical test conducted for semester I	TBH/ DSE-IV	Bioinformatics

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Navneet Kumar **Department: Botany**
Semester: I//IV/VI

Month		Topics	Course	Paper
JANUARY	**Theory**	• Introduction to Plant Biotechnology • Blotting techniques (Southern, Northern and Western)	B.Sc.(P.) Biological Science. Sem IV	Economic Botany and Biotechnology
		• History of discovery of DNA, features of the double helix, various forms of DNA. • Denaturation and reassociation of DNA, hyperchromicity, melting temperature, factors affecting Tm of DNA molecules. • Types of RNA and their structure. • Definition of a gene, organization of genes in viruses, bacteria and eukaryotes. • Complexity of eukaryotic genes and chromosomes, supercoiling of DNA and its importance, linking number, topoisomerases, inhibitors of topoisomerases and their application in medicine, • Nucleosome structure and packaging of DNA into higher order structures.	B.Sc.(P.) Biological Science. Sem IV	Molecular Biology
	Practical	• Study of molecular techniques: • Polymerase Chain Reaction • Blotting techniques (Western, Southern and Northern), • AGE and PAGE	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Biotechnology
		• Current status of ecotourism • Different practices to integrate ecotourism programme • Plant identification holding ecotourism attraction • Basic elements of ecotourism • Checklist of birds and animals • Development of suitable messages to educate target groups • Survey and identification of target groups for ecotourism	Skill Enhancement Course Sem I	Sustainable Ecotourism and Entrepreneurship
		• Ultraviolet absorption spectrum of DNA/RNA • Determination of DNA concentration by A260nm	B.Sc. (P.) Biological Science Sem IV	Molecular Biology
	Tutorials			

FEBRUARY	**Theory:**	• Molecular DNA markers (RAPD, RFLP, SNPs) and DNA fingerprinting in plants. • Genetic Engineering Techniques: Gene cloning vectors (pUC 18, pBR322, BAC, YAC, Ti plasmid); construction of genomic and C-DNA libraries; • Insertion of genes into plant tissues (Agrobacterium mediated, electroporation, micro-projectile bombardment)	B.Sc.(P.) Biological Science. Sem IV	Economic Botany and Biotechnology
		• General features of DNA replication, the chemistry of DNA synthesis, • DNA polymerase, the replication fork, enzymes and proteins in DNA replication, *E coli* DNA polymerases, • stages of replication-initiation, elongation and termination, • origin of replication, replication in eukaryotes, end replication problem, telomerase, various modes of replication. • Comparison of replication in prokaryotes and eukaryotes. • Inhibitors of replication.	B.Sc.(P.) Biological Science. Sem IV	Molecular Biology
	Practicals:	• Study of economically important plants : Wheat, Gram, Soybean, Black pepper, Clove Tea, Cotton, Groundnut through specimens, sections	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Biotechnology
		• Tourist spending patterns and track preferences • Sustainable ecotourism development programme • Development of ecotourism activities • Strategic alliances and partnerships. • Stories development • Assignments allotted to students	Skill Enhancement Course Sem I	Sustainable Ecotourism and Entrepreneurship
		• Quantitative estimation of DNA by DPA method • Quantitative estimation of RNA by orcinol method	B.Sc. (P.) Biological Science Sem IV	Molecular Biology
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Navneet Kumar **Department: Botany**
Semester: II//IV/VI

Month		Topics	Course	Paper
MARCH	**Theory:**	• Selection of recombinants by selectable marker and reporter genes (GUS, luciferase, GFP). • Screening for gene of interest by DNA probe hybridisation, complementation;	B.Sc.(P.) Biological Science. Sem IV	Economic Botany and Biotechnology
		• DNA-dependent RNA polymerase, sigma factor, bacterial promoters, identification of DNA binding sites by DNA footprinting, • Three stages of RNA synthesis (initiation, elogation and termination), rho-dependent and rho-independent termination, • Transcription in eukaryotes, Transcription factors, inhibitors of transcription and applications as antibiotics. • RNA processing, modification of eukaryotic mRNA at the 5‟ and the 3‟ end, splicing introns, alternative splicing, exon shuffling and RNA editing, processing of rRNAs and tRNAs.	B.Sc.(P.) Biological Science. Sem IV	Molecular Biology
		• Introduction	General Elective II	Ethnobotany
	Practicals:	• Study of economically important plants : Wheat, Gram, Soybean, Groundnut, Cotton through micro-chemical tests	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Biotechnology
		• Quantitative estimation of RNA by orcinol method	B.Sc. (P.) Biological Science Sem IV	Molecular Biology
		• Introduction	General Elective II	Ethnobotany
	Tutorials:			

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APRIL	**Theory:**	• Applications: Bt cotton, Roundup ready soybean, Golden rice, Flavr-Savr tomato, edible vaccines, industrial enzyme production, • Bioreactors, • Applications: Micropropagation, androgenesis, gynogenesis, embryo and endosperm culture, secondary metabolite production, germplasm conservation.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Features of the genetic code, triplet nature, degeneracy, wobble hypothesis. • Experimental approaches used to decipher the genetic code. • The ribosome as a supramolecular machine, structure of tRNAs. • The five stages of protein biosynthesis, charging of tRNAs, aminoacyl-tRNA synthetases, initiation in prokaryotes and in eukaryotes, elongation,termination. Inhibitors of protein synthesis and their application in medicine.	B.Sc.(P.) Biological Science. Sem IV	Molecular Biology
		• Concept, scope and objectives; Ethnobotany as an interdisciplinary science • The relevance of ethnobotany in the present context;	General Elective II	Ethnobotany
	Practical:	• Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation • Familiarization with basic equipments in tissue culture.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Identification of nucleotide bases by paper chromatography • Isolation of chromosomal DNA and to assess the purity by A260/A280 Ratio	B.Sc. (P.) Biological Science Sem IV	Molecular Biology
		• Collection, identification and preparation of herbarium of three ethno-botanically important plants with appropriate references	General Elective II	Ethnobotany
	Tutorials:			
	Theory	• Etic and Emic Perspectives: a) Field work; b) Herbarium; c) Ancient Literature and oral traditions; d) Archaeological finding inferences; e) Religious and sacred places.	General Elective II	Ethnobotany

MAY	**Practical**	• Preparation of crude extract of ethnobotanically important plants with appropriate references (any method to be used).	General Elective II	Ethnobotany
	Tutorial			
JUNE	**Theory**	• Role of ethnobotany in modern Medicine, Medico-ethnobotanical sources in India; Significance of the following plants in ethnobotanical practices (along with their habitat and morphology): a) *Azadirachta indica,* b) *Ocimum sanctum*, c) *Vitex negundo,* d) *Gloriosa superba,* e) *Tribulus terrestris,* f) *Pongamia pinnata,*	General Elective II	Ethnobotany
	Practical	• Project work-documentation, literature survey, and collection of information on ethnobotanically useful plants from traditional healers).	General Elective II	Ethnobotany
	Tutorial			
JULY	**Theory**	• Significance of the following plants in ethnobotanical practices (along with their habitat and morphology) g) *Cassia auriculata*, h) *Indigofera tinctoria.*	General Elective II	Ethnobotany
	Practical	• Project work-documentation, literature survey, and collection of information on ethnobotanically useful plants from traditional healers).	General Elective II	Ethnobotany
	Tutorial			

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sunita Yadav **Department: Botany**
Semester : II/IV/VI 2022-23

Month		Topics	Course	Paper Code/Name
January	**Theory**	Introduction to paper and discussion about the paper Unit-2 Enzymes:historical background, nomenclature and classification, structure, mechanism of activation (activation energy, lock and key, induced fit), factors affecting enzyme activity, Km, significance	B.Sc. (H) Botany Semester VI	Plant metabolism
		Introduction to paper Unit 1: Plant water relation: Water potential and its components, pathway of water movement, ascent of sap	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		Unit-7: Mechanism of translation Understanding the requirements of translation in prokaryotes and eukaryotes, mRNA, tRNA and ribosome	B.Sc.(H) Botany Semester IV	Molecular Biology
	Practicals	• To study the effect of substrate concentration on the activity of enzyme urease. • To study the effect of pH on the activity of enzyme catalase. • Chemical separation of photosynthetic pigments.	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To determine osmotic potential of plant cell sap by plasmolytic method	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Study of experiments establishing nucleic acid as genetic material (Avery et al, Griffith's, Hershey & Chase's and Fraenkel & Conrat's experiments) through photographs • Study of DNA replication through photographs: Modes of replication - Rolling circle, Theta and semi-discontinuous; Semiconservative model of replication (Messelson and Stahl's experiment); Telomerase assisted end-replication of linear DNA • Preparation of LB medium and raising E. coli	B.Sc.(H) Botany Semester IV	Molecular Biology
	Tutorials	----------		

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February	**Theory:**	Unit-2: Enzymes: Enzyme inhibition, isozymes and multienzyme complexes, role of regulatory enzymes, covalent modification, allosteric regulation Unit-5 carbon oxidation: historical background, glycolysis, regulation, fermentation, OPPP, PDH, NADH shuttle, Kreb's cycle	B.Sc. (H) Botany Semester VI	Plant metabolism
		Unit-1: transpiration and its significance, factors affecting transpiration, root pressure, guttation, stomatl movements	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		Unit-7: Mechanism of translation Charging of tRNA, aminoacyl synthetases, Initiation of translation in prokaryotes and eukaryotes	B.Sc.(H) Botany Semester IV	Molecular Biology
	Practicals:	• Experimental demonstration of Hill reaction. • To study the Blackman's law of limiting factors. • To compare the rate of respiration in different parts of a plant (at least 3 parts).	B.Sc. (H) Botany Semester VI	Plant metabolism
		• Comparison of the rate of respiration in any two parts of a plant. • To study the effect of two environmental factors (light and wind) on transpiration by excised twig • To demonstrate hill reaction	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Numerical based on DNA re-association kinetics (melting profiles and Cot curves) • Study of structures of: tRNA (2D and 3D)	B.Sc.(H) Botany Semester IV	Molecular Biology
	Tutorials:	----------		
March	**Theory:**	Unit-5 carbon oxidation: Mitochondrial ETC, oxidative phosphorylation, CN resistant respiration, factors affecting respiration Unit-6 ATP synthesis: Substrate level and oxidative and photophosphorylation, mechanism of ATP synthesis, chemiosmotic hypothesis, role of uncouplers, Boyers conformation model	B.Sc. (H) Botany Semester VI	Plant metabolism
		Unit-3 Translocation in phloem Composition of phloem sap, girdling experiment, pressure flow model	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		Unit-7: Mechanism of translation Elongation in prokaryotes and eukaryotes, termination of translation in prokaryotes and eukaryotes, fidelity of translation, Inhibitors of protein synthesis	B.Sc.(H) Botany Semester IV	Molecular Biology

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	Practicals:	• To study the activity of nitrate reductase in leaves of two different plant sources • To demonstrate the activity of lipase in germinating oilseeds • To demonstrate mobilization of lipids during germination	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To study the activity of catalase • To study the effect of pH on catalase • To study the effect of enzyme concentration on catalase	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• DNA isolation from cauliflower heads. • Quantification of unknown DNA by diphenylamine reagent. • Study of prokaryotic and eukaryotic RNA polymerase • Study of RNAi mechanism	B.Sc.(H) Botany Semester IV	Molecular Biology
	Tutorials:	---------		
	<u>Assignment :</u>	Given to all students for respective papers		
April	**Theory:**	Unit-7 Lipid metabolism: synthesis and breakdown beta-oxidation, glyoxylate cycle, gluconeogenesis, alpha-oxidation	B.Sc. (H) Botany Semester VI	Plant metabolism
		Unit-3 Phloem loading and unloading	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		Unit-7: Mechanism of translation Post-translational modifications of proteins Unit-8 Gene regulation in prokaryotes and eukaryotes Basic principles of regulation, positive and negative, inducible and repressible, activators and repressors, operon concept and lactose metabolism regulation	B.Sc.(H) Botany Semester IV	Molecular Biology
	Practicals:	• To demonstrate fluorescence by isolated chlorophyll pigments • To demonstrate absorption spectrum of photosynthetic pigments • To demonstrate respiratory quotient	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To demonstrate bolting • To demonstrate effect of auxins on rooting • To demonstrate suction due to transpiration	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Study of spliceosome machinery, splicing mechanism, ribozymes and alternative splicing • Understanding the regulation of lac and trp operon	B.Sc.(H) Botany Semester IV	Molecular Biology
	Tutorials:	---------		
	<u>Test</u>	Conducted for all papers		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sachin Kumar **Department: Botany**

Semester: Even sem. (II, March onwards)

Month		Topics	Course	Paper Code/Name
APRIL	**Theory:**	Unit 1: History of cell biology, cell theory, Structure and functions of membrane, models of membrane structure.	B.Sc(H) Biological Science Sem-II	BS-DSC-201/Cell Biology
	Practicals:	1. Estimation of cell size by micrometry. 2. To study plasmolysis and deplasmolysis in a cell. 3. Study the effect of organic solvent on membrane permeability.	B.Sc(H) Biological Science Sem-II	BS-DSC-201/Cell Biology
	Tutorials:			
May	**Theory:**	Unit 1: Transport across membranes (with examples): simple diffusion, facilitated diffusion, active transport (Na+/K+ pumps, Co-transport, proton pumps) and passive transport. Phagocytosis, pinocytosis, exocytosis. Unit 3: Structure and organization of microfilaments.	B.Sc(H) Biological Science Sem-II	BS-DSC-201/Cell Biology
	Practicals:	4. Demonstrate the phenomenon of protoplasmic streaming. 5. Study of ultrastructure of a cell (Plasma membrane, Nucleus, Nuclear Pore Complex, Chloroplast, Mitochondrion, Golgi bodies, Endoplasmic reticulum, Lysosomes) through electron micrographs. 6. Study of cytoskeletal structures through photographs.	B.Sc(H) Biological Science Sem-II	BS-DSC-201/Cell Biology
	Tutorials:			
June	**Theory:**	Unit 3: Structure and organization ofintermediate filaments, microtubules, their functions in plants and animals. Unit 4: Cell wall organization (Primary and secondary cell wall), components of cell wall.	B.Sc(H) Biological Science Sem-II	BS-DSC-201/Cell Biology

	Practicals:	7. Study of different stages of mitosis by temporary preparation of onion root tips. 8. Study of different stages of meiosis by temporary permanent slides.	B.Sc(H) Biological Science Sem-II	BS-DSC-201/Cell Biology
	Tutorials:			

July	**Theory:**	Unit 4: Extracellular Matrix and Cell junctions, adhesive junctions, gap junctions and tight junctions, plasmodesmata. Function of cell wall. Revision	B.Sc(H) Biological Science Sem-II	BS-DSC-201/Cell Biology
	Practicals:	Staining and visualisation of mitochondria by Janus green stain. Revision and Mock test	B.Sc(H) Biological Science Sem-II	BS-DSC-201/Cell Biology
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sachin Kumar **Department: Botany**

Semester: Even sem. (VI)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Unit 3: Generation of data (Gene sequencing, Protein sequencing, Mass spectrometry, Microarray).	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
		Unit 3: Historical background, concept of light-action and absorption spectra, photosynthetic pigments, role of photosynthetic pigments (chlorophyll and accessory pigments (no structural details), antenna molecules and reaction centres, photochemical reactions.	B.Sc(H) Botany Sem-VI	BHCC13/Plant Metabolism
		Unit 1: Overview of defense mechanisms in plants and animals Unit 2: Pre-existing structural defenses (first line of defense) - surface structures (waxy coat, cuticle, epidermal layer, hydathodes, thorns, sclereids), mineral crystals (idioblasts,) and cell wall.	B.Sc(H) Biological Science Sem-VI	BS C-13/Immunobiology
	Practicals:	1. Sequence retrieval (protein and gene) from NCBI. 2. Structure download (protein and DNA) from PDB. 3. Molecular file formats - FASTA, GenBank, Genpept, GCG, CLUSTAL, Swiss-Prot, FIR.	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
		1.To study the effect of substrate concentration on the activity of enzyme urease. 2. To study the effect of pH on the activity of enzyme catalase. 3.Chemical separation of photosynthetic pigments.	B.Sc(H) Botany Sem-VI	BHCC13/Plant Metabolism
	Tutorials:			

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FEBRUARY	**Theory:**	Unit 3: Sequence submission tools (BankIt, Sequin, Webin); Sequence file format (flat file, FASTA, GCG, EMBL, Clustal, Phylip, Swiss-Prot).	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
		Unit 3: Photosynthetic electron transport, photophosphorylation, PSI, PSII, Q cycle, CO2 reduction, photorespiration, C4 pathways, Crassulacean acid metabolism, factors affecting CO2 reduction. Unit 6: P/O ratio, Boyer's conformational model.	B.Sc(H) Botany Sem-VI	BHCC13/Plant Metabolism
		Unit 2: Biochemical defenses- secondary metabolites (terpenoids, glycosides, phenolics and alkaloids) Innate Immunity in Plants- Pattern triggered immunity (PTI). Unit 4: Factors causing plant stress- abiotic and biotic. Abiotic- strategies and mechanisms, Physiological and cellular responses to drought stress, salinity stress, temperature stress (freezing and heat).	B.Sc(H) Biological Science Sem-VI	BS C-13/Immunobiology
	Practicals:	4. Molecular viewer by visualization software. 5. Translate a nucleotide sequence and select the correct reading frame of the polypeptide from the output sequences. 6. Predict the structure of protein from its amino acid sequence.	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
		4. Experimental demonstration of Hill reaction. 5. To study the Blackman's law of limiting factors. 6. To compare the rate of respiration in different parts of a plant (at least 3 parts).	B.Sc(H) Botany Sem-VI	BHCC13/Plant Metabolism
	Tutorials:			
MARCH	**Theory:**	Unit 3: Sequence annotation; Data retrieval systems (SRS, Entrez). Unit 6: Structural Bioinformatics in Drug Discovery.	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
		Unit 6: Racker's experiement, Jagendorf's experiement. Unit 8: Nitrate assimilation, biological nitrogen fixation (examples of legumes and non-legumes).	B.Sc(H) Botany Sem-VI	BHCC13/Plant Metabolism

		Unit 4: Biotic- Classification of biotic stresses, major pests and diseases of economically important crops, interaction in host-pathogen systems, Flor"s gene for gene concept, R gene mediated resistance, effector trigerred immunity (ETI), receptor-elicitor model, Cytological protection and induced resistance. Concept of signal transduction and other host-defense mechanisms. Heatshock proteins, Basic ROS cycle and adaptation during stress.	B.Sc(H) Biological Science Sem-VI	BS C-13/Immunobiology
	Practicals:	7. BLAST suite of tools for pairwise alignment. 8. Sequence homology and Gene annotation.	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
		7. To study activity of enzyme Nitrate reductase in leaves of two plant sources. 8. To study the activity of lipases in germinating oilseeds and demonstrate mobilization of lipids during germination.	B.Sc(H) Botany Sem-VI	BHCC13/Plant Metabolism
	Tutorials:			
APRIL	**Theory:**	Unit 6: Quantitative structure-activity relationship (QSAR) techniques in Drug Design, Microbial genome applications, Crop improvement.	B.Sc(H) Botany Sem- VI	BHDS4/Bioinformatics
		Unit 8: Physiology and biochemistry of nitrogen fixation, Ammonia assimilation (GS-GOGAT), reductive amination and transamination.	B.Sc(H) Botany Sem-VI	BHCC13/Plant Metabolism
		Unit 4: Systemic Acquired Resistance (SAR), Phytoalexins Jasmonic acid, MAPKS,SROS,HPL, systemins, mechanism of production and scavenging of NO.	B.Sc(H) Biological Science Sem-VI	BS C-13/Immunobiology
	Practicals:	9. Generating phylogenetic tree using PHYLIP, and MAGA X, Clustal W etc with PHYLIP. 10. Gene prediction using GENSCAN and GLIMMER. •Mock test	B.Sc(H) Botany Sem- VI	BHDS4/Bioinformatics

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		9. Demonstration of fluorescence by isolated chlorophyll pigments. 10. Demonstration of absorption spectrum of photosynthetic pigments. 11. Demonstration of respiratory quotient (RQ).	B.Sc(H) Botany Sem-VI	BHCC13/Plant Metabolism
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2022-2023)
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Name of the Faculty: Dr. Sachin Kumar **Department: Botany**

Semester: Odd sem. (I)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Unit 1: ATP: structure and its role as an energy currency molecule. Unit 2: Cell as a unit of structure and function; Characteristics of prokaryotic and eukaryotic cells; Origin of eukaryotic cell (Endosymbiotic theory). Unit 3:Chemistry, structure and function of Plant Cell Wall.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Practicals:	1.Separation of chloroplast pigments by paper chromatography/ Thin Layer Chromatography. 2.Separation of amino acids by paper chromatography. 3.Study the effect of organic solvent and temperature on membrane permeability. 4.Demonstration of the phenomenon of protoplasmic streaming in *Hydrilla* leaf.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Tutorials:			
FEBRUARY	**Theory:**	Unit 3:Cell Wall and Plasma Membrane- Singer and Nicolson's fluid mosaic model of cell membrane.	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Practicals:	1.Demonstration of the phenomenon of plasmolysis and deplasmolysis. 2.Demonstration of separation of biomolecules by dialysis. -Mock Test	B.Sc (H) Botany Sem I	BOT-DSE-2/Cell Biology: Organelles and Biomolecules
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2022-2023)
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Name of the Faculty: Dr. Guduru Krishna Kumar **Department: Botany**

Semester : II/IV/VI

Month		Topics	Course	Paper
JANUARY	**Theory**	• Spices-General account • Clove-Taxonomy, morphology and uses • Black pepper- Taxonomy, morphology and uses	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Scope of microbes in Industry • Scope of microbes in Environment • Solid-state and liquid-state (stationary and submerged) fermentations	B.Sc.(H.) Botany Sem VI	Industrial and Environmental Microbiology
	Practicals	• Familiarization with basic equipment in tissue culture. • Study of economically important plants - Black pepper, Clove and Tea through specimens and sections.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Principles and functioning of instruments in microbiology laboratory (autoclave, laminar air flow, incubators, types of fermenters) • Preparation of different culture media (Nutrient medium/ Luria Bertani medium/Potato dextrose medium/Czapek Dox medium)	B.Sc.(H.) Botany Sem VI	Industrial and Environmental Microbiology
	Tutorials			
FEBRUARY	**Theory:**	• Oils and Fats-General account • Groundnut- Taxonomy, morphology and uses	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Batch and continuous Fermentations • Components of a typical bioreactor	B.Sc.(H.) Botany Sem VI	Industrial and Environmental Microbiology
	Practicals:	• Study of economically important plants: Wheat, Gram, Soybean through specimens, sections and microchemical tests.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Hydrolysis of casein / starch by microorganisms • Alcohol production by yeast using sugar/ jaggery	B.Sc.(H.) Botany Sem VI	Industrial and Environmental Microbiology
	Tutorials:			

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MARCH	**Theory:**	• Introduction of Economic Botany	B.Sc.(H.) Botany Sem II	Economic Botany
		• Fibre Yielding Plants-General description • Cotton- Taxonomy, morphology and uses	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Types of bioreactors: laboratory, pilotscale and production fermenters; Constantly stirred tank fermenter, tower fermenter, fixed bed and fluidized bed bioreactors and air-lift fermenter • Microorganisms involved, microorganisms generally regarded as safe (GRAS)	B.Sc.(H.) Botany Sem VI	Industrial and Environmental Microbiology
	Practicals:	• Wheat (habit sketch, L.S/T.S. grain, starch grains, micro-chemical tests)	B.Sc.(H.) Botany Sem II	Economic Botany
		• Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Serial dilution method for isolation of microorganisms from water and soil and study of aeromicroflora. • Determination of BOD, COD, TDS and TOC of water samples	B.Sc.(H.) Botany Sem VI	Industrial and Environmental Microbiology
	Tutorials:			
APRIL	**Theory:**	• General characteristic features of Spices	B.Sc.(H.) Botany Sem II	Economic Botany
		• Introduction to Biotechnology • Biotechnological Applications	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Media, fermentation conditions • Downstream processing and uses; Filtration, centrifugation, cell disruption, solvent extraction, precipitation and ultrafiltration, lyophilization, spray drying • production of industrially important products: enzyme (amylase); organic acid (citric acid); alcohol (ethanol); antibiotic (penicillin)	B.Sc.(H.) Botany Sem VI	Industrial and Environmental Microbiology
	Practicals:	• Rice (habit sketch, study of paddy and grain, starch grains, micro-chemical tests)	B.Sc.(H.) Botany Sem II	Economic Botany
		• PCR, Blotting Techniques, AGE and PAGE	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Determination of coliforms in water samples using eosin methylene blue (EMB) medium • A visit to Yakurti probiotic industry to see an industrial fermenter, and other downstream processing operations and a report to be submitted	B.Sc.(H.) Botany Sem VI	Industrial and Environmental Microbiology

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Name of the Faculty: Dr. Guduru Krishna Kumar **Department: Botany**

Semester : I

Month		Topics	Course	Paper
JANUARY	**Theory**	• Nucleus:Structure-nuclear envelope, nuclear pore complex, nuclear lamina, molecular organization of chromatin;nucleolus. • Cytoskeleton:role and structure of microtubules, microfilaments and intermediary filament. • Chloroplast, mitochondria and peroxisomes: Structural organization; Function; Semiautonomous nature of mitochondria and chloroplast.	B.Sc.(H.) Botany Sem I	Biomolecules and Cell Biology
	Practicals	• Separate chloroplast pigments by paper chromatography. • Study the phenomenon of plasmolysis and deplasmolysis.	B.Sc.(H.) Botany Sem I	Biomolecules and Cell Biology
	Tutorials			
FEBRUARY	**Theory:**	• Endomembrane system: Endoplasmic Reticulum – Structure and function of RER and SER, • Protein folding, processing in ER, export of proteins and lipids • Golgi Apparatus – Organization, protein glycosylation, protein sorting and export from Golgi Apparatus; Lysosomes • Eukaryotic cell cycle, mitosis and meiosis. Regulation of cell cycle	B.Sc.(H.) Botany Sem I	Biomolecules and Cell Biology
	Practicals:	• Qualitative tests for carbohydrates, reducing sugars, non-reducing sugars, lipids and proteins. • Demonstrate the activity of any two enzymes (Urease, Amylase, Catalase).	B.Sc.(H.) Botany Sem I	Biomolecules and Cell Biology
	Tutorials:			

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Name of the Faculty: Dr. Pooja Gokhale Sinha

Department: BOTANY **Semester: IV/VI**

Month		**Topics**	**Course**	**Paper Code/Name**
January	**Theory**	Introduction and History of Ecology, Factors: Water, soil, wind, temperature, light; Laws of Ecology	B.Sc. (Hons.) Botany Sem IV	Ecology
		Introduction to industrial and environmental microbiology Role in microbes in industries with examples and strains	B.Sc. (Hons.) Botany Sem VI	Industrial and Environmental Microbiology
		Origin of Cultivated Plants: Concept of centre of origin, importance of Vavilov's work	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practical	• Ecological instruments • Determination of Minimal Quadrat area • Determination of Frequency, density and abundance	B.Sc. (Hons.) Botany Sem IV	Ecology
		• Instruments used in microbiology • Serial dilution • Analysis of aeromicroflora	B.Sc. (Hons.) Botany Sem VI	Industrial and Environmental Microbiology
		Study of economically important plants: Wheat, Gram, Soybean, Black pepper, Clove Tea, Cotton, Groundnut through specimens, sections and micro chemical tests	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Tutorials:			
February	**Theory**	Introduction to community ecology; Characters; analytical and synthetic; Concept of	B.Sc. (Hons.) Botany Sem IV	Ecology

		niche: actual and realized		
		Role of microbes in environment: air, water and soil; remediation of pollutants	B.Sc. (Hons.) Botany Sem VI	Industrial and Environmental Microbiology
		Unit 2 Wheat: Origin, Morphology and uses	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practical	• Analysis of soil characters through Rapid field tests • pH of soil samples • Estimation of dissolved oxygen by Winklers' method	B.Sc. (Hons.) Botany Sem IV	Ecology
		Selective and differential media	B.Sc. (Hons.) Botany Sem VI	Industrial and Environmental Microbiology
		Study through photographs: Anther culture, somatic embryogenesis, endosperm, and embryo culture; micropropagation	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Tutorials:			
March	**Theory**	Community ecology: Concept of succession; sere; hydrosere; xerosere; concept of climax in community	B.Sc. (Hons.) Botany Sem IV	Ecology
		Water pollution: sources and solution, BOD,COD,DO; Sewage treatment: Primary, secondary and tertiary	B.Sc. (Hons.) Botany Sem VI	Industrial and Environmental Microbiology
		Legumes: General account of Gram Soybean	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practical	• Biotic interactions • Determination of density and porosity of soil samples	B.Sc. (Hons.) Botany Sem IV	Ecology
		Production of alcohol from yeast and sugar by fermentation	B.Sc. (Hons.) Botany Sem VI	Industrial and Environmental Microbiology
		Conduct of Mock test for internal assessment and Final practical examination	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Tutorials:			
April	**Theory**	Population Ecology: Basic	B.Sc. (Hons.)	Ecology

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		concepts, Growth curve, r- and k-selected population; population interaction	Botany Sem IV	
		Industrial production of enzymes: processes and examples; penicillin acyclase, amylase	B.Sc. (Hons.) Botany Sem VI	Industrial and Environmental Microbiology
		Legumes: General account of Soybean	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology
	Practical	• Estimation of Organic Carbon in soil by Walkley and Black' rapid titration. • Conduct of Mock test for internal assessment and Final practical examination	B.Sc. (Hons.) Botany Sem IV	Ecology
		Conduct of Mock test for internal assessment and Final practical examination	B.Sc. (Hons.) Botany Sem VI	Industrial and Environmental Microbiology
		Conduct of Mock test for internal assessment and Final practical examination	B.Sc. (P) Life Sciences Sem VI	Economic Botany and Biotechnology

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SEMESTER WISE TEACHING PLAN (2022-2023)
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Name of the Faculty: Dr. Aditi Kothari Chhajer **Department: Botany**
Semester : II/IV/VI

Month		Topics	Course	Paper
JANUARY	**Theory**	• Tissue culture- Introduction , nutrient media, aseptic and culture conditions • Development pathways, direct and indirect organogenesis and embryogenesis	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Introduction to Intellectual Property • Copyrights Introduction, works protected under copyright law, infringement, transfer of copyright.	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		• Historical contribution of Sachs, Blackmann, Engelmann, Hill, Arnon • Photosynthetic pigments (Chlorophyll a and b, xanthophyll, carotene)	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Practicals	• Familiarization with basic equipment in tissue culture. • Study of economically important plants - Black pepper, Clove and Tea through specimens and sections.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Copyright infringement • Plagiarism check • Introduction to IPR e-diary	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		• Determination of osmotic potential of plant cell sap • Effect of light on transpiration of excised twig	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Tutorials			
FEBRUARY	**Theory:**	• Micropropagation: Introduction • Single cell and protoplast culture, • Beverages- Introduction, Tea – morphology, processing and uses	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Trade Marks Introduction, How to obtain, Different types of marks — Collective marks, certification marks, service marks, Trade names, etc. Differences from Designs. • Geographical Indications Definition, rules for registration, prevention of illegal exploitation, importance to India.	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights

		• Photosystem I and II • Reaction Centre • Antenna complex • Electron transport-cyclic and non-cyclic • Dark reactions –C3 cycle	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Practicals:	• Study of economically important plants: Wheat, Gram, Soybean through specimens, sections and microchemical tests.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Trademark Search • Patent search • Industrial designs	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		• Calculation of stomatal index and frequency of a mesophyte and a xerophyte • Study Hills Reaction • Study activity of catalase • Study effect of pH and Enzyme concentration on activity of catalase	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Tutorials:			
MARCH	**Theory:**	• *Agrobacterium* mediated genetic transformation • Electroporation • Micro-projectile bombardment • Selectable marker and reporter genes- GUS , Luciferase, GFP • Applications- Bt cotton, Round up ready soybean, Golden Rice, Flavr Savr tomato, edible vaccine	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Patents Historical Perspective, Basic and associated right, WIPO, PCT system, Traditional Knowledge, Patents and Healthcare — balancing promoting innovation with public health, Software patents and their importance for India • Industrial Designs Definition, How to obtain, features, International design registration.	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		• C4 pathway • CAM pathway • Photrespiration • Photoperiodism _SDP,LDP,DNP • Phytochrome- introduction and structure	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Practicals:	• Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture;	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology

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		• Geographical Indicators i)food (Basmati rice, Tirupati laddu, etc.) ii)handlooms(kota saree, banarse,etc.) iii)industry (mysore agarbatti, feni, champagne,etc) iv)Natural resources (Makrana marble, etc)	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		• Study the effect of light intensity on oxygen evolution in photosynthesis • Compare rate of respiration in any two parts of a plant • Bolting- demonstration • Effect of auxin on rooting - Demonstration	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Tutorials:			
APRIL	**Theory:**	• Androgenesis, Gynogenesis • Embryo and endosperm culture • Secondary metabolite production • Germplasm conservation	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Layout design of integrated circuits Circuit Boards, Integrated Chips, Importance for electronic industry. • Protection of Plant Varieties, Information technology related IPR	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		• Photomorphogenesis • Florigen (brief account)	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Practicals:	• PCR, Blotting Techniques, AGE and PAGE	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Biopiracy • Industrial Designs	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		• Hydroponics • Demonstration of delay of senescence • Study the phenomenon of seed germination (effect of light and darkness)	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pamil Tayal **Department: Botany**

Semester : IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	Introduction to Plant Tissue Culture, Historical Perspective, composition of media, nutrient and hormone requirements, role of vitamins and hormones, plasticity and totipotency, Introduction to recombinant DNA technology, Restriction endonucleases and its types, Restriction mapping of circular and linear DNA, biological role	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		Scope and importance of medicinal plants in the traditional system of medicine and modern medicine, Plant cell, Tissue and Organ culture, Cryopreservation Role of NBPGR, CIMAP, JNTBGR and RRL	**B.Sc. (H) Botany (IV)**	**SEC-Medicinal Botany,**
		Introduction to chromatography, principle and applications of paper and thin layer chromatography	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Practical	Preparation of Murashige and Skoogs Media, Demonstration of *in vitro* sterilization and inoculation methods using leaf and nodal explants, Study of in vitro micropropagation, construction of restriction maps of linear and circular DNA from the data provided.	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		1. Identification and medicinal value of locally available medicinal plants in the field. 2. Study of organoleptic, microscopic and macroscopic parameters of any two plant drugs.	**B.Sc. (H) Botany (IV)**	**SEC-Medicinal Botany**
		Protein estimation by Biuret/Lowry's method, separation of amino acids by Thin Layer Chromatography (TLC), Study of Agarose Gel Electrophoresis (AGE)	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Tutorials			

February	**Theory:**	Organogenesis, embryogenesis – somatic and zygotic, Protoplast isolation, culture and fusion, tissue culture applications, micropropagation, androgenesis, virus elimination, secondary metabolite production, haploids, triploids and cybrids, applications of restriction enzymes, plasmids – pUC18 and pUC 19 Conservation of Endangered and Endemic medicinal plants, Red Data List Criteria, In situ conservation: Biosphere reserves, National parks, Sacred groves, Ex situ conservation : Botanic gardens, National gene banks, Principle and applications of Ion exchange chromatography, gel filtration chromatography and affinity chromatography, HPLC	**B.Sc. (H) Botany (VI)** **B.Sc. (H) Botany (IV)** **B.Sc. (H) Biological Science (IV)**	**Plant Biotechnology** **SEC-Medicinal Botany,** **SEC – Biochemical Techniques**
	Practical:	Study of in vitro organogenesis and in vitro embryogenesis, study of anther, endosperm and embryo culture, study of artificial seeds, isolation of protoplasts, study of methods of gene transfer – Agrobacterium tumefaciens mediated gene transfer, electroporation, microinjection, microprojectile bombardment. 1. Isolation of bioactive compounds in the lab and phytochemical analysis of the crude extract of various parts of medicinal plants 2. Study of ingredients and medicinal uses of common polyherbal formulations used in the traditional system of medicine Separation of sugars/ nucleic acids by paper chromatography, isolation of mitochondria and assay of its marker enzyme SDH, Study of Agarose Gel Electrophoresis (AGE)	**B.Sc. (H) Botany (VI)** **B.Sc. (H) Botany (IV)** **B.Sc. (H) Biological Science (IV)**	**Plant Biotechnology** **SEC-Medicinal Botany** **SEC – Biochemical Techniques**
	Assignment:	Assignment topics will be distributed according to the syllabi		

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March	**Theory:**	Cryopreservation and germplasm conservation, cloning vectors, pBR322, Ti Plasmid, BAC, Lamda Phage, MI3 phagemids, cosmids, shuttle vectors, eukaryotic vectors, YAC and PAC, gene cloning, Recombinant DNA, Bacterial transformation and selection of recombinant clones, PCR, RT-PCR mediated gene cloning, gene construct, construction of genomic and c DNA libraries	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		Importance of preventive and holistic healing in the Indian traditional system of medicine, Ayurveda, History, origin, fundamental doctrine and concepts of Panchamahabhutas, Saptadhatus and Tridosha in relation to health and disease.	**B.Sc. (H) Botany (IV)**	**SEC-Medicinal Botany,**
		Electromagnetic radiations, interaction of radiations with biomolecules, principle of UV- visible absorption chromatography, beer-lambert's law, working of a spectrophotometer	**B.Sc. (H) Biological Science (IV)**	**SEC- Biochemical Techniques**
	Practical:	Study of steps of genetic engineering for production of Bt cotton, Golden rice, Flavr Savr tomato through photographs, isolation of plasmid DNA, Restriction digestion.	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		E-presentations : traditional system of medicine, contribution of medicinal plants to alternative and modern medicine, conservation strategies of medicinal plants.	**B.Sc. (H) Botany (IV)**	**SEC-Medicinal Botany**
		Separation techniques – Ion exchange and Gel filtration chromatography	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Technique**
	Tutorials:			

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April	**Theory:**	Genetic selection, complementation, colony hybridization, probe-oligonucleotide heterologs, methods of gene transfer – Agrobacterium tumefaciens mediated gene transfer, electroporation, microinjection, microprojectile bombardment, selection of transgenics- selectable and reporter marker luciferase, GUS, GFP, DNA fingerprinting by RAPD and RFLP	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		Therapeutic and pharmaceutical uses of important plants used in Ayurveda system of medicine Concept of Rasayana drugs, 1.Siddha : Origin , concepts, therapeutic and pharmaceutical uses of important plants used in Siddha system of medicine. 3.Unani : History, concept of Umoor-e-Tabiyat (Fundamentals of Physique), therapeutic and pharmaceutical uses of plants used in Unani system of medicine	**B.Sc. (H) Botany (IV)** **B.Sc. (H) Biological Science (IV)**	**SEC-Medicinal Botany,** **SEC– Biochemical Techniques**
		Applications of UV-visible absorption chromatography in biochemistry, fluorescence spectrophotometry and its applications in biochemistry.		
	Practical:	gel electrophoresis of plasmid DNA, Calculate the percentage similarity between different cultivars of a species using RAPD profile. Construct a dendrogram and interpret results.	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		E- presentations – Nutraceuticals, Rasayana drugs, Medicinal plants and non- communicable diseases, cultivation , marketing and utilization of medicinal plants,	**B.Sc. (H) Botany (IV)**	**SEC-Medicinal Botany**
		Verification of Beer's Lambert's law, Protein estimation by Biuret/Lowry's method	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Practical Test:	Practical test will be conducted and evaluated as per the date sheet		

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SEMESTER WISE TEACHING PLAN (2022-2023)
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Name of the Faculty: Dr. Shweta Sharma **Department: Botany**
Semester: II

Month		Topics	Course	Paper Code/Name
March	**Theory**	• DNA Structure and Replication • Discovery of DNA		
	Practicals	• Mitosis (Introduction)	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
	Tutorials			
April	**Theory**	• Watson and Crick model of DNA • Structure semiconservative replication • Meseson and Stahal experiment • DNA replication mechanism in *E. coli* (semi discontinuous mode and Yfork) • Introduction Linkage, crossing over and chromosome mapping	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
	Practicals	• To study mitosis in *Allium Cepa* through squash preparation of root tips. • To study mitosis in *Allium Cepa* through smear preparation of anthers	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
	Tutorials	•		
May	**Theory**	• Discovery; linkage and crossing over • recombination frequency: two factor crosses; sex linkage • eye color in Drosophila; colour blindness and haemophilia in humans). • Mutations: History • Mutation types with examples spontaneous and induced • somatic and germinal • biochemical mutations • point mutations (base substitutions) • transition and transversion • deletion and frameshift mutations	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology

	Practicals	• To study incomplete dominance and deviations of Mendelian dihybrid ratio (12:3:1, 9:3:4, 9:7, 15:1, 13:3) through seed samples. • **Human Genetics** • Study of autosomal & sex-linked dominant & recessive inheritancethrough pedigree analyses. • ABO blood group testing using kits, • To study the syndromes (Down's, Klinefelter's, and Turner's) through karyotypes • **To study chromosomal aberrations:** • reciprocal translocation through squash preparations of Rhoeo anthers. • Complex translocation ring, quadrivalents, lagging chromosomes, dicentric/inversion bridge through permanent slides.	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
	Tutorials			
June	**Theory**	• Missense and nonsense mutations • **Molecular basis of mutation**; Mutagens - physical UV and X-rays, • **Chemical mutagens** • Base analogues, deaminating, alkylating and intercalating agents • Transposons • **Gene expression** • Genetic code • Structure and types of RNA • Transcription and Translation in Prokaryotes • Transcription •	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
	Practicals	• To prepare LB medium, inoculate and maintain (spread plate, streak plate, pour plate & serial dilution methods) E. coli cultures. • To isolate genomic DNA from cauliflower and E.coli. Visualise using agarose gel electrophoresis •		
	Tutorials			
July	**Theory**	• RNA processing and Translation in Eukaryotes	B.Sc.(P.) Life Sciences Sem II	Genetics and Molecular Biology
	Practicals	• To estimate DNA by diphenylamine method.		
	Tutorials			

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SEMESTER WISE TEACHING PLAN (SWTP)

DEPARTMENT OF CHEMISTRY, 2022-23 EVEN SEMESTER

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DEPARTMENT OF CHEMISTRY
SRI VENKATESWARA COLLEGE

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr Mercy Jacob **Department: Chemistry**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Coordination Chemistry: IUPAC nomenclature of coordination compounds, isomerism in coordination compounds, stereochemistry of complexes with 4 and 6 coordination numbers. Chelate effect, polynuclear complexes, Labile and inert complexes.	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals	Inorganic Preparations: i. Tetraamminecopper (II) sulphate, ii. Acetylacetonate complexes of Cu^{2+}	B.Sc. (H) Chemistry IInd Year, Semester - IV (Batch A and B)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials			
FEBRUARY	**Theory:**	Werner's theory, valence bond theory (inner and outer orbital complexes), electroneutrality principle and back bonding, Crystal field theory	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals	Preparation of (iv) Potassium tri(oxalato)ferrate(III) Estimation of nickel (II) using Dimethylglyoxime (DMG).	B.Sc. (H) Chemistry IInd Year, Semester - IV (Batch A and B)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry

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		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials:			
	<u>Assignment:</u>	Coordination chemistry and chemistry of s block elements	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
MARCH	**Theory:**	Measurement of 10 Dq (Δ_o). CFSE in weak and strong fields, pairing energies, factors affecting the magnitude of 10 Dq (Δ_o, Δt). Octahedral vs. tetrahedral coordination	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals:	Estimation of copper as CuSCN Preparation of Tetraamminecarbonatocobalt (III) nitrate	B.Sc. (H) Chemistry IInd Year, Semester - IV (Batch A and B)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials:			
	<u>Test</u>	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
APRIL	**Theory:**	Tetragonal distortions from octahedral geometry Jahn-Teller theorem, square planar geometry. Qualitative aspect of Ligand field and MO Theory	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry

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	Practicals:	Estimation of iron as Fe_2O_3 by precipitating iron as $Fe(OH)_3$.	B.Sc. (H) Chemistry IInd Year, Semester - IV (Batch A and B)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Mixtures preferably contain one interfering anion and combination of anions	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials:			
MAY	**Theory:**			
	Practicals:			
	Tutorials:			

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Vibha Saxena **Department: Chemistry**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Chemistry of 3d metals General discussion of 3d metals. Oxidation states displayed by Cr, Fe, Co, Ni and Cu. A study of the following compounds (including preparation and important properties): $K_2Cr_2O_7$, $KMnO_4$, $K_4[Fe(CN)_6]$.	BSc(P) Life science III year	DSE:Organometallics, Bioinorganic Chemistry, Polynuclear hydrocarbons and UV, IR Spectrosopy
	Practicals	Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	CHEMISTRY –Core Paper-4 Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Tutorials	NA	NA	NA

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FEBRUARY	**Theory:**	Organometallic Compounds Definition and classification with appropriate examples based on nature of metal-carbon bond (ionic, s, p and multicentre bonds). Structure and bonding of methyl lithium and Zeise's salt. Structure and physical	BSc(P) Life science III year	DSE:Organometallics, Bioinorganic Chemistry, Polynuclear hydrocarbons and UV, IR Spectrosopy
	Practicals:	Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	CHEMISTRY –Core Paper-4 Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Tutorials:	NA	NA	NA

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	Assignment :	Organometallic Chemistry & Bio-inorganic Chemistry Assignment	BSc(P) Life science III year	DSE:Organometallics, Bioinorganic Chemistry, Polynuclear hydrocarbons and UV, IR Spectrosopy
MARCH	**Theory:**	π-acceptor behaviour of carbon monoxide (MO diagram of CO to be discussed), synergic effect and use of IR data to explain extent of back bonding.	BSc(P) Life science III year	DSE:Organometallics, Bioinorganic Chemistry, Polynuclear hydrocarbons and UV, IR Spectrosopy
	Practicals:	Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	CHEMISTRY –Core Paper-4 Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Redox Titrations (i) Estimation of Fe(II) with K2Cr2O7 using diphenylamine as internal indicator.	B.Sc. (H) Chemistry I Year	(DSC-4): CHEMISTRY OF S- AND P-BLOCK ELEMENTS (DSC-4: Inorganic Chemistry -II)
	Tutorials:	NA	NA	NA
	Test	Organometallic Chemistry & Bio-inorganic Chemistry Test	BSc(P) Life science III year	DSE:Organometallics, Bioinorganic Chemistry, Polynuclear hydrocarbons and UV, IR Spectrosopy
APRIL	**Theory:**	A brief introduction to bio-inorganic chemistry. Role of metal ions present in biological systems with special reference to Na+ , K+ and Mg2+ ions: Na/K pump; Role of Mg2+ ions in energy	BSc(P) Life science III year	DSE:Organometallics, Bioinorganic Chemistry, Polynuclear hydrocarbons and UV, IR Spectrosopy
	Practicals:	Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	CHEMISTRY –Core Paper-4 Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Redox Titrations (ii) Estimation of Fe(II) with $K_2Cr_2O_7$ using N-phenyl anthranilic acid as internal indicator. (iii) Estimation of Fe(II) with $K_2Cr_2O_7$ using external indicator	B.Sc. (H) Chemistry I Year	(DSC-4): CHEMISTRY OF S- AND P-BLOCK ELEMENTS (DSC-4: Inorganic Chemistry -II)

MAY	**Practicals:**	Iodo/Iodimetric Titrations (i) Estimation of Cu(II) using sodium thiosulphate solution (Iodometrically). (ii) Estimation of $K_2Cr_2O_7$ using sodium thiosulphate solution (Iodometrically).	B.Sc. (H) Chemistry I Year	(DSC-4): CHEMISTRY OF S- AND P-BLOCK ELEMENTS (DSC-4: Inorganic Chemistry -II)
JUNE	**Practicals:**	Iodo/Iodimetric Titrations (ii) Estimation of $K_2Cr_2O_7$ using sodium thiosulphate solution (Iodometrically). (iii) Estimation of antimony in tartaremetic iodimetrically. (iv) Estimation of Iodine content in iodized salt.	B.Sc. (H) Chemistry I Year	(DSC-4): CHEMISTRY OF S- AND P-BLOCK ELEMENTS (DSC-4: Inorganic Chemistry -II)

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Prof. Sanjay Batra **Department: Chemistry**

Semester: IV

Month		**Topics**	**Course**	**Paper Code/Name**
January	**Theory:**	Chemical Kinetics: Order and molecularity of a reaction, rate laws in terms of the advancement of a reaction, differential and integrated form of rate expressions up to second order reactions, experimental methods for determination of rate laws	B.Sc. Chemistry (Hons.) II Year, Semester IV (Batch-A)	CC-X Physical Chemistry IV: Conductance & Chemical Kinetics
February	**Theory:**	Kinetics of complex reactions (integrated rate expressions up to first order only): (i) Opposing reactions (ii) parallel reactions and (iii) consecutive reactions and their differential rate equations (steady-state approximation in reaction mechanisms) (iv) chain reactions.	B.Sc. Chemistry (Hons.) II Year, Semester IV (Batch-A)	CC-X Physical Chemistry IV: Conductance & Chemical Kinetics
March	**Theory**	Temperature dependence of reaction rates; Arrhenius equation; activation energy. Collision theory of reaction rates, Lindemann mechanism, qualitative treatment of the theory of absolute reaction rates. **Assignment and Internal exam was given based on covered syllabus**	B.Sc. Chemistry (Hons.) II Year, Semester IV (Batch-A)	CC-X Physical Chemistry IV: Conductance & Chemical Kinetics
April	**Theory:**	Catalysis: Types of catalyst, specificity and selectivity, mechanisms of catalyzed reactions at solid surfaces. Enzyme catalysis, Michaelis-Menten mechanism, acid-base catalysis.	B.Sc. Chemistry (Hons.) II Year, Semester IV (Batch-A)	CC-X Physical Chemistry IV: Conductance & Chemical Kinetics

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Name of the Faculty: Dr. Sharda Pasricha **Department: CHEMISTRY**

Semester: VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Organic Spectroscopy** General principles Introduction to absorption and emission spectroscopy. UV Spectroscopy: Types of electronic transitions, λmax, Chromophores and Auxochromes, Bathochromic and Hypsochromic shifts, Intensity of absorption; Application of Woodward Rules for calculation of λ_{max} for the following systems: α,β-unsaturated aldehydes, ketones, carboxylic acids and esters; Conjugated dienes: alicyclic, homoannular and heteroannular; Extended conjugated systems (aldehydes, ketones and dienes); distinction between cis and trans isomers.(7 lectures). **Dyes** Classification, Colour and constitution; Mordant and Vat Dyes; Chemistry of dyeing; Synthesis and applications of: Azo dyes – Methyl orange; Triphenyl methane dyes Malachite green and Rosaniline ; Phthalein Dyes – Phenolphthalein; Natural dyes – structure elucidation and synthesis of Alizarin and Indigotin; Edible Dyes with examples.(5 lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V

	Practical	Qualitative analysis of unknown organic compounds containing monofunctional groups (carbohydrates, aryl halides, aromatic hydrocarbons) 1. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters) .	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
February	**Theory:**	**Dyes** Classification, Colour and constitution; Mordant and Vat Dyes; Chemistry of dyeing; Synthesis and applications of: Azo dyes – Methyl orange; Triphenyl methane dyes Malachite green and Rosaniline ; Phthalein Dyes – Phenolphthalein; Natural dyes – structure elucidation and synthesis of Alizarin and Indigotin; Edible Dyes with examples.(3 lectures) **IR Spectroscopy**: Fundamental and non-fundamental molecular vibrations; IR absorption. Effect of H-bonding, conjugation, resonance and ring size on IR absorptions; Fingerprint region and its significance. IR absorption positions of O, N and S containing functional groups; application in functional group analysis. (8 Lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V

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	Practical:	Qualitative analysis of unknown organic compounds containing monofunctional groups (nitro compounds, amines and amides) and simple bifunctional groups, e.g. salicylic acid, cinnamic acid, nitrophenols etc. 1. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
March	**Theory:** Internal Exam I	**NMR Spectroscopy** Basic principles of Proton Magnetic Resonance, chemical shift and factors influencing it; Spin – Spin coupling and coupling constant; Anisotropic effects in alkene, alkyne, aldehydes and aromatics, Interpretation of NMR spectra of simple compounds. Applications of IR, UV and NMR for identification of simple organic molecules. (6 lectures) Topic : UV-Visible Spectroscopy	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY - C XIV: ORGANIC CHEMISTRY V	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V

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	Practical:	1.Extraction of caffeine from tea leaves. 2.Preparation of urea formaldehyde resin.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V
		1. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols , carbonyl compounds and esters) 2. Analysis of aniline by bromate-bromide method	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
		1.Acetylation of any one of the following compounds: amines (aniline, o-, m-, p-toluidines and o-, m-, p-anisidine) and phenols (β-naphthol, salicylic acid) by any one method: i. Using conventional method ii. Using green approach	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY PRACTICAL –CC-V LAB: Organic Chemistry II
April	**Theory:**	**NMR Spectroscopy** Basic principles of Proton Magnetic Resonance, chemical shift and factors influencing it; Spin – Spin coupling and coupling constant; Anisotropic effects in alkene, alkyne, aldehydes and aromatics, Interpretation of NMR spectra of simple compounds. Applications of IR, UV and NMR for identification of simple organic molecules. (6 lectures) **Pharmaceutical Compounds** Antimalarials - Chloroquine (with synthesis); An elementary treatment of Antibiotics and detailed study of chloramphenicol(03 Lectures) Any Pending Work from Previous Month Revision and Discussion of Previous year papers.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V

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	Assignment **Internal Exam II** **Internal Exam III**	**Topics: UV Spectroacopy and Polymers** Topics: IR Spectroscopy and Polymers Topics: NMR Spectroscopy and Pharmaceutical compounds	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V CHEMISTRY - C XIV: ORGANIC CHEMISTRY V
	Practical:	1. Identification of simple organic compounds by IR spectroscopy and NMR spectroscopy (Spectra to be provided). 2. Mock Practical Exam 1.Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols , carbonyl compounds and esters) 2. Mock Practical Exam 1.Benzolyation of one of the following amines (aniline, o-, m-, p-toluidines and o, m-, p-anisidine) or one of the following phenols (β-naphthol, resorcinol, p-cresol) by Schotten-Baumann reaction. 2.Bromination of acetanilide/aniline/phenol by anyone of the following: (a) Green method b) Conventional method 3. Nitration of nitrobenzene/chlorobenzene/phenols. 4. Haloform reaction of acetone.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III CHEMISTRY PRACTICAL –CC-V LAB: Organic Chemistry II
May		1. Estimation of the given sample of amine by: a) Acetylation b) Bromate-Bromide method. 2.Estimation of the given sample of amine by: a) Acetylation b) Bromate-Bromide method 3.Functional group tests for alcohols, phenols, carboxylic acids, phenols, carbonyl compounds, esters	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

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June		1.Identification of functional group for monofunctional organic compounds (Alcohols, phenols, aldehydes, ketones, carboxylic acids). 2. Oxidation of benzyl alcohol to benzoic acid 3.Haloform reaction of isopropylalcohol. 4. Estimation of the given sample of amine by: a) Acetylation b) Bromate-Bromide method	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
July		1. Any pending work 2. Mock Exam	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

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July		Chromatography 1.Separation of a mixture of two sugars by ascending paper chromatography 2.Mock Practical Exam	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

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Self Attested

Dr. Sharda Pasricha
Associate Professor

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shefali Shukla

Department: Chemistry Semester: II/IV/VI Month	Topic	Course	Paper
November	**Theory**	Electronic displacements and their applications, reaction intermediates, Electrophiles & nucleophiles Basic Concepts of Stereochemistry	B. Sc. (H) Chemistry I Yr, Semester I	DSC 2: ORGANIC CHEMISTRY - I Basic Concepts, Aliphatic Hydrocarbons
December	**Theory**	Configuration and projection formulae, Racemic mixture and their resolution, Isomerism	B. Sc. (H) Chemistry I Yr, Semester I	DSC 2: ORGANIC CHEMISTRY - I Basic Concepts, Aliphatic Hydrocarbons
January	**Theory**	Structure elucidation of naphthalene, preparation and properties of naphthalene	B. Sc. (P) Life Sciences III Yr, Semester V	DSE- Chemistry- 12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		Conformational Isomerism, Preparation and properties of alkenes	B. Sc. (H) Chemistry I Yr, Semester I	DSC 2: ORGANIC CHEMISTRY - I Basic Concepts, Aliphatic Hydrocarbons
Practicals:		Introduction to Qualitative analysis of unknown organic compounds containing monofunctional groups, Preliminary tests Known compounds	B. Sc. (H) Chemistry III Yr, Semester VI	CXIV: ORGANIC CHEMISTRY - V Spectroscopy and Applied Organic Chemistry
		Systematic analysis of oxygen containing functional groups Preliminary tests, known practice compounds	B. Sc. (H) Chemistry II Yr, Semester IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
		To calculate acidity in given sample of pesticide formulations as per BIS specifications To carryout market survey of potent pesticides	B. Sc. (H) Chemistry II Yr, Semester IV	SEC: Pesticide Chemistry
		Detection of extra elements (Known) Detection of extra elements (Unknown) Preparation of tetraamminecopper (II) sulphate complex and measurement of their conductivity:	B. Sc. (P) Life Sciences III Yr, Semester V	DSE- Chemistry- 12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
Tutorials:		NA	NA	NA
Test		**Internal Assessment examination**	B. Sc. (H) Chemistry I Yr, Semester I	DSC 2: ORGANIC CHEMISTRY - I Basic Concepts, Aliphatic Hydrocarbons

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. PRAGYA GAHLOT **Department: CHEMISTRY**
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Programming Language – QBASIC; Commands:** INPUT and PRINT Commands; GOTO, If, ELSEIF, THEN and END IF Commands; FOR and NEXT Commands; Library Functions (ABS, ASC, CHR$, EXP,INT, LOG, RND, SQR, TAB and trigonometric Functions), DIM, READ, DATA, REM, RESTORE, DEF, FNR, GOSUB, RETURN Simple programs using above mentioned commands.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
	Practicals	Small programs for mathematical computations in BASIC language. Roots of equations: (e.g. volume of gas using van der Waals equation and comparison with ideal gas, pH of a weak acid).	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		1. Semi-micro qualitative analysis of mixtures 2. Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.	B. Sc Prog. Life Sciences Semester IV	CC-IV: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
February	**Theory:**	QBASIC programs for Chemistry problems - Example: plotting van der Waal Isotherms (Simple Problem, available in general text	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry

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	Practicals:	Probability distributions (gas kinetic theory) and mean values. Matrix operations.	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		3. Semi-micro qualitative analysis of mixtures 4. Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald viscometer.	B. Sc Prog. Life Sciences Semester IV	CC-IV: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
March	**Theory:**	Solution of quadratic equation, polynomial equations (formula, iteration and Newton – Raphson methods, binary bisection and Regula Falsi); Numerical differential, Numerical integration (Trapezoidal rule), Simultaneous equations, Matrix addition and multiplication, Statistical analysis.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
	Practicals:	Numerical differentiation (e.g., change in pressure for small change in volume of a van der Waals gas, potentiometric titrations). 3. Numerical integration (e.g. entropy/ enthalpy change from heat capacity data).	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		Semi-micro qualitative analysis of mixtures	B. Sc Prog. Life Sciences Semester IV	CC-IV: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	<u>Assignment :</u>		B.Sc. CHEMISTRY (Hons.) III Year,	DSE: Applications of computers in Chemistry
	<u>Test</u>		B.Sc. CHEMISTRY (Hons.) III Year,	DSE: Applications of computers in Chemistry

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April	**Theory**	Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, Ostwald's dilution law, ionization constant and ionic product of water	B.Sc.(P) Life sciences I year, Semester II	Chemistry Core II
	Practical	**Basic Computer system (in brief)-** Hardware and Software; Input devices, Storage devices, Output devices, Central Processing Unit (Control Unit and Arithmetic Logic Unit); Number system (Binary, Octal and Hexadecimal Operating System); Computer Codes (BCD and ASCII)**;** Numeric/String constants and variables. Operating Systems (DOS, WINDOWS, and Linux); Software languages: Low level and High Level languages (Machine language, Assembly language;	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
		Study of the variation of viscosity of an aqueous solution with concentration of solute Semi-micro qualitative analysis of mixtures	B. Sc Prog. Life Sciences Semester IV	CC-IV: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Estimation of Sodium carbonate using HCl by acid base titration Estimation of carbonate and hydroxide present together in a mixture Estimation of carbonate and	B. Sc Prog. Life Sciences Semester I	DSC 5 Chemistry-II: Chemical Bonding and Elements in Biological System
	<u>Assignment :</u>	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry	
May	**Practical**	Estimation of free alkali present in different soaps/detergents Estimation of oxalic acid using KMnO4 by redox titration.	B. Sc Prog. Life Sciences Semester I	DSC 5 Chemistry-II: Chemical Bonding and Elements in Biological System
June	**Practical**	Determination of dissolved oxygen in water. Estimation of Fe (II) ions by titrating it with	B. Sc Prog. Life Sciences Semester I	DSC 5 Chemistry-II: Chemical Bonding and Elements in Biological System

July	**Practical**	Paper Chromatographic separation of mixture of metal ions a. Cu^{2+}, Cd^{2+} b. Ni^{2+}, Co^{2+}	B. Sc Prog. Life Sciences Semester I	DSC 5 Chemistry-II: Chemical Bonding and Elements in Biological System

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Name of the Faculty: HARSHVARDHAN MEENA

Department: Chemistry **Semester: II / VI**

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Qualitative and quantitative aspects of analysis: Sampling, evaluation of analytical data, errors, accuracy and precision, methods of their expression. Normal law of distribution of indeterminate errors, statistical test of data; F, Q and t test, rejection of data, and confidence intervals.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
	Practicals	1. Separation of mixtures by paper chromatography and reporting the Rf values: (i) Co^{2+} and Ni2+ . (ii) Amino acids present in the given mixture.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
		1. Separation of mixtures by paper chromatography and reporting the Rf values: (i) Co^{2+} and Ni^{2+} .	B.Sc. (P) Life Science III year (Batch I)	CHEMISTRY LAB
		2. Separation of mixtures by paper chromatography and reporting the Rf values: (ii) Fe^{3+} and Al^{3+}	B.Sc. (P) Life Science IIIyear	Chemistry Lab
	Tutorials	NA	NA	NA
FEB	**Theory:**	Optical methods of analysis Origin of spectra, interaction of radiation with matter, fundamental laws of spectroscopy and selection rules UV-Visible	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
	Practicals:	2. Solvent Extractions (i) To separate a mixture of Ni^{2+} & Fe^{3+} by complexation with DMG and extracting the Ni^{2+} DMG complex in	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS

		3.Preparation of tetraammine copper (II) sulphate	B.Sc. (P) Life Science III year	CHEMISTRY LAB
	Tutorials:	NA	NA	NA
MAR	**Theory:**	Thermal methods of analysis: Theory of thermogravimetry (TG) and basic principle of instrumentation of thermal analyser. Techniques for quantitative estimation of Ca and Mg from their mixture.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry

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Practicals:	3. Analysis of soil: (i) Determination of pH of soil. (ii) Total soluble salt (iii) Estimation of calcium and magnesium (iv) Qualitative	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
	4. Preparation of potassium trioxalatoferrate (III) trihydrate	B.Sc. (P) Life Science III year	Chemistry Lab
	5.Detection of extra elements.	B.Sc. (P) Life Science III year	Chemistry Lab
	1.Estimation of Fe (II) with $K_2Cr_2O_7$ using N- phenyl anthranllic acid as internal indicator	B.Sc.(H) Chemistry I year	Chemistry Lab
<u>Assignment :</u>	CHEMISTRY-DSE 4: Analytical methods in chemistry	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry

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APRIL	**Theory:**	Electroanalytical methods Classification of electroanalytical methods, basic principle of pH metric, potentiometric and conductometric titrations.Techniques used for the determination of equivalence points. Techniques used for the determination of pKa values.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
	Practicals:	4. Ion exchange: (i) Determination of exchange capacity of cation exchange resins and anion exchange resins. (ii) Separation of	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
		6. Systematic qualitative analysis of organic compounds	B.Sc. (P) Life Science III year	Chemistry Lab
		2. Estimation of Fe (II) with $K_2Cr_2O_7$ using diphenylamine as internal indicator	B.Sc.(H) Chemistry I year	Chemistry Lab
	Tutorials:	NA	NA	NA
	<u>Test</u>	CHEMISTRY-DSE 4: Analytical methods in chemistry	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
MAY	**Theory:**	Separation techniques Solvent extraction: Classification, principle and efficiency of the technique. Chromatography: Classification, principle and	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
	Practicals:	5. Spectrophotometry (i) Verification of Lambert-Beer's law and determination of concentration of a coloured species (CuSO4, KMnO4,	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry

		7. Identification of simple organic compound containing functional groups by IR spectroscopy	B.Sc. (P) Life Science III year	Chemistry Lab
		3. Estimation of Fe (II) with $K_2Cr_2O_7$ using external indicator	B.Sc.(H) Chemistry I year	Chemistry Lab
		4. Estimation of Cu (II) using hypo solution	B.Sc.(H) Chemistry I year	Chemistry Lab
JUNE		5. Estimation of $K_2Cr_2O_7$ using hypo solution	B.Sc.(H) Chemistry I year	Chemistry Lab
		6.Estimation of antimony in tartaremetic iodimetrically.	B.Sc.(H) Chemistry I year	Chemistry Lab
		7. Estimation of iodine content in iodized salt.	B.Sc.(H) Chemistry I year	Chemistry Lab

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: **Dr. Vinita Kapoor** **Department:** **Chemistry**

Month		Topics	Course	Paper Code/Name
JAN	**Practicals**	1. Semi-micro qualitative analysis of mixtures 2. Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.	BSc (P) Life Sci. Semester IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals	Small programs for mathematical computations in BASIC language. Roots of equations: (e.g. volume of gas using van der Waals equation and comparison with ideal gas, pH of a weak acid).	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**
Month		Topics	Course	Paper Code/Name
FEB	**Practicals**	3. Semi-micro qualitative analysis of mixtures 4. Study of the variation of surface tension of a detergent solution with concentration. 5. Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald's viscometer.	BSc (P) Life Sci. Semester IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals	Probability distributions (gas kinetic theory) and mean values. Matrix operations.	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**
Month		Topics	Course	Paper Code/Name
MARCH	**Practicals**	6. Semi-micro qualitative analysis of mixtures 7. Study of the variation of viscosity of an aqueous solution with concentration of solute	BSc (P) Life Sci. Semester IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS

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	Practicals	Numerical differentiation (e.g., change in pressure for small change in volume of a van der Waals gas, potentiometric titrations). 3. Numerical integration (e.g. entropy/ enthalpy change from heat capacity data).	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**
Month			Course	Paper Code/Name
APRIL	**Theory**	**Chemical Thermodynamics:** Intensive and extensive variables; state and path functions; isolated, closed and open systems. Mathematical treatment - Exact and inexact differential, Partial derivatives, Euler's reciprocity rule, cyclic rule. **First law:** Concept of heat, Q, work, W, internal energy, U, and statement of first law; enthalpy, H, relation between heat capacities, Joule Thompson Porous Plug experiment, Nature of Joule Thompson coefficient	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY – II**
	Practicals	8. Semi-micro qualitative analysis of mixtures 9. Semi-micro qualitative analysis of mixtures	BSc (P) Life Sci. Semester IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals	Graphic programs related to Chemistry problems. *e.g.* van der Waals isotherm, Compressibilty versus pressure curves, Maxwell distribution curves, concentration-time Graph, pH metric titration curve, conductometric titration curves, Lambert Beer's law graph, s, p, d orbital shapes, radial distribution curves, etc.	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**

Month		Topics	Course	Paper Code/Name
MAY	**Theory**	Calculations of Q, W, ΔU and ΔH for reversible, irreversible and free expansion of gases (ideal and van der Waals) under isothermal and adiabatic conditions. **Thermochemistry**: Enthalpy of reactions: standard states; enthalpy of neutralization, enthalpy of hydration, enthalpy of formation and enthalpy of combustion and its applications, bond dissociation energy and bond enthalpy; effect of temperature (Kirchhoff's equations) on enthalpy of reactions.	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY - II**

Month		Topics	Course	Paper Code/Name
JUNE	**Theory**	**Second Law:** Concept of entropy; statement of the second law of thermodynamics, Carnot cycle. Calculation of entropy change for reversible and irreversible processes (for ideal gases). Free Energy Functions: Gibbs and Helmholtz energy; variation of S, G, A with T, V, P; Free energy change and spontaneity (for ideal gases). Relation between Joule-Thomson coefficient and other thermodynamic parameters; inversion temperature; Gibbs-Helmholtz equation; Maxwell relations; thermodynamic equation of state. **Chemical Equilibrium:** Criteria of thermodynamic equilibrium, degree of advancement of reaction, Chemical equilibria in ideal gases, Thermodynamic derivation of relation between Gibbs free energy of a reaction and reaction quotient, Equilibrium constants and their dependence on temperature, pressure and concentration, Le Chatelier's Principle (Quantitative treatment), Free energy of mixing and spontaneity, Equilibrium between ideal gases and a pure condensed phase.	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY - II**
Month		Topics	Course	Paper Code/Name
JULY	**Theory**	**Third Law:** Statement of third law, unattainability of absolute zero, calculation of absolute entropy of molecules, concept of residual entropy, calculation of absolute entropy of solid, liquid and gases. **Systems of Variable Composition:** Partial molar quantities, dependence of thermodynamic parameters on composition; Gibbs Duhem equation, chemical potential of ideal mixtures, Change in thermodynamic functions on mixing of ideal gases.	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY - II**
Month			Course	Paper Code/Name

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shikha Gulati Department: Chemistry

Semester: VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Definition and classification of organometallic compounds on the basis of bond type. Concept of hapticity of organic ligands. Metal carbonyls: 18 electron rule, electron count of mononuclear, polynuclear and substituted metal carbonyls of 3d series. General methods of preparation (direct combination, reductive carbonylation, thermal and photochemical decomposition) of mono and binuclear carbonyls of 3d series.	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
	Practicals			

	(i) Paper chromatographic separation of Co^{2+} and Ni^{2+}. (ii) Separation and identification of the amino acids present in the given mixture by paper chromatography. Reporting the R_f values.	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
	1. . Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. The following radicals are suggested: $CO_3$2-, NO_2-, S2-, $SO_3$2-,$SO_4$2-,$S_2O_3$2-, CH_3COO-, F-,Cl-, Br-, I-, NO_3-, $BO_3$3-, $C_2O_4$2-, $PO_4$3-, NH_4+, K+, Pb2+,Cu2+, Cd2+, Bi3+, Sn2+, Sb3+, Fe3+, Al3+, Cr3+, Zn2+, Mn2+, Co2+, Ni2+, Ba2+, Sr2+, Ca2+, Mg2+	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY - CXIII: INORGANIC CHEMISTRY - IV

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		Gravimetric Analysis: i. Estimation of nickel (II) using Dimethylglyoxime (DMG). **Inorganic Preparations:** i. Tetraamminecopper (II) sulphate, $[Cu(NH_3)_4]SO_4.H2O$ ii. Acetylacetonate	B.Sc. (Hons.) Chemistry II Year	C VIII: INORGANIC CHEMISTRY III
	Tutorials	NA	NA	NA

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FEBRUARY	**Theory:**	Structures of mononuclear and binuclear carbonyls of Cr, Mn, Fe, Co and Ni using VBT. π-acceptor behaviour of CO (MO diagram of CO to be discussed), synergic effect and use of IR data to explain extent of back bonding. Zeise's salt: Preparation and structure, evidences of synergic effect and comparison of synergic effect with that in carbonyls. Metal Alkyls: Important structural features of methyl lithium (tetramer) and trialkyl aluminium (dimer), concept of multicentre bonding in these compounds. Ferrocene: Preparation and reactions (acetylation, alkylation, metallation, Mannich Condensation). Structure and aromaticity. Comparison of aromaticity and reactivity with that of benzene. **Catalysis by Organometallic Compounds** Study of the following industrial processes and their mechanism: 1. Alkene hydrogenation (Wilkinson's Catalyst) 2. Synthetic gasoline (Fischer Tropsch reaction) 3. Polymerisation of ethene using Ziegler-Natta catalyst	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV

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Practicals:	(i) To separate a mixture of Ni^{2+} & Fe^{2+} by complexation with DMG and extracting the Ni^{2+}-DMG complex in chloroform, and determine its concentration by spectrophotometry. Analysis of soil: (i) Determination of pH of soil. (ii) Total soluble salt	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
	1. Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. The following radicals are suggested: $CO_3$2-, NO_2-, S2-, $SO_3$2-,$SO_4$2-,$S_2O_3$2-, CH_3COO-, F-,Cl-, Br-, I-, NO_3-, $BO_3$3-, $C_2O_4$2-, $PO_4$3-, NH_4+, K+, Pb2+,Cu2+, Cd2+, Bi3+, Sn2+, Sb3+, Fe3+, Al3+, Cr3+, Zn2+, Mn2+, Co2+, Ni2+, Ba2+, Sr2+, Ca2+, Mg2+ 2. Mixtures should preferably contain one interfering anion, or insoluble component (BaSO4, SrSO4, PbSO4, CaF2 or Al2O3) or combination of anions e.g. CO32- and SO32-, NO2- and NO3-, Cl-and Br-, Cl and I-, Br- and I-, NO3- and Br-, NO3- and I-. Spot tests	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV

		ii. Estimation of copper as CuSCN iii. Estimation of iron as Fe2O3 by precipitating iron as $Fe(OH)_3$. **Inorganic Preparations:** iii. Tetraamminecarbonatocobalt (III) nitrate iv. Potassium tri(oxalato)ferrate(III)	B.Sc. (Hons.) Chemistry II Year	C VIII: INORGANIC CHEMISTRY III
	Tutorials:	NA	NA	NA

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	Assignment:	Organometallics and Bioinorganic Chemistry	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
MARCH	**Theory:**	**Bioinorganic Chemistry:** Metal ions present in biological systems, classification of elements according to their action in biological system. Geochemical effect on the distribution of metals. Sodium / K-pump, carbonic anhydrase and carboxypeptidase. Excess and deficiency of some trace metals. Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity, Use of chelating agents in medicine, Cisplatin as an anti-cancer drug. Iron and its application in bio-systems, Haemoglobin, Myoglobin; Storage and transfer of iron.	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
	Practicals:	(iii) Estimation of calcium, magnesium (iv) Qualitative detection of nitrate, phosphate	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
		. Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. The following radicals are suggested: $CO_3$2-, NO_2-, S2-, $SO_3$2-,$SO_4$2-,$S_2O_3$2-, CH_3COO-, F-,Cl-, Br-, I-, NO_3-, $BO_3$3-, $C_2O_4$2-, $PO_4$3-, NH_4+, K+, Pb2+,Cu2+, Cd2+,	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY – C XIII

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		Estimation of Al(III) by precipitating with oxine and weighing as Al(oxine)3 (aluminium oxinate). **Properties of Complexes** i. Measurement of 10 Dq by spectrophotometric method	B.Sc. (Hons.) Chemistry II Year	C VIII: INORGANIC CHEMISTRY III
		Preparation of standard solution of Sodium carbonate	B.Sc.(P) Life Sciences I year	DSC 5: Chemistry II
	Tutorials:	NA	NA	NA
	Test	Organometallics and Bioinorganic Chemistry	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV

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APRIL	**Theory:**	**Catalysis by Organometallic Compounds** Study of the following industrial processes and their mechanism: 1. Alkene hydrogenation (Wilkinson's Catalyst) 2. Synthetic gasoline (Fischer Tropsch reaction) 3. Polymerisation of ethene using Ziegler-Natta catalyst	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
	Practicals:	Spectrophotometry Verification of Lambert-Beer's law and determination of concentration of a coloured species ($CuSO_4$, $KMnO_4$)	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY

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MAY **JUNE**		. Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. The following radicals are suggested: $CO_3$2-, NO_2-, S2-, $SO_3$2-,$SO_4$2-,$S_2O_3$2-, CH_3COO-, F-,Cl-, Br-, I-, NO_3-, $BO_3$3-, $C_2O_4$2-, $PO_4$3-, NH_4+, K+, Pb2+,Cu2+, Cd2+, Bi3+, Sn2+, Sb3+, Fe3+, Al3+, Cr3+, Zn2+, Mn2+, Co2+, Ni2+, Ba2+, Sr2+, Ca2+, Mg2+ 2. Mixtures should preferably contain one interfering anion, or insoluble component (BaSO4, SrSO4, PbSO4, CaF2 or Al2O3) or combination of anions e.g. CO32- and SO32-, NO2- and NO3-, Cl-and Br-, Cl and I-, Br- and I-, NO3- and Br-, NO3- and I-. Spot tests	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
		ii. Verification of spectrochemical series. iii. Synthesis of ammine complexes of Ni(II) and its ligand exchange reactions (e.g. bidentate ligands like acetylacetone, DMG, glycine) by substitution method.	B.Sc. (Hons.) Chemistry II Year	C VIII: INORGANIC CHEMISTRY III

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		2. Estimation of Sodium carbonate using HCl by acid base titration. 3. Estimation of carbonate and hydroxide present together in a mixture. 4. Estimation of carbonate and bicarbonate present together in a mixture.	B.Sc.(P) Life Sciences I year	DSC 5: Chemistry II
	Practicals:	5. Estimation of free alkali present in different soaps/detergents 6. Estimation of oxalic acid using $KMnO_4$ by redox titration. 7. Estimation of Mohr's salt using $KMnO_4$ by redox titration.	B.Sc.(P) Life Sciences I year	DSC 5: Chemistry II
	Practicals:	8. Determination of dissolved oxygen in water. 9. Estimation of Fe (II) ions by titrating it with $K_2Cr_2O_7$ using internal and external indicators. 10. Estimation of Cu (II) ions iodometrically using $Na_2S_2O_3$ 11. Paper Chromatographic separation of mixture of metal ions a. Cu^{2+}, Cd^{2+} b. Ni^{2+}, Co^{2+}.	B.Sc.(P) Life Sciences I year	DSC 5: Chemistry II

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SEMESTER WISE TEACHING PLAN

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Name of the Faculty: Dr. POOJA **Department: CHEMISTRY**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	General introduction to pesticides (natural and synthetic), benefits and adverse effects, changing concepts of pesticides, structure activity relationship	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Introduction and classification including di-block, tri-block and amphiphilic polymers; weight average molecular weight, number average molecular weight, glass transition temperature (Tg) of polymers	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry
	Practicals	Qualitative analysis of unknown organic compounds containing monofunctional groups: aromatic hydrocarbons, aryl halides, carbohydrates, nitro compounds, amines, amides and simple compounds containing bifunctional groups, e.g. salicylic acid, cinnamic acid, nitrophenols.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry
		Preparation of solid shampoo. Preparation of liquid shampoo.	B.Sc. Life Science (prog.) III Year, Semester VI	CHEMISTRY OF COSMETICS & PERFUMES Practical
FEBRUARY	**Theory:**	synthesis and technical manufacture and uses of representative pesticides in the following classes: Organochlorines (DDT, Gammexene).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Polymerization reactions -Addition and condensation. Mechanism of cationic, anionic and free radical addition polymerization; Ziegler-Natta polymerization of alkenes. Preparation and applications of plastics–thermosetting (phenol-formaldehyde, Polyurethanes) and thermosoftening (PVC, polythene);	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry

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	Practicals:	Qualitative analysis of unknown organic compounds containing monofunctional groups: aromatic hydrocarbons, aryl halides, carbohydrates, nitro compounds, amines, amides and simple compounds containing bifunctional groups, e.g. salicylic acid, cinnamic acid, nitrophenols.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry
		Preparation of enamels. Preparation of face cream, Preparation of nail polish and nail polish remover.	B.Sc. Life Science (prog.) III Year, Semester VI	CHEMISTRY OF COSMETICS & PERFUMES Practical
MARCH	**Theory:**	synthesis and technical manufacture and uses of representative pesticides in the following classes: Organophosphates (Malathion, Parathion), Carbamates (Carbofuran and carbaryl).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Fabrics – natural and synthetic (acrylic, polyamide, polyester). Rubbers – natural and synthetic, Buna-S, Chloroprene and Neoprene. Vulcanization - Polymer additives; Introduction to Biodegradable and conducting polymers with examples.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry
	Practicals:	Qualitative analysis of unknown organic compounds containing monofunctional groups: aromatic hydrocarbons, aryl halides, carbohydrates, nitro compounds, amines, amides and simple compounds containing bifunctional groups, e.g. salicylic acid, cinnamic acid, nitrophenols.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry
		Preparation of talcum powder. Preparation of soap.	B.Sc. Life Science (prog.) III Year, Semester VI	CHEMISTRY OF COSMETICS & PERFUMES Practical
		Preparation of standard solutions. Estimation of Sodium carbonate using HCl by acid-base titration. Estimation of carbonate and hydroxide present together in a mixture.	B.Sc. Life Science (prog.) I Year, Semester II	DSC-5 Chemistry-II Chemical Bonding and Elements in Biological System
	Assignment	Written Assignment questions to solve	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Class test-I	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry

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APRIL	**Theory:**	Synthesis and technical manufacture and uses of representative pesticides in the following classes: Quinones (Chloranil), Anilides (Alachlor and Butachlor).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Classification, structure, and therapeutic uses of antipyretics - Paracetamol (with synthesis); Analgesics Ibuprofen (with synthesis); Antitubercular drugs - Isoniazid. Medicinal values of curcumin (haldi), azadirachtin (neem), vitamin C and antacid (ranitidine).	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry
	Practicals:	Qualitative analysis of unknown organic compounds containing monofunctional groups: aromatic hydrocarbons, aryl halides, carbohydrates, nitro compounds, amines, amides and simple compounds containing bifunctional groups, e.g. salicylic acid, cinnamic acid, nitrophenols.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry
		Preparation of hand wash. Activity to find out the formulation of various brands of cosmetics SEC practical exam	B.Sc. Life Science (prog.) III Year, Semester VI	CHEMISTRY OF COSMETICS & PERFUMES Practical
		Estimation of carbonate and bicarbonate present together in a mixture. Estimation of free alkali present in different soaps/detergents	B.Sc. Life Science (prog.) I Year, Semester II	DSC-5 Chemistry-II Chemical Bonding and Elements in Biological System
	<u>Test</u>	Class test	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Class test-II Class test-III	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CCXIV: ORGANIC CHEMISTRY-V Spectroscopy and Applied Organic Chemistry
MAY	**Practicals:**	Estimation of Fe (II) ions by titrating it with $K_2Cr_2O_7$ using internal and external indicators.	B.Sc. Life Science (prog.) I Year, Semester II	DSC-5 Chemistry-II Chemical Bonding and Elements in Biological System
JUNE	**Practicals:**	Estimation of Cu (II) ions iodometrically using $Na_2S_2O_3$ Paper Chromatographic separation of mixture of metal ions a. Cu^{2+}, Cd^{2+}	B.Sc. Life Science (prog.) I Year, Semester II	DSC-5 Chemistry-II Chemical Bonding and Elements in Biological System
JULY	**Practicals:**	Practice exercise	B.Sc. Life Science (prog.) I Year, Semester II	DSC-5 Chemistry-II Chemical Bonding and Elements in Biological System

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SEMESTER WISE TEACHING PLAN

Academic year 2022-2023 (Even Semester)

SRI VENKATESWARA COLLEGE

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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Ms. Laishram Saya Devi **Department: CHEMISTRY**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**CONDUCTANCE:** Quantitative aspects of Faraday's laws of electrolysis Arrhenius theory of electrolytic dissociation. Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes. Molar conductivity at infinite dilution. Kohlrausch law of independent migration of ions. Debye-Hückel-Onsager equation, Wien effect, Debye-Falkenhagen effect. Walden's rules. Ionic velocities, mobilities and their determinations, transference numbers and their relation to ionic mobilities	B.Sc.(H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV
	Practical	Determination of cell constant Determination of conductivity, molar conductivity, degree of dissociation and dissociation constant of a weak acid. Perform the following conductometric titrations: (I) Strong acid vs. strong base **Basic Analytical Chemistry:** 1. Determination of pH of soil samples. 2. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	B.Sc. (H) CHEMISTRY Semester IV (SECTION B) B.Sc. (P) Life Sciences Semester IV	C X: PHYSICAL CHEMISTRY IV **LAB** **SEC: Basic Analytical Chemistry**
FEBRUARY	**Theory**	**CONDUCTANCE:** Determination of transference numbers using Hittorf and Moving Boundary methods. Applications of conductance measurement: (i) degree of dissociation of weak electrolytes, (ii) ionic product of water (iii) solubility and solubility product of sparingly soluble salts, (iv) conductometric titrations, and (v) hydrolysis constants of salts **PHOTOCHEMISTRY:** Characteristics of electromagnetic radiation, Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws, of photochemistry, quantum yield, actinometry.	B.Sc.(H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV
	Practical	**Conductometric titrations:** (I)Weak acid vs. strong base (II)Mixture of strong acid and weak acid vs. strong base Study of kinetics of Acid hydrolysis of methyl acetate with hydrochloric acid. Saponification of ethyl acetate **Basic Analytical Chemistry** 4. Determination of dissolved oxygen (DO) of a water sample. 5. Paper chromatographic separation of mixture of metal ion (Ni^{2+} and Co^{2+}).	B.Sc. (H) CHEMISTRY Semester IV (SECTION B) B.Sc. (P) Life Sciences Semester IV	C X: PHYSICAL CHEMISTRY IV **LAB** **SEC: Basic Analytical Chemistry**

		6. To study the use of phenolphthalein in trap cases.		
MARCH	**Theory**	**Chemical Kinetics:** Order and molecularity of a reaction, rate laws in terms of the advancement of a reaction, differential and integrated form of rate expressions up to second order reactions, experimental methods for determination of rate laws.	B.Sc.(H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV
	Practical	Comparison of the strengths of HCl and H_2 SO4 by studying kinetics of hydrolysis of methyl acetate.	B.Sc. (H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV **LAB**
		Basic Analytical Chemistry: 3. Determination of pH, acidity and alkalinity of a water sample. 4.Spectrophotometric determination of Iron in vitamin / dietary tablets. 11. Spectrophotometric identification and determination of caffeine and benzoic acid in soft drink.	B.Sc. (P) Life Sciences Semester IV	**SEC: Basic Analytical Chemistry**
		Thermochemistry: 1. Determination of heat capacity of a calorimeter for different volumes using (i) change of enthalpy data of a known system and (ii) heat gained equal to heat lost by cold water and hot water respectively	B.Sc. (H) CHEMISTRY Semester II (SECTION A)	DSC-6: Thermodynamics and its Applications
		Thermochemistry: (a) Determination of heat capacity of a calorimeter for different volumes using change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution of sulphuric acid or enthalpy of neutralization).	B.Sc. (H) CHEMISTRY Semester II (SECTION B	DSC-6: Thermodynamics and its Applications
APRIL	**Theory**	**Chemical Kinetics:** Kinetics of complex reactions (integrated rate expressions up to first order only): (i) Opposing reactions (ii) parallel reactions and (iii) consecutive reactions and their differential rate equations (steady-state approximation in reaction mechanisms) (iv) chain reactions. Temperature dependence of reaction rates; Arrhenius equation; activation energy. Collision theory of reaction rates, Lindemann mechanism, qualitative treatment of the theory of absolute reaction rates.	B.Sc.(H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV
	Practical	Study the kinetics of Iodide-persulphate reaction using (i) Initial rate method (ii) (ii)Integrated rate method	B.Sc. (H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV **LAB**
		Basic Analytical Chemistry 1. Determination of pH of soil samples. 2. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	B.Sc. (Prog) Life Sciences Semester IV	**SEC: Basic Analytical Chemistry**
		THERMOCHEMISTRY: (b) Determination of heat capacity of a calorimeter for different volumes using heat gained equal to heat lost by cold water and hot water.	B.Sc.(H) CHEMISTRY I year Semester II (Batch1)	DSC-6: Thermodynamics and its Applications

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		(c) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. **THERMOCHEMISTRY:** (b) Determination of heat capacity of a calorimeter for different volumes using heat gained equal to heat lost by cold water and hot water. (c) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	B.Sc.(H) CHEMISTRY I year Semester II (Batch 2)	DSC-6: Thermodynamics and its Applications
MAY	**Theory**	**Catalysis**: Types of catalyst, specificity and selectivity, mechanisms of catalyzed reactions at solid surfaces. Enzyme catalysis, Michaelis-Menten mechanism, acid-base catalysis.	B.Sc.(H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV
	Practical	**THERMOCHEMISTRY** (d) Determination of the enthalpy of ionization of ethanoic acid. (e) Determination of integral enthalpy solution of endothermic salts. (f) Determination of integral enthalpy solution of exothermic salts. **THERMOCHEMISTRY** (d) Determination of the enthalpy of ionization of ethanoic acid. (e) Determination of integral enthalpy solution of endothermic salts. (f) Determination of integral enthalpy solution of exothermic salts.	B.Sc.(H) CHEMISTRY I year Semester II (Batch 1) B.Sc.(H) CHEMISTRY I year Semester II (Batch 2)	DSC-6: Thermodynamics and its Applications DSC-6: Thermodynamics and its Applications
JUNE	**Theory**			
	Practical	**THERMOCHEMISTRY:** (g) Determination of basicity of a diprotic acid by the thermochemical method in terms of the changes of temperatures observed in the graph of temperature versus time for different additions of a base. Also calculate the enthalpy of neutralization of the first step. (h) Determination of enthalpy of hydration of salt. (i) Study of the solubility of benzoic acid in water and determination of ΔH. **THERMOCHEMISTRY:** (g) Determination of basicity of a diprotic acid by the thermochemical method in terms of the changes of temperatures observed in the graph of temperature versus time for different additions of a base. Also calculate the enthalpy of neutralization of the first step. (h) Determination of enthalpy of hydration of salt. (i) Study of the solubility of benzoic acid in water and determination of ΔH.	B.Sc.(H) CHEMISTRY I year Semester II (Batch 1) B.Sc.(H) CHEMISTRY I year Semester II (Batch 2)	DSC-6: Thermodynamics and its Applications DSC-6: Thermodynamics and its Applications
JULY	**Theory**			
	Practical	**REVISION EXERCISES ALONG WITH VIVA**	B.Sc.(H) CHEMISTRY I year	DSC-6: Thermodynamics and its Applications

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		B.Sc.(H) CHEMISTRY I year (Batch 2)	(Batch 1) B.Sc.(H) CHEMISTRY I year (Batch 2)	DSC-6: Thermodynamics and its Applications

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Academic Year 2022-2023 (Even)
Name of the Faculty: Dr. Rekha Yadav
Department: Chemistry **Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
On maternity leave from (20-10-2022 to 22-01-23) 23-JANUARY 2023	**Theory**	-	-	-
	Practical	Conductometric titrations: Weak acid vs. strong base, Mixture of strong acid and weak acid vs. strong base	B.Sc. (Hons.) Chemistry II year, Semester IV	CX: PHYSICAL CHEMISTRY–IV Course Title: Conductance & Chemical Kinetics
	Practical	Separation of mixtures by paper chromatography and reporting the R_f values: Fe^{3+} and Al^{3+}	B.Sc. (P) Life Sciences III year, Semester VI	Chemistry Lab
FEBRUARY	**Theory**	-	-	-
	Practical	To study the kinetics of Acid hydrolysis of methyl acetate with hydrochloric acid using integrated rate law method. To study the kinetics of Iodide-persulphate reaction by Initial rate method.	B.Sc. (Hons.) Chemistry II year, Semester IV	CX: PHYSICAL CHEMISTRY–IV Course Title: Conductance & Chemical Kinetics
	Practical	Preparation of tetraammine copper (II) sulphate	B.Sc. (P) Life Sciences III year, Semester VI	Chemistry Lab
MARCH	**Theory**	**Ionic Equilibria** Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, Ostwald's dilution law	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Theory	-	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
	Practical	To study the kinetics of Saponification of ethyl acetate. To study the kinetics of iodine-persulphate reaction using integrated rate law method.	B.Sc. (Hons.) Chemistry II year, Semester IV	CX: PHYSICAL CHEMISTRY–IV Course Title: Conductance & Chemical Kinetics
	Practical	Preparation of potassium trioxalatoferrate (III) trihydrate Systematic qualitative analysis of organic compounds Detection of extra elements.	B.Sc. (P) Life Sciences III year, Semester VI	Chemistry Lab
	Practical	Preparation of buffer solutions: (i) Sodium acetate-acetic acid or (ii) Ammonium chloride-ammonium acetate.	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Practical	-	SEC: Forensic Science, I year, II Semester	-
	Practical	Preparation of standard solutions.	B.Sc. (P) Life Sciences, I year, II Semester	CHEMISTRY - II Chemical Bonding and Elements in Biological System
APRIL	**Theory**	Ionization constant and ionic product of water, ionization of weak acids and bases, pH scale, common ion effect, salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions and their applications in biological systems, Henderson-Hasselbalch equation. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Theory	**History of Development of Forensic Science in India** Definitions, Scope and Need of forensic science, Ethics in forensic science, History of forensic science, Basic principles of forensic science, Organizational structure of forensic science laboratories, Different branches in forensic science. **Fingerprints** Definition, History of fingerprint identification, Fingerprint as forensic evidence, Visible Finger marks, Latent Finger marks, ten-digit classification, Methods of Development of latent fingerprints using conventional	SEC: Forensic Science, I year, II Semester	Forensic Chemistry

		methods–Powdering (Black and grey, fluorescent and magnetic)		
	Practical	Comparison of the strengths of HCl and H_2SO_4 by studying the kinetics of hydrolysis of methyl acetate. To study the kinetics of iodine clock reaction.	B.Sc. (Hons.) Chemistry II year, Semester IV	CX: PHYSICAL CHEMISTRY–IV Course Title: Conductance & Chemical Kinetics
	Practical	Systematic qualitative analysis of organic compounds Identification of simple organic compound containing functional groups by IR spectroscopy	B.Sc. (P) Life Sciences III year, Semester VI	Chemistry Lab
	Practical	Measurement of the pH of buffer solutions and comparison of the values with theoretical values. pH metric titration of (i) strong acid with strong base	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Practical	Phenolphthalein test for trap cases. Development of fingerprint through conventional powder method. Development of fingerprint through chemical methods.	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
	Practical	Estimation of Sodium carbonate using HCl by acid base titration. Estimation of carbonate and hydroxide present together in a mixture. Estimation of carbonate and bicarbonate present together in a mixture.	B.Sc. (P) Life Sciences, I year, II Semester	CHEMISTRY - II Chemical Bonding and Elements in Biological System
MAY	**Theory**	**Chemical energetics** Review of laws of thermodynamics, important principles and definitions of thermochemistry, concept of standard state and standard enthalpies of formations, enthalpy of neutralization, integral and differential enthalpies of solution and dilution, calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data, Statement of third law of thermodynamics and calculation of absolute entropies of substances. **Nanomaterials of Biological importance** Overview of nanomaterials, classification, properties, role of size, methods of synthesis (Chemical methods: chemical reduction, coprecipitation, sol-gel, microemulsions or reverse micelles, solvothermal synthesis, Green or biological methods using bacteria, Fungi, etc, Plants based methods using tea leaves, cinnamon bark, etc).	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Assignment	Assignment 1	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Theory	Methods of development of latent fingerprint using chemical method (iodine fuming, silver nitrate, Ninhydrin, Vacuum metal deposition), Automated Fingerprint identification system (AFIS), Poroscopy and Edgescopy **Forensic Chemistry** Scope & significance of Forensic Chemistry, Types of cases/exhibits received for analysis. Trap Cases: Collection, and Preliminary analysis of evidence in trap cases. Alcoholic Beverages: Types of alcohols, country made liquor, illicit liquor, denatured spirits, Indian made foreign alcoholic and non-alcoholic beverages. Dyes: Scope & Significance of dyes in crime investigation, analysis of ink by TLC and UV visible spectrophotometry. Petroleum products and their adulterations: Chemical composition of various fractions of Petroleum Products, Analysis of petrol, kerosene, diesel.	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
	Assignment	Assignment 1	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
	Practical	To determine the degree of hydrolysis and hydrolysis constant of aniline hydrochloride in aqueous solution. To relate the rate of the reaction between Calcium carbonate and Hydrochloric acid to the amount of carbon dioxide formed and study the effect of change in concentration of reactants and the temperature on rate of the reaction.	B.Sc. (Hons.) Chemistry II year, Semester IV	CX: PHYSICAL CHEMISTRY–IV Course Title: Conductance & Chemical Kinetics

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	Practical	pH metric titration of weak acid with strong base and determination of dissociation constant of a weak acid. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Determination of integral enthalpy (endothermic and exothermic) solution of salts. XRD pattern of nanomaterials and estimation of particle size. (Students can be provided with XRD patterns of known materials and asked to interpret the data.)	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Practical	Identification of Handwriting Individual Characteristics. Study of Disguise in handwriting. TLC of amino acids	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
	Practical	Estimation of free alkali present in different soaps/detergents Estimation of oxalic acid using $KMnO_4$ by redox titration. Estimation of Mohr's salt using $KMnO_4$ by redox titration. Determination of dissolved oxygen in water.	B.Sc. (P) Life Sciences, I year, II Semester	CHEMISTRY - II Chemical Bonding and Elements in Biological System
JUNE	**Theory**	Characterization techniques (UV-Vis, IR, SEM, TEM, XRD), optical properties of gold and silver metallic nanoparticles, concept of surface plasmon resonance, carbon nanotubes, inorganic nanowires, quantum dots & semiconductor nanoparticles, metal-based nanostructures (Iron Oxide & ZnO nanoparticles), polymer-based nanostructures, protein-based Nanostructures, natural and artificial nanomaterials, bionanomaterials and bio-nanocomposites, bioinorganic nanomaterials, DNA and its nanomaterials, biomimetics, self-assembled nanostructures, control of nanoarchitecture. Applications of nanomaterials in drug delivery, tissue engineering, medicine, orthopaedics, bioimaging, dental implants and biosensors.	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Theory	Fire/Arson and Explosives Fire: Introduction to Fire & Arson, origin of fire, Chemistry of Fire, Fire tetrahedron, Firefighting operations, preservation of fire scene, collection of evidences, Seat of fire, cause of fire, motives, Analysis of fire debris, Case studies related to fire and Arson. Explosive and Explosion: Scope & significance of explosive analysis in forensic science, Types of explosives, deflagration and detonation, explosive trains, collection, preservation and forwarding of exhibits, preliminary analysis of explosives. Dos and Don'ts. Case studies related to explosives. Drugs of abuse: Classification, including designer drugs. Ill effects of drugs of abuse, Preliminary and conformatory tests.	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
	Practical	Synthesis of silver nanoparticles (AgNPs) by chemical reduction method and their spectroscopic characterization using UV-visible spectrophotometer. Green synthesis of silver nanoparticles (AgNPs) using soluble starch or cinnamon bark and their characterization using UV-visible spectroscopy. Phytochemicals mediated synthesis of gold nanoparticles (AuNPs) using tea leaves and to study the effect of size on color of gold nanoparticles. Preparation of magnetic nanoparticles (MNPs) of Fe3O4 using green tea leaf extract. Synthesis of pure ZnO and Cu-doped ZnO nanoparticles by precipitation method and its characterization using UV-visible spectroscopy.	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Practical	To check the alcohol presence in different liquor. Revision	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
	Practical	Estimation of Fe (II) ions by titrating it with $K_2Cr_2O_7$ using internal and external indicators. Estimation of Cu (II) ions iodometrically using $Na_2S_2O_3$	B.Sc. (P) Life Sciences, I year, II Semester	CHEMISTRY - II Chemical Bonding and Elements in Biological System

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		Paper Chromatographic separation of mixture of metal ions a. Cu^{2+}, Cd^{2+} b. Ni^{2+}, Co^{2+}. Revision		
	Test	Test 1	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Test	Test 1	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
JULY	**Theory**	Revision of Syllabus	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Theory	Revision of Syllabus	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
	Practical	Revision	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Practical	Revision	SEC: Forensic Science, I year, II Semester	Forensic Chemistry
	Practical	Revision	B.Sc. (P) Life Sciences, I year, II Semester	CHEMISTRY - II Chemical Bonding and Elements in Biological System

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SEMESTER WISE TEACHING PLAN-2022-2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Rangarajan T. M.

Department: Chemistry **Semester: II/IV/VI**

Month		Topic	Course	Paper
January	**Theory:**	Polynuclear Hydrocarbons Introduction, Classification,Structure, Nomenclature and uses. Aromaticity of polynuclear hydrocarbons, structure elucidation of Naphthalene and general methods of preparation of naphthalene, phenanthrene and anthracene(including Haworth method,Friedel Craft acylation, Diels Alder reaction,Elbs reaction and Pschorr Synthesis).Relative reactivity of naphthalene, phenanthrene and anthracene in comparison to benzene. Properties: Physical properties, discussion on the following reaction (with mechanism) for Naphthalene, Anthracene and Phenanthrene:	B. Sc. (H)-Chemistry, II-Year, Semester-IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Theory:	Hair preparation: Structure of hair, classification of hair, Hair dye- classification – temporary, semipermanent, demi permanent, permanent, formulation, hair sprays, shampoo	B. Sc. (P)-Life Science, III-Year, Semester-VI	CHEMISTRY –SEC-10 Course Title: Chemistry of Cosmetics and Perfumes
	Practicals:	Detection of extra elements (Known) Detection of extra elements (Unknown) Preparation of tetraamminecopper (II) sulphate complex and measurement of their conductivity:	B. Sc. (P)-Life Science, III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practicals:	To carryout market survey of potent pesticides with details as follows: a) Name of pesticide b) Chemical name, class and structure of pesticide c) Type of formulation available and Manufacturer's name d) Useful information on label of packaging regarding: Toxicity, LD50 ("Lethal Dose, 50%"), Side effects and Antidotes.	B. Sc. (H)-Chemistry, II-Year, Semester-IV-Batch-I	CHEMISTRY –SEC-11 Course Title: Pesticide Chemistry
	Tutorials:			
February	**Theory:**	Addition reactions, Oxidation, Electrophilic substitution- Friedel Craft	B. Sc. (H)-Chemistry,	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III

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		reaction, Chloromethylation, Halogenation, Formylation, Nitration and sulphonation. Reduction reaction and Diels Alder reaction. Terpenes: Introduction, Occurrence, Uses, classification, isoprene and special isoprene rule; general methods of structure elucidation including distinction between isopropylidene and isopropenyl group, Elucidation of structure.	II-Year, Semester-IV	Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Theory:	types of shampoo, conditioners. Colored preparation: Nail preparation Structure of nail,	B. Sc. (P)-Life Science, III-Year, Semester-VI	CHEMISTRY –SEC-10 Course Title: Chemistry of Cosmetics and Perfumes
	Practicals:	Preparation of potassium trioxalatoferrate (III) trihydrate complex and measurement of their conductivity: Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation)	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		To calculate acidity in given sample of pesticide formulations as per BIS specifications. Presentation: on market survey.	B. Sc. (H)-Chemistry, II-Year, Semester-IV-Batch-I	CHEMISTRY –SEC-11 Course Title: Pesticide Chemistry
	Tutorials:			
March	**Theory:**	Synthesis and industrial applicationof Citral. Alkaloids Introduction, Natural occurrence, Classification, Uses, general structural features, general methods for structure elucidation including Hoffmann's exhaustive methylation and Emde's method. Structure elucidation, synthesis and physiological action of Nicotine.	B. Sc. (H)-Chemistry, II-Year, Semester-IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Theory:	Nail lacquers, Nail polish remover Lipsticks. Personal hygiene products: Antiperspirants and deodorants.	B. Sc. (P)-Life Science, III-Year, Semester-VI	CHEMISTRY –SEC-10 Course Title: Chemistry of Cosmetics and Perfumes
	Practicals:	Separation of mixtures of two ions by paper chromatography and measurement of Rf value in	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear

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		each case: (Fe3+, Al3+ and Cr3+) Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation)		Hydrocarbons and UV, IR Spectroscopy
		To carryout market survey of potent botanical pesticides with details as follows: a) Botanical name and family; b) Chemical name (active ingredient) and structure of active ingredient; c) Type of formulation available and Manufacturer's name; d) Useful information on label of packaging regarding: Toxicity, LD50 ("Lethal Dose, 50%"), Side effects and Antidotes. Presentation on market survey.	B. Sc. (H)-Chemistry, II-Year, Semester-IV-Batch-I	CHEMISTRY –SEC-11 Course Title: Pesticide Chemistry
	Tutorials:			
	Assignment			
Apirl	**Theory:**	Quinoline and isoquinoline, (Skraup synthesis, Friedlander's synthesis, Knorr quinoline synthesis, Doebner-Miller synthesis, Bischler-Napieralski reaction, Pictet-Spengler reaction, Pomeranz-Fritsch reaction) Quinoline and Isoquinoline: Electrophilic substitution-Nitration, sulphonation, halogenation, Formylation, acylation, mercuration and carboxylation. Oxidation,Reduction, Addition, Reactions showing acidic /basic character.Reaction with diazonium salts, Ring opening, Ring expansion and Nucleophilic substitution reaction wherever applicable should be discussed.	B. Sc. (H)-Chemistry, II-Year, Semester-IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Theory:	oral hygiene products, flavours and essential oils.	B. Sc. (P)-Life Science, III-Year, Semester-VI	CHEMISTRY –SEC-10 Course Title: Chemistry of Cosmetics and Perfumes
	Practicals:	Systematic qualitative analysis of organic compounds possessing monofunctional groups:	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear

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		amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation)		Hydrocarbons and UV, IR Spectroscopy
		To calculate alkalinity in given sample of pesticide formulations as per BIS specifications. Presentation on market survey.	B. Sc. (H)-Chemistry, II-Year, Semester-IV-Batch-I	CHEMISTRY –SEC-11 Course Title: Pesticide Chemistry
	Tutorials:	NA	NA	NA
	Test			

Month		Topic	Course	Paper
March/April	**Theory:**	Reactions: Nucleophilic addition, nucleophilic addition-elimination reaction including reaction with HCN, ROH, $NaHSO_3$, NH_2-G derivatives. Iodoform test, Aldol condensation and its biological application,	B. Sc. (H)- I-Year, Semester-II, Generic Elective (GE)	CHEMISTRY- GE-5 Course Title: Chemistry of Oxygen containing Functional Groups and their Applications to Biology
	Practicals:	Benzoylation of one of the following amines (aniline, *o*-, *m*-, *p*-toluidines and *o*-, *m*-, *p*-anisidine) Oxime of aldehydes and ketones	B. Sc. (H)- I-Year, Semester-II, Generic Elective (GE)	CHEMISTRY- GE-5 Course Title: Chemistry of Oxygen containing Functional Groups and their Applications to Biology.
	Practicals:	UNIT- I Participation in Physical Activity • Fit India Protocol, Physical Activity, Health and Fitness • Indicators of Fitness Practical/Practice • Aerobic Work Out/ Physical Activity (Walking) • Yoga - Asanas (Lying, Sitting and Standing positions) and Pranayama • Cardiovascular Testing by 12min/9 min Cooper Run/Walk test	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	VALUE ADDITION COURSES (Vacs) UNDER UGCF-2022- **Fit India**
	Practicals:	Phenolphthalein test for trap cases. Development of fingerprint through conventional powder method.	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	Skill Enhancement Courses (SECs) Under UGCF-2022- **Forensic Chemistry**
	Tutorials:			
May	**Theory:**	Cannizzaro's reaction, Wittig reaction, Benzoin condensation, Clemmensen reduction, Wolff Kishner reduction,	B. Sc. (H)- I-Year, Semester-II, Generic Elective (GE)	CHEMISTRY- GE-5 Course Title: Chemistry of Oxygen containing Functional Groups and their Applications to Biology

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	Practicals:	2,4-Dinitrophenyl-hydrazone of aldehydes and ketones Alkaline hydrolysis of amide/ester.	B. Sc. (H)- I-Year, Semester-II, Generic Elective (GE)	CHEMISTRY- GE-5 Course Title: Chemistry of Oxygen containing Functional Groups and their Applications to Biology.
		UNIT- II Health Related Fitness and their Components • Muscular Strength and Endurance • Body Composition and Flexibility Practica I/Practice • Flexibility Training: Back Saver Sit and Reach test • Muscular Strength Training: Curl Ups / Standing Broad Jump/ Vertical Jump/ Plyometric • Endurance Training: 1 Mile RockPort Test or 12 /9 minute Cooper run/walk test. • Ideal Body Weight, Body Mass Index (BMI), Waist-Hip Ratio, Waist-Height Ratio (Data of at least 10 persons to be collected)	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	VALUE ADDITION COURSES (Vacs) UNDER UGCF-2022- **Fit India**
		Development of fingerprint through chemical methods	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	Skill Enhancement Courses (SECs) Under UGCF-2022- **Forensic Chemistry**
	Tutorials:			
June	**Theory:**	Meerwein-Pondorff Verley reduction, enzyme-catalyzed additions to α,β-unsaturated carbonyl compounds.	B. Sc. (H)- I-Year, Semester-II, Generic Elective (GE)	CHEMISTRY- GE-5 Course Title: Chemistry of Oxygen containing Functional Groups and their Applications to Biology
	Practicals:	Aldol condensation using green method Identification of functional group for monofunctional organic compounds (Alcohols, phenols, aldehydes, ketones, carboxylic acids).	B. Sc. (H)- I-Year, Semester-II, Generic Elective (GE)	CHEMISTRY- GE-5 Course Title: Chemistry of Oxygen containing Functional Groups and their Applications to Biology.
		UNIT- Ill Nutrition and Fitness • Healthy Eating Plate • Balanced Diet • Caloric Content of Food Practical/Practice • Preparing Daily Diet and Calorie Chart • Aerobic Work Out/ Physical Activity (Walking) • Assessment of Physical Activity with the Calorie intake. • Asanas for digestive system excretory system	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	VALUE ADDITION COURSES (Vacs) UNDER UGCF-2022- **Fit India**
		Identification of Handwriting Individual Characteristics.	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	Skill Enhancement Courses (SECs) Under UGCF-2022- **Forensic Chemistry**

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		To check the alcohol presence in different liquor		
	Tutorials:			
	Assignment			
July	**Theory:**	relative reactivities of acid derivatives towards nucleophiles, activation of carboxylate ions for nucleophilic acyl substitution reactions in biological systems, Reformatsky reaction, Perkin condensation.	B. Sc. (H)- I-Year, Semester-II, Generic Elective (GE)	CHEMISTRY- GE-5 Course Title: Chemistry of Oxygen containing Functional Groups and their Applications to Biology
	Practicals:	Benzoin condensation using Thiamine Hydrochloride as a catalyst. Identification of functional group for monofunctional organic compounds (Alcohols, phenols, aldehydes, ketones, carboxylic acids).	B. Sc. (H)- I-Year, Semester-II, Generic Elective (GE)	CHEMISTRY- GE-5 Course Title: Chemistry of Oxygen containing Functional Groups and their Applications to Biology.
		UNIT- IV Sports Physiology and Psychology • Depression, Anxiety and Stress Scale (DASS) • Rosenberg Self Esteem Scale Practical/Practice • Skills learning and Participation in sports • Group Games/ Relays/ Minor Games • Meditative Asanas and Pranayama • Fitness component testing (as per Fit India Protocol and Norms) and Analysis of Results • Data of at least 10 persons to be collected on DASS and self-esteem scale	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	VALUE ADDITION COURSES (Vacs) UNDER UGCF-2022- **Fit India**
		Study of Disguise in handwriting. TLC of amino acids	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	Skill Enhancement Courses (SECs) Under UGCF-2022- **Forensic Chemistry**
	Tutorials:	NA	NA	NA
	Test			

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Name of the Faculty: Dr. Chandra Sekhar Tekuri **Department: Chemistry**

Semester: II & VI

Month		**Topics**	**Course**	**Paper Code/Name**
January	**Theory**	1. Structure elucidation of naphthalene, preparation and properties of naphthalene and anthracene. Preparation and Properties of the following compounds with reference to electrophilic and nucleophilic substitution: furan, pyrrole, thiophene, and pyridine.	B. Sc. (P) Life Sciences III Year, Semester VI	: CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Assignment	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
February	**Theory**	2. Preparation: Claisen ester condensation, Keto-enol tautomerism. Reactions: Synthetic uses of ethylacetoacetate (preparation of non-heteromolecules having up to 6 carbons) 3. UV-Visible and infrared spectroscopy and their application to simple organic molecules. Electromagnetic radiations and their properties; double bond equivalence and hydrogen deficiency.	B. Sc. (P) Life Sciences III Year, Semester VI	: CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy

	Assignment	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Test	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
March	**Theory**	4. double bond equivalence and hydrogen deficiency. UV-Visible spectroscopy (electronic spectroscopy): General electronic transitions, λmax &εmax, chromophores & auxochromes, bathochromic & hypsochromic shifts. Application of Woodward rules for calculation of λmax for the following systems: conjugated dienes - alicyclic, homoannular and heteroannular; α,β-unsaturated aldehydes and ketones, charge transfer complex	B. Sc. (P) Life Sciences III Year, Semester VI	: CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practicals	5. Acetylation of any one of the following compounds: amines (aniline, o-, m-, ptoluidines and o-, m-, p-anisidine) and phenols (β-naphthol, salicylic acid) by any one method: i. Using conventional method ii. Using green approach	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): Haloalkanes, Arenes, Haloarenes, Alcohols, Phenols, Ethers And Epoxides
		6. Oxime of aldehydes and ketones	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	Ge 13: Chemistry: Chemistry of Oxygen containing Functional Groups and their

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				Applications to Biology
		7. Development of fingerprint through conventional powder method.	B. Sc. (P) Life Sciences & B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY - SEC-5 Course Title: Chemical Aspects of Forensic Science
April	**Theory**	7. Infrared (IR) Spectroscopy: Infrared radiation and types of molecular vibrations, significance of functional group & fingerprint region. IR spectra of alkanes, alkenes, aromatic hydrocarbons (effect of conjugation and resonance on IR absorptions), simple alcohols (inter and intramolecular hydrogen bonding and IR absorptions),	B. Sc. (P) Life Sciences III Year, Semester VI	: CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practicals	8. Benzolyation of one of the following amines (aniline, o-, m-, p-toluidines and o, m-, p-anisidine) or one of the following phenols (β-naphthol, resorcinol, pcresol) by Schotten-Baumann reaction. 9. Bromination of acetanilide/aniline/phenol by anyone of the following: (a) Green method b) Conventional method	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): Haloalkanes, Arenes, Haloarenes, Alcohols, Phenols, Ethers And Epoxides
		10. 2,4-Dinitrophenylhydrazone of aldehydes and ketones 3. Aldol condensation using green method.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	Ge 13: Chemistry: Chemistry of Oxygen containing Functional Groups and their Applications to Biology

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		11. Development of fingerprint through chemical methods. 12. To check the alcohol presence in different liquor.	B. Sc. (P) Life Sciences & B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY - SEC-5 Course Title: Chemical Aspects of Forensic Science
May	**Practicals**	13. Nitration of nitrobenzene/chlorobenzene/phenols. 5. Haloform reaction of ethanol.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): Haloalkanes, Arenes, Haloarenes, Alcohols, Phenols, Ethers And Epoxides
		14. Benzoin condensation using Thiamine Hydrochloride as a catalyst. 15. Alkaline hydrolysis of amide/ester.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	Ge 13: Chemistry: Chemistry of Oxygen containing Functional Groups and their Applications to Biology
		16. Phenolphatelin test for trap cases. 17. Identification of Handwriting Individual Characteristics.	B. Sc. (P) Life Sciences & B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY - SEC-5 Course Title: Chemical Aspects of Forensic Science
June	**Practicals**	18. Estimation of the given sample of phenol/amine by: a) Acetylation b) Bromate-Bromide method 19. Functional group tests for alcohols, phenols, carboxylic acids, phenols, carbonyl compounds, esters	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): Haloalkanes, Arenes, Haloarenes, Alcohols, Phenols, Ethers And Epoxides

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		20. Benzoylation of one of the following amines (aniline, o-, m-, p-toluidines and o-, m-, panisidine) or one of the following phenols (β-naphthol, resorcinol, p-cresol) by SchottenBaumann reaction. 21. Identification of functional group for monofunctional organic compounds (Alcohols, phenols, aldehydes, ketones, carboxylic acids).	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	Ge 13: Chemistry: Chemistry of Oxygen containing Functional Groups and their Applications to Biology
		22. Study of Disguise in handwriting. 23. TLC of amino acids	B. Sc. (P) Life Sciences & B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY - SEC-5 Course Title: Chemical Aspects of Forensic Science
July	**Practicals**	24. Oxidation of benzyl alcohol to benzoic acid	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): Haloalkanes, Arenes, Haloarenes, Alcohols, Phenols, Ethers And Epoxides
		25. Identification of functional group for monofunctional organic compounds (Alcohols, phenols, aldehydes, ketones, carboxylic acids).	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	Ge 13: Chemistry: Chemistry of Oxygen containing Functional Groups and their Applications to Biology
		Revision	B. Sc. (P) Life Sciences & B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY - SEC-5 Course Title: Chemical Aspects of Forensic Science

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Name of the Faculty: Dr. RAMANAIAH SEELLA **Department: CHEMISTRY**
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
February	**Theory:**	**Chemical Kinetics:** Concept of Reaction Rates, Factor affecting the reaction rates	B.Sc. Life sciences, II Year, Semester IV (Batch-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Chemical Kinetics: Concept of Reaction Rates, Factor affecting the reaction rates	B.Sc. Life sciences, II Year, Semester IV (Batch-B)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals:	**Basic Analytical Chemistry** 5. Paper chromatographic separation of mixture of metal ion (Ni2+ and Co2+). 6. To study the use of phenolphthalein in trap cases.	B.Sc. (P) Life Sciences Semester IV	SEC: Basic Analytical Chemistry
March	**Theory:**	**Chemical Kinetics:** Order and molecularity of a reaction, Derivations of Integrated rate equations of zero, first & Secondorder rate reactions (both equal & unequal reactants concentrations), Half-life of reactions, general methods for determination of reaction rates, Concept of activation energy. Arrhenius equation and activation energy determination from Arrhenius equation	B.Sc. Life sciences, II Year, Semester IV (Batch-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Chemical Kinetics: Order and molecularity of a reaction, Derivations of Integrated rate equations of zero, first & Secondorder rate reactions (both equal & unequal reactants concentrations), Half-life of reactions, general methods for determination of reaction rates, Concept of activation energy. Arrhenius equation and activation energy determination from Arrhenius equation	B.Sc. Life sciences, II Year, Semester IV (Batch-B)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

	Practicals:	**Thermochemistry**: 1. Determination of heat capacity of a calorimeter for different volumes using (i) change of enthalpy data of a known system and (ii) heat gained equal to heat lost by cold water and hot water respectively **Thermochemistry**: (a) Determination of heat capacity of a calorimeter for different volumes using change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution of sulphuric acid or enthalpy of neutralization).	B.Sc.(H) CHEMISTRY I year Semester II(Batch 1) B.Sc.(H) CHEMISTRY I year Semester II(Batch 2)	DSC-6: Thermodynamics and its Applications DSC-6: Thermodynamics and its Applications
	Practicals:	**Basic Analytical Chemistry:** 3. Determination of pH, acidity and alkalinity of a water sample. 4.Spectrophotometric determination of Iron in vitamin / dietary tablets. 11. Spectrophotometric identification and determination of caffeine and benzoic acid in soft drink.	B.Sc. (P) Life Sciences Semester IV	SEC: Basic Analytical Chemistry
	Practicals;	**Chemical Energetics, Ionic Equilibria and Nanomaterials:** Preparation of buffer solutions: (i) Sodium acetate-acetic acid or (ii) Ammonium chloride-ammonium acetate	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Assignment:		B.Sc. Life sciences, II Year, Semester IV (Batch-A) & (Batch-B)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Test:		B.Sc. Life sciences, II-Year, Semester IV (Batch-A) & (Batch-B)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

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April	**Theory:**	**Solids:** Unit Cells, Crystal System, Law of rational indices, Miller indices, X-Ray diffraction by crystals, Bragg's law, Structure of NaCl, CsCl & KCl, Defects in Crystals, Glasses and liquid crystals	B.Sc. Life sciences, II-Year, Semester IV (Batch-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Solids: Unit Cells, Crystal System, Law of rational indices, Miller indices, X-Ray diffraction by crystals, Bragg's law, Structure of NaCl, CsCl & KCl, Defects in Crystals, Glasses and liquid crystals	B.Sc. Life sciences, II-Year, Semester IV (Batch-B)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Liquids: Surface tension and its determination using stalagmometer, Viscosity of liquid and its determination coefficient of viscosity using Ostwald viscometer, effect of temperature on surface tension and coefficient of viscosity	B.Sc. Life sciences, II-Year, Semester IV (Batch-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Liquids: Surface tension and its determination using stalagmometer, Viscosity of liquid and its determination coefficient of viscosity using Ostwald viscometer, effect of temperature on surface tension and coefficient of viscosity	B.Sc. Life sciences, II-Year, Semester IV (Batch-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals:	**THERMOCHEMISTRY:** (b) Determination of heat capacity of a calorimeter for different volumes using heat gained equal to heat lost by cold water and hot water. (c) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	B.Sc.(H) CHEMISTRY I year Semester II(Batch 1)	DSC-6: Thermodynamics and its Applications
		THERMOCHEMISTRY: (b) Determination of heat capacity of a calorimeter for different volumes using heat gained equal to heat lost by cold water and hot water. (c) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	B.Sc.(H) CHEMISTRY I year Semester II(Batch 2)	DSC-6: Thermodynamics and its Applications
	Practicals:	**Basic Analytical Chemistry:** 1. Determination of pH of soil samples. 2. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	B.Sc. (Prog) Life Sciences Semester IV	**SEC: Basic Analytical Chemistry**

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	Practicals:	**Chemical Energetics, Ionic Equilibria and Nanomaterials,** Measurement of the pH of buffer solutions and comparison of the values with theoretical values. pH metric titration of (i) strong acid with strong base	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Practicals:	UNIT- I Participation in Physical Activity • Fit India Protocol, Physical Activity, Health and Fitness Indicators of Fitness Practical/Practice • Aerobic Work Out/ Physical Activity (Walking) • Yoga Asanas (Lying, Sitting and Standing positions) and Pranayama • Cardiovascular Testing by 12min/9 min Cooper Run/Walk test	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	VALUE ADDITION COURSES (Vacs) UNDER UGCF-2022-Fit India
May	**Practicals:**	**THERMOCHEMISTRY** (d) Determination of the enthalpy of ionization o ethanoic acid. (e) Determination of integral enthalpy solution o endothermic salts. (f) Determination of integral enthalpy solution o exothermic salts. **THERMOCHEMISTRY** (d) Determination of the enthalpy of ionization o ethanoic acid. (e) Determination of integral enthalpy solution o endothermic salts. (f) Determination of integral enthalpy solution of exothermic salts.	B.Sc.(H) CHEMISTRY I year Semester II(Batch 1) B.Sc.(H) CHEMISTRY I year Semester II(Batch 2)	DSC-6: Thermodynamics and its Applications DSC-6: Thermodynamics and its Applications
	Practicals:	**Chemical Energetics, Ionic Equilibria and Nanomaterials** pH metric titration of weak acid with strong base and determination of dissociation constant of a weak acid. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Determination of integral enthalpy (endothermic and exothermic) solution of salts. XRD pattern of nanomaterials and estimation of particle size. (Students can be provided with XRD patterns of known materials and asked to interpret the data.)	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)

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June	**Practicals:**	**THERMOCHEMISTRY:** (g) Determination of basicity of a diprotic acid by the thermochemical method in terms of the changes of temperatures observed in the graph of temperature versus time for different additions of a base. Also calculate the enthalpy of neutralization of the first step. (h) Determination of enthalpy of hydration of salt. (i) Study of the solubility of benzoic acid in water and determination of ΔH. **THERMOCHEMISTRY:** (g) Determination of basicity of a diprotic acid by the thermochemical method in terms of the changes of temperatures observed in the graph of temperature versus time for different additions of a base. Also calculate the enthalpy of neutralization of the first step. (h) Determination of enthalpy of hydration of salt. (i) Study of the solubility of benzoic acid in water and determination of ΔH.	B.Sc.(H) CHEMISTRY I year Semester II(Batch 1) B.Sc.(H) CHEMISTRY I year Semester II(Batch 2)	DSC-6: Thermodynamics and its Applications DSC-6: Thermodynamics and its Applications
	Practicals:	**Chemical Energetics, Ionic Equilibria and Nanomaterials** Synthesis of silver nanoparticles (AgNPs) by chemical reduction method and their spectroscopic characterization using UV-visible spectrophotometer. Green synthesis of silver nanoparticles (AgNPs) using soluble starch or cinnamon bark and their characterization using UV-visible spectroscopy. Phytochemicals mediated synthesis of gold nanoparticles (AuNPs) using tea leaves and to study the effect of size on color of gold nanoparticles. Preparation of magnetic nanoparticles (MNPs) of Fe3O4 using green tea leaf extract. Synthesis of pure ZnO and Cu-doped ZnO nanoparticles by precipitation method and its characterization using UV-visible spectroscopy.	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Practicals:	UNIT- Ill Nutrition and Fitness • Healthy Eating Plate • Balanced Diet • Caloric Content of Food Practical/Practice • Preparing Daily Diet and Calorie Chart • Aerobic Work Out/ Physical Activity (Walking) • Assessment of Physical Activity with the Calorie intake. • Asanas for digestive system excretory system	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	VALUE ADDITION COURSES (Vacs) UNDER UGCF-2022- Fit India
July	**Practicals :**	**REVISION EXERCISES ALONG WITH VIVA** B.Sc.(H) CHEMISTRY I year (Batch 2)	B.Sc.(H) CHEMISTRY I year (Batch 1) B.Sc.(H) CHEMISTRY I year (Batch 2)	DSC-6: Thermodynamics and its Applications DSC-6: Thermodynamics and its Applications

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	Practicals :	Revision Exercises along with Viva	B.Sc. (H) Biological Science I year, II Semester	Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)
	Practicals:	UNIT- IV Sports Physiology and Psychology • Depression, Anxiety and Stress Scale (DASS) • Rosenberg Self Esteem Scale Practical/Practice • Skills learning and Participation in sports • Group Games/ Relays/ Minor Games • Meditative Asanas and Pranayama • Fitness component testing (as per Fit India Protocol and Norms) and Analysis of Results • Data of at least 10 persons to be collected on DASS and self-esteem scale	B. Sc. (H) and B. Sc. (P)-I-Year, Semester-II	VALUE ADDITION COURSES (Vacs) UNDER UGCF-2022-Fit India

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Y.Veera Manohara Reddy Department: CHEMISTRYSemester: II/IV/VI

Month		Topics	Course	Paper Code/Name
February	**Theory:**	Nitrogen containing functional groups: Diazonium Salts: Preparation and synthetic applications of diazonium salts including preparation of arenes, haloarenes, phenols, cyano and nitro compounds. Coupling reactions of diazonium salts(preparation of azo dyes)	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
	Practicals:	Preparation of potassium trioxalatoferrate (III) trihydrate complex and measurement of their conductivity: Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation)	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY – DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		Preparation of enamels. Preparation of face cream, Preparation of nail polish and nail polish remover.	B.Sc. Life Science (prog.) III Year, Semester VI	CHEMISTRY OF COSMETICS & PERFUMES Practical
	Theory:	Face Preparation: Structure of skin, Face powder.	B.Sc. Life sciences, III Year, Semester VI (Batch-B)	CHEMISTRY – SEC-10 Course Title: Chemistry of Cosmetics and Perfumes
March	**Theory:**	Nitro compounds (Aliphatic and Aromatic):Nomenclature, classification and general methods of preparation: from alkyl halides, alkanes, oxidation of amines and oximes and diazonium salts. Properties: Physical properties, discussion on the following reactions with mechanism:	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III

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	Practicals:	Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation)	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		Preparation of talcum powder. Preparation of soap.	B.Sc. Life Science (prog.) III Year, Semester VI	CHEMISTRY OF COSMETICS & PERFUMES Practical
		Preparation of standard solutions. Estimation of Sodium carbonate using HCl by acid-base titration. Estimation of carbonate and hydroxide present together in a mixture.	B.Sc. Life Science (prog.) I Year, Semester II	DSC-5 Chemistry-II Chemical Bonding and Elements in Biological System
	Assignment:	Written Assignment questions to solve	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
	Test:	Class test-I	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
	Theory:	Compact powder, Talcum powder.	B.Sc. Life sciences, III Year, Semester VI (Batch-B)	CHEMISTRY – SEC-10 Course Title: Chemistry of Cosmetics and Perfumes
	Assignment:	Written Assignment questions to solve	B.Sc. Life Science (prog.) III Year, Semester VI	CHEMISTRY –SEC-10 Course Title: Chemistry of Cosmetics and Perfumes
	Test:	Class Test	B.Sc. Life Science (prog.) III Year, Semester VI (Batch-B)	CHEMISTRY – SEC-10 Course Title: Chemistry of Cosmetics and Perfumes
	Theory:	Unit-1 Reaction with alkali and its synthetic applications, condensation reaction, Mannich reaction, Hydrolysis,Reduction-electrolytic reduction, reduction in acidic, basic and neutral medium (for aromatic compounds),reaction with nitrous acid, Electrophilic substitution-Halogenation, nitration and	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III

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		sulphonation reaction, and Nucleophilic substitution on the ring.		
	Practicals:	Acetylation of any one of the following compounds: amines (aniline, o-, m-, ptoluidines and o-, m-, p-anisidine) and phenols (β-naphthol, salicylic acid) by any one method: i. Using conventional method ii. Using green approach	SEMESTER – II B.SC. (Hons.) I Year, Semester II (Batch-A)	Chemistry Dsc-5: Chemistry – II (DSC-5): Organic Chemistry-II
April	**Theory:**	Introduction, importance, classification and nomenclature of heterocyclic compounds (containing only one hetero atom). General discussion on the following aspects of heterocyclic compounds: Structure, aromaticity in 5-membered and 6-membered rings containing one heteroatom; Basicity and relative reactivity towards electrophilic substitution reactions(amongst five membered and six membered rings) General methods of synthesis for: Furan, Pyrrole (Paal-Knorr synthesis, Knorr pyrrole synthesis, Hantzsch synthesis), Thiophene, Pyridine (Hantzsch synthesis), Indole(Fischer indole synthesis and Madelung synthesis, reduction of o-nitrobenzaldehyde) Physical properties, discussion on the following reaction (with mechanism) for Furan, Pyrrole, thiophene, Pyridine, Indole, Quinoline and Isoquinoline: Electrophilic substitution- Nitration, sulphonation, halogenation, Formylation, acylation, mercuration and carboxylation. Oxidation,Reduction, Addition, Reactions showing acidic /basic character.Reaction with diazonium salts, Ring opening, Ring expansion and Nucleophilic substitution reaction wherever applicable should be discussed	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
	Practicals:	Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation)	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy

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	Practicals:	Benzolyation of one of the following amines (aniline, o-, m-, p-toluidines and o, m-, p-anisidine) or one of the following phenols (β-naphthol, resorcinol, pcresol) by Schotten-Baumann reaction	SEMESTER – II B.SC. (Hons.) I Year, Semester II (Batch-A)	Chemistry Dsc-5: Chemistry – II (DSC-5): Organic Chemistry-II
		Preparation of standard solutions. 2. Estimation of Sodium carbonate using HCl by acid base titration. 3. Estimation of carbonate and hydroxide present together in a mixture.	SEMESTER – II B.SC. (life sicences) I Year, Semester II (Batch-A)	Course Code DSC-5: CHEMISTRY - II Course Title: Chemical Bonding and Elements in Biological System
May	**Theory:**	Introduction, Nomenclature and uses. Preparation from the following reactions: Dehydration of amides and aldoximes, substitution reaction in alkyl halides and tosylates, from Grignard reagents and from dehydrogenation of primary amines. Properties: Physical properties, discussion on the following reactions with mechanism: Reaction with Grignard reagent, hydrolysis,addition reaction with HX,NH3,reaction with aqueous ROH, Reduction reactions-catalytic reduction and Stephen's reaction, Condensation reactions-Thorpe Nitrile Condensation. D) Isonitriles: Introduction, Nomenclature and uses. Preparation from the following reactions: Carbylamine reaction, substitution in alkyl halides and dehydrogenation of N-substituted formamides. Properties: Physical properties, discussion on the following reactions with mechanism: Hydrolysis, reduction, addition of– HX, X2 and sulphur, Grignard reaction, oxidation and rearrangement.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
	Practicals:	Estimation of free alkali present in different soaps/detergents 6. Estimation of oxalic acid using KMnO4 by redox titration.	B.Sc. Life sciences, I Year, Semester II (Batch-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Practicals:	Bromination of acetanilide/aniline/phenol by anyone of the following: (a) Green method b) Conventional method	SEMESTER – II B.SC. (Hons.) I Year, Semester II (Batch-A)	Chemistry Dsc-5: Chemistry – II (DSC-5): Organic Chemistry-II
June	**Practicals:**	Nitration of nitrobenzene/chlorobenzene/phenols. 5. Haloform reaction of ethanol	SEMESTER – II B.SC. (Hons.) I Year, Semester II (Batch-A)	Chemistry Dsc-5: Chemistry – II (DSC-5): Organic Chemistry-II
	Practicals:	Estimation of Mohr's salt using KMnO4 by redox titration. 8. Determination of dissolved oxygen in water. 9. Estimation	B.Sc. Life Science (prog.) I Year, Semester II	DSC-5 Chemistry-II Chemical Bonding and Elements in Biological

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		of Fe (II) ions by titrating it with K2Cr2O7 using internal and external indicators		System
July	**Practicals:**	Oxidation of benzyl alcohol to benzoic acid 7. Estimation of the given sample of phenol/amine by: a) Acetylation b) Bromate-Bromide method 8. Functional group tests for alcohols, phenols, carboxylic acids, phenols, carbonyl compounds, esters	B.Sc. Life sciences, I Year, Semester II (Batch-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Practicals:	Estimation of Cu (II) ions iodometrically using Na2S2O3 11. Paper Chromatographic separation of mixture of metal ions a. Cu2+, Cd2+ b. Ni2+, Co2+ . 12. Any suitable experiment (other than the listed ones) based upon neutralisation/redox reactions.	B.Sc. Life Science (prog.) I Year, Semester II	DSC-5 Chemistry-II Chemical Bonding and Elements in Biological System

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Dr. T.VASANTHA **Department: CHEMISTRY**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
February	**Theory:**	**Metallurgy:** A brief discussion of Metallurgy, principles of hydrometallurgy.	B.Sc. CHEMISTRY (Prog) II Year, Semester IV (Batch-A)	SLS CC-IV : INORGANIC CHEMISTRY – General Principles of Metallurgy, Hydrometallurgy
	Practicals:	Semi-micro qualitative analysis of mixtures	B.Sc. CHEMISTRY (Prog.) II Year, Semester IV (Batch-A)	Lab SLS CC IV: INORGANIC CHEMISTRY – Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Theory:	Electrolytic , oxidative refining, Van Arkel-DeBoer process, Electrolytic process, oxidative process, Mond's process	B.Sc. Life sciences, II Year, Semester IV (Batch-A)	SLS CC-IV: INORGANIC CHEMISTRY – Hydrometallurgy
	Practicals:	Detection of extra elements (Known) Detection of extra elements (Unknown) Preparation of tetraamminecopper (II) sulphate complex and measurement of their conductivity:	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practicals:	Estimation of P^H of soil	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI (Batch-A)	TCH DSE-1: Analytical Methods in Chemistry
March	**Theory:**	Brief discussion of Metallurgy, chief mode of occurrence of metals based on standard electrode potentials.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II (Batch-A)	FCH DSC-IV: INORGANIC CHEMISTRY – General Principles of Metallurgy,

	Practicals:	Preparation of potassium trioxalatoferrate (III) trihydrate complex and measurement of their conductivity: Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation)	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Theory:	Hydrometallurgy with reference to cyanide process for silver & gold, Methods of Purification of metals	B.Sc. CHEMISTRY (Hons.) I Year, Semester II (Batch-A)	FCH DSC-IV: INORGANIC CHEMISTRY :Hydrometallurgy
	Theory:	Brief introduction of trace metals, toxic metals, biological systems	B.Sc. Life sciences, I Year, Semester II (Batch-A)	FLS DSC-5: Chemistry II: Chemical Bonding & Elements in Biological system
	Practicals:	Systematic qualitative analysis of identification of Anions, cations	B.Sc. CHEMISTRY (Prog.) II Year, Semester IV (Batch-A)	SLS CC IV: INORGANIC CHEMISTRY – Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Theory:	S and P block elements: Sturcture bonding & their important properties like oxidation/ reduction, acidic/basic nature of the following compounds & their application in industrial & environmental chemistry	B.Sc. Life sciences, II Year, Semester IV (Batch-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals:	Chromatography experiment	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI (Batch-A)	TCH DSE-1: Analytical Methods in Chemistry
April	**Theory:**	Classification of elements in biological system, Geochemical effect on the distribution of metals.	B.Sc. Life sciences, I Year, Semester II (Batch-A)	FLS DSC-5: Chemistry II: Chemical Bonding & Elements in Biological system
	Practical	Separation of mixtures of two ions by paper chromatography and measurement of Rf value in each case: (Fe3+, Al3+ and Cr3+) Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation)	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy

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	Theory:	Hydrides of Nitrogen (NH3,NH2OH,NH2NH2) structures, properties, uses	B.Sc. Life sciences, II Year, Semester IV (Batch-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Theory:	Brief discussion of metals & alloys used in ancien & medieval india.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II (Batch-A)	FCH DSE-5: INORGANIC CHEMISTRY – I
	Practical	Identification of anions, cations & unknown mixture	B.Sc. CHEMISTRY (Prog.) II Year, Semester IV (Batch-A)	Lab SLS CC IV: INORGANIC CHEMISTRY – Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Theory:	S and P block elements: Periodicity in s and p block elements with respect to electronic configuration, atomic and ionic sizes, ionization enthalpy. Electronegativity (Pauling, Muliken, Alred-Rochow scales), Allotropy in C,S and P.	B.Sc., CHEMISTRY (Hons.) I Year, Semester II (Batch-A)	FCH DSEIV:: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Assignment:	General Principles of Metallurgy	B.Sc. CHEMISTRY (Prog) II Year, Semester IV (Batch-A)	SLS CC IV: INORGANIC CHEMISTRY – Metallurgy
	Internal:	Hydrometallurgy	B.Sc. Life sciences, II Year, Semester IV (Batch-A)	SLS CC-IV: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals:	Estimation of calcium and magnesium, verification of Lambert-Beer's law and determination of concentration of a coloured species	B.Sc. Life sciences, I Year, Semester II (Batch-A)	CHEMISTRY – DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practicals:	Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation)	B. Sc. (P)-III-Year, Semester-VI	CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy

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	Practicals:	Determination of coloured species by Ratio method/Job's method	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI (Batch-I)	TCH DSE-1: Analytical Methods in Chemistry
May	**Theory:**	Oxoacids of P,S,Cl Halides & oxohalides of Pcl3, PCl5,SOCl2 & SO2Cl2	B.Sc. Life sciences, I Year, Semester II (Batch-A)	SLS CC IV: INORGANIC CHEMISTRY – Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Theory:	**Elements in Biological System** Metal ions present in biological systems with special reference to Na^{+}, K^{+}, Ca^{2+}, Mg^{2+}, Fe^{2+}, Cu^{2+} and Zn^{2+}, Sodium / K-pump, Role of Ca^{2+} (blood clotting and structural)	B.Sc. Life sciences, I Year, Semester II (Batch-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Theory:	Carbonates, sulphates, alkali & alkaline earth metal compounds, tendency of s-block elements and their properties	B.Sc., CHEMISTRY (Hons.) I Year, Semester II (Batch-A)	FCH DSE IV:: Chemistry of S-Block Elements, States of Matter and Chemical Kinetics
June	**Theory:**	**Unit II: Elements in Biological System** Role of Mg^{2+} in chlorophyll and energy production, Excess and deficiency of some trace metals	B.Sc. Life sciences, I Year, Semester II (Batch-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Theory:	Chemistry of P-block elements	B.Sc., CHEMISTRY (Hons.) I Year, Semester II (Batch-A)	FCH DSE IV:: Chemistry of S-Block Elements, States of Matter and Chemical Kinetics

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July	**Theory:**	Iron and its application in bio-systems, Storage and transport of iron.	B.Sc. Life sciences, I Year, Semester II (Batch-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Theory:	Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity, Dose response relationship curves of metal ions,	B.Sc. Life sciences, I Year, Semester II (Batch-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System

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Name of the Faculty: Dr. K.Murali Mohan Achari **Department: Chemistry**

Semester: II, IV & VI

Month		**Topics**	**Course**	**Paper Code/Name**
February	**Theory**	5. A brief discussion of electronic configuration, oxidation states, colour, 6. spectral and magnetic properties.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	CHEMISTRY – CVIII: INORGANIC CHEMISTRY - III Course Title: Coordination Chemistry
		7. Chief modes of occurrence of metals based on standard electrode potentials. Ellingham diagrams for reduction of metal oxides using carbon as reducing agent	B. Sc. (P) Life Sciences &) II Year, Semester IV	CHEMISTRY –Core Paper-4 Course Title: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals	(i) To separate a mixture of Ni^{2+} & Fe^{2+} by complexation with DMG and extracting the Ni^{2+}-DMG complex in chloroform, and determine its concentration by spectrophotometry. Analysis of soil: (i) Determination of pH of soil. (ii) Total soluble salt	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
		1. Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. The following radicals are suggested: $CO_3$2-, NO_2-, S2-, $SO_3$2-,$SO_4$2-,$S_2O_3$2-, CH_3COO-, F-,Cl-, Br-, I-, NO_3-, $BO_3$3-, $C_2O_4$2-, $PO_4$3-, NH_4+, K+, Pb2+,Cu2+, Cd2+, Bi3+, Sn2+, Sb3+, Fe3+, Al3+, Cr3+, Zn2+, Mn2+, Co2+, Ni2+, Ba2+, Sr2+, Ca2+, Mg2+ 2. Mixtures should preferably contain one interfering anion, or insoluble component (BaSO4, SrSO4,	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV

		PbSO4, CaF2 or Al2O3) or combination of anions e.g. CO32- and SO32-, NO2- and NO3-, Cl-and Br-, Cl and I-, Br- and I-, NO3- and Br-, NO3- and I-. Spot tests		
March	**Theory**	8. Lanthanoid contraction (causes and Zeffects) separation of lanthanoids by ion exchange method	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	CHEMISTRY – CVIII: INORGANIC CHEMISTRY - III Course Title: Coordination Chemistry
		9. Hydrometallurgy with reference to cyanide process for silver and gold, Methods of purification of metals (Al, Pb, Ti, Fe, Cu, Ni, Zn): electrolytic, oxidative refining, van Arkel-De Boer process, Mond's process and Zone Refining. 10. s- and p- block elements Periodicity in s- and p-block elements with respect to electronic configuration, atomic and ionic size, ionization enthalpy, electronegativity (Pauling, Muliken, and Allred-Rochow scales).	B. Sc. (P) Life Sciences &) II Year, Semester IV	CHEMISTRY –Core Paper-4 Course Title: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals	(iii) Estimation of calcium, magnesium (iv) Qualitative detection of nitrate, phosphate	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
		. Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. The following radicals are suggested: $CO_3$2-, NO_2-, S2-, $SO_3$2-,$SO_4$2-,$S_2O_3$2-, CH_3COO-, F-,Cl-, Br-, I-, NO_3-, $BO_3$3-, $C_2O_4$2-, $PO_4$3-, NH_4+, K+, Pb2+,Cu2+, Cd2+, Bi3+, Sn2+, Sb3+, Fe3+, Al3+, Cr3+, Zn2+, Mn2+, Co2+, Ni2+, Ba2+, Sr2+, Ca2+, Mg2+ 2. Mixtures should preferably contain one interfering anion, or insoluble component (BaSO4, SrSO4, PbSO4, CaF2 or Al2O3) or combination of anions e.g. CO32- and SO32-, NO2- and NO3-, Cl-and Br-, Cl and I-, Br- and I-, NO3- and Br-, NO3- and I-. Spot tests	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY – C XIII

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April	**Theory**	6. Inorganic Reaction Mechanism: Introduction to inorganic reaction mechanisms. Concept of reaction pathways, transition state, intermediate and activated complex.Substitution reactions in square planarcomplexes, Trans-effect, theories of trans-effect. Thermodynamic and Kinetic stability (using VBT).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	CHEMISTRY – CVIII: INORGANIC CHEMISTRY - III Course Title: Coordination Chemistry
		6. Allotropy in C, S, and P. Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides), inert pair effect, diagonal relationship and anomalous behaviour of first member of each group. ,compounds of s- and p-block elements , diborane and concept of multicentre bonding. Structure, bonding and their important properties like oxidation/reduction, acidic/basic nature of the following compounds and their applications in industrial and environmental chemistry. Hydrides of nitrogen (NH3, N2H4, N3H, NH2OH) Oxoacids of P, S and Cl, Halides and oxohalides: PCl_3, PCl_5, $SOCl_2$ and SO_2Cl_2	B. Sc. (P) Life Sciences &) II Year, Semester IV	CHEMISTRY –Core Paper-4 Course Title: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		11. Ionic Bonding: General characteristics of ionic bonding, Lattice Enthalpy and Solvation Enthalpy and their relation to stability and solubility of ionic compounds, Born-Lande equation for calculation of Lattice Enthalpy (no derivation),	B. Sc. (P) Life Sciences &) I Year, Semester II	Course Code DSC-5: CHEMISTRY - II Course Title: Chemical Bonding and Elements in Biological System

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	Practicals	Spectrophotometry Verification of Lambert-Beer's law and determination of concentration of a coloured species ($CuSO_4$, $KMnO_4$)	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
		. Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. The following radicals are suggested: CO_3^{2-}, NO_2^-, S^{2-}, SO_3^{2-}, SO_4^{2-}, $S_2O_3^{2-}$, CH_3COO^-, F^-, Cl^-, Br^-, I^-, NO_3^-, BO_3^{3-}, $C_2O_4^{2-}$, PO_4^{3-}, NH_4^+, K^+, Pb^{2+}, Cu^{2+}, Cd^{2+}, Bi^{3+}, Sn^{2+}, Sb^{3+}, Fe^{3+}, Al^{3+}, Cr^{3+}, Zn^{2+}, Mn^{2+}, Co^{2+}, Ni^{2+}, Ba^{2+}, Sr^{2+}, Ca^{2+}, Mg^{2+} 2. Mixtures should preferably contain one interfering anion, or insoluble component ($BaSO_4$, $SrSO_4$, $PbSO_4$, CaF_2 or Al_2O_3) or combination of anions e.g. CO_3^{2-} and SO_3^{2-}, NO_2^- and NO_3^-, Cl^- and Br^-, Cl^- and I^-, Br^- and I^-, NO_3^- and Br^-, NO_3^- and I^-. Spot tests	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
		Estimation of Sodium carbonate using HCl by acid base titration. Estimation of carbonate and hydroxide present together in a mixture. Estimation of carbonate and bicarbonate present together in a mixture.	B.Sc. (P) Life Sciences, I year, II Semester	CHEMISTRY - II Chemical Bonding and Elements in Biological System
May	**Theory**	Born-Haber cycle and its applications, polarizing power and polarizability, Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character. Covalent Bonding: Valence Bond Approach, Hybridization and VSEPR Theory with suitable examples, Concept of resonance and resonating structures in various inorganic and organic compounds,	B. Sc. (P) Life Sciences &) I Year, Semester II	Course Code DSC-5: CHEMISTRY - II Course Title: Chemical Bonding and Elements in Biological System

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	Practicals	Estimation of free alkali present in different soaps/detergents Estimation of oxalic acid using $KMnO_4$ by redox titration. Estimation of Mohr's salt using $KMnO_4$ by redox titration. Determination of dissolved oxygen in water.	B.Sc. (P) Life Sciences, I year, II Semester	CHEMISTRY - II Chemical Bonding and Elements in Biological System
June	**Theory**	Molecular Orbital Approach: Rules for the LCAO method, bonding, nonbonding and antibonding MOs and their characteristics for s-s, s-p and p-p combinations of atomic orbitals, MO treatment of homonuclear diatomic molecules of 1st and 2nd periods (including idea of s-p mixing) and heteronuclear diatomic molecules such as CO, NO and NO+ . Brief introduction to Metallic Bonding, Hydrogen Bonding, van der Waals forces	B. Sc. (P) Life Sciences &) I Year, Semester II	Course Code DSC-5: CHEMISTRY - II Course Title: Chemical Bonding and Elements in Biological System
	Practicals	Estimation of Fe (II) ions by titrating it with $K_2Cr_2O_7$ using internal and external indicators. Estimation of Cu (II) ions iodometrically using $Na_2S_2O_3$ Paper Chromatographic separation of mixture of metal ions a. Cu^{2+}, Cd^{2+} b. Ni^{2+}, Co^{2+}. Revision	B.Sc. (P) Life Sciences, I year, II Semester	CHEMISTRY - II Chemical Bonding and Elements in Biological System
July		Revision	B. Sc. (P) Life Sciences &) I Year, Semester II	Course Code DSC-5: CHEMISTRY - II Course Title: Chemical Bonding and Elements in Biological System
	Practicals	Revision	B.Sc. (P) Life Sciences, I year, II Semester	CHEMISTRY - II Chemical Bonding and Elements in Biological System

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. RAMAVATH JANRAJ NAIK Department:CHEMISTRY
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
February	**Theory:**	**Lanthanoids and Actinoids:** A brief discussion of electronic configuration, oxidation states, colour, spectral and magnetic properties.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Section-A)	SCH CC VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
March	**Theory:**	Lanthanoid contraction (causes and effects) separation of lanthanoids by ion exchange method. **Inorganic Reaction Mechanism**: Introduction to inorganic reaction mechanisms. Concept of reaction pathways, transition state, intermediate and activated complex	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Section-A)	SCH CC VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals:	Estimation of copper as CuSCN Estimation of iron as Fe_2O_3 by precipitating iron as $Fe(OH)_3$	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-II)	SCH CC VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Assignment:		B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Section-A)	SCH CC VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Test:		B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Section-A)	SCH CC VIII: INORGANIC CHEMISTRY – III Coordination Chemistry

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	Theory:	Ellingham Diagrams for reduction of metal oxides using carbon as reducing agent S and P block elements: Periodicity in s and p block elements with respect to electronic configuration, atomic and ionic sizes, ionization enthalpy. Electronegativity (Pauling, Muliken, Alred-Rochow scales), Allotropy in C,S and P.	B.Sc. Life sciences, II Year, Semester IV (Section-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Assignment:		B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Section-A)	SCH CC VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Test:		B.Sc. Life sciences, II Year, Semester IV (Section-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Theory:	**Unit I: Chemical Bonding** Ionic Bonding: General characteristics of ionic bonding, Lattice Enthalpy and Solvation Enthalpy and their relation to stability and solubility of ionic compounds,	B.Sc. Life sciences, I Year, Semester II (Section-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Practicals:	Preparation of standard solutions	B.Sc. Life sciences, I Year, Semester II (Batch-II)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Practicals:	Semi-micro qualitative analysis of mixtures	B.Sc. CHEMISTRY(Hons.) III Year, Semester VI (Batch-I)	TCH CC XIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry
April	**Theory:**	Substitution reactions in square Planar complexes, Trans- effect, theories of trans-effect.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Section-A)	SCH CC VIII: INORGANIC CHEMISTRY – III Coordination Chemistry

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	Practicals:	Estimation of Al(III) by precipitating with oxine and weighing as $Al(oxine)_3$ (aluminium oxinate)	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-II)	SCH CC VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Theory:	Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides, inert pair effect, diagonal relationship and anomalous behaviour of first member of each group. Compounds of s and p block elements, diborane and concept of multicentre bonding.	B.Sc. Life sciences, II Year, Semester IV (Section-A)	SLS CC-4: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Theory:	Born-Lande equation for calculation of Lattice Enthalpy (no derivation), Born-Haber cycle and its applications, polarizing power and polarizability, Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character. Covalent Bonding: Valence Bond Approach, Hybridization and VSEPR Theory with suitable examples, Concept of resonance and resonating structures in various inorganic and organic compounds, Molecular Orbital Approach: Rules for the LCAO method, bonding, nonbonding and antibonding MOs and their characteristics for s-s, s-p and p-p combinations of atomic orbitals,	B.Sc. Life sciences, I Year, Semester II (Section-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Practicals:	Estimation of Sodium carbonate using HCl by acid base titration Estimation of carbonate and hydroxide present together in a mixture Estimation of carbonate and bicarbonate present together in a mixture.	B.Sc. Life sciences, I Year, Semester II (Batch-II)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Assignment:		B.Sc. Life sciences, I Year, Semester II (Section-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System

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	Practicals:	Semi-micro qualitative analysis of mixtures	B.Sc. CHEMISTRY(Hons.) III Year, Semester VI (Batch-I)	TCH CC XIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry
May	**Theory:**	Thermodynamic and Kinetic stability (using VBT)	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Section-A)	SCH CC VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Theory:	MO treatment of homonuclear diatomic molecules of 1st and 2nd periods (including idea of s-p mixing) and heteronuclear diatomic molecules such as CO, NO and NO^+. Brief introduction to Metallic Bonding, Hydrogen Bonding, van der Waals forces	B.Sc. Life sciences, I Year, Semester II (Section-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Test:		B.Sc. Life sciences, I Year, Semester II (Section-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Practicals:	Estimation of free alkali present in different soaps/detergents Estimation of oxalic acid using $KMnO_4$ by redox titration. Estimation of Mohr's salt using $KMnO_4$ by redox titration.	B.Sc. Life sciences, I Year, Semester II (Batch-II)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
June	**Theory:**	**Unit II: Elements in Biological System** Classification of elements in biological system, Geochemical effect on the distribution of metals, Metal ions present in biological systems with special reference to Na^+, K^+, Ca^{2+}, Mg^{2+}, Fe^{2+}, Cu^{2+} and Zn^{2+}, Sodium / K-pump, Role of Ca^{2+} (blood clotting and structural), Role of Mg^{2+} in chlorophyll and energy production, Excess and deficiency of some trace metals, Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity, Dose response relationship curves of metal ions.	B.Sc. Life sciences, I Year, Semester II (Section-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System

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	Practicals:	Determination of dissolved oxygen in water. Estimation of Fe (II) ions by titrating it with $K_2Cr_2O_7$ using internal and external indicators. Estimation of Cu (II) ions iodometrically using $Na_2S_2O_3$	B.Sc. Life sciences, I Year, Semester II (Batch-II)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
July	**Theory:**	Iron and its application in bio-systems, Storage and transport of iron.	B.Sc. Life sciences, I Year, Semester II (Section-A)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System
	Practicals:	Paper Chromatographic separation of mixture of metal ions a. Cu^{2+}, Cd^{2+} b. Ni^{2+}, Co^{2+}	B.Sc. Life sciences, I Year, Semester II (Batch-II)	DSC-5: CHEMISTRY - II Chemical Bonding and Elements in Biological System

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Neelam Kumari **Department: CHEMISTRY**

Semester: IV, VI

Month		**Topics**	**Course**	**Paper Code/Name**
February	**Theory:**	Polynuclear Hydrocarbons Introduction, Classification, Structure, Nomenclature and uses. Aromaticity of polynuclear hydrocarbons, structure elucidation of Naphthalene and general methods of preparation of naphthalene, phenanthrene and anthracene(including Haworth method, Friedel Craft acylation, Diels Alder reaction, Elbs reaction and Pschorr Synthesis).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-A)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III. Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Assignment:	Written Assignment for Chapter: "Nitrogen containing functional groups: Diazonium Salts: Preparation and synthetic applications of diazonium salts including preparation of arenes, haloarenes, phenols, cyano and nitro compounds. Coupling reactions of diazonium salts (preparation of azo dyes)"	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-A)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III. Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Practicals:	Preparation of tetraammine copper (II) sulphate	B.Sc. (P) Life Science III year	TLS-DSE-Organometallics, Bioinorganic chemistry, Polynuclear hydrocarbons and UV, IR Spectroscopy
		Systematic analysis of oxygen containing functional groups unknown compounds	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
		To carryout market survey of potent pesticides with details as follows: a) Name of pesticide b) Chemical name, class and structure of pesticide c) Type of formulation available and Manufacturer's name d) Useful information on label of packaging regarding: Toxicity, LD50 ("Lethal Dose, 50%"), Side effects and Antidotes.	B. Sc. (H)-Chemistry, II-Year, Semester-IV-Batch-A	CHEMISTRY –SEC-11 Course Title: Pesticide Chemistry

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March	**Theory:**	Relative reactivity of naphthalene, phenanthrene and anthracene in comparison to benzene. Properties: Physical properties, discussion on the following reaction (with mechanism) for Naphthalene, Anthracene and Phenanthrene: Addition reactions, Oxidation, Electrophilic substitution- Friedel Craft reaction, Chloromethylation, Halogenation, Formylation, Nitration and sulphonation. Reduction reaction and Diels Alder reaction. **Heterocyclic Compounds** : Introduction, importance, classification and nomenclature of heterocyclic compounds (containing only one hetero atom). General discussion on the following aspects of heterocyclic compounds: Structure, aromaticity in 5-membered and 6-membered rings containing one heteroatom; Basicity and relative reactivity towards electrophilic substitution reactions(amongst five membered and six membered rings)	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-A)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III, Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Practicals:	To carryout market survey of potent botanical pesticides with details as follows: a) Botanical name and family; b) Chemical name (active ingredient) and structure of active ingredient; c) Type of formulation available and Manufacturer's name; d) Useful information on label of packaging regarding: Toxicity, LD50 ("Lethal Dose, 50%"), Side effects and Antidotes. Presentation on market survey.	B. Sc. (H)-Chemistry, II-Year, Semester-IV-Batch-I	CHEMISTRY –SEC-11 Course Title: Pesticide Chemistry
		Preparation of potassium trioxalatoferrate (III) trihydrate	B.Sc. (P) Life Science III year	TLS-DSE-Organometallics, Bioinorganic chemistry, Polynuclear hydrocarbons and UV, IR Spectroscopy
		Detection of extra elements.	B.Sc. (P) Life Science III year	TLS-DSE-Organometallics, Bioinorganic chemistry, Polynuclear hydrocarbons and UV, IR Spectroscopy
		Systematic analysis of oxygen containing functional groups unknown compounds	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III, Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Assignment:	Last 10 year Question Paper	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-A)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III, Course Title: Nitrogen containing functional groups, Polynuclear

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				Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Test:	Nitrogen Containing Compounds	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-A)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III, Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
April	**Theory:**	General methods of synthesis for: Furan, Pyrrole (Paal-Knorr synthesis, Knorr pyrrole synthesis, Hantzsch synthesis), Thiophene, Pyridine (Hantzsch synthesis), Indole(Fischer indole synthesis and Madelung synthesis, reduction of o-nitrobenzaldehyde), Quinoline and isoquinoline, (Skraup synthesis, Friedlander's synthesis, Knorr quinoline synthesis, Doebner-Miller synthesis, Bischler-Napieralski reaction, Pictet-Spengler reaction, Pomeranz-Fritsch reaction) Properties: Physical properties, discussion on the following reaction (with mechanism) for Furan, Pyrrole, thiophene, Pyridine, Indole, Quinoline and Isoquinoline: Electrophilic substitution- Nitration, sulphonation, halogenation, Formylation, acylation, mercuration and carboxylation. Oxidation,Reduction, Addition, Reactions showing acidic /basic character.Reaction with diazonium salts, Ring opening, Ring expansion and Nucleophilic substitution reaction wherever applicable should be discussed	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-A)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III, Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Theory	**Alkaloids:** Introduction, Natural occurrence, Classification, Uses, general structural features, general methods for structure elucidation including Hoffmann's exhaustive methylation and Emde's method. Structure elucidation, synthesis and physiological action of Nicotine. **Terpenes:** Introduction, Occurrence, Uses, classification, isoprene and special isoprene rule; general methods of structure elucidation including distinction between isopropylidene	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-A)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III, Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.

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		and isopropenyl group, Elucidation of structure, synthesis and industrial applicationof Citral.		
	Practicals:	To calculate alkalinity in given sample of pesticide formulations as per BIS specifications. Presentation on market survey.	B. Sc. (H)-Chemistry, II-Year, Semester-IV-Batch-I	CHEMISTRY –SEC-11 Course Title: Pesticide Chemistry
		Systematic qualitative analysis of organic compounds	B.Sc. (P) Life Science III year	TLS-DSE-Organometallics, Bioinorganic chemistry, Polynuclear hydrocarbons and UV, IR Spectroscopy
		A. Estimation of aniline by Bromate-bromide method B. Isolation of caffeine from tea leaves	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III, Course Title: Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Meena Bisht **Department: Chemistry**
Semester: II, IV, VI

Month		Topics	Course	Paper Code/Name
February	**Theory:**	Applications of conductance measurement: (i) degree of dissociation of weak electrolytes, (ii) ionic product of water (iii) solubility and solubility product of sparingly soluble salts.	B.Sc. Chemistry (Hons.) II Year, Semester IV (Batch-A)	CC-X Physical Chemistry IV: Conductance & Chemical Kinetics
	Theory:	Definition and general introduction on principles of chromatography, Different type of chromatography	B.Sc. Life sciences, II Year, Semester IV	SEC: Basic Analytical Chemistry
	Practical	Semi-micro qualitative analysis of mixtures	B.Sc. Life sciences, II Year, Semester IV	SLS CC IV: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practical	QBASIC programs for Chemistry problems Sum of first N Natural numbers, product of first N Natural numbers, sum of first even N Natural numbers, product of first even N Natural numbers, sum of first odd N Natural numbers, product of first odd N Natural numbers, roots of a quadratic equation, pressure of a gas using ideal gas equation and basic commands of graphics programme.	B.Sc. Chemistry (Hons.) III Year, Semester VI (Batch-A)	Applications of Computers in Chemistry
March	**Theory:**	Applications of conductance measurement in conductometric titrations, and hydrolysis constants of salts.	B.Sc. Chemistry (Hons.) II Year, Semester IV (Batch-A)	CC-X Physical Chemistry IV: Conductance & Chemical Kinetics
	Theory:	General introduction of complexometric titrations	B.Sc. Life sciences, II Year, Semester IV	SEC: Basic Analytical Chemistry

	Practical	Semi-micro qualitative analysis of mixtures	B.Sc. Life sciences, II Year, Semester IV	SLS CC IV: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practical	QBASIC programs for Chemistry problems Addition, subtraction, transpose of two matrix multiplication of two matrix etc.	B.Sc. Chemistry (Hons.) III Year, Semester VI (Batch-A)	Applications of Computers in Chemistry
	Assignment and Test	Assignment and Internal exam was given based on covered syllabus	B.Sc. Chemistry (Hons.) II Year, Semester IV (Batch-A)	CC-X Physical Chemistry IV: Conductance & Chemical Kinetics
	Assignment and Test	Assignment and Internal exam was given based on covered syllabus	B.Sc. Life sciences, II Year, Semester IV	SEC: Basic Analytical Chemistry
April	**Theory:**	Characteristics of electromagnetic radiation, Jablonski Diagram. Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws of photochemistry, quantum yield, actinometry, examples of low and high quantum yields, photochemical equilibrium and the differential rate of photochemical reactions, photosensitized reactions, quenching. Role of photochemical reactions in biochemical processes, photostationary states, chemiluminescence. Jablonsky diagram.	B.Sc. Chemistry (Hons.) II Year, Semester IV (Batch-A)	CC-X Physical Chemistry IV: Conductance & Chemical Kinetics
	Theory:	Concepts of chelation, chelating agents and use of indicators in complexometric titration.	B.Sc. Life sciences, II Year, Semester IV	SEC: Basic Analytical Chemistry
	Theory:	Chemistry of p-block elements: Electronic configuration, atomic and ionic size, metallic/non-metallic character, melting point, ionization enthalpy, electron gain enthalpy, electronegativity, Catenation, Allotropy of C, P, S. (**NOTE:** Sharing this course with other teacher).	B.Sc., Chemistry (Hons.) I Year, Semester II (Batch-A)	FCH DSEIV:: Chemistry of s- and p-Block Elements

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	Practical	Semi-micro qualitative analysis of unknown mixtures	B.Sc. Life sciences, II Year, Semester IV	SLS CC IV: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practical	Numerical methods for solving problems in chemistry using Binary Bisection method, Iteration method Newton Rapshon method, Simpson methods .	B.Sc. Chemistry (Hons.) III Year, Semester VI (Batch-A)	Applications of Computers in Chemistry
	Practical	i) Estimation of Ca^{2+} and Mg^{2+} ions from soil ii) Determination of coloured species by Ratio method/Job's method	B.Sc. Chemistry (Hons.) III Year, Semester VI (Batch-I)	TCH DSE-1: Analytical Methods in Chemistry
May	**Theory:**	Chemistry of p-block elements: Inert pair effect, diagonal relationship between B and Si and anomalous behaviour of first member of each group.	B.Sc., Chemistry (Hons.) I Year, Semester II (Batch-A)	FCH DSEIV:: Chemistry of s- and p-Block Elements
June	**Theory:**	Compounds of p-block elements: Hydrides: hydrides of Group 13 (only diborane), Group 14, Group 15, Group 16 and Group 17, Oxoacids of phosphorus, sulphur and chlorine. (**NOTE:** Sharing this course with other teacher).	B.Sc., Chemistry (Hons.) I Year, Semester II (Batch-A)	FCH DSEIV:: Chemistry of s- and p-Block Elements
July	**Theory:**	Compounds of p-block elements: Interhalogen and pseudohalogen compounds • Clathrate compounds of noble gases, xenon fluorides (MO treatment of XeF2). (**NOTE:** Sharing this course with other teacher).	B.Sc., Chemistry (Hons.) I Year, Semester II (Batch-A)	FCH DSEIV:: Chemistry of s- and p-Block Elements

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Name of the Faculty: Mr. Ravindra Kumar Upadhyay

Department: CHEMISTRY **Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
February	**Theory:**	Classification, synthesis, structure activity relationship (SAR), mode of action, uses and adverse effects of representative pesticides in the following classes:	B.Sc (H) Chemistry II year Semester IV	CHEMISTRY – SEC -11
	Practicals:	Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters.	B. Sc. (H)-II-Year, Semester-IV	CHEMISTRY – SCH - CCIX
		Market Survey of pesticide and presentation of Market Survey.	B. Sc. (H)-II-Year, Semester-IV	Chemistry SEC-11
		Qualitative analysis of unknown organic compounds containing monofunctional groups: aromatic hydrocarbons, aryl halides, carbohydrates, nitro compounds, amines, amides and simple compounds containing bifunctional groups, e.g., salicylic acid, cinnamic acid, nitrophenols.	B. Sc. (H)-III-Year, Semester-VI	TCH: CXIV Organic Chemistry -V
March	**Theory:**	Structure and classification of alcohols as 1º, 2º & 3º, Reactions: Acidic character of alcohols.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – GE-5
		Botanical insecticides [No structure elucidation or synthesis is required for the following compounds:] Alkaloids(Nicotine); Pyrethrum (natural and synthetic pyrethroids);Azadirachtin; Rotenone and Limonene.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	CHEMISTRY – SEC -11
			B.Sc (Life	

		Definition of pure water, sources responsible for contaminating water	Science) -II Year Semester -IV	SEC -2
	Practicals:	Estimation of aniline by any one of the following methods (a) Acetylation (b) Bromate-bromide method .	B. Sc. (H)-II-Year, Semester-IV	CHEMISTRY – SCH - CCIX
		To carryout market survey of potent botanical pesticides with details as follows: a) Botanical name and family; b) Chemical name (active ingredient) and structure of active ingredient	B. Sc. (H)-II-Year, Semester-IV	Chemistry SEC-11
		Qualitative analysis of unknown organic compounds containing monofunctional groups: aromatic hydrocarbons, aryl halides, carbohydrates, nitro compounds, amines, amides and simple compounds containing bifunctional groups, e.g., salicylic acid, cinnamic acid, nitrophenols.	B. Sc. (H)-III-Year, Semester-VI	TCH: CXIV Organic Chemistry -V
	Assignment:	Written Assignment questions to solve	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	Chemistry SEC-11
	Test:	Class test-I	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV (Batch-B)	Chemistry SEC-11
April	**Theory:**	Acidic character of alcohols and reaction with sodium, with HX (Lucas Test), esterification, oxidation of alcohol.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – GE-5
		Botanical insecticides [No structure elucidation or synthesis is required for the following compounds:] Azadirachtin; Rotenone and Limonene. Pesticide formulations: Wettable	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	CHEMISTRY – SEC -11

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		powders, Surfactants Water sampling methods, water purification methods.	(Batch-B) B.Sc (Life Science) -II Year Semester -IV SEC -SLS	SEC -SLS
	Practicals:	Estimation of aniline by any one of the following methods (a) Acetylation (b) Bromate-bromide method Type of formulation available and Manufacturer's name; Useful information on label of packaging regarding: Toxicity, LD50 ("Lethal Dose, 50%"), Side effects and Antidotes. Qualitative analysis of unknown organic compounds containing monofunctional groups: aromatic hydrocarbons, aryl halides, carbohydrates, nitro compounds, amines, amides and simple compounds containing bifunctional groups, e.g., salicylic acid, cinnamic acid, nitrophenols.	B. Sc. (H)-II-Year, Semester-IV B. Sc. (H)-II-Year, Semester-IV B. Sc. (H)-III-Year, Semester-VI	CHEMISTRY – SCH - CCIX Chemistry SEC-11 TCH: CXIV Organic Chemistry -V
May	**Theory:**	oxidation of alcohol (with PCC, alkaline $KMnO_4$, acidic $K_2Cr_2O_7$ and conc. HNO_3), Oppeneauer Oxidation, Biological oxidation Reactions	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – GE-5
June	**Theory:**	Acidity of phenols and factors affecting their acidity, Reactions: Electrophilic substitution reactions, *viz.* nitration, halogenation, sulphonation, Reimer-Tiemann reaction, Gattermann–Koch reaction, Houben-Hoesch condensation; Reaction due to OH group: Schotten-Baumann reaction	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – GE-5
		Assignment		
		Class Test		

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Sri Venkateswara College
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NAAC Grade A+

G20
भारत 2023 INDIA

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23) (Even-Semester)

PRINCIPAL (Acting)
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Name of the Faculty: Dr. S. Venkata Kumar
Department: Commerce
Courses: B.Com (H)
Semester: VI

Month	Type of Class	Course Contents	Course	Unique Paper Code/Paper Name
January 2023	**Theory**	**1. Unit I: Introduction to International Business** • Globalization and its growing importance in the world economy; • Impact of globalization; • International business contrasted with domestic businesses-complexities of international business; internationalization stages and orientations; modes of entry into international business. **2. Unit I: International Business Environment**	B.Com. (Hons) – VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business

		• Economic Environment • Demographic Environment • Cultural Environment • Political-Legal Environment		
	Tutorials	**Unit 1: Introduction to International Business & International Business Environment**	B.Com. (Hons.) - VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
February 2023	**Theory**	1. **Unit 2: International Trade**: • Theories of International Trade • Absolute Advantage Theory • Competitive Advantage Theory • Factor Proportion Theory and Leontief Paradox • Product Life Cycle Theory • National Competitive Advantage Theory • Tariff and Non-Tariff Barriers • BOP- Balance of Payment Account and its Components 2. **Unit 3: Regional Economic Integration**: • Forms of regional integration • Integration efforts amongst countries in Europe, North America and Asia • EU, NAFTA and SAARC • Cost and Benefits of regional economic integration. 3. **Unit 3: International Economic Organisations**: • WTO • UNCTAD • World Bank and • IMF	B.Com. (Hons) – VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business

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	Tutorials	1. **Unit 2 & Unit 3**: International Trade theories; Regional Economic Integration	B.Com. (Hons) – VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
March 2023	**Theory**	1. **Unit – 4: International Financial Environment** • Foreign exchange markets • Spot market, spot rate quotations, bid-ask spreads • Trading in spot markets • Cross exchange rates, forward markets • Forward rate, long and short forward positions • Forwards Premium and Discount • Arbitrage, Hedging and Speculation • Types of exchange rate systems – fixed and floating, soft peg, crawling peg, free float, managed float • Foreign exchange risk and exposure 2. **Unit – 4: Exchange Rate Determination** • Types of exchange rates, • Factors affecting exchange rate- relative inflation rates, interest rates, relative interest rates, relative income levels, government controls and expectations.	B.Com. (Hons) – VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business
	Tutorials	**Unit 4**: International Financial Environment; Exchange Rate Determination	B.Com. (Hons) – VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business
	Assignment	Assignments will be issued for International Business before mid-semester break	B.Com. (Hons) – VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business

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	Home Examination	Test will be conducted on the concerned subject after mid-semester break	B.Com. (Hons) – VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
April 2023	**Theory**	**1. Unit 5: Foreign Direct Investment**: • Types of FDI – Greenfield investment • Brownfield investment • Mergers & Acquisitions • Strategic Alliances • Benefits and Drawbacks of FDI **2. Developments and Issues in International Business**: • Outsourcing and its potential for India • International business & ecological considerations	B.Com. (Hons) - VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business
	Tutorials	**Unit – 5: Foreign Direct Investment; Developments and Issues in International Business**	B.Com. (Hons) - VI	22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23)

Name of the Faculty: **Mrs. Sunita Chhabra**
Department: **Commerce**
Semester: **6th**

MONTH	TYPE OF CLASS	TOPICS	COURSE	PAPER CODE/NAME
JANAURY 2023	Theory	Communication process, AIDA model, advertising – importance and objectives, DAGMAR approach, audience selection	B.Com. Sem VI	Paper BC 6.3 (A) B.Com. Sem VI Advertising, Personal selling and Salesmanship
	Tutorials	Types of advertising, AIDA model, communication process, benefits of advertising and criticism of advertising		
FEBRAURY 2023	Theory	Methods of setting advertising budget, advertising appeals, advertising copy, print and broadcast advertising copy, types of media, media scheduling	B.Com. Sem VI	Paper BC 6.3 (A) B.Com. Sem VI Advertising, Personal selling and Salesmanship
	Tutorials	Difference between advertising sales promotion and personal selling, advertising message decision, merits and de-merits of different media mix		
MARCH 2023	Theory	Advertising agency, evaluating communication sales effect, pre and post testing techniques, personal selling and salesmanship, personal selling situations, types of salespersons, personal selling process – prospecting, pre approach, approach	B.Com. Sem VI	Paper BC 6.3 (A) B.Com. Sem VI Advertising, Personal selling and Salesmanship
	Tutorials	Qualities of good salesperson, career opportunities in selling, types of salespersons, measures of making selling an attractive career		
	Assignment:	Unit 1, 2		
APRIL 2023	Theory	Personal selling process – presentation and demonstration, handling of objections, closing the sale, follow up, Personal selling situations, Qualities of a good sales person, Measures for making selling as an attractive career	B.Com. Sem VI	Paper BC 6.3 (A) B.Com. Sem VI Advertising, Personal selling and Salesmanship
	Tutorials	Methods of handling objections, types of sales reports, sales manual, role of personal selling in CRM		
	Test:	Unit 1, 2 and 3		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23)

Name of the Faculty: Dr. Mamta Arora **Department: Commerce**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY 2023	**Theory**	Unit 1: Matrices & Determinants	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
FEBRUARY 2023	**Theory**	Unit 4: Mathematics of Finance Unit 5: LPP	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
	Assignment	Unit 1	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
MARCH 2023	**Theory**	Unit 2: Basic calculus – Application of differentiation Unit 4: Mathematics of Finance	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
	Test	Unit 4, and 5	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
APRIL 2023	**Theory**	Unit 3: Advance Calculus – Application of partial differentiation, application of integration	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
EVEN SEMESTER 2023

Name of the Faculty: Dr. Shruti Mathur Department: CommerceSemester: VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit 1: The Investment Environment** - The investment decision process, Types of Investments – Commodities, Real Estate and Financial Assets, the Indian securities market, the market participants and trading of securities, security market indices, sources of financial information, Concept of return and risk, Impact of Taxes and Inflation on return	B.Com H Sem VI	DSE-Fundamentals of Investment
	Tutorials	1). Discussion on IPO/FPO, Book building. Understanding SENSEX, NIFTY. Practice numerical on calculation of risk and return	B.Com (H) Sem VI	DSE: Fundamentals of Investment
FEBRUARY	**Theory:**	**Unit 2: Fixed Income Securities** - Bond features, types of bonds, estimating bond yields, Bond Valuation, types of bond risks, default risk and credit rating. **Unit 3: Approaches to Equity Analysis:** Valuation of Equity Shares using various models. Introductions to Fundamental Analysis	BCom H Sem VI	DSE: Fundamentals of Investment

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	Tutorials:	Numerical and Presentations: Calculating Bond Yields analyzing the company's performances using various ratios and historical records.	BCom H Sem VI	DSE: Fundamentals of Investment
	Assignment:	Assignment & presentation on any topic selected by the student from the syllabus	BCom H Sem VI	DSE: Fundamentals of Investment
MARCH	**Theory:**	**Unit 3: Approaches to Equity Analysis**: Technical Analysis and Efficient Market Hypothesis, **Unit 4: Portfolio Analysis and Financial Derivatives:** Portfolio and Diversification, Portfolio Risk and Return	BCom H Sem VI	DSE: Fundamentals of Investment
	Tutorials:	Presentations and Numericals on : Equity Valuation and Portfolio Risk and Return. Including Markowitz model, CAPM etc	BCom H Sem VI	DSE: Fundamentals of Investment
	Test	Unit 1, 2 and 3	BCom H Sem VI	DSE: Fundamentals of Investment

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APRIL	**Theory:**	**Unit 4: MF & Financial Derivatives:** Mutual funds. Introduction to Financial Derivatives- Forward, Futures & Options, Financial Derivatives Markets in India. **Unit 5: Investor Protection** – Role of SEBI & stock exchanges in investor protection, investor grievances and their redressal system, insider trading, investors' awareness and activism.	BCom H Sem VI	DSE: Fundamentals of Investment
	Tutorials:	1) Presentation, and Discussion on MFs, Derivatives and Investor Protection.	BCom H Sem VI	DSE: Fundamentals of Investment

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EVEN SEMESTER 2023

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Name of the Faculty: Dr. Shruti Mathur **Department: Commerce**

Semester : VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit 1: The Investment Environment** - The investment decision process, Types of Investments – Commodities, Real Estate and Financial Assets, the Indian securities market, the market participants and trading of securities, security market indices, Concept of return and risk	B.Com Sem VI	DSE-Fundamentals of Investment
	Tutorials	Discussion on IPO/FPO, Book building. Understanding SENSEX, NIFTY. Practice numerical on calculation of risk and return	B.Com Sem VI	DSE: Fundamentals of Investment
FEBRUARY	**Theory:**	**Unit 1** : Impact of Taxes and Inflation on return**,** speculation gambling and investment**,** sources of financial information, **Unit 2: Fixed Income Securities** - Bond features, types of bonds, estimating bond yields, Bond Valuation, types of bond risks, default risk and credit rating.	B.Com Sem VI	DSE: Fundamentals of Investment

	Tutorials:	Numerical and Presentations: Calculating Bond Yields analyzing the company's performances using various ratios and historical records.	B.Com Sem VI	DSE: Fundamentals of Investment
	Assignment:	Assignment & presentation on any topic selected by the student from the syllabus	B.Com Sem VI	DSE: Fundamentals of Investment
MARCH	**Theory:**	**Unit 4: Portfolio Analysis and Financial Derivatives:** Portfolio and Diversification, Portfolio Risk and Return Mutual funds. Types . Calculation of NAV, Return. Expenses	B.Com Sem VI	DSE: Fundamentals of Investment
	Tutorials:	Presentations and Numericals on : Portfolio Risk and Return. Including Markowitz model, CAPM etc Discussion on MFs	BCom Sem VI	DSE: Fundamentals of Investment
	Test	Unit 1, 2 and 3	B.Com Sem VI	DSE: Fundamentals of Investment

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APRIL	**Theory:**	**Unit 4: Financial Derivatives:** Introduction to Financial Derivatives- Forward, Futures & Options, Financial Derivatives Markets in India.	B.Com Sem VI	DSE: Fundamentals of Investment
	Tutorials:	1) Presentation, and discussion on Derivatives Revision of all concepts	BCom Sem VI	DSE: Fundamentals of Investment

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
EVEN SEM 2022-23

Name of the Faculty: Dr Pooja Jain **Department: Commerce** **Semester: IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY	**Theory**	**1.Unit I**:Nature and Scope, Difference between cost accounting and management accounting, cost control, cost reduction, cost management, difference between cost control, cost reduction and cost management. **Unit IV:** a. Absorption versus variable costing: Distinctive features and income determination. b. Cost-Volume-Profit Analysis: Break-even analysis-algebraic and graphic methods. Contribution / sales ratio, key factor. Margin of safety. Angle of incidence. Determination of cost indifference point. **Unit 1: Introduction** Meaning, scope, objectives and advantages of cost accounting; Difference between financial and cost accounting. Cost concepts and classifications, Overview of elements of cost and Cost sheet. Role of a cost accountant in an organisation. Introduction to Cost Accounting Standards & Cost Accounting Records and Audit Rules **Unit II: Elements of Cost: Material and Labour** *Materials*: Material/inventory control techniques. Accounting and control of purchases, storage and issue of materials. Inventory systems, Methods of pricing of materials issues — FIFO, LIFO, Simple Average, Weighted Average, Replacement, Standard Cost;	1. **B.Com. VI** 2. **B.Com. IV**	1. **BC 6.1 Management Accounting** 2. **BC 4.1 Cost Accounting**
	Practicals	Introduction to excel and Mathematics of Finance	**B.Com. (Hons) – IV**	**BCH 4.2**

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				B.Mathematics
	Tutorials	1. Basics and significance of Management Accounting will be discussed. Practical problems will be discussed related to following topics: a. Absorption versus variable costing: Distinctive features and income determination. 2. Practical problems on Materials will be discussed	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
FEBRUARY	**Theory**	**1.Unit II**: Budgeting and budgetary control: Concept of budget and budgetary control, objectives, merits, and limitations, Budget administration, Functional budgets, Fixed and flexible budgets, Zero base budget, Programme and performance budgets. **Unit VI**: Responsibility Accounting: Concept, Significance, Different Responsibility Centers, Divisional Performance Measurement – Financial Measures. **Unit II: Elements of Cost: Material and Labour** ***(a)*** *Materials*:Physical Verification, Accounting treatment and control of losses— Wastage, scrap, spoilage and defectives ***(b)*** *Labour*: Accounting and Control of labour cost. Time-keeping and time-booking. Concept and treatment of idle time, over time, labour turnover and fringe benefits. Methods of wage payment and Incentive schemes- Halsey, Rowan, Taylor's differential piece wage. **Unit III: Elements of Cost: Overheads** Classification, allocation, apportionment and absorption of overheads, Under- and over-absorption; Capacity Levels and Costs; Treatments of certain items in costing like interest on capital, packing expenses, bad debts, research and	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**

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		development expenses. Activity based costing.		
	Practicals	Excel projects of Mathematics of finance-FV-annuity & Lump sum, PV-annuity & Lump sum Excel project: Graphical solutions of LPP Problems on Mathematics of Finance	**B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**
	Tutorials	1.Practical problems will be discussed related to following topics: a. Cost-Volume-Profit Analysis: Break-even analysis-algebraic and graphic methods. Contribution / sales ratio, key factor. Margin of safety. Angle of incidence. Determination of cost indifference point. b. Budgeting and budgetary control: Budget administration, Functional budgets, Fixed and flexible budgets 2. Practical problems will be discussed related to Material and labour	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
	Assignment	1.Assignment will be given from the topic: Absorption and variable Costing and CVP analysis. 2. Assignment from Unit I and II	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
MARCH	**Theory**	**1.Unit V:** Decision making: Costs for decision making, variable costing and differential analysis as aids in making decisions – fixation of selling price, exploring new markets, make or buy, product mix, operate or shut down, sell or process further **Unit IV: Methods of Costing** Unit costing, Job costing, Contract costing, Process costing (including process losses, valuation of work-in-progress, joint and by-products).	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**

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	Practicals	Excel Projects :LLP graphical solution and simplex using 'solver-in' in excel Problems on Mathematics of Finance	**B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**
	Tutorials	Practical questions and Presentation will be taken from the following topics: 1. Decision making: Costs for decision making, variable costing and differential analysis as aids in making decisions – fixation of selling price, exploring new market 2. Practical problems will be taken from Overheads	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
	Test	Class Test will be conducted in the middle of the month from these topics: 1.Nature and scope of management accounting Absorption and variable costing C-V-P Analysis Budgetary Control 2. Unit I and II **Practical exam in B.Mathematics**	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
APRIL	**Theory**	**1.Unit III**: Standard costing and variance analysis: Meaning of standard cost and standard costing: advantages, limitations and applications, Variance analysis – material, labour, overhead and sales variances, Disposition of variances, Control ratios. **2.Unit IV: Methods of Costing** Service costing (only transport). **Unit V: Cost Accounting Book-Keeping Systems** Integral and non-integral systems; Reconciliation of cost accounting records with financial accounts.	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**

	Practicals	Integration and Applications of integration	**1. B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**
	Tutorials	1.Practical questions and Presentation will be taken from the following topics: a. Decision making: make or buy, product mix, operate or shut down, sell or process further b Standard costing and variance analysis: Meaning of standard cost and standard costing: advantages, limitations and applications, Variance analysis – material, labour, overhead and sales variances, Disposition of variances, Control ratios. Miscellaneous questions will be discussed from examination point of view. 2. Practical problems will be taken Methods of costing.	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sindhumani Bag **Department: Commerce**
Semester: VI

Month		Topics	Course	Paper Code/Name
JANUARY-2023	**Theory**	**1. Introduction: Introduction to organisational theories; concept, determinants, challenges and opportunities. Contributing discipline of OB, OB model, Individual Behaviour: Foundation of Individual Behaviour; personality- Factors Influencing personality, Traits, Type A&B;**	1. B.Com -VI Sem Sec-A&B	**1. BC:6.2(d) Organisational Behaviour.**
		2. Business Ethics and Corporate Social responsibility: Business Ethics and values; Importance of Ethics.	2. Auditing and Corporate Governance	**2. BCH 6.1:Auditing &Corporate Governance**
		3. Business Ethics and Corporate Social responsibility: Business Ethics and values; Importance of Ethics.	3.Auditing and Corporate Governance	**3. BCH 6.1:Auditing &Corporate Governance**
	Tutorials / Practicals	1. Group wise presentation of case studies.	1. B.Com (p)-VI sem Sec-A&B	**1. BC6.2(d): Organisational Behaviour**
		2. Group wise presentation of case studies.	2. B.Com (H)-VI Sem, Sec-A	2.BCH 6.1: Auditing & Corporate Governance
		3.Group wise Case study presented by the Students	3.B.Com(H)VIsem, Sec-B	**3.BCH6.1: Auditing & Corporate Governance**

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FEBRUARY -2022	**Theory:**	1. **Individual Behaviour:**Values, attitudes & learning- Concept and types of values- Terminal values and Instrumental values; Components of attitudes, Job related attitudes (only job satisfaction and job involvement), perceptions and Emotions- concept , perceptual process, factors influencing perceptions, Emotional Intelligence. Motivation and Communication: Meaning and Importance of motivation; Theories=Equity, Intrinsic motivation by Ken Thomas; Behaviour modification, Communication and Feedback;	1. B.Com (p)-VI sem Sec-A&B	**1. BC 6.2(d): Organisational Behaviour**
		2. Corporate Governance and Ethics., Ethical theories, Code of Ethics and Ethics Committee.	2. B.Com (H)-VI Sem, Sec-A	**2. BCH 6.1: Auditing & Corporate Governance**
		3. Corporate Governance and Ethics., Ethical theories, Code of Ethics and Ethics Committee.	3. B.Com(H)-VI-B	**3.BCH 6.1: Auditing &Corporate Governance**
	Tutorials/Practical:	1. Group wise presentation of case studies.	1. B.Com (P)-VI sem	**1. BC:Organisational Behaviour**
		2. Group wise presentation of case studies.	2. B.Com(H)-VI sem,, SECA	**2. BCH : Auditing & Corporate Governance**
		3. Case study presented by the Students	3.B.Com (H)-VI Sem, Sec-B	**3. 3. BCH 6.1: Auditing &Corporate Governance**
	Assignment	Assignment questions Given to the students and collected Assignments.	1.B.Com (p)VI sem 2. B.Com (P)-VI Sem, Sec-A 3. B.com (H) sem-VI, Sec-B	**1. BC6.2(d): Organisational Behaviour** **2. BCH 6.1: Auditing & Corporate Governance** **3. BCH 6.1: Auditing&CG**

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MARCH-2023	**Theory:**	1. Transactional Analysis, JOHARI window, motivation practices of 5 prominanat organisation. Group Behaviour and Leadership:- Concept, Types- Group norms, Group roles and Group cohesiveness; Leadership- Concept and Trait theory, Leadership continuum, Transactional, Charismatic, and Transaformational leadership.	1.B.Com (P)-VIsem	**1. BC 6.2(d). Organisational Behaviour**
		2. Concept of corporate social resposibility, CSR and corporate sustainability, CSR and business ethics, CSR and corporate governance, CSR and Corporate Philanthropy.	2.B.Com (H)-V ISem, Sec-A	**2. BCH: Auditing & Corporate Governance**
		3. Concept of corporate social resposibility, CSR and corporate sustainability, CSR and business ethics, CSR and corporate governance, CSR and Corporate Philanthropy	3. B.Com(H)-VIsem, sec-	**3. BCH 6.1 Auditing&C.G**
		4. Introduction: meaning and charcteristics of company, Lifting of Corporate veil, Overview of administration of company laws,	4. B.COM (h) -IIA	**4. BCH DSC-2.2**
	Tutorials/ Practical:	1. Group wise presentation of case studies.	1.B.Com (P)-VI sem	**1. BC6.2(d): Auditing & Corporate Governance.**
		2. Group wise presentation of case studies.	2. B.Com(H)-VI sem,, SEC-A	**2. BCHH 6.1: Auditing & Corporate Governance**
		3. Case study presented by the Students	3.B.Com (H)-VI Sem, Sec-B	**3. BCH 6.1 A&C.G**
		4. Presentation of case laws	4. B.COM (h) -IIA	**4. BCH DSC-2.2**
	<u>Test</u>	Time schedule decided for conducting of Internal exam on 4th week of March.	1. B.Com (P)-VI sem	**1. BC 6.2(d): Organisational BehaviourCost accounting**
			2. B.Com(H)-VI sem, SEC-A	**2. BCH 6.1: A&CG**
			3.B.Com (H)-VI Sem, Sec-B	**3. BCH 6.1 A &C G**

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APRIL-2023	**Theory:**	1. Dynamic of Organisational Behaviour: Conflict- sources and resolution strategies, Organisational culture-concept and determinants; organisational change, Managing change; stress-Individual and Organisational factors to stress, prevention and Management of stress. Case studies can be taught from units III, IV AND V. **2. Environmental Aspects of CSR, Model and benefit of CSR, Driver of CSR, CSR in India.** **3.Environmental Aspects of CSR, Model and benefit of CSR, Driver of CSR, CSR in India.** **4. Types of companies, Including private and public company, government company, foreign company, one person company, small company, associate company, dormant company and producer company, association not for profit , Illegal Association.**	E1.B.Com (P)-VI sem 2. B.COM(H)-VI-A 3. B.com(H)=VI-B 4. B.Com (H)-IIA	**1. BC 6.2(d): Organisational behaviour.** **2. BCH 6.1: A&CG** **BCH 6.1: A&CG** **4.BCH DSC 2.2**
	Tutorials/ Practical:	1. Group wise presentation of Case studies 2. Group wise presentation of case studies. 3. Case study presented by the Students	1.B.Com (P)-VI sem 2. B.Com(H)-VIsem,, SEC-A 3.B.Com (H)-VI Sem, Sec-B	**1. BC6.2(d):Organisational Behaviour.** **2. BCH 6.1: A&CG** **3. BCH 6.1: A &C.G**
	Internal assessment Finalise	1.OB 2. A&CG 3.A &C.G	1.B.Com (P)-VI 2. B.Com(H)-VIsem,, SEC-A 3.B.Com (H)-VI Sem, Sec-B	**1. BC 6.2(d): A&CG** **2. BCH 6.1: A&CG** **3. BCH 6.1: A &C.G**

May 2023	Theory	1.Share capital: prospectus, shelf and redherring prospectus, Mis statement in prospectus,, Book building, allotment of forfeiture of shares, Sweat equity, ESOPS,. 2.Share capital: prospectus, shelf and redherring prospectus, Mis statement in prospectus,, Book building, allotment of forfeiture of shares, Sweat equity, ESOPS,	1. B,COM(H)-IIA 2.B,COM(H)-IIB	**1.BCH DSC 2.2.** **2. BCH DSC 2.2**
	Tutorial	1. presentation of case laws 2. presentation of case laws	2.B,COM(H)-IIA 2.B,COM(H)-IIB	**1.BCH DSC 2.2** **2. BCH DSC 2.2**
June-2023	Theory	1. Bonus and Further issue of share, buyback, split of share, split of share and provisions regarding buyback, Transfer and transmission of shares, Demat system 2.Bonus and Further issue of share, buyback, split of share, split of share and provisions regarding buyback, Transfer and transmission of shares, Demat system	2.B,COM(H)-IIA 2.B,COM(H)-IIB	**1.BCH DSC 2.2** **2.BCH DSC 2.2**
	Tutorial	1. presentation of case Laws 2.presentation of case Laws	1.B,COM(H)-IIA 2.B,COM(H)-IIB	**1.BCH DSC 2.2** **2. BCH DSC 2.2**
	Asssignment and Internal test	1Assignment and Internal test finalise	Both B.com (h) Sec-A&B	**BCH DSC 2.2**

PRINCIPAL (Acting)
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Sri Venkateswara College
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NAAC Grade A+

G20
भारत 2023 INDIA

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23) (Even-Semester)

PRINCIPAL (Acting)
Sri Venkateswara College
(University of Delhi)
Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Vinod Kumar
Department: Commerce
Courses: B.Com (H)/B.Com
Semester: IV/VI

Month	Type of Class	Course Contents	Course	Unique Paper Code/Paper Name
January 2023	**Theory**	**1. Unit I: Introduction to International Business** • Globalization and its growing importance in the world economy; • Impact of globalization; • International business contrasted with domestic businesses-complexities of international business; internationalization stages and orientations; modes of entry into international business. **2. Unit I: International Business Environment**	**1.** B.Com. (Hons) – VI **2.** B. Com – VI	**1.** 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b):

		• Economic Environment • Demographic Environment • Cultural Environment • Political-Legal Environment **3. Unit V: Investor Protection** • Role of SEBI and Stock Exchanges in investor protection • Investor grievances and their redressal system • Insider trading • Investors 'education and awareness	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Fundamentals of Investment
	Tutorials	**1. Unit V: Investor Protection** • Role of SEBI and Stock Exchanges in investor protection • Investor grievances and their redressal system • Insider trading • Investors 'education and awareness	**1.** B.Com. - VI	**1.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment
	Practical	**1. Unit 5: Database Management System** DBMS Software: Environment: Tables, Forms, Queries; Reports; Modules	**1.** B.Com. – (H) - IV	**1.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
February 2023	**Theory**	**1. Unit 2: International Trade**: • Theories of International Trade • Absolute Advantage Theory • Competitive Advantage Theory • Factor Proportion Theory and Leontief Paradox • Product Life Cycle Theory • National Competitive Advantage Theory • Tariff and Non-Tariff Barriers • BOP- Balance of Payment Account and its Components	**1.** B.Com. (Hons) – VI **2.** B. Com – VI	**1.** 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of

		2. **Unit 3: Regional Economic Integration**: • Forms of regional integration • Integration efforts amongst countries in Europe, North America and Asia • EU, NAFTA and SAARC • Cost and Benefits of regional economic integration. 3. **Unit 3: International Economic Organisations**: • WTO • UNCTAD • World Bank and • IMF 4. **Unit – III: Approaches to Equity Analysis**: Fundamental Analysis; Technical Analysis	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Investment
	Practical	1. **Unit 5: Database Management System** DBMS Software: Environment: Tables, Forms, Queries; Reports; Modules	1. B.Com.(H) - IV	1. 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
	Tutorials	1. **Approaches to Equity Analysis**: Fundamental Analysis; Technical Analysis	1. B.Com. - VI	1. 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
March 2023	**Theory**	1. **Unit – 4: International Financial Environment** • Foreign exchange markets • Spot market, spot rate quotations, bid-ask spreads • Trading in spot markets • Cross exchange rates, forward markets • Forward rate, long and short forward positions • Forwards Premium and Discount • Arbitrage, Hedging and Speculation	1. B.Com. (Hons) – VI 2. B. Com – VI	1. 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business 2. 52417608; Discipline Specific

		• Types of exchange rate systems – fixed and floating, soft peg, crawling peg, free float, managed float • Foreign exchange risk and exposure **2. Unit – 4: Exchange rate determination** • Types of exchange rates, • Factors affecting exchange rate- relative inflation rates, interest rates, relative interest rates, relative income levels, government controls and expectations. **3. Unit – III: Approaches to Equity Analysis** • Efficient Market Hypothesis (EMH)	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Elective – 2B; BC 6.2 (b): Fundamentals of Investment
	Practicals	**1. Unit 5: Database Management System** DBMS Software: Environment: Tables, Forms, Queries; Reports; Modules	**1.** B.Com.(H) - IV	**1.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
	Tutorials	**1. Approaches to Equity Analysis**: Efficient Market Hypothesis (EMH)	**1.** B.Com. - VI	**1.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment
	Assignment/workbook	**1.** Assignments will be issued for International Business **2.** Assignments will be issued for fundamentals of investment. **3.** Workbook will be issued for computer applications in business.	**1.** B.Com. (Hons) - VI **2.** B. Com – VI **3.** B.Com (Hons) - IV	**1.** 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b):

			PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Fundamentals of Investment **3.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
	Home Examination	**1.** Test will be conducted on the concerned subject after mid-semester break **2.** Test would be conducted on the concerned subject after mid-semester break **3.** Test would be conducted on the concerned subject after mid-semester break	**1.** B.Com. (Hons) - VI **2.** B. Com – VI **3.** B.Com (Hons)- IV	**1.** DSE BCH-6.4 (d): 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment **3.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
April 2023	**Theory**	**1. Unit 5: Foreign Direct Investment**: • Types of FDI – Greenfield investment • Brownfield investment • Mergers & Acquisitions • Strategic Alliances • Benefits and Drawbacks of FDI **2. Developments and Issues in International Business**:	**1.** B.Com. (Hons) - VI **2.** B. Com – VI	**1.** 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific

		• Outsourcing and its potential for India • International business & ecological considerations **3. Unit – III: Approaches to Equity Analysis** • Valuation of Equity Shares	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Elective – 2B; BC 6.2 (b): Fundamentals of Investment
	Practicals	**1. Unit 5: Database Management System** DBMS Software: Environment: Tables, Forms, Queries; Reports; Modules	**1.** B.Com.(H) - IV	**1.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
	Tutorials	**1. Unit – III: Approaches to Equity Analysis** • Valuation of Equity Shares	**1.** B.Com.- VI	**1.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment
March-2023 to July-2023 (Semester-II)				
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
March 2023	**Theory**	**1. Unit 1: Introduction to Human Resource Management** • Concept and functions • Role, status and competencies of HR Manager • HR policies • Evolution of HRM	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
	Assignment	**Continuous assessment on Unit 1**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
April 2023	**Theory**	**Unit 1: Introduction to Human Resource Management** • Emerging challenges of HRM – workplace diversity, empowerment, downsizing, VRS, work life balance **Unit 2: Introduction to Human Resource Management**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management

		• Human Resource Planning – Quantitative and qualitative dimensions • Job Analysis – Job description and job specification • Recruitment – concept and sources		PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021
April 2023	**Assignment**	**Continuous assessment on Unit 2**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
May 2023	**Theory**	**Unit 2: Introduction to Human Resource Management** • Selection –concept and process • Test and interview • Placement • Induction and socialization • Retention of employees	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
	Assignment	**Continuous assessment on Unit 1 & 2**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
June 2023	**Theory**	**Unit 5: Employee Maintenance, Engagement and Emerging Horizons** • Employee health and safety • Employee welfare • Social security (excluding legal provisions) • Employer-employee relations • Grievance handling and redressal • Industrial disputes • Causes and settlement machinery • Stress-free environment • Rejuvenation breaks and leisure activities	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
	Assignment	**Continuous assessment on Unit 5**	**1.** B.Com.(H) – II	**1.** Discipline Specific

				Core Course -2.3 (DSE-2.3) Human Resource Management
	Home Examination	**1.** Test will be conducted on the concerned subject		
July 2023	**Theory**	**Unit 5: Employee Maintenance, Engagement and Emerging Horizons** • Emerging horizons • Redundant manpower • e-HRM • Human resource information system • HR audit • Emerging job opportunities • Talent management • Employee burnout • Work life balance • Work from home	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
	Assignment	**Continuous assessment on Unit 5**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management

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NAAC Grade A+

G20
भारत 2023 INDIA

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23) (Even-Semester)

PRINCIPAL (Acting)
Sri Venkateswara College
(University of Delhi)
Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Vinod Kumar
Department: Commerce
Courses: B.Com (H)/B.Com
Semester: IV/VI

Month	Type of Class	Course Contents	Course	Unique Paper Code/Paper Name
January 2023	**Theory**	**1. Unit I: Introduction to International Business** • Globalization and its growing importance in the world economy; • Impact of globalization; • International business contrasted with domestic businesses-complexities of international business; internationalization stages and orientations; modes of entry into international business. **2. Unit I: International Business Environment**	**1.** B.Com. (Hons) – VI **2.** B. Com – VI	**1.** 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b):

		• Economic Environment • Demographic Environment • Cultural Environment • Political-Legal Environment **3. Unit V: Investor Protection** • Role of SEBI and Stock Exchanges in investor protection • Investor grievances and their redressal system • Insider trading • Investors 'education and awareness	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Fundamentals of Investment
	Tutorials	**1. Unit V: Investor Protection** • Role of SEBI and Stock Exchanges in investor protection • Investor grievances and their redressal system • Insider trading • Investors 'education and awareness	**1.** B.Com. - VI	**1.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment
	Practical	**1. Unit 5: Database Management System** DBMS Software: Environment: Tables, Forms, Queries; Reports; Modules	**1.** B.Com. – (H) - IV	**1.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
February 2023	**Theory**	**1. Unit 2: International Trade**: • Theories of International Trade • Absolute Advantage Theory • Competitive Advantage Theory • Factor Proportion Theory and Leontief Paradox • Product Life Cycle Theory • National Competitive Advantage Theory • Tariff and Non-Tariff Barriers • BOP- Balance of Payment Account and its Components	**1.** B.Com. (Hons) – VI **2.** B. Com – VI	**1.** 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of

		2. **Unit 3: Regional Economic Integration**: • Forms of regional integration • Integration efforts amongst countries in Europe, North America and Asia • EU, NAFTA and SAARC • Cost and Benefits of regional economic integration. 3. **Unit 3: International Economic Organisations**: • WTO • UNCTAD • World Bank and • IMF 4. **Unit – III: Approaches to Equity Analysis**: Fundamental Analysis; Technical Analysis	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Investment
	Practical	1. **Unit 5: Database Management System** DBMS Software: Environment: Tables, Forms, Queries; Reports; Modules	1. B.Com.(H) - IV	1. 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
	Tutorials	1. **Approaches to Equity Analysis**: Fundamental Analysis; Technical Analysis	1. B.Com. - VI	1. 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
March 2023	**Theory**	1. **Unit – 4: International Financial Environment** • Foreign exchange markets • Spot market, spot rate quotations, bid-ask spreads • Trading in spot markets • Cross exchange rates, forward markets • Forward rate, long and short forward positions • Forwards Premium and Discount • Arbitrage, Hedging and Speculation	1. B.Com. (Hons) – VI 2. B. Com – VI	1. 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business 2. 52417608; Discipline Specific

		• Types of exchange rate systems – fixed and floating, soft peg, crawling peg, free float, managed float • Foreign exchange risk and exposure **2. Unit – 4: Exchange rate determination** • Types of exchange rates, • Factors affecting exchange rate- relative inflation rates, interest rates, relative interest rates, relative income levels, government controls and expectations. **3. Unit – III: Approaches to Equity Analysis** • Efficient Market Hypothesis (EMH)	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Elective – 2B; BC 6.2 (b): Fundamentals of Investment
	Practicals	**1. Unit 5: Database Management System** DBMS Software: Environment: Tables, Forms, Queries; Reports; Modules	**1.** B.Com.(H) - IV	**1.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
	Tutorials	**1. Approaches to Equity Analysis**: Efficient Market Hypothesis (EMH)	**1.** B.Com. - VI	**1.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment
	Assignment/workbook	**1.** Assignments will be issued for International Business **2.** Assignments will be issued for fundamentals of investment. **3.** Workbook will be issued for computer applications in business.	**1.** B.Com. (Hons) - VI **2.** B. Com – VI **3.** B.Com (Hons) - IV	**1.** 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b):

			PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Fundamentals of Investment **3.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
	Home Examination	**1.** Test will be conducted on the concerned subject after mid-semester break **2.** Test would be conducted on the concerned subject after mid-semester break **3.** Test would be conducted on the concerned subject after mid-semester break	**1.** B.Com. (Hons) - VI **2.** B. Com – VI **3.** B.Com (Hons)- IV	**1.** DSE BCH-6.4 (d): 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment **3.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
April 2023	**Theory**	**1. Unit 5: Foreign Direct Investment**: • Types of FDI – Greenfield investment • Brownfield investment • Mergers & Acquisitions • Strategic Alliances • Benefits and Drawbacks of FDI **2. Developments and Issues in International Business**:	**1.** B.Com. (Hons) - VI **2.** B. Com – VI	**1.** 22417604; Discipline Specific Elective – 4; BCH-6.4 (d): International Business **2.** 52417608; Discipline Specific

		• Outsourcing and its potential for India • International business & ecological considerations **3. Unit – III: Approaches to Equity Analysis** • Valuation of Equity Shares	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	Elective – 2B; BC 6.2 (b): Fundamentals of Investment
	Practicals	**1. Unit 5: Database Management System** DBMS Software: Environment: Tables, Forms, Queries; Reports; Modules	**1.** B.Com.(H) - IV	**1.** 22411403; BCH 4.3: Computer Applications in Business (Core Paper)
	Tutorials	**1. Unit – III: Approaches to Equity Analysis** • Valuation of Equity Shares	**1.** B.Com.- VI	**1.** 52417608; Discipline Specific Elective – 2B; BC 6.2 (b): Fundamentals of Investment
March-2023 to July-2023 (Semester-II)				
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
March 2023	**Theory**	**1. Unit 1: Introduction to Human Resource Management** • Concept and functions • Role, status and competencies of HR Manager • HR policies • Evolution of HRM	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
	Assignment	**Continuous assessment on Unit 1**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
April 2023	**Theory**	**Unit 1: Introduction to Human Resource Management** • Emerging challenges of HRM – workplace diversity, empowerment, downsizing, VRS, work life balance **Unit 2: Introduction to Human Resource Management**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management

		• Human Resource Planning – Quantitative and qualitative dimensions • Job Analysis – Job description and job specification • Recruitment – concept and sources		PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021
April 2023	**Assignment**	**Continuous assessment on Unit 2**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
May 2023	**Theory**	**Unit 2: Introduction to Human Resource Management** • Selection –concept and process • Test and interview • Placement • Induction and socialization • Retention of employees	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
	Assignment	**Continuous assessment on Unit 1 & 2**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
June 2023	**Theory**	**Unit 5: Employee Maintenance, Engagement and Emerging Horizons** • Employee health and safety • Employee welfare • Social security (excluding legal provisions) • Employer-employee relations • Grievance handling and redressal • Industrial disputes • Causes and settlement machinery • Stress-free environment • Rejuvenation breaks and leisure activities	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
	Assignment	**Continuous assessment on Unit 5**	**1.** B.Com.(H) – II	**1.** Discipline Specific

				Core Course -2.3 (DSE-2.3) Human Resource Management
	Home Examination	**1.** Test will be conducted on the concerned subject		
July 2023	**Theory**	**Unit 5: Employee Maintenance, Engagement and Emerging Horizons** • Emerging horizons • Redundant manpower • e-HRM • Human resource information system • HR audit • Emerging job opportunities • Talent management • Employee burnout • Work life balance • Work from home	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management
	Assignment	**Continuous assessment on Unit 5**	**1.** B.Com.(H) – II	**1.** Discipline Specific Core Course -2.3 (DSE-2.3) Human Resource Management

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Neha Singhal **Department: Commerce** **Semester : IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1. Introduction, Types of Audit, Audit Planning and Documentation, Internal Control System, Evidence in Auditing, Vouching, Verification of Assets, Verification of Liabilities, Appointment and Removal of Auditor, Rights and Duties of a Company Auditor, Auditor's Report, Liabilities of Auditor. 2. Business Research-Introduction, Scope, Philosophies	1) B.Com (H)-VI 2) B.Com (H)-IV	1. BCH-6.1-Auditing and CG 2. BCHS 4.5(b)-Business Research Methods & Analytics
	Practical	1. Mathematics of Finance	1.B.com (H)-IV	1. BCH-4.2-Busines Mathematics
FEBRUARY	**Theory:**	1. Role of Auditor, PCAOB, NFRA 2. Corporate Governance Theories and Models 3. Major Corporate Failures 4. Classification of Research, Research design Approaches, Classification of Measurement Scales	1) B.Com (H)-VI 2) B.Com (H)-IV	1BCH-6.1-Auditing and CG 2. BCHS 4.5(b)-Business Research Methods & Analytics
	Practical:	1. Mathematics of Finance	1.B.com (H)-IV	1. BCH-4.2- Business Mathematics
	Assignment	1. Assignment from Chapter- Measurement Scale 2. Assignment from Chapter- Appointment and Removal of an Auditor, CG theories and Models	1) B.Com (H)-VI 2) B.Com (H)-IV	1.BCH-6.1-Auditing and CG 2. BCHS 4.5(b)-Business Research Methods & Analytics

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MARCH	**Theory**	1. Committee, Regulatory Framework 2. Scaling Techniques, Questionnaire Design	1) B.com (H)-IV 2) B.Com (H)-VI	1.BCH-6.1-Auditingand CG 2. BCHS 4.5(b)-Business Research Methods & Analytics
	Practical	1. Mathematics of Finance 2. Linear Programming	1.B.com (H)-IV	1. BCH-4.2-Busines Mathematics
	Test	1. Test/Assignment from Chapter- Appointment and Removal of an Auditor, Rights and Duties ofAuditor, Liabilities of an Auditor, Theories and Models of CG, Insider Trading, Whistle blower policy and Credit Rating Agencies. 2. Test/Assignment from Chapter- Mathematics of Finance and Linear Programming 3. Test from Chapter-Research Design and Questionnaire Development	1. B.com (H)-IV 2. B.Com (H)-VI	1. BCHS 4.5(b)-Busines Research Methods & Analytics 2. BCH-6.1-Auditing ar CG
APRIL	**Theory**	1. Security and Legal Aspects of E-Commerce 2. Business Ethics and Corporate Social Responsibility 3. Types of Sampling	1) B.Com (H)-VI 2) B.Com (H)-IV	1. BCH-6.1-Auditing ar CG 2. BCHS 4.5(b)-Business Research Methods & Analytics
	Practical	1. Mathematics of Finance and Linear Programming	1.B.com (H)-IV	1. BCH-4.2-Busines Mathematics

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SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Neha Singhal **Department: Commerce** **Semester : B.COM, SEM-II**

MONTH		TOPICS	COURSE	PAPER CODE/NAME
MARCH	THEORY	Unit-1, Basic Concepts and Significance of HRM, Role and Functions of HR Manager, Emerging issues in HRM	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
APRIL	THEORY	Unit-2, HR Planning-Quantitative and Qualitative Dimensions, Job Analysis	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
MAY	THEORY	Unit-2, Job Description, Job Specification, Recruitment	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
	ASSIGNMENT	Case Study on Job Analysis	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
JUNE	THEORY	Unit-2, Selection, Training, Placement, Induction, Employee Retention, Workforce Diversity	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
JULY	THEORY	Unit-1, Employee Empowerment, VRS, WFH, WLB	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Arpita Kaul **Department: Commerce**

Semester : II, IV & VI

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Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Unit I: Leadership Styles and attributes of Leadership; Transactional and transformational leadershiphttps://courses .lumenlearning.com/wm - principlesofmanagement /chapter/transformationa l-and-transactional- theories-of-leadership/; Ethical leadership, culture andleadership (the emerging trends in leadership are to be discussed with case studies andprojects).	B.COM H IV	BCH 4.5 (c) Leadership and Team Development
		Unit 1 : Introduction Experiencing and Voicing Dissatisfaction: Concept of Consumer, Consumer buying process and Post-Purchase behaviour, Factors affecting voicing of consumer grievances, Alternatives available to Dissatisfied Consumers: Private action and Public Action; Conciliation and Intermediation for out-of-court Redressal.	B.COM H VI	BCH 6.3(d) Consumer Affairs & Customer Care
	Practicals	INTEREST, SIMPLEINTEREST, COMPOUND INTEREST, PRESENT VALUE,FUTURE VALUE, EQUATION OF VALUE	B.Com H IV	BCH4.2 BUSINESS MATHEMATICS
	Tutorials	Case studies and doubts will be taken up. Group presentations by students.	B.Com HVI	BC6.3(d)

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FEBRUARY	**Theory:**	Unit II: Groups and Group Processes The nature and types of groups; Group dynamics- group cohesion, group roles and group norms, **https://www.youtube.com/watch?v=vsfkk3tQmtw** threat to group effectiveness; Managing group and inter-group dynamics; Managing culturally diverse groups.	B.Com H IV	BCH 4.5 (c) Leadership and Team Development
		Unit II The Consumer Protection Act (CPA), 1986 Objectives and Basic Concepts: Consumer rights and UN Guidelines on consumer protection, Consumer, goods, defect in goods, spurious goods and services, service, deficiency in service, unfair trade practice, restrictive trade practice. Organisational set-up under the Consumer Protection Act: Advisory Bodies: Consumer Protection Councils at the Central, State and District Levels; Adjudicatory Bodies: District Forums, State Commissions, National Commission: Their Composition, Powers, and Jurisdiction (Pecuniary and Territorial), Role of Supreme Court under the CPA with important case law	B.COM H VI	BCH 6.3(d) Consumer Affairs & Customer Care
	Practicals:	Integration, application of integration	B.Com H IV	BCH 4.2Business Mathematics
	Tutorials:	Case studies and doubts will be taken up. Group presentations by students.	B.Com H VI	BC 6.3(d) Consumer Affairs & Customer Care

MARCH	**Theory**	Unit I: Introduction to HRM: Basic concepts and significance of HRM, role and functions of HR manager, emerging issues in hrm, Emerging issues in human resource management: Work force diversity, employee empowerment, downsizing, VRS, work life balance and work from home Unit III: Leaders and Group Decisions Group decision making; Power and influence in teams; https://screencast-o-matic.com/content/videos?sortBy=most_recent&pageView=grid&page=1 Leadership and team empowerment; Challenges in team decision making. Unit III: Grievance Redressal Mechanism under the CPA, 1986 Filing and handling of Complaints: Who can file a complaint; Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases; Relief/Remedy available; Temporary Injunction; Enforcement of order; Appeal; Frivolous and vexatious complaints; Offences and penalties. Leading Cases decided under Consumer Protection law by Supreme Court/National Commission: Medical Negligence; Banking; Insurance; Housing & Real Estate; Electricity Supply; Telecommunication; Education; Defective Products; Unfair Trade Practices.	B.Com II B.Com H IV B.Com H VI	DSC 2.3 Human Resource Management BCH 4.5 (a) Leadership and Team Development BCH 6.3(d) Consumer Affairs & Customer Care
	Practicals	ANNUTIES, LPP Using solver	B.Com H IV	BCH 4.2 Business Mathematics

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Tutorial	Assessment 1: Presentation on diversity Inclusion plan of any company	B.Com II	DSC 2.3 Human Resource Management

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	Assignment	Students will make group presentations on approved topics and present in the class.	B.Com H IV	BCH 4.5 (c) Leadership and Team Development
APRIL	**Theory:**	Unit 2: Procurement of Human Resource: Human resource planning- quantitative and qualitative dimensions, job analysis- job description and job specification, recruitment- concept and sources, selection- concept and process, tests and interview, placement, induction and socialization, employee retention Unit IV: Team Building and Team Effectiveness Group vs. team; Evolution of group into teams; Stages of team development (team development **https://www.youtube.com/watch?v=qtpY9zwuzFM** case studies); Emotionally intelligent teams; Characteristics of effective team; Collaborative communication in teams; https://hbr.org/2007/11/eight- ways-to-build-collaborative- teams Problem solving and conflict resolution in teams. https://hbr.org/1993/03/the-discipline-of-teams-2 Unit V: Emerging Trends in Leadership Women in leadership; Leadership skills- coaching and mentoring; leadership and social media. Unit IV: Consumer Protection in India Quality and Standardisation: Voluntary and Mandatory standards; Indian Standards Mark (ISI), Ag-mark, Hallmarking, Consumer Grievance Redressal under the BIS Act, 2016; ISO 10000 suite. Industry Regulators and Consumer Complaint Redressal Mechanism Banking Ombudsman; Insurance Ombudsman;	B.Com II B.Com H IV	DSC 2.3Human Resource Management BCH 4.5 (c) Leadership and Team Development

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		Telecommunication: TRAI; Food Products: FSSAI; Advertising Standard Council of India; Real Estate Regulatory Authority. Unit V: Competition Act, 2002 Objectives and basic concepts: Consumer, goods, service; Prohibition of anti-competitive agreements; Prohibition of Abuse of Dominant Position; Regulation of Combination; Composition and Powers of Competition Commission of India, Complaints and Procedures For Investigation, Hearings and Enquiry and Appeal Provisions.	B.Com H VI	BCH 6.3(d) Consumer Affairs & Customer Care
	Tutorials: **TEST**	Assessment 2: Analysis of Job description and job specification from any recruitment advertisement in newspaper or online After midterm break, in the second week of March for iv and vi sem. For ii sem according to the college notification.	B.Com H II B.Com IV & VI	DSC 2.3Human Resource Management BCH 4.5 (c) Leadership & Team Development BCH 6.3 (d) Consumer Affairs & Customer Care
MAY	**Theory**	Unit 4: Performance Appraisal and Compensation Management: Performance appraisal – Nature, objectives, process and methods, performance management, potential appraisal, employee counseling, employee enhancement: transfer and promotion. Compensation- concept and policies, types of compensation:base and supplementary	B.Com H II	DSC 2.3Human Resource Management
JUNE	**Theory**	Unit 4:Individual, group and organization incentive plans, fringe benefits, performance linked compensation: employee stock option, pay band compensation system and job evaluation	B.Com H II	DSC 2.3Human Resource Management
JULY	**Theory**	Maintenance of employees and emerging horizons Employee health and safety, employee welfare, social security (excluding legal provisions), employer-employee relations, grievance handling and redressal, industrial dispute: causes and	B.Com H II	DSC 2.3Human Resource Management

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		settlement machinery, e hrm, human resource information system (hris), impact of hrm practices on organizational performance,hr audit		

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SEMESTER WISE TEACHING PLAN
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TEACHING PLAN

Name of the Faculty: Mr. Ajit Singh **Department: Commerce** **Semester: IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
January	Theory	1. Computers Applications in Business Unit 1. Introduction to computers. Input & Output, Generation of computer .	B.Com Hons IV-A+B	BCH 4.3
	Theory	2. Advertising & Personal Selling Unit-1 Introduction to advertising. Communication Process; AIDA Model, Advertising: Importance, types and objectives; DAGMAR Approach; Audience Selection; Methods of setting Advertising Budget.	B.Com VI- B	BC 6.3 (a)

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	Practical	3. Computers Applications in Business Introduction to Preparing Presentation	B.Com Hons IV-A+B	BCH 4.3
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
February	Theory	1. Computers Applications in Business Unit2 Computer Networks	B.Com Hons IV-A+B	BCH 4.3
	Theory	2. Advertising & Personal Selling Unit-2 Message and Media Decisions Advertising Appeals; Advertising Copy: Elements of print and broadcast advertising copy; Types of Media: Merits and Demerits; Media Scheduling.	B.Com VI- B	BC 6.3 (a)

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	Practical	3. Computers Applications in Business MS Word – Use of word art, Mazines Cover Page, Use of Watermark, Inserting tables, Images,Text,Symbols	B.Com Hons IV-A+B	BCH 4.3
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
March	Theory	1.Computers Applications in Business Introduction to Operating Systems. Recent Trends in Computing. Test: Test conducted on the concerned subject after mid-semester break.	B.Com Hons IV-A+B	BCH 4.3
	Theory	2. Advertising & Personal Selling Unit -3 Advertising effectiveness Advertising Agency: Role and types. Evaluating Communication and Sales Effect; Pre and Post-testing Techniques.	B.Com VI- B	BC 6.3 (a)

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		Test: **Test conducted on the concerned subject after mid-semester break.**		
	Practical	**3. Computers Applications in Business Media,Design,Transition,Animation, and Slideshow. Mail merge** **Workbook Collected**	**B.Com Hons IV-A+B**	**BCH 4.3**
	Assingement	**Assignment and Presentation Given to the students**	**B.Com VI- B**	**BC 6.3 (a)**

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Month	Type of Class	Topics	Course	Paper Code/Name
April	Theory	1.Computers Applications in Business UNIT-5 Database Management System (Theory)	B.Com Hons IV-A+B	BCH 4.3
	Theory	2. Advertising & Personal Selling Unit-4,5 Introduction Personal Selling & its process. Concept of Personal Selling and Salesmanship; Personal Selling Situations; Qualities of a Good Salesperson; Types of Salespersons; Role of Personal Selling in CRM; Career 0pportunities in Selling; Measures for making selling as an attractive career; Buying Motives. Prospecting; Pre Approach; Approach; Presentation and Demonstration; Handling of 0bjections; Closing the Sale; Follow-Up.	B.Com VI- B	BC 6.3 (a)
	Practical	3. Computers Applications in Business Revision & Practice of All. Business Presentation Using All Tools.	B.Com Hons IV-A+B	BCH 4.3

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TEACHING PLAN

Name of the Faculty: Mr. Aashish Jain **Department: Commerce** **Semester: II/IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Goods & Service Tax** **a)** Constitutional framework of Indirect Taxes before GST, Concept of VAT: Meaning, Variants of VAT and Methods of VAT; Major defects in the structure of Indirect Taxes prior to GST. **b)** Rationale of GST; Structure of GST (SGST, CGST, UTGST & IGST); GST Council; GST Network; State Compensation Management & Registration **Investing in Stock Market** **a)** Basics of investment, Risk & Return, Instruments of Investments – Equity & Preference shares **b)** Types of orders & Analyst recommendations	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods & Service Tax 2. BC – 4.4(b): Investing in Stock markets
	Practical	**HTML** **1.** Introduction to HTML	B.Com – II Semester – IV	BCH 4.4(a) – E – Commerce (HTML)
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
FEBRUARY	**Theory**	**Goods & Service Tax** 1) Supply of GST (Taxable Event) 2) Place of GST (Within State & Inter – State) 3) Time of Supply (Forward Charge; Reverse Charge & Rate of Change in GST) 4) Exemptions of Supply – Goods & Services 5) Levy & Collection of GST 6) Reverse Charge Mechanism	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods & Service Tax 2. BC – 4.4(b): Investing in Stock markets

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		Investing in Stock Markets **a)** Overview of Indian Securities market – Primary market, private placements, Future & Options **b)** Stock exchange in India – BSE, NSE, MSEI		
	Practical	**HTML** **1.** Table **2.** Creating List (Ordered & Unordered List)	B.Com – II Semester – IV	BCH 4.4(a) – E – Commerce (HTML)
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
MARCH	**Theory**	**Goods & Service Tax** a) Eligible & Ineligible Input Tax Credit b) Composition Scheme c) Composite & Mixed Supply d) Recovery of Tax Credit e) Availability of Tax Credit f) Transfer of Input Tax Credit g) Job Work **Investing in Stock Markets** **a)** Analysis of Domestic & International scenario **b)** Industry Analysis, Cash flow statement Analysis	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	**1.** BCH 6.2: Goods & Service Tax **2.** BC – 4.4(b): Investing in Stock markets
	Practical	**HTML** **1.** Forms **2.** Frame	B.Com – II Semester – IV	BCH 4.4(a): E – Commerce (HTML)
	Assignment	1. Topics allotment for making the assignments from Introduction and Levy & Collection and ITC	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods & Service Tax
	Test	1. Test conducted on the concerned subject after mid-semester break.	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods & Service Tax

Month	Type of Class	Topics	Course	Paper Code/Name
APRIL	**Theory**	**GST & Custom Laws** **a)** Tax Invoice, Credit & Debit Notes, Audit in GST, Self Assessment Tax, E – Way Bills, Offences & Penalties & Appeals **b)** Basic Concept of Custom Laws, Types of Custom Duties, Baggage Rules & Exemptions **Investing in Stock Markets** **a)** Trading Rules, confidence index, and charting (use of historic price) **b)** Do's & Don'ts of investment in markets **c)** Investment in Mutual Funds (Types of mutual funds) **d)** Factors affecting choice of mutual funds	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester - IV	1. BCH 6.2: Goods & Service Tax 2. BC 4.4(b): Investing in stock markets
	Practical	**HTML** **1.** Project work **2.** Practice more comprehensive problems	B.Com – II Semester – IV	BCH 4.4(a) – E – Commerce (HTML)

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Mohini Yadav **Department: Commerce**

Semester: II/IV (AY 22-23)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Unit 1: Accounting for Share capital and debentures, Unit 2: Financial Statements of Companies – Balance Sheet	B.COM P – Sem IV (A+B)	**Corporate Accounting (BC 4.2)**
	Tutorials /Practical	Unit 1: Accounting for Share capital and debentures Unit 4: Mathematics of Finance	B.COM P – Sem IV (A+B) B.COM (H) – Sem 1V (Sec A)	**Corporate Accounting (BC 4.2)** **Business Mathematics (BCH 4.2)**
FEBRUARY	**Theory**	Unit 2: Financial Statements of Companies – P&L, Unit 3: Cash Flow Statements	B.COM P – Sem IV (A+B)	**Corporate Accounting (BC 4.2)**
	Tutorials /Practical	Unit 2: Financial Statements of Companies Unit 5: Solver in LLP	B.COM P – Sem IV (A+B) B.COM (H) – Sem IV (Sec A)	**Corporate Accounting (BC 4.2)** **Business Mathematics (BCH 4.2)**
	<u>Assignment</u>	Unit 1: Accounting for Share capital and debentures, Unit 2: Financial Statements of Companies	B.COM P – Sem IV (A+B)	**Corporate Accounting (BC 4.2)**

MARCH	**Theory**	Unit 4: Amalgamation of Companies	B.COM P – Sem IV (A+B)	**Corporate Accounting (BC 4.2)**
		Unit 4: Amalgamation of Companies and Internal Reconstruction	B.COM P – Sem II (Sec A)	**Corporate Accounting (DSC 2.1)**
	Tutorials /Practical	Unit 4: Amalgamation of Companies: Internal Reconstruction	B.COM P – Sem IV (A+B)	**Corporate Accounting (BC 4.2)**
		Unit 4: Amalgamation of Companies and Internal Reconstruction	B.COM P – Sem II (Sec A)	**Corporate Accounting (DSC 2.1)**
		Unit 4: Mathematics of Finance (Equation of Values)	B.COM (H) – Sem IV (Sec A)	**Business Mathematics (BCH 4.2)**
	Test	Unit 3 & 4: Cash Flow Statements, Amalgamation of Companies, Internal Reconstruction	B.COM P – Sem IV (A+B)	**Corporate Accounting (BC 4.2)**
		Unit 4: Mathematics of Finance (Equation of Values) and Unit 5: Solving LLP using Solver	B.COM (H) – Sem IV (Sec A)	**Business Mathematics (BCH 4.2)**
APRIL	**Theory**	Unit 5: Accounting of Holding Companies	B.COM P – Sem IV (A+B)	**Corporate Accounting (BC 4.2)**
		Unit 4: Amalgamation of Companies and Internal Reconstruction	B.COM P – Sem II (Sec A)	**Corporate Accounting (DSC 2.1)**
	Tutorials /Practical	Unit 5: Accounting of Holding Companies	B.COM P – Sem IV (A+B)	**Corporate Accounting (BC 4.2)**
		Unit 4: Mathematics of Finance (Annuities)	B.COM (H) – Sem IV (Sec A)	**Business Mathematics (BCH 4.2)**
MAY	**Theory**	Unit 4: Amalgamation of Companies and Internal Reconstruction	B.COM P – Sem II (Sec A+B)	**Corporate Accounting (DSC 2.1)**

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JUNE	**Theory**	Unit 5: Corporate Financial Reporting	B.COM P – Sem II (Sec A+B)	**Corporate Accounting (DSC 2.1)**
JULY	**Theory**	Unit 5: Corporate Financial Reporting	B.COM P – Sem II (Sec A+B)	**Corporate Accounting (DSC 2.1)**

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TEACHING PLAN

Name of the Faculty: Ms. Angel Josy Lakra **Department: Commerce** **Semester: II**

Month	Type of Class	Topics	Course	Paper Code/Name
May	**Theory (4 Lectures)**	**1.Financial Management for Beginners** ✓ Income statement ✓ Balance sheet ✓ Ratio analysis: meaning, significance and limitations ✓ Current ratio ✓ Quick ratio ✓ Absolute liquidity ratio ✓ Debt-equity ratio ✓ Interest coverage ratio ✓ Inventory turnover ratio ✓ Debtors turnover ratio ✓ Average collection period	B.Com Hons – II (GE)	GE-2.2
June	**Theory (4 Lectures)**	**Financial Management for Beginners** ✓ Creditors turnover ratio ✓ Average payment period ✓ Return on capital employed ✓ Return on equity ✓ Earnings per share Dividend per share ✓ Price-earning ratio ✓ Capital budgeting process ✓ Capital budgeting techniques (Payback period, Discounted payback period, NPV, IRR)	B.Com Hons – II (GE)	GE-2.2
7 July	**Theory (1 Lecture)**	**Financial Management for Beginners** ✓ Capital budgeting techniques (Payback period, Discounted payback period, NPV, IRR)	B.Com Hons – II (GE)	GE-2.2

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Name of the Faculty: Ms. Angel Josy Lakra **Department: Commerce** **Semester: IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
January	**Theory**	**1. Insurance and Risk Management** ✓ Concept of Insurance ✓ Need for Insurance ✓ Principles of utmost good faith ✓ Insurable Interest ✓ Indemnity ✓ Economic Function ✓ Proximate Cause ✓ Subrogation and Contribution ✓ Overview of Regulatory framework of Insurance	Hons IV GE	BCH 4.4 (a)
	Theory	**2. E- Commerce** ✓ Introduction ✓ What is E-Commerce? ✓ Evolution of E-Commerce ✓ Defining E-Commerce ✓ E-Commerce based activities ✓ Goals of E-Commerce ✓ Technical Components of E-Commerce-Infrastructure ✓ Functions of E-Commerce ✓ Advantages of E-Commerce ✓ Disadvantages of E-Commerce ✓ Framework of E-Commerce ✓ E-Commerce Applications/Scope ✓ Supply Chain Management ✓ E-Business	B.Com IV-A+B	BC4.4(a) AEEC -2

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	Practical	**3. Computers Applications in Business** ✓ Spreadsheet Concepts ✓ Creating, Opening and Saving a Workbook ✓ Organizing Worksheets ✓ Working with Cell(s) ✓ Formatting Cells, Rows and Columns ✓ Formulas in Excel ✓ Formulas Copying and Types of Cell References ✓ Charts in Excel ✓ Printing Worksheet ✓ What-if Analysis	B.Com Hons IV-A+B	BCH 4.3
	Theory	**4. Training and Development (TD)** ✓ Theories of Management Training & Development ✓ Practical Application of the theories in today's Organization ✓ Inputs and Gaps in Training ✓ TD as a source of competitive advantages ✓ Training vis-à-vis learning ✓ Training Process ✓ Methods of Training ✓ Human re-engineering	B.Com VI A+B (GE)	BC 6.4 (b)
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
February	**Theory**	**1. Insurance and Risk Management** ✓ Types of Insurance: Life and Non-life Insurance ✓ Features of each type of Insurance ✓ Need and Policies of Insurance ✓ Legal Aspects of Insurance contract ✓ Loss Assessment ✓ Loss Control ✓ Control of Malpractices and Mis-selling ✓ Exclusion of Perils	Hons IV GE	BCH 4.4 (a)
	Theory	**2. E- Commerce** ✓ Nature and Dynamics of the Internet ✓ Categories of E-Commerce ✓ Types of Business Models	B.Com -IV A+B	BC4.4 (a) AEEC -2

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		✓ Launching a Business on the Internet ✓ The Life Cycle Approach		
	Practical	**3. Computers Applications in Business** ✓ Goal Seek ✓ Data Tables ✓ Scenario Manager ✓ Solver ✓ Statistical Analysis ✓ Data Validation ✓ Data Protection ✓ Pivot Table Reports and Charts ✓ Subtotals	B.Com Hons IV-A+B	BCH 4.3
	Theory	**4. Training and Development (TD)** ✓ Learning Curves ✓ Resistance to change ✓ Change Management ✓ Workmen training ✓ Re-training ✓ Government Initiatives ✓ Self-Directed Work Teams ✓ Managing a Diverse Workforce	B.Com -VI A+B (GE)	BC 6.4 (b)
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
March	**Theory**	**1.Insurance and Risk Management** ✓ Actuaries ✓ Computation of Insurance Premium ✓ Re-Insurance and Co-insurance: Features, Objectives and Methods ✓ Bancassurance- Features and Merits **Test:** Test conducted on the concerned subject after mid-semester break.	Hons IV GE	BCH 4.4 (a)
	Theory	**2. E- Commerce** ✓ Internet and Its Evolution ✓ IT Infrastructure	B.Com - IV A+B	BC4.4 (a) AEEC -2

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		✓ Middleware ✓ Domain Names ✓ Integrating E-Business Applications ✓ Components of Internet ✓ Intranet, Extranet ✓ Relationship between the Internet, Intranet, and Extranet ✓ Meaning of E-Payment ✓ Models and Methods of E-Payment **Test:** Test conducted on the concerned subject after mid-semester break.		
	Practical	**3. Computers Applications in Business** ✓ What are functions ✓ Inserting a Function ✓ Mathematical Functions ✓ Statistical Functions ✓ Logical Functions ✓ Financial Functions ✓ Other functions ✓ Ratio Analysis ✓ Capital Budgeting **Workbook Collected**	B.Com Hons IV-A+B	BCH 4.3
	Theory	**4. Training and Development (TD)** ✓ Practical Application of Designing Programmes in Today's Environment ✓ Career Development and Planning ✓ Career Development Programs ✓ Counseling ✓ Group Projects ✓ Training for international Assignments **Test:** Test conducted on the concerned subject after mid-semester break.	B.Com -VI A+B (GE)	BC 6.4 (b)

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Month	Type of Class	Topics	Course	Paper Code/Name
April	**Theory**	**1.Insurance and Risk Management** ✓ Re-insurance and Co-insurance ✓ Concept of Risk ✓ Types of Risk ✓ Assessment and Transfer ✓ Sources and Measurement of Risk ✓ Disaster Risk Management ✓ Risk Retention and Transfer ✓ IRDA Act 1999; objectives, composition, power and functions; delegation of powers ✓ Role of IRDA ✓ Establishment of Insurance Advisory Committee	Hons IV GE	BCH 4.4 (a)
	Theory	**2. E- Commerce** ✓ E-Money ✓ Payment Gateway ✓ SET Protocol ✓ Visitors to website ✓ Website promotion tools ✓ Web Analytics ✓ Collecting Web Data ✓ Building web traffic ✓ Risk Management Options for E-payment system ✓ IT Act 2000 and Objectives ✓ Threats in E-Commerce ✓ Security of Clients and Service Provider ✓ Legal Aspects of E-Commerce	B.Com -IV A+B	BC4.4 (a) AEEC -2
	Practical	**3. Computers Applications in Business** ✓ Generalized Loan Sheet ✓ Generalized Loan Sheet with Garbage Cleaning ✓ Loan Sheets with Rescheduling ✓ Depreciation ✓ Regression Analysis ✓ Trend Analysis	B.Com Hons IV-A+B	BCH 4.3

	Theory	**4. Training and Development (TD)** ✓ Evaluation of TD programmes- statistical Methods ✓ Use of Appropriate training TD software packages ✓ Application of Distance learning packages ✓ Effective training follow-up ✓ Executive Development ✓ Role of Development Officers ✓ Administrators ✓ Consultants ✓ Designers and Instructors ✓ Trends towards Performance Management; its impact on training professionals	B.Com -VI A+B (GE)	BC 6.4 (b)

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

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Name of the Faculty: Antima Sharma **Department: Commerce**

Semester: II (AY 22-23)

Month		Topics	Course	Paper Code/Name
May	**Theory**	Unit 1: Issue of Rights and Bonus Shares, ESOPs, and Buy-Back of Shares, Issue and Redemption of Preference shares and Debentures, Underwriting of Shares and debentures	B.COM P – Sem II (A+B)	**Corporate Accounting (DSC 2.1)**
		Unit V: Appointment of auditor, Qualification and Disqualification of Auditor, rotation and removal of auditor	B. Com P – Sem II (B)	**Company Law (DSC 2.2)**
	Tutorials /Practical	Unit 1: Redemption of preference shares, Redemption of debentures.	B.COM P – Sem II (A+B)	**Corporate Accounting (DSC 2.1)**
June	**Theory**	Unit 2: Financial Statements of Companies – P&L, Unit 3: Cash Flow Statements	B.COM P – Sem II (A+B)	**Corporate Accounting (DSC 2.1)**
		Unit V: Winding Up: Concepts and Mode of Winding Up; Provisions of winding up under insolvency and Provisions Bankruptcy code 2016, provisions relating to payment of dividend.	B. Com P – Sem II (B)	**Company Law (DSC 2.2)**
	Tutorials /Practical	Unit 2: Financial Statements of Companies	B.COM P – Sem IV (A+B)	**Corporate Accounting (BC 4.2)**

	Assignment	Unit 1: Accounting for Share capital and debentures, Unit 2: Financial Statements of Companies	B.COM P – Sem II (A+B)	**Corporate Accounting (DSC 2.1)**
July	**Theory**	Unit 3: Valuation of Intangible assets and Shares, Value added statements, Economic Value added. Market value added, and shareholder value added. Unit 3: Allotment and Forfeiture of shares, Sweat Equity, ESOPs, Bonus Issue, and Further issue of shares, buyback, split of shares, and provisions regarding buyback.	B.COM P – Sem II (A+B)	**Corporate Accounting (DSC 2.1)**
	Tutorials /Practical	Unit 4: Valuation of Intangible assets and Shares	B.COM P – Sem IV (A+B)	**Corporate Accounting (DSC 2.1)**
	Test	Unit 3 & 4: Cash Flow Statements, Amalgamation of Companies, Internal Reconstruction	B.COM P – Sem II (A+B)	**Corporate Accounting (DSC 2.1)**

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SRI VENKATESWARA COLLEGE
UNIVERSITY OF DELHI

DEPARTMENT OF COMMERCE
SEMESTER-WISE TEACHING PLAN

Name of the Faculty: Ms. Deepika
Semester: II
Course: B.Com(H)

Month	Type of Class	Topics	Course	Paper Code/Name
April 2023	Theory	1. Company Law • Overview of Syllabus and Meaning of Directors 2. Personal Financial Planning • Overview of Syllabus	B.COM (H) Semester II SEC	DSC 2.2: Company Law SEC 2.2: Personal Financial Planning
May 2023	Theory	**1. Company Law** Unit 4: Management and Meetings • Legal Position of Directors • Disqualifications • DIN • Classification of Directors • Appointment and Removal of Directors • Key Managerial Positions • Board Meetings • Shareholders' Meetings • Convening and Conduct of Meetings • Postal Ballot • E-Voting **2. Personal Financial Planning** Unit 1: Introduction to Financial Planning • Financial Goals • Budgeting incomes and payments • Time value of money • Introduction to Savings (benefits and management) • Setting alerts and maintaining funds for fixed commitments Unit 2: Investment Planning • Process and Objectives of Management • Return and Risk • Measurement of Portfolio Risk and Return • Diversification and Portfolio Management • Mutual Fund • Currency Derivatives **CONTINUOUS ASSESSMENT**	B.COM (H) Semester II SEC	DSC 2.2: Company Law SEC 2.2: Personal Financial Planning

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June 2023	Theory	**1. Company Law** Unit 5: Dividends, Audit and Winding Up • Dividend • Company Audit • Insolvency and bankruptcy Code, 2016 **2. Personal Financial Planning** Unit 3: Personal Tax Planning • Tax Structure in India • Personal Tax Planning • Comparison of Benefits • Tax avoidance and tax evasion Unit 4: Insurance Planning • Need for Insurance • Types of Insurance **CONTINUOUS ASSESSMENT**	B.COM (H) Semester II SEC	DSC 2.2: Company Law SEC 2.2: Personal Financial Planning
July 2023	Theory	**1. Company Law** Insolvency and Bankruptcy Code, 2016 **2. Personal Financial Planning** Unit 5: Retirement Benefits Planning • Retirement planning goals • Process of Retirement Planning • Pension plans in India • Reverse Mortgage • Estate Planning	B.COM (H) Semester II SEC	DSC 2.2: Company Law SEC 2.2: Personal Financial Planning

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SEMESTER WISE TEACHING PLAN (2022-2023)

SRI VENKATESWARA COLLEGE (DU)

Name of the Faculty: Dr. M. Rama Naik **Department: Commerce** **Semester: GE-2.2, SEM-II**

MONTH		TOPICS	COURSE	PAPER CODE/NAME
MARCH	THEORY	Unit-1, Meaning and Importance of of finance Role of Finance Manager Time Value of Money(Compounding& Discounting)	GE-2.2	GE-2.3- FINANCIAL MANAGEMENT FOR BEGINNERS
APRIL	THEORY	Unit-1 Risk& Return. Alternative Investment options Sources of Long term Financing and short term Financing.	GE-2.2	GE-2.3- FINANCIAL MANAGEMENT FOR BEGINNERS
MAY	THEORY	Unit-2 Financial Statements Income statement Balance sheet Ratio Analysis Meaning Significance and Limitation	GE-2.2	GE-2.3- FINANCIAL MANAGEMENT FOR BEGINNERS
	ASSIGNMENT	Case Study on Job Analysis	GE-2.2	
MAY	THEORY	Unit-2 Debtors turnover ratio, average collection period, creditors turnover ratio, average payment period, return on capital employed, return on equity, earning per share, price earnings ratio	GE-2.2	GE-2.3- FINANCIAL MANAGEMENT FOR BEGINNERS

MAY	THEORY	Unit-3 Concept of cost of capital and capital structure, cost of debt and equity. Cost of preference share, cost of equity share	GE-2.2	GE-2.3- FINANCIAL MANAGEMENT FOR BEGINNERS
JUNE	THEORY	Weighted average, cost of capital (WACC), meaning of leverage and types (operating leverage, financial leverage and combined leverage)	GE-2.2	GE-2.3- FINANCIAL MANAGEMENT FOR BEGINNERS
	THEORY	Unit-4 Meaning of dividends, types of dividends, factors affecting dividend policies	GE-2.2	GE-2.3- FINANCIAL MANAGEMENT FOR BEGINNERS
	THEORY	Stocks split and bonus shares, concept of working capital, its components and factors affecting working capital requirements	GE-2.2	GE-2.3- FINANCIAL MANAGEMENT FOR BEGINNERS
	THEORY	Unit-5 Types of risks and return, concept of valuation, equity valuation and analysis, bond valuation and analysis, portfolio analysis, and contemporary issues in finance	GE-2.2	GE-2.3- FINANCIAL MANAGEMENT FOR BEGINNERS

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SEMESTER WISE TEACHING PLAN (2022-2023)

SRI VENKATESWARA COLLEGE (DU)

Name of the Faculty: Dr. M. Rama Naik **Department: Commerce** **Semester: B.COM, SEM-II**

MONTH		TOPICS	COURSE	PAPER CODE/NAME
MARCH	THEORY	Unit-1, Basic Concepts and Significance of HRM, Role and Functions of HR Manager, Emerging issues in HRM	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
APRIL	THEORY	Unit-2, HR Planning-Quantitative and Qualitative Dimensions, Job Analysis	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
MAY	THEORY	Unit-2, Job Description, Job Specification, Recruitment	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
	ASSIGNMENT	Case Study on Job Analysis	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
MAY	THEORY	Unit-3 A Concept of Training and Significance Role Specific and competency Based Training Differentiate between Training and Development	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT

MAY	THEORY	Unit-3 Methods of Training On the Job Training and off the job Training and Difference. Apprenticeship Training, Under study Job rotation Internship training Lecture methods Coaching and Mentoring	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
MAY	THEORY	Unit-3 Visitable training, Case Study, Role Plying e-learning sensitivity training Management games Conferences and seminars' Management development Programs Training Process	B.COM-II	DSC-2.3-HUMAN RESOURCE
JUNE	THEORY	Unit-4 Performance Appraisal Meaning Nature Objectives Process Performance management	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
	THEORY	Unit-4 Methods of Performance Appraisal, Potential Employee Counseling: Job Transfer and Promotion	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
	THEORY	Unit-4 Concept of Compensation policies, base and supplementary compensation Individual Group and Compensation	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
	THEORY	Unit-4 Meaning of Fringe benefits Performance linked compensation Employee stock options Pay band compensation system Job Evaluation	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
JUNE	THEORY	Unit-2, Selection, Training, Placement, Induction, Employee Retention, Workforce Diversity	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT

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JULY	THEORY	Unit-1, Employee Empowerment, VRS, WFH, WLB B.COM-II	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
JULY	THEORY	Unit-5 Concept of Employee Health and Safety Employee Welfare Social Security (Excluding legal provision) Employee Employer relations Grievance handling and redressal	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
JULY	THEORY	Unit-5 Industrial Dispute Causes and Settlement Machinery, Stress free environment, Rejuvenation breaks and leisure activities	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT
JULY	THEORY	Emerging Horizons Redundant manpower e-HRM Human resource information system HR Audit Emerging Job Opportunity Talent Management Employee burnout work life balance work from home	B.COM-II	DSC-2.3-HUMAN RESOURCE MANAGEMENT

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23) (Even-Semester)

PRINCIPAL (Acting)
Sri Venkateswara College
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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Devendra Malapati
Department: Commerce
Courses: B.Com (H)/B.Com
Semester: II

May-2023 to July-2023 (Semester-II)				
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
May 2023	**Theory**	1. **Unit -II: Formation and Incorporation Documents** ▪ Formation of Company ▪ Promoters and their legal position ▪ Pre-incorporation contracts ▪ Online Registration of a Company ▪ Memorandum of Association and its alteration ▪ Articles of Association and its alteration	**1.** B.Com.(H) – II **2.** B.COM-II	**1.** Discipline Specific Core Course -2.2

		Unit V: Dividends, Audit and Winding up • Provisions relating to payment of Dividend. • Company Audit: auditor's qualification and disqualifications, • Auditor's appointment, rotation and removal, Secretarial Audit. • Winding Up: Concept and Modes of Winding Up; • Provisions of winding up under Insolvency and Bankruptcy Code 2016. **Unit I: Introduction to financial Planning** • Financial goals , steps in financial planning, budgeting incomes and payments • Time value of money, introduction to savings, benefits of savings • Management of spending and financial discipline	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	**2.** Skill Enhancement Course.
	Assignment	**Continuous assessment on Unit II,V & I**	**1.** B.Com.(H) – II **2.** B.COM-II	**1.** Discipline Specific Core Course -2.3 **2.** Discipline Specific Core Course -2.2 **3.** Skill Enhancement Course.
May 2023	**Theory**	**Unit II: Formation and Incorporation Documents** • Doctrine of constructive notice • Doctrine of ultra vires and Indoor management **Unit III: Share Capital** • Prospectus, shelf and red herring prospectus	**1.** B.COM-II	**1.** Discipline Specific Core Course -2.2 **2.** Skill Enhancement Course.

		• Mis statement in prospectus, book building • Transfer and transmission of shares, Demat System **Unit I: Introduction to financial Planning** • Setting alerts and maintaining sufficient funds for fixed commitments. **Unit II: Investment planning** • process and objectives of investment, concept and measurement of return and risk for various assets classes, • measurement of portfolio risk and return, diversification & portfolio formation, gold bond, Real estate, investment in greenfield and brown field projects, • investment in fixed income instruments, financial derivatives & commodity market in india	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	
May 2023	**Assignment**	**Continuous assessment on Unit I,II & III**	**1.** B.COM-II	**1.** Discipline Specific Core Course -2.2 **2.** Skill Enhancement Course.
May 2023	**Theory**	**Unit IV : Management and Meetings** • Directors, legal position, Disqualifications • Director Identification Number (DIN) • Classification of Directors and-Additional • Alternative and Casual Directors • Women directors **Unit II: Investment planning**	**1.** B.COM-II	**1.** Discipline Specific Core Course -2.2 **2.** Discipline Specific Core Course -2.2 **3.** Skill Enhancement Course.

		• Mutual fund schemes, international investment avenues • Currency derivation and digital currency	PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021	
	Assignment	**Continuous assessment on Unit II & IV**	**1.** B.Com.(H) – II **2.** B.COM-II	**1.** Discipline Specific Core Course -2.2 **2.** Discipline Specific Core Course -2.2 **3.** Skill Enhancement Course.
June 2023	**Theory**	**Unit IV : Management and Meetings** • Independent director, • small shareholder's director; • Appointment, Removal of directors; • Powers and Duties **Unit III: Personal tax planning** • Tax structure in India for personal taxation, scope of personal tax planning • Exemption and deductions available to individuals under different heads of income and gross total income . • Comparison of benefits, special provisions u/s 115 LBAC, vis-à-vis general provisions of Income tax act,1961, tax avoidance versus tax evasion **Unit-IV: Insurance Planning** • Need for insurance, life insurance, Health insurance • Property insurance, credit life insurance and • Professional liability insurance	**1.** B.COM-II	**1.** Discipline Specific Core Course -2.2 **2.** Skill Enhancement Course.
	Assignment	**Continuous assessment on Unit IV,III &IV**	**1.** B.COM-II	**1.** Discipline Specific Core Course -2.2

				2. Skill Enhancement Course.
	Home Examination	**1.** Test will be conducted on the concerned subject		
July 2023	**Theory**	**Unit IV : Management and Meetings** • Key managerial personnel (KMP) • Board Meetings; Shareholders' meetings: • AGM and EGM. Convening and conduct of meetings: Requisites of a valid meeting; • Resolutions (Virtual meetings); Postal ballot; e-voting. **Unit-V:Retirement Benefits Planning** • Retirement planning goals, • Process of retirement planning • Pension plans available in India • Reverse mortgage, Estate planning.	**1.** B.COM-II	**1.** Discipline Specific Core Course -2.2 **2.** Skill Enhancement Course.
	Assignment	**Continuous assessment on Unit IV& V**	**1.** B.COM-II	**1.** Discipline Specific Core Course -2.2 **2.** Skill Enhancement Course.

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23) (Even-Semester)

PRINCIPAL (Acting)
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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Neetu Kushwaha
Department: Commerce
Courses: B.Com (H) / VAC
Semester: II

Month	Type of Class	Course Contents	Course	Unique Paper Code/Paper Name
April 2023	**Theory**	**1. Unit 3 Upgrading Employees: Training and Development** • Concept and significance of Training & Development	**1.** B.Com. (Hons) – II	**1.** DSC 2.3 Human Resource Management
		1. Unit- I Introduction - The Basis of Ethics • Getting to Know Each Other • What to Expect from the Course?	**2.**Value Added Course	**2.** Ethics & Culture
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
May 2023	**Theory**	**1. Unit 3: Upgrading Employees: Training and Development** • Role specific and competency-based training; • Training and development methods – Apprenticeship, understudy, job rotation, vestibule training, case study, role playing, hands on, shadowing, e-learning, sensitivity training, In-basket, management games, conferences and seminars, coaching and mentoring, management development programs;	**1.** B.Com. (Hons) – II	**1.** DSC 2.3 Human Resource Management

		• Training process outsourcing. • Scope of training; On board, soft skills, technical skills, product & service, quality, • Anti-harassment, legal		
		Unit 1: Introduction - The Basis of Ethics • Recognition of Our Common Humanity • Empathy, Compassion and Justice **Unit 2: The Role of Intelligence, Reason and Emotions** • Discernment: What Is The Right Thing To Do? • The Art of Conflict Resolution • Destructive and Constructive Emotions • The Need for Emotional Balance	**2.**Value Added Course	**2.** Ethics & Culture
	Tutorials	**1.** Upgrading Employees: Training and Development	**1.** B.Com. - II	1. DSC 2.3 Human Resource Management
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
June 2023	**Theory**	**1. Unit 4: Performance Appraisal and Compensation Management** • Performance appraisal- Nature, objectives and process • Performance management • Methods of performance appraisal • Potential appraisal • Employee counselling • Job Transfer and promotion • Compensation - Concept and policies • Base and supplementary compensation • Individual, group and organization incentive plans • Fringe benefits • Performance linked compensation • Employee stock option	**1.** B.Com. (Hons) – II	**1.** DSC 2.3 Human Resource Management PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021

		• Pay band compensation system • Job evaluation.		
		2. Unit 3: Cultivating Inner Values- Ethics in the World of Work and Play • Training the Mind: Mindfulness and Kindness • Meditation • Discovering your Vocation and Interests • Self-discipline, Integrity, Commitment, Creativity • Work-Life Balance	**2.** Value Added Course	**2.** Ethics & Culture
	Tutorials	**1.** Performance Appraisal and Compensation Management	**1.** B.Com. – II	**1.**DSC 2.3 Human Resource Management
	Assignment	**1.** Assignments will be issued for Human Resource Management	**1.** B.Com. (Hons) – II	**1.**DSC 2.3 Human Resource Management
		2. Assignments will be issued for Ethics & Culture	**2.** Value Added Course	**2.**Ethics & Culture
	Home Examination	**1.** Test will be conducted on the concerned subject	**1.** B.Com. (Hons) - II	**1.** DSC 2.3 Human Resource
		2.Test would be conducted on the concerned subject	**2**. Value Added Couse	**2.** Ethics & Culture
Month	**Type of Class**	**Course Contents**	**Course**	**Paper Code/Name**
July 2023	**Theory**	**1. Unit 5: Employee Maintenance, Engagement and Emerging Horizons** • Employee health and safety; Employee welfare • Social security (excluding legal provisions) • Employer-employee relations • Grievance handling and Redressal • Industrial disputes: Causes and settlement machinery • Stress-free environment • Rejuvenation breaks and leisure activities	**1.** B.Com. (Hons) - II	**1.** DSC 2.3 Human Resource Management PRINCIPAL (Acting) Sri Venkateswara College (University of Delhi) Dhaula Kuan, New Delhi-110021

		• Emerging Horizons • Redundant manpower • e-HRM • Human Resource Information System (HRIS) • HR Audit • Emerging job opportunities • Talent management • Employee burnout, • Work life balance • Work from Home.		
		2.Unit 4: Striving for a Better World Outreach Activities • Means and Ends • Debate and Dialogue • Culture as Shared Values • Creating and Sustaining Ethical Cultures: The Role of Philosophy, Religion, Literature, Theatre, Cinema, Music, Media	**2**.Value Added Course	**2**.Ethics & Culture
	Tutorials	• Employee Maintenance, Engagement	**1.** B.Com. (Hons) - II	**1.** DSC 2.3 Human Resource Management

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2022-23) (Even-Semester)

PRINCIPAL (Acting)
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Name of the Faculty: Dr. P.Chengalrayulu
Department: Commerce
Courses: B.Com (H)/B.Com
Semester: II

Month	Type of Class	Course Contents	Course	Unique Paper Code/Paper Name
May 2023	**Theory**	**Unit 3: Valuation of Intangible Assets and Shares**: **Methods of Valuation of Intangible Assets** ➢ Average Profits Method ➢ Super Profits Method ➢ Capitalization Methods **Methods of Valuation of Shares** ➢ Net Assets Method ➢ Market Value Method ➢ Fair Value Method Value Added Statement, Economic Value Added, Market	**1.** B.Com. (Hons) – II **2.** B. Com – II	**1.** Discipline Specific Elective – 2.1; BCH-2.1: Corporate Accounting

		Value Added, and Shareholder Value Added.		
	Tutorials	**Methods of Valuation of Intangible Assets** ➢ Average Profits Method Problems No.4, 5 &6 ➢ Super Profits Method Problems No.4, 5 &6 ➢ Capitalization Methods Problems No.4, 5 &6 **Methods of Valuation of Shares** ➢ Net Assets Method Problems No.4, 5 &6 ➢ Market Value Method Problems No.4, 5 &6 Fair Value Method Problems No.4, 5 &6	1. B.Com. (Hons) – II	1.Discipline Specific Elective – 2.1; BCH-2.1: Corporate Accounting
	Theory	**Unit 3: Share Capital** ➢ Prospectus, Shelf and Red herring prospectus, misstatement in prospectus; ➢ Book building. Allotment and Forfeiture of share ➢ Sweat Equity, ESOPs, Bonus issue ➢ Further issue of shares, buyback, ➢ split of sharers and provisions regarding buyback; ➢ Transfer and transmission of shares; Demat system.	1. B.Com. – II	1.Discipline Specific Elective – 2.2; BCOM-2.2: Company Law
	Tutorials	**Unit 3: Share Capital** ➢ Misstatement in prospectus; ➢ Book building. Allotment and Forfeiture of share ➢ Sweat Equity, ESOPs, Bonus issue ➢ Further issue of shares, buyback, ➢ Transfer and transmission of shares; Demat system.	1. B.Com. – II	1.Discipline Specific Elective – 2.2; BCOM-2.2: Company Law
June 2023	**Theory**	**Unit 4: Amalgamation of Companies and Internal Reconstruction** ➢ Accounting for Amalgamation of Companies (excluding inter-company holdings) applying AS 14/Ind AS 103. ➢ Problem No. 1, 2, 3&4	1. B.Com. (Hons) – II	1.Discipline Specific Elective – 2.1; BCH-2.1: Corporate Accounting

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	Tutorials	➢ Accounting for Amalgamation of Companies ➢ Problem No. 5, 6, 7&8	1. B.Com. (Hons) – II	1.Discipline Specific Elective – 2.1; BCH-2.1: Corporate Accounting
	Theory	**Unit 4: Management and Meetings** Directors: Legal position, Disqualifications, Director Identification Number (DIN) Classification of directors-Additional Alternate and Casual directors, Women directors	1. B.Com. – II	1.Discipline Specific Elective – 2.2; BCOM-2.2: Company Law
	Tutorials	**Unit 4: Management and Meetings** Directors: Disqualifications, Classification of directors-Additional Alternate and Casual directors, Women directors	1. B.Com. – II	1.Discipline Specific Elective – 2.2; BCOM-2.2: Company Law
July 2023	**Theory**	**Unit 4: Amalgamation of Companies and Internal Reconstruction** ➢ Accounting for Different forms of Internal Reconstruction (excluding drafting of Internal Reconstruction Scheme). Problem No. 1, 2, 3&4	1. B.Com. (Hons) – II	1.Discipline Specific Elective – 2.1; BCH-2.1: Corporate Accounting
	Tutorials	Accounting for Different forms of Internal Reconstruction Problem No. 5, 6, 7&8	1. B.Com. (Hons) – II	1.Discipline Specific Elective – 2.1; BCH-2.1: Corporate Accounting
	Theory	**Unit 4: Management and Meetings** ➢ Independent director, small shareholder's director; Appointment, Removal of directors; Powers and Duties;	1. B.Com. – II	1.Discipline Specific Elective – 2.2; BCOM-2.2: Company Law

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		➢ Key managerial personnel (KMP); ➢ Board Meetings; Shareholders' meetings: AGM and EGM.		
	Tutorials	**Unit 4: Management and Meetings** ➢ Convening and conduct of meetings: Requisites of a valid meeting ➢ Resolutions (Virtual meetings) ➢ Postal ballot; e-voting.	1. B.Com. – II	1.Discipline Specific Elective – 2.2; BCOM-2.2: Company Law

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Dr. Aruna Rao

Teaching plan for even semester 2022-2023

Principles of Microeconomics II Semester 2

Unit 1: Market Structure

a) Theory of a Monopoly Firm

b) Imperfect Competition

Chapters 13, 16, 17 Jan 2, -31 January 2022

Unit 2 : Consumer and Producer Theory

a) Consumer and Producer theory in action

b) Markets and Market Failure

Chapters 10, 11, 22 February 1- February 28

Unit 3 : Income distribution and factor pricing input markets , Chapter 18 March 1- March 7

Unit 4 : International trade , Chapter 3 March 8 – March 15

GE Semester 6, B Com (P) Principles of Macroeconomics

Unit 1: Introduction to Macroeconomics and National income accounting , January2- January 31

Unit 2: Money, February1-february 15

Unit 3 : Inflation, February 16- February 28

Unit 4 : Closed economy in the short run, March 1- March 15

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr M. PADMA SURESH

Department: ECONOMICS **Semester : IV , 2022-23**

MONTH		TOPICS	COURSE	PAPER CODE/NAME
JANUARY	**Theory**	Data Types and Sources. Nature of research –Ch 1,2, 4, 5,6, 13 Ranjit Kumar(RK)-Ch 3(Flick) Discussion on how to choose a research topic and data sources like mospi, data.gov.in, etc.	BA PROG SEC-Economics	Research Methodology UPC-62273426 LOCF-PS41
FEBRUARY	**Theory**	Questionnaire design and sampling techniques. Approaches to research and research strategy-Ch 7,8,9,10,12 of RK,Cochran-Ch1,2,5,8-relevant sections. Submission of research proposal.		
MARCH	**Theory**	Processing of survey data, analysing data. Sample selection:Ch 11,15,16,17 of RK Conduct of Practice internal test on Ch 1-8 of RK. Discussion of research proposals.		
APRIL	**Theory**	Ethics and scientific integrity. Writing Project Report-Ch 14,15,16.17 of RK Submission of Project/Research Report		

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Dr. M PADMA SURESH
Department: ECONOMICS **Semester : VI /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE/NAME
JANUARY	**Theory**	Bipin Chandra-The Colonial Legacy & Dreze and Sen- An Uncertain Glory Ch 1 Growth & Structural Change-Phases of growth, Eco liberalization,-Dreze & Sen Ch.2 & Lamba & Subramanian(2020)JEP.	BA Prog.	The Indian Economy LOCF-PGE62 UPC-62275605
	Tutorials	Discussion on the topics covered. Assignment practice.		
FEBRUARY	**Theory:**	Comparative perspective-Dreze & Sen-Ch.3. Dreze & Sen Ch 5, 6, 7, 8 on Education, Health, Poverty & Social Support, Inequality. Indrani Gupta-Health Indicators ; Bina Agarwal-Gender Inequality from NOCEI		
	Tutorials:	Discussion on India and other countries & States of India. Discussion on Education, Health. Assignment 1. Submission and answers discussion.		
MARCH	**Theory:**	Dreze & Sen Ch 7, 8. Phases of growth, Eco liberalization-Omkarnath-Ch.7. Agriculture and Industry-Issues. M.Ghatak, Mahendra Dev & R.Nagaraj from NOCEI. .		
	Tutorials:	Discussion on Poverty, social support, sectoral issues. Assignment 2 practice and submission and discussion of answers. Conduct of Internal Test.		
APRIL	**Theory:**	Industry, Services & External sector issues. R. Nagaraj(EPW), , Eco. Survey 2016-17; R. Chanda(NOCEI), P.P.Pal Ch. 5&6 and Eco. Survey(2020-21)		
	Tutorials:	Discussion of topics, revision from previous question papers.		

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Name of the Faculty: KRISHNAKUMAR S (2022-23)

Department: ECONOMICS **Semester : IV 2022-23**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introduction to the Growth Theory. Neoclassical Solow model and its assumptions. Golden Rule Law of Accumulation. Harrod-Domar	BA(Hons) Sem IV	Intermediate Macroeconomics-II
	Practicals			
	Tutorials	Assignments on neoclassical Solow growth model from Mankiw workbook		
FEBRUARY	**Theory:**	Economic Growth in the Jones-Roemer framework. Economics of ideas, technological change. Math modeling of the same. Open Economy macroeconomics. Uncovered and Covered Interest	BA(Hons) Sem IV	Intermediate Macroeconomics-II
	Practicals:			
	Tutorials:	Economics Growth tutorials and tests . some new readings		
MARCH	**Theory:**	Foreign Exchange Markets. Spot, Forward and Futures. Arbitrage and speculation.	BA(Hons) Sem IV	Intermediate Macroeconomics-II
		Fiscal and monetary policies under fixed and flexible exchange rate regimes.		
	Practicals:			
	Tutorials:	Problems on inter-temporal approach. Discussion of some articles.		
	<u>Assignment :</u>	Test based on Economic growth		

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APRIL	**Theory:**	Fiscal and Monetary Policy Debt stabilization . Taylors interest rate setting rule. Economics of ideas. Schools of Macroeconomics. Miscellaneous. Revision	BA(Hons) Sem IV	Intermediate Macroeconomics-II
	Practicals:			
	Tutorials:	Problems on debt stabilization , Taylor's rule		
	<u>Test</u>			
May	**Theory:**	Miscellaneous. Revision	BA(Hons) Sem IV	Intermediate Macroeconomics-II
	Practicals:			
	Tutorials:			

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Name of the Faculty: KRISHNAKUMAR S (2022-23)

Department: ECONOMICS **Semester : IV**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	IS-LM Analysis: Derivations of the IS and LM functions; IS-LM and aggregate demand; shifts in the AD curve	BA Programme Sem IV	Principles of Macroeconomics-II
	Practicals			
	Tutorials	IS LM Analytics with problems		
FEBRUARY	**Theory:**	GDP and Price Level in Short Run and Long Run: Aggregate demand and aggregate supply; multiplier analysis with AD curve and changes in price levels; aggregate supply in the SR and LR	BA Programme Sem IV	Principles of Macroeconomics-II
	Practicals:			
	Tutorials:	More of IS LM numericals		
MARCH	**Theory:**	Inflation and Unemployment: Concept of inflation; determinants of inflation; relationship between inflation and unemployment: Phillips Curve in short run and long run	BA Programme Sem IV	Principles of Macroeconomics-II
	Tutorials:	AD AS , Phillips curve discussion		
	Assignment :			
APRIL	**Theory:**	Balance of Payments and Exchange Rate: Balance of payments: current account and capital account; market for foreign exchange; determination of	BA Programme Sem IV	Principles of Macroeconomics-II
	Tutorials:			

	Test			
May	**Theory:**	Discussion over Contemporary Economic Issues. Doubts based on Newspaper articles	BA Programme Sem IV	Principles of Macroeconomics-II
	Tutorials:			

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Name of the Faculty: D. BRAHMA REDDY
Department: ECONOMICS **Semester: VI /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
JANUARY	**Theory**	Topic 1: MONEY: Concept, Functions, Measurement, Theories of Money Supply Determination	Economics (Hons.)	Money & Financial Markets UPC: 12277606
	Tutorials	Project Allocation		
FEBRUARY	**Theory:**	Topic 2: Financial Institutions, Markets, Instruments And Financial Innovations:		
	Tutorials:	Project Discussion		
MARCH	**Theory:**	Topic 3: Interest Rates Topic 4: Banking System		
	Tutorials:	Project Discussion		
	Tutorials:			
APRIL	**Theory:**	Topic 5: Central Banking and Monetary Policy		
	Tutorials:	Project Submission (Report & PPt) and Presentation		

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: D. BRAHMA REDDY
Department: ECONOMICS **Semester: IV /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
JANUARY	**Theory**	Union Budget & Goods and Services Tax	Economics (Hons.)	SEC-Contemporary Economic Issues UPC-12273403
	Tutorials:	Project Allocation & Quiz on Union Budget Formulation & Implementation		
FEBRUARY	**Theory:**	Union Budget & Goods and Services Tax		
	Tutorials:	Project Discussion		
MARCH	**Theory:**	Fiscal Federalism		
	Tutorials:	Project Discussion & Study Visit to Parliament		
	Tutorials:			
APRIL-MAY	**Theory:**	Economic Survey- 2022-23		
	Tutorials:	Quiz on Goods and Services Tax & Project Submission (Report & PPt) and Presentation		

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Name of the Faculty: Dr. Aruna Rao
Department: ECONOMICS **Semester :2/2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
20/03/2023-10/04/2023	**Theory**	Unit 1:Introduction to Macroeconomics and National Income Accounting Abel, Bernanke and Croushore: Chapter 1(Sections 1.2 and 1.3), chapter 2 and 5 (uptil Sections 5.1- pp 165-176) Latest Economic Survey, 2022-23, Table 5.2(pp 92-95)	INTRODUCTORY MACROECONOMICS	ECON 004
	Tutorials	Problem discussion on the related topic		
12/04/2023-17/05/2023	**Theory:**	Unit 2: Money Abel, Bernanke and Croushore: Chapter 7(Section 7.1); Froyen Chapter 4(Section 4.1- till p 70)		
	Tutorials:	Debate on the importance of cryptocurrency in the present time		
19/05/2023-12/06/2023	**Theory:**	Unit 4:Simple theory of income determination. Froyen: Chapter 3, chapter 4(Section 4.1- pp 70-72; Sections 4.2-4.3) Dornbusch, Fischer and Startz ; Chapter 9		
	Tutorials:	Problem solving		
	Tutorials:			
14/06/2023-08/07/2023	**Theory:**	IS-LMAnalysis and Aggregate Demand Dornbusch, Fischer and Startz: Chapters 10,11		
	Tutorials:	Problem Solving		

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Name of the Faculty: Dr. Aruna Rao
Department: ECONOMICS **Semester : 2 /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
21/03/2023-25/04/2023	**Theory**	Unit 1: Introduction: what is macroeconomics and the major macroeconomic issues in an economy Abel, Bernanke and Croushore: Chapter 1.1and 1.3 Unit 2: National Income Accounting Abel, Bernanke and Croushore: Chapter 2	INTRODUCTORY MACROECONOMICS(for major and minor courses only)	ECON004
	Tutorials	Discussion and problem solving		
26/04/2023-15/06/2023	**Theory:**	Unit 3: Simple theory of income determination Abel, Bernanke and Croushore: Chapter 4.1and 4.2- till page 121 Dornbusch, Fischer and Startz: Chapter 9		
	Tutorials:	Discussion and problem solving		
20/06/2023-08/07/2023	**Theory:**	Unit 3: Money in a modern economy Abel, Bernanke and Croushore: Chapter 7.1 blanchard: Chapter 4		
	Tutorials:	Discussion and problem solving		
	Tutorials:			

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Name of the Faculty: Dr. Aruna Rao
Department: ECONOMICS **Semester :2/2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
21/03/2023-25/04/2023	**Theory**	Unit 1:Introduction to Macroeconomics Unit 2: National Income Accounting Abel, Bernanke and Croushore: Chapter 1(Sections 1.1 and 1.3), chapter 2 2022-23	INTRODUCTORY MACROECONOMICS(for Major and minor courses)	ECON 004
	Tutorials	Problem discussion on the related topic		
26/04/2023-15/06/2023	**Theory:**	Unit 3:Simple theory of income determination. Abel, Bernanke and Croushore: Chapter 4(Section 4.1and 4.2- till p 121); Dornbusch, Fischer and Startz ; Chapter 9		
	Tutorials:	Problem solving		
20/06/2023-08/07/2023	**Theory:**	Unit 4:Money in a Modern Economy Abel, Bernanke and Croushore: Chapter 4(Section 4.1,4.2- till p 121) Dornbusch, Fischer and Startz: Chapter 9		
	Tutorials:	debate on credit cards and cryptocurrencies being included as part of money supply		
	Tutorials:			

14/06/2023- 08/07/2023	**Theory:**	IS-LMAnalysis and Aggregate Demand Dornbusch, Fischer and Startz: Chapters 10,11		
	Tutorials:	Problem Solving		

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Name of the Faculty:Dr. Aruna Rao
Department: ECONOMICS **Semester : 2 /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
21/03/2023-31/03/2023 03/04/2023-24/04/2023	**Theory**	Unit 1: Introduction Abel Bernanke and Croushore: Chapter 1 Unit 2: National income Accounting Abel Bernanke and Croushore: Chapter 2	PRINCIPLES OF MACROECONOMICS I	ECON 026
	Tutorials	Discussion on the various measures of income determination		
26/04/2023-19/05/2023	**Theory:**	Unit 3: Determination of GDP Abel Bernanke and Croushore: Chapter4 Dornbusch, Fischer and Startz Chapter 1, Section 1.2, pp14-16, Chapter 9		
	Tutorials:	numerical and diagrammatic practice		
22/05/2023-16/06/2023	**Theory:**	Unit 4: National Income Determination in an open economy with Government Dornbusch, Fischer and Startz: Chapter 9 Abel Bernanke and Croushore: Chapter 5, Section 5.2, pp 214-215		
	Tutorials:			
	Tutorials:	Problem solving		

18/06/2023- 08/07/2023	**Theory:**	Unit 5: Money in a modern economy Abel Bernanke and Croushore: Chapter 7, Section 7.1 pp 274-281 Blanchard Chapter 4		
	Tutorials:	Discussion		

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Name of the Faculty: Dr. KANIKA PATHANIA
Department: ECONOMICS **Semester: 2ND (EVEN) /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
MARCH (Starting from 20th March; 2023)	**Theory**	**UNIT 1: Sampling distribution of a Statistics:** Concepts of statistics and parameter, sampling distribution **References:** Devore Chapter 5.3, 5.4,	BA(H) ECONOMICS	ECON006/ INTERMEDIATE STATISTICS FOR ECONOMICS
	Tutorials	Back questions of Devore ch 5.3, discussion on the topic of sampling distribution.	BA(H) ECONOMICS	ECON006/ INTERMEDIATE STATISTICS FOR ECONOMICS
APRIL	**Theory:**	**Unit 1: Sampling distribution of a Statistics:** Central limit theorem, sampling. **References:** Devore Chapter 5.4, 5.5, Hogg Tanis and Zimmerman, CH 5.6, Anderson Ch: 7.8 **UNIT 2: ESTIMATION:** estimator and methods of estimation, point estimator, method of moments, MLE, Properties of estimator. **References:** Devore Chapter 6 Hogg Tanis and Zimmerman Ch 6.4 Larsen and Marx: Ch 5.4 Jan Kmenta: Ch 6.1	BA(H) ECONOMICS	ECON006/ INTERMEDIATE STATISTICS FOR ECONOMICS
	Tutorials:	**UNIT 2: ESTIMATION** **1.** Back book questions **2.** Discussions on the topics covered. **3.** Continuous Evaluation (1): MCQ for sampling Distribution (5 marks) **4.** Continuous Evaluation (2): Group Project to be given based on survey using the sampling methods, and point and interval estimation to be continued till next month. (20 marks)	BA(H) ECONOMICS	ECON006/ INTERMEDIATE STATISTICS FOR ECONOMICS

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MAY	**Theory:**	**UNIT 2: ESTIMATION:** Interval estimation, confidence level, chi square, f distribution. **References:** Devore Chapter 6 Hogg Tanis and Zimmerman Ch6.3, **UNIT 3: INFERENCE:** Hypothesis testing, Type I & II error. **References:** Devore 8.1 John Rice 9.4 Larsen And Marx: Ch 6.1-6.4	BA(H) ECONOMICS	ECON006/ INTERMEDIATE STATISTICS FOR ECONOMICS
	Tutorials:	**UNIT 2: ESTIMATION:** 1. Back exercise questions. 2. Internal Assessment 1 (12 Marks): Unit 1 & Unit 2 (only till point estimation) on 2nd May, 2023. 3. Continuous Evaluation (2) group project continued. Students will make a group of 4 and first decide a question to be analyzed and target population. Then they will draw a sample of at least 30 and will be asked to fill up the questionnaire. Based on the sample drawn, they will analyse the sample statistics and will make a point and interval estimation for the population mean. They will conclude the report with limitations of the study. This report (to be submitted by 25th May) will be of 15 marks and 5 marks will be for presentation on the same to be done in next month. 4. Assignment (5marks): Method of moment and MLE (15th May) **UNIT 3: INFERENCE:** Hypothesis testing, Type I & II error. 1. Discussion of the topics covered and the back exercise questions.	BA(H) ECONOMICS	ECON006/ INTERMEDIATE STATISTICS FOR ECONOMICS
JUNE-JULY	**Theory:**	**UNIT 3 to be continued** **UNIT 4: HYPOTHESIS TESTING:** Testing of a population mean, proportions, p values, testing for variance, testing for two samples, testing for equality of means; testing for ratio of variances.	BA(H) ECONOMICS	ECON006/ INTERMEDIATE STATISTICS FOR ECONOMICS

		References: Devore: Ch 8.2-8.5, ch 9 Hogg Tanis and Zimmerman: Ch 8.1-8.4		
	Tutorials:	**UNIT 3:** 1. Internal Assessment (12 marks): Unit 2 and Unit 3 (1st June) 2. Back questions 3. Presentations of group projects. **UNIT 4: HYPOTHESIS TESTING:** 4. Continuous Evaluation (4): Understanding based case study test on topics covered in this unit (5 marks) 5. Discussion and application of the hypothesis testing	BA(H) ECONOMICS	ECON006/ INTERMEDIATE STATISTICS FOR ECONOMICS

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Dr. Kanika Pathania
Department: ECONOMICS **Semester : 2nd (Even) /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
MARCH	**Theory**	**UNIT1: Introduction and Overview:** Populations and samples; sample statistics; descriptive Statistics **References:** Mc Clave: Chapter 1, 2.1-2.5, Anderson, Sweeny Chapter 3.2	BA(P) Major for Economics	ECON022/ BASIC STATISTICS FOR ECONOMICS
	Tutorials	Back exercise of McClave and discussion on populations and various case studies.	BA(P) Major for Economics	ECON022/ BASIC STATISTICS FOR ECONOMICS
APRIL	**Theory:**	**Unit 1** to be continued **Unit 2: Basic Concepts of Probability:** Spaces and Events; Probability concepts, Conditional Probability **References:** McClave: Chapter 3	BA(P) Major for Economics	ECON022/ BASIC STATISTICS FOR ECONOMICS
	Tutorials:	1. Continuous Evaluation (1): MCQ on the understanding of population, sampling, and techniques. (5 marks on –April, 2023) 2. Continuous Evaluation (2): Group project of 4 students on conducting a survey starting from choosing a research question, and defining target population, making questionnaire and doing the analysis using the concepts learned in Unit 1. This is for 10 marks report writing (to be submitted by May end) followed by 5 marks presentation (to be done in next month) 3. Continuous Evaluation (3): Problem set given based on Histogram and Pie Chart (5 Marks) 4. More problem set will be given on the topics of Bar graph, Descriptive Statistics, Probability apart from the Referred textbook.	BA(P) Major for Economics	ECON022/ BASIC STATISTICS FOR ECONOMICS
MAY	**Theory:**	**UNIT 3: Probability Distribution and Sampling:** Random variables- Discrete and continuous, various probability distribution function and Characteristics; commonly used distribution – Uniform, Binomial, Exponential, Poisson, Hypergeometric and Normal random	BA(P) Major for Economics	ECON022/ BASIC STATISTICS FOR ECONOMICS

		variable; Joint Distribution – Conditional Distributions and Expectations, Covariance and Correlation. **References:** Mc Clave: Chapter 4 Anderson, Sweeny Ch 5.4		
	Tutorials:	1. Internal Assessment (1): 12 marks on 3rd May, 2023 for UNIT 1 & 2. 2. Continuous Evaluation (4): Class assessment of 5 marks will be done for the topic on inference. 3. Back exercise question to be discussed and problem set will be given for unit 3 4. Presentations of Continuous evaluation (2) to be continued.	BA(P) Major for Economics	ECON022/ BASIC STATISTICS FOR ECONOMICS
JUNE-JULY	**Theory:**	**UNIT 4: ESTIMATION AND HYPOTHESIS TESTING:** Properties of estimators; confidence intervals; defining statistical hypothesis; distributions of test statistics; testing hypothesis related to population parameters; Type I and II error; power of the test. **References:** McClave: Ch:6.1-6.3 and 7.1-7.5, 7.8	BA(P) Major for Economics	ECON022/ BASIC STATISTICS FOR ECONOMICS
	Tutorials:	1. Internal Assessment (2): 12 marks on 5th June, 2023 2. Continuous Evaluation (5): class assessment on the application of hypothesis testing by giving some case study., 3. Back exercise and discussions on the topics covered. 4. Solving of problem sets given.	BA(P) Major for Economics	ECON022/ BASIC STATISTICS FOR ECONOMICS

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Name of the Faculty: Dr. Kanika Pathania
Department: ECONOMICS **Semester : 2nd (Even) /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
MARCH	**Theory**	**UNIT1: Introduction:** What is macroeconomics? Macroeconomic issues in an economy. **References:** Abel, Bernanke and Croushore: Chapter 1	GENERAL ELECTIVE-4	ECON026/ PRINCIPLES OF MACROECONOMICS I
	Tutorials	Discussion on Different countries macroeconomic issues.	GENERAL ELECTIVE-4	ECON026/ PRINCIPLES OF MACROECONOMICS I
APRIL	**Theory:**	**Unit 1** to be continued **Unit 2: National Income Accounting:** Concepts of GDP and National Income; measurement of national income and related aggregates; nominal and real income; limitations of the GDP concept **References:** Abel, Bernanke and Croushore: Chapter 2	GENERAL ELECTIVE-4	ECON026/ PRINCIPLES OF MACROECONOMICS I
	Tutorials:	1. Continuous Evaluation (1): Class assessment on 3 ways of solving for national income (5 marks on –April, 2023) 2. Continuous Evaluation (2): Group project of 4 students on analyzing the macroeconomic variables of different countries specifically focusing on the growth rate (real and nominal GDP), inflation, unemployment etc topics covered in Unit 1 & 2. They will be downloading the data on various parameter and an analysis need to be done. This is for 15 marks report writing (to be submitted by May end) followed by 5 marks presentation (to be done in next month). 3. Problem set given questions based on the product method, income method and expenditure method.	GENERAL ELECTIVE-4	ECON026/ PRINCIPLES OF MACROECONOMICS I

MAY	**Theory:**	**UNIT 3: Determination of GDP** : Actual and potential GDP; aggregate expenditure; consumption function; investment function; equilibrium GDP; concepts of MPS, APS, MPC, APC; autonomous expenditure; concept of multiplier **References:** Abel, Bernanke and Croushore: Chapter 4 Dornbusch, Fisher and Startz: Chapter 1, section 1.2	GENERAL ELECTIVE-4	ECON026/ PRINCIPLES OF MACROECONOMICS I
	Tutorials:	1. Internal Assessment (1): 12 marks on 8th May, 2023 for UNIT 1 & 2. 2. Continuous Evaluation (3): Class assessment of 5 marks will be done for understanding of the working of determination of GDP. 3. Back exercise question to be discussed and problem set will be given for unit 3. 4. Presentations of Continuous evaluation (2) to be continued.	GENERAL ELECTIVE-4	ECON026/ PRINCIPLES OF MACROECONOMICS I
JUNE-JULY	**Theory:**	**UNIT 4: NATIONAL INCOME DETERMINATION IN AN OPEN ECONOMY WITH GOVERNMENT:** Income determination; Fiscal policy; impact of changes in government expenditure and taxes; net exports functions; national income **References:** Abel, Bernanke and Croushore: Chapter 5.2 Dornbusch, Fisher and Startz: Chapter 9 **UNIT 5: Money in a Modern Economy:** Concept of money in modern economy; monetary aggregates; demand for money; quantity theory of money; liquidity preference; money supply and credit creation; monetary policy. **References:** Abel, Bernanke and Croushore: Chapter 7.1 Blanchard: Chapter 4	GENERAL ELECTIVE-4	ECON026/ PRINCIPLES OF MACROECONOMICS I

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	Tutorials:	1. Internal Assessment (2): 12 marks on 15th June, 2023 for Unit 2&3 2. Continuous Evaluation (5): class assessment on the application of money 3. Back exercise and discussions on the topics covered. 4. Solving of problem sets given.	GENERAL ELECTIVE-4	ECON026/ PRINCIPLES OF MACROECONOMICS I

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Sonakshi Jain
Department: ECONOMICS

Semester : II/2022-23

MONTH		TOPICS	COURSE	PAPER CODE /NAME
MARCH	**Theory**	Introduction	General Elective	ECON026 Principles Of Macroeconomics 1
	Tutorials	Discussion of research project		
APRIL	**Theory:**	National Income Accounting Determination of GDP		
	Tutorials:	Discussion of research project		
MAY	**Theory:**	National Income determination in an open economy with government		
	Tutorials:	End chapter exercises Continuous Assessment		
	Tutorials:			
JUNE-JULY	**Theory:**	Money in Modern Economy		

	Tutorials:	Continuous Assessment Presentaions		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Sonakshi Jain
Department: ECONOMICS **Semester : II/2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
MARCH	**Theory**	Linear Algebra	B.A.Hons Economics	Intermediate Mathematical Methods for Economics
	Tutorials	End chapter exercises		
APRIL	**Theory:**	Linear Algebra		
	Tutorials:	End chapter exercises		
MAY	**Theory:**	Functions of several real variables		
	Tutorials:	End chapter exercises Continuous Assessment (Tests)		
	Tutorials:			
JUNE-JULY	**Theory:**	Multivariate Optimization		

	Tutorials:	End chapter exercises Continuous Assessment (Tests)		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Sonakshi Jain
Department: ECONOMICS **Semester : IV/2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
JANUARY	**Theory**	General equilibrium, Efficiency and Welfare	B.A.Hons Economics	Intermediate microeconomics II
	Tutorials	End chapter exercises		
FEBRUARY	**Theory:**	Strategic games with perfect information		
	Tutorials:	Problem Sets		
MARCH	**Theory:**	Market structure and game theory		
	Tutorials:	End chapter exercises		
	Tutorials:			
APRIL-MAY	**Theory:**	Market structure and Game theory Market failure		
	Tutorials:	End chapter exercises Doubt clearing sessions		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: V. Sushmitha Naidu
Department: ECONOMICS **Semester: IV /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
JANUARY	**Theory**	Dev, M. (2018) Transformation of Indian Agriculture? Growth, Inclusiveness and Sustainability. Working paper 2018-026, IGIDR	General Elective Indian Economy	12275401/ Indian Economy II (GE42)
	Tutorials	Taking doubts for the above readings		
FEBRUARY	**Theory:**	Roy, SD. (2017). Economic Reforms and Agricultural Growth in India, vol.52, special article, 4th. Economic & Political Weekly Nagaraj, R. (2017). Economic Reforms and Manufacturing Sector Growth. Economic and Political Weekly. Kumar, N. (2014). FDI and Portfolio Investment Flows and Development: A Perspective on Indian Experience in Uma Kapila (ed.), Indian Economy Since Independence, 26th edition, 2015-16. Ch. 40 or 28th edition Ch. 35. Academic Foundation, Delhi. Thomas, J.J. (2018). Economic Growth without Employment: The story of Indian Manufacturing in Hill and Palit (eds.), Employment Policy in Emerging Economies. Routledge, London and New York.	General Elective Indian Economy	12275401/ Indian Economy II (GE42)
	Tutorials:	Taking doubts for the above readings. Discussed the Union Budget. Gave practice questions from past year question papers.		

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MARCH	**Theory:**	Panagariya, A., & Bhagwati, J. (2012). A Multitude of Labour Laws and their Reforms in India's Tryst with Destiny. Ch. 8, Collins Business, Noida, Chanda, R. (2020). India's Services Sector; trends, opportunities and challenges, in Uma Kapila; Indian Economy Since Independence, 31st edition (Ed), (Chp.29), (2020-21) Dhar, B. (2015). India's New Foreign Trade Policy. Economic & Political Weekly Internal Assesment-1, Unit-2, 3 INDIA. WTO. (2020). Trade Policy Review: on Trade Performance, Investment profile. Ch.2 (2.2 and 2.3)	General Elective Indian Economy	12275401/ Indian Economy II (GE42)
	Tutorials:	Taking doubts for the above readings. Gave practice questions from past year question papers. Discussed Internal Assessment questions.		
	Tutorials:			
APRIL-MAY	**Theory:**	Balakrishnan, P. (2014). The Great Reversal: A Macro Story. Economic & Political Weekly Assignment/ Retest, Unit-3,4 Subramaniam, A., & Felman, J. (2019). India's Great Slowdown; What happened? What's the Way Out?, CID working paper no.370. Panda, M., & Kapila, U. (2019). Macro-economic Developments and Policy Options, in Uma Kapila (ed.) Indian Economy-II: Macroeconomic Policies, Sectoral Developments and Performance	General Elective Indian Economy	12275401/ Indian Economy II (GE42)

	Tutorials:	Taking doubts for the above readings. Gave practice questions from past year question papers.		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mr. Yogesh Malhotra
Department: ECONOMICS **Semester : VI /2022-23**

Economics Development & Policy in India II

MONTH		TOPICS	COURSE	PAPER CODE /NAME
JANUARY	**Theory**	Unit 1- Requisites of Macroeconomic Stability and Monetary Policy Framework in India	B.A Prog. EDPI II	62277603/CBCS- DSE
	Tutorials	Discussed the overall macroeconomic situation in India in current times and RBI's stand on inflation		
FEBRUARY	**Theory:**	Unit-3 Economic Reforms and Manufacturing sector growth, Privatization, FDI in Manufacturing Sector and Small-Scale Manufacturing		
	Tutorials:	Doubt-clearing sessions on FDI and Small-Scale Manufacturing		
MARCH	**Theory:**	Unit-2 Land Reforms, Irrigation, Farm Income Calculation and Transformation of agriculture sector in India		
	Tutorials:	Last year's question papers and discussed the internal examination questions		
	Tutorials:			
APRIL-MAY	**Theory:**	Unit-4 India's Service Sector and India's policy change from Exports to Import Substitution		
	Tutorials:	Previous Year's question papers and doubt-clearing sessions on the agriculture unit		

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Mr. Yogesh Malhotra
Department: ECONOMICS **Semester: IV /2022-23**

Public Finance

MONTH		TOPICS	COURSE	PAPER CODE /NAME
JANUARY	**Theory**	Public Finance basics and use for public finance, fundamental theorems of welfare economics	GE Public Finance	12275403/GE41
	Tutorials	Doubt sessions related to the finances of the government and how it manages its finances		
FEBRUARY	**Theory:**	Market failure, Public goods, Externalities and burden of taxation with the incidence of taxation		
	Tutorials:	Doubt sessions on externalities and their impact on the public and discuss previous years' question papers		
MARCH	**Theory:**	Current issues of India's tax system including GST, Analysis of Budget and Deficits		
	Tutorials:	Sessions on GST implementation and discussion on the current fiscal year's budget and discussion over the internal assessment I question paper		
	Tutorials:			
APRIL-MAY	**Theory:**	Fiscal Federalism in India, devolution of taxes between centre and states and 15th finance commission recommendations		

	Tutorials:	Doubt session on previous year's question papers and assignment questions covered		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Sheebani Goswami
Department: ECONOMICS **Semester : VI /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
JANUARY	**Theory**	**Unit I:** introduction – what is Macro economics ? Macroeconomic issues in an economy. **Abel and Bernanke** **Unit II:** National income, accounting: concepts of GDP and national income; measurement of national income and related aggregates; nominal and real income; limitation of the GDP concept **Abel and Bernanke Chapter 2**.	**B.Com** (P)	62275604/ GE: Principles of Macroeconomics Semester VI
	Tutorials	1. Doubts regarding unit I and unit II 2. Questions on national income accounting Numericals on national income accounting		
FEBRUARY	**Theory:**	**Unit III**: determination of GDP: actual and potential GDP; aggregate expenditure; consumption, function; investment function; equilibrium, GDP; concept of MPS, APC, APS, etc; autonomous expenditure; concept of multiplier. i) Dornbusch Fischer and Startz Chapter 10 , Section 10.1,10.2,10.3 Abel and Bernanke Chapter 4 , Section 4.1 and 4.2	**B.Com** (P)	62275604/ GE: Principles of Macroeconomics Semester VI

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	Tutorials:	1. Past year paper questions 2. Numericals on Simple Keynesian Model for determination of Income 3. Doubts from unit III		
	Test 1	Class test from Unit III		
MARCH	**Theory:**	Unit IV: National income, determination in an open economy with government: fiscal policy: impact of changes in government expenditure and taxes; net export function; net export and equilibrium national income. i) Dornbusch, Fischer and Startz Chapter 10, section 10.4 to 10.6 Net Exports (Lipsey and Chrystal)	**B.Com** (P)	62275604/ GE: Principles of Macroeconomics Semester VI
	Tutorials:	1. Past year paper questions 2. Doubts from unit IV Diagram, practice and problem-solving		
	Tutorials: **Test II**	Class test from Unit III and IV		
APRIL-MAY	**Theory:**	Unit V: money in a modern economy: concept of money in a modern economy; monetary aggregates; demand for money; quantity, theory of money; liquidity, preference, and rate of interest; money, supply, and credit creation; monetary policy. i) Dornbusch, Fischer and Startz chapter 16 " Demand for Money Section 16.2, 16.3 and 16.5	**B.Com** (P)	62275604/ GE: Principles of Macroeconomics Semester VI

	Tutorials: **Test III**	1. Past year paper questions 2. Diagram practice 3. Doubt sessions 4. Numericals Home assignment from Unit V		

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Sheebani Goswami
Department: ECONOMICS **Semester : II /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
March-April	**Practical**	Unit I: 1. Needs and challenges 2. Vision of Digital India: Digilocker, E Pathshala, BHIM, e kranti. Public utility portals such as RTI, Health, Finance, Income tax filing , education 3. **Continuous evaluation:**Survey on the awareness of use of various services offered by digital India like DigiLocker, BHIM, E Path Shala. II : spread digital literacy/awareness amongst the vulnerable groups and marginalised sections of the society like street, vendors, domestic, help, security, guards, senior citizens.**Rodney Jones and Christoph Hafner " understanding digital literacies: A practical introduction"** www.digitalindia.gov.in	VALUE ADDED COURSE	Digital Empowerment
April- May	**Practical**	Unit II: Communication and collaboration in the cyberspace 1. Electronic communication: electronic mail, blogs, social media 2. Collaborative digital platforms 3. Tools/platforms for online learning 4. Collaboration using file, sharing, messaging, video conferencing **Continuous evaluation :** writing blogs, or creating mini vlogs, social media handles and creating content for the same. collaborating with each other for better social media, outreach and marketing	VALUE ADDED COURSE	Digital Empowerment

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Abhishek Malhotra
Department: ECONOMICS **Semester: VI /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
JANUARY	**Theory**	Unit 1 (Chapter 9 and 10) Debraj Ray, Development Economics, Oxford University Press, 2009	B.A. (Hons.) Economics	Development Theory and Experience- II
	Tutorials	Discussions on Topic covered	B.A. (Hons.) Economics	
FEBRUARY	**Theory:**	Unit 2 (Chapter 11, 12, 13 and 14) Debraj Ray, Development Economics, Oxford University Press, 2009	B.A. (Hons.) Economics	Development Theory and Experience- II
	Tutorials:	Discussions on topics covered Important questions from chapters	B.A. (Hons.) Economics	
MARCH	**Theory:**	Unit 2 (Chapter 14) and Unit 3 and Unit 4 (Chapter 7 and 10.1 & 10.5) Debraj Ray, Development Economics, Oxford University Press, 2009 Elinor Ostrom (Chapter 1) Partha Dasgupta, Oxford University Press, 2007 Gerald M. Meier et. Al, Oxford University Press, 7th Edition	B.A. (Hons.) Economics	Development Theory and Experience- II
	Tutorials:	Internal 1: Unit 1 (Chapter 10) ad Unit 2 (Chapter 11, 12 and 13) Discussions on topics covered.		

	Tutorials:		B.A. (Hons.) Economics	
APRIL-MAY	**Theory:** **Tutorials:**	Unit 3 (Chapter 1 and Chapter 12) and Unit 4 (Globalization) Charles D. Kolstad, Oxford University Press, 2012 Abhijit Banerjee et. al, Oxford University Press, 2006 Dani Rodrik, Oxford University Press, 2011 Raghuram Rajan, Fault Lines, 2010 Internal 2: Unit 2 (Chapter 14) and Unit 4 (Chapter 7 and 10.1 & 10.5) Internal 3: Presentations Previous Years Papers	B.A. (Hons.) Economics B.A. (Hons.) Economics	Development Theory and Experience- II

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Name of the Faculty: Abhishek Malhotra
Department: ECONOMICS **Semester: IV /2022-23**

MONTH		TOPICS	COURSE	PAPER CODE /NAME
JANUARY	**Theory**	Unit 1.1 R.A. Musgrave and P.B. Musgrave, Public Finance in Theory and Practice, Chapter 1 Harvey Rosen (2005), Public Finance	B.Com (Hons.)	Public Finance
	Tutorials	Discussions on the topics	B.Com (Hons.)	Public Finance
FEBRUARY	**Theory:**	Unit 1.2 Stiglitz, Economics of Public Sector, Chapter 4 John Cullis and Philip Jones (1998), Public Finance and Public Choice, Chapter 3 Harvey Rosen (2005), Public Finance	B.Com (Hons.)	Public Finance
	Tutorials:	Discussions on the topics Problem Sets	B.Com (Hons.)	Public Finance
MARCH	**Theory:**	Unit 1.3, 2.1 and 2.2 R.A. Musgrave and P.B. Musgrave, Public Finance in Theory and Practice, Chapter 14 Case and Fair, Principles of Economics (Chapter 24 and 25) Rao, M. Govinda (2019) Surajit Das (2017)	B.Com (Hons.)	Public Finance
	Tutorials:	Internal 1: Unit 1.2 and 1.3 Important questions in chapters discussed		
	Tutorials:		B.Com (Hons.)	Public Finance

APRIL-MAY	**Theory:**	Unit 2.3, 2.4 and 2.5 Report of the 15th Finance Commission 2020-21 Rao, M. Govinda (2017) Rangarajan, Chakravarthy and D. K. Srivastava (2005) Lekha Chakraborty, EPW (2021)	B.Com (Hons.) B.Com (Hons.)	Public Finance Public Finance
	Tutorials:	Internal 2: Unit 2.1 and 2.2) Internal 3: Presentations Past year question papers		

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Session 2022-2023 (Even Semester)

Name of the Faculty : Dr Nutan Joshi
Department : Electronics

Semester: Theory : B.Sc(H) Electronics, Sem IV
Practical : B.Sc(H) Electronics, Sem IV

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Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Basic Operational Amplifier: Concept of differential amplifiers (Dual input balanced and unbalanced output), constant current bias, current mirror, cascaded differential amplifier stages with concept of level translator, block diagram of an operational amplifier (IC 741) Op-Amp parameters: input offset voltage, input offset current, input bias current, differential input resistance, input capacitance, offset voltage adjustment range, input voltage range, common mode rejection ratio, slew rate, supply voltage rejection ratio.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications
	Practical	Study of op-amp characteristics: CMRR and Slew rate. Designing of an amplifier of given gain for an inverting and non-inverting configuration using an opamp. Designing of analog adder and subtractor circuit. Designing of an integrator using op-amp for a given specification and study its frequency response.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		Design of multi range ammeter and voltmeter using galvanometer. Measurement of resistance by Wheatstone bridge and measurement of bridge sensitivity Measurement of Capacitance by de'Sautys.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation Lab
FEBRUARY	**Theory**	Op-Amp Circuits: Open and closed loop configuration, Frequency response of an op-amp in open loop and closed loop configurations, Inverting, Non-inverting, Summing and difference amplifier, Integrator,	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications

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		Differentiator, Voltage to current converter, Current to voltage converter. Comparators: Basic comparator, Level detector, Voltage limiters, Schmitt Trigger.		
	Practical	Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		Measure of low resistance by Kelvin‘s double bridge. To determine the Characteristics of resistance transducer - Strain Gauge (Measurementof Strain using half and full bridge.) To determine the Characteristics of LVDT	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation Lab
	Assignment	As per the syllabus covered		
MARCH	**Theory**	Signal generators: Phase shift oscillator, Wein bridge oscillator, Square wave generator, triangle wave generator, saw tooth wave generator, and Voltage controlled oscillator(IC 566). Multivibrators (IC 555): Block diagram, Astable and monostable multivibrator circuit, Applications of Monostable and Astable multivibrators. Phase locked loops (PLL): Block diagram, phase detectors,	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications
	Practical	Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab

		Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series		
		To determine the Characteristics of Thermistors and RTD. 8. Measurement of temperature by Thermocouples and study of transducers like AD590 (two terminal temperature sensor), PT-100, J- type, K-type.		
APRIL	Theory	IC565. Fixed and variable IC regulators: IC 78xx and IC 79xx -concepts only, IC LM317- output voltage equation Signal Conditioning circuits: Sample and hold systems, Active filters: First order low pass and high pass butterworth filter, Second order filters, Band pass filter, Band reject filter, All pass filter, Log and antilog amplifiers.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications
	Practical	Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series **ASSIGNMENT TAKEN** **AND PRACTICAL TEST CONDUCTED**	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		To study the Characteristics of LDR, Photodiode, and Phototransistor: (i) Variable Illumination. (ii) Linear Displacement. 10. Characteristics of one Solid State sensor/ Fiber optic sensor	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation Lab

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SEMESTER-WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Jan-May 2022-2023

Name of the Faculty: Dr. Sunita Jain

Department: Electronics

Semester: Even

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Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Introduction to EM waves, concept of spherical & plane waves, reflection and transmission, total internal reflection, origin of refractive index and dispersion. Interference, division of wave front, division of amplitude. Young's double slit experiment, Newton's ring, Michelson Interferometer, and thin film. Holograph	B.Sc. (H)	CC-XIV Photonics
	Practical	Sem VI**:** To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by Michelson Interferometer. To verify the law of Malus for plane polarized light. Sem IV: Design of multi range voltmeter & ammeter using galvanometer. Measurement of resistance by Wheatstone bridge & bridge sensitivity.	B.Sc. (H)	CC-XIV Photonics Lab CC-X Electronic Instrumentation
FEBRUARY	**Theory**	Fresnel and Fraunhoffer diffraction. Diffraction by rectangular aperture, single slit, and double slit, diffraction grating and circular aperture. Resolving and dispersive power of grating. Resolving power of telescope and microscope. Polarization of	B.Sc. (H)	CC-XIV Photonics

		light, production and analysis of linear circular and elliptically polarized light. Malus Law, Double refraction, half and quarter wave plate.		
	Practical	Sem VI**:** Determination of unknown wavelength using diffraction grating. Determination of Resolving and dispersive power of grating. Determination of specific rotation of sugarcane solution using polarimeter. Sem IV: Capacitance measurement by de-Sauty's bridge. Determination of low resistance by Kelvin's double bridge. Strain gauge (measurement of stress). Characteristics of LVDT.	B.Sc. (H)	CC-XIV Photonics Lab CC-X Electronic Instrumentation
	<u>Assignment</u>	Questions based on interference, diffraction and Polarization.	B.Sc. (H)	CC-XIV Photonics
MARCH	**Theory**	Liquid crystal display. Interaction of radiation and matter, Einstein coefficients, Condition for amplification, laser cavity, threshold for laser oscillation, line shape function. The semiconductor injection laser diode. LED, photodiodes and photodetectors. Quantum efficiency and responsivity	B.Sc. (H)	CC-XIV Photonics
	Practical	Sem VI**:** Characteristics of LEDs and Photodetector and Photodiode. Diffraction experiments using LASER. Sem IV: Characteristics of LDR, Photodiode & Phototransistor.	B.Sc. (H)	CC-XIV Photonics Lab CC-X Electronic Instrumentation

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	Mid-Term Test	Questions based on interference, diffraction and polarization		
APRIL	**Theory**	T.E. and T.M. modes in symmetric slab waveguide. Wave propagation and concept of linearly polarized waves inside dielectric waveguide. Group velocity and dispersion relation. Single mode and multimode fiber. Dispersion and attenuation in optical fiber.	B.Sc. (H)	CC-XIV Photonics
	Practical	Sem VI : Determination of numerical aperture of a fiber. Sem IV: Characteristics of solid state sensors. Measurement of temperature by thermocouple/transducer.	B.Sc. (H)	CC- XIV Photonics Lab CC-X Electronic Instrumentation

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January to July, 2023

Name of the Faculty: Dr. Neeru Kumar

Department: Electronics

Semester: Six

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Introduction: Block diagram of an electronic communication system, electromagnetic spectrum-band designations and applications, need for modulation, concept of channels and base-band signals. Amplitude modulation: Basics of Amplitude Modulation, generation of AM (balanced modulator, collector modulator), Amplitude Demodulation (diode detector), Double side band suppressed carrier, DSBSC generation (balanced modulator), Single side band suppressed carrier, SSBSC generation (filter method, phase cancellation method, Weaver‘s method),).	**B.Sc. Electronics VI Semester**	**CCXIII/ Communication Electronics**

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	Practicals:	**Sem VI:** 1.Study of Amplitude Modulation 2. Study of Amplitude Demodulation **Sem VI:** 1. Study of Amplitude shift keying. 2. Study of Frequency shift keying.		**CCXIII/ Communication Electronics** **DSE Modern Communication Systems**
Feburary	**Theory:**	Other forms of AM (Pilot Carrier Modulation, Vestigial Side Band modulation, Independent Side Band Modulation). Block diagram of AM Transmitter and Receiver Angle modulation: Frequency and Phase modulation, modulation index and frequency spectrum, equivalence between FM and PM, Generation of FM (direct and indirect methods), FM detector (PLL). Block diagram of FM Transmitter and Receiver Comparison between AM, FM and PM.	**B.Sc. Electronics VI Semester**	**CCXIII/ Communication Electronics**

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	Practicals:	**Sem VI:** 1. Study of Frequency Modulation 2.Study of Frequency Demodulation 3. AM Transmitter/Receiver **Sem VI:** 1. Study of Phase shift keying. 2.Modulation of LED and detection through photodetector.		**CCXIII/ Communication Electronics** **DSE /Modern Communication Systems**
	Assignment	Given from the syllabus covered		
March	**Theory:**	Pulse Analog Modulation: Sampling theorem, Pulse Amplitude Modulation (PAM), Pulse Width Modulation (PWM) and Pulse Position Modulation (PPM). Generation and detection of PAM, PWM, PPM. Concept of Noise: External noise, internal noise, signal to noise ratio, noise factor, noise temperature, Friss formula.	**B.Sc. Electronics VI Semester**	**CCXIII/ Communication Electronics**
	Theory	Number System and Codes. Logic Gates and Boolean Algebra.	**B.Sc. Electronics II Semester**	**DSC – 5 NEP Digital Electronics**
	Practicals:	**Sem VI:** 1 Study of Pulse Amplitude Modulation 2.Study of Pulse Width Modulation 3. Study of Pulse Position Modulation		**CCXIII/ Communication Electronics**
	<u>Mid Term Test</u>	Given from the syllabus covered		

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April	**Theory** **Theory**	Pulse Code Modulation: Need for digital transmission, Quantizing, Uniform and Nonuniform Quantization, Quantization Noise, Companding, Coding, Digital Formats. Decoding, Regeneration, Transmission noise and Bit Error Rate. Differential Pulse Code Modulation, Delta Modulation, Quantization noise, Adaptive Delta Modulation.	**B.Sc. Electronics VI Semester**	**CCXIII/ Communication Electronics**
		Combinational Circuit Design.	**B.Sc. Electronics II Semester**	
	Practicals:	**Sem VI:** 1. Study of Pulse Code Modulation 2. Study of Delta Modulation 3. Study of Adaptive Delta Modulation		**CCXIII/ Communication Electronics**
May	**Theory**	Sequential Circuits.	**B.Sc. Electronics II Semester**	**DSC – 5 NEP Digital Electronics**
June	**Theory**	Synchronous Sequential circuit synthesis. Signal conversion.	**B.Sc. Electronics II Semester**	**DSC – 5 NEP Digital Electronics**
July	**Theory**	Memories and Logic Families	**B.Sc. Electronics II Semester**	**DSC – 5 NEP Digital Electronics**

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Teaching Plan for the Semester
March - July (2023)

Dr Lalita Josyula / Department of Electronics

Paper : Generic Elective (II semester) / Data Visualization ---> (3T + 1P) / Week
"GE for all courses BA/BSc/BCom
***SEC for all courses BA/BSc/BCom**
IA=30 Marks (12Assignment+12Written_Test+06Attendance) / End of Term Theory Exam = 90 Marks / Practicals=40 Marks(10Continous Assessment+20Practicals+10Viva)

Subject / Month	Theory	Practicals
March	Introduction to Data Visualization, Various tools for Data Visualization.	1. Visualization of Spreadsheet Models. 2. Visualization of Semi-Structured Data.
April, 2023	Introduction to Numpy, Pandas and Matplotlib. Structured & Semi-structured Dataset, Data Cleaning and Preparation. Handling Missing Data, Data Transformation. Basic Plotting with Matplotlib, Dataset on Immigration e.g. Canada (source: https://open.canada.ca)/ any other. Univariate and Multivariate Visualization. Introduction to cloud computing. Assignment for 12 Marks -IA!!	3. Interactive Plots in Python and Tableau. 4. Hierarchical and Topographical Data Visualizations in Tableau.
May, 2023	Data Visualizations Techniques: Line Plots, Area Plots, Histograms, Bar Charts, Pie Charts, Box Plots, Scatter Plots, Bubble Plots, Waffle Charts, Word Clouds, Seaborn and Regression Plots, Creating Maps and Visualizing Geospatial Data - Introduction to Folium, Maps with Markers, Choropleth Maps. Written Test for 12 Marks -IA	5. Calendar Heatmaps and Flow Data Visualizations in Python. 6. Time Series Data Visualization in 'Plotly.

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June, 2023	Introduction to Seaborn, Basic plotting with Seaborn. Introduction to Plotly. Scatter chart, Bubble Plot, Pie chart, Gantt chart, Contour plotting, Sunburst and Polar charts, Heatmaps. Introduction to Tableau Desktop, connecting to dataset, Data preparation, Filtering and sorting data, Creating basic chart types (bar charts, line charts etc.), Assembling a dashboard layout, Using dashboard filters, Transform the data, Simple calculations in Tableau, Creating advanced chart types. Introduction-to Data Story.	7. Creating cloud account Amazon/Azure/Google/IBM to store images /files / programs. 8. Use a dataset that contains immigration details e.g. Canada for a given duration of 30 years (Canada Immigration Dataset, source: https://open.canada .ca) or any other a. Create an area plot for top 6 immigrant countries in a given duration. b. Create and year-wise immigrant bar chart from India to Canada in a given duration. c. Create a boxplot of immigrants for three given countries. d. Show the total no. of immigrants using Area Chart and Pie chart for two given countries. e. Create a scatter Histogram for the immigrants in the given year for two specific countries.
July, 2023	Final Exams	Project Work if Any ! Final Exams

Teaching Plan for the Semester
March - July (2023)

Dr Lalita Josyula / Department of Electronics

Paper : Skill Enhancement Course (II semester) / R Programming for Data Analytics ---> (4P Practicals) / Week
"GE for all courses BA/BSc/BCom
***SEC for all courses BA/BSc/BCom**
Continuous Assessment=20 Marks / End of Term Practicals Exam = 40 Marks / Viva Voce = 20 Marks

Subject / Month	PRACTICALS

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March, 2023	Introduction to R and familiarization of RStudio, Basic components in R Studio
April, 2023	R Syntax andprogramming , Understanding tidyverse, tibble, dplyr, ggplot2, tidyr, purrr, readr, forcats, stringr for tidying, manipulating and plotting data,
May, 2023	Linear Programming Models, Optimization models, understanding optim() Classification based on similarities with k-nearest neighbours, odds with logistic regression, maximizing separation with discriminant analysis, classifying with decision tress, regression with kNN, random forest, XGBoost, Understanding mlr, classif. , regr.
June, 2023	Dimension Reduction- Maximizing variance with Principal Component Analysis; k-meancluster, understanding cluster.
July, 2023	Final Assessment

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2022-2023 (Even Semester)

Name of the Faculty : Dr Hari Singh
Department : Electronics

Semester: Theory : B.Sc. (H) Electronics, Semester II
B.Sc./B.A. (H/P), Semester II

Practical : B.Sc. (H) Electronics, Semester IV
B.Sc. (H) Electronics, Semester II
B.Sc./B.A. (H/P), Semester II

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Month		Topics	Course	Paper Code/ Name
Jan	**Theory**	Academic Session 2022-2023 (Odd Semester)		
	Practical	✚ Study of op-amp characteristics: CMRR and Slew rate. ✚ Designing of an amplifier of given gain for an inverting and non-inverting configuration using an opamp. ✚ Designing of analog adder and subtractor circuit. ✚ Designing of an integrator using op-amp for a given specification and study its frequency response.	B.Sc.(Hons) Electronics, Semester IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		✚ Generation of Signals: continuous time. ✚ Generation of Signals: discrete-time. ✚ Time shifting and time scaling of signals.	B.Sc.(Hons) Electronics, Semester IV	Core-Course-IX/ Signals and Systems Lab
Feb	**Theory**	Academic Session 2022-2023 (Odd Semester)		
	Practical	✚ Designing of a differentiator using op-amp for a given specification and study its frequency response. ✚ Designing of a First Order Low-pass filter using op-amp. ✚ Designing of a First Order High-pass filter using op-amp ✚ Designing of a RC Phase Shift Oscillator using op-amp. ✚ Study of IC 555 as an astable multivibrator. ✚ Study of IC 555 as monostable multivibrator. ✚ Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series	B.Sc.(Hons) Electronics, Semester IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		✚ Convolution ✚ Solution of a Difference equation. ✚ Step and impulse response.	B.Sc.(Hons) Electronics, Semester IV	Core-Course-IX/ Signals and Systems Lab
Mar	**Theory**	Unit I: Fundamentals of Electronic Measurements Qualities of Measurement: SI system of units. Specifica_tions of instruments, their static and dynamic characteristics. Error (Gross error, systematic error, absolute error and relative error) and uncertainty analysis. Basic Measurement Instruments: PMMC instrument, galvanometer	B.Sc.(Hons) Electronics, Semester II	Discipline Specific Core Course IV/Basic Instrumentation and Measurement Techniques
		Unit I: Introduction - Self-Awareness and Happiness	B.Sc./B.A.	Value Addition

		• Getting to Know Each Other • What to Expect from this Course? • Getting to Know Oneself • What Makes One Happy/ Unhappy? Outer vs Inner Sources of Happiness, Joy of Giving	(Hons/Prog) ,Semester II	Course II/Social and Emotional Learning
	Practical	✚ Design of ammeter and voltmeter using galvanometer. ✚ Measurement of resistance by Wheatstone bridge. ✚ Measurement of Capacitance by De Sauty's bridge. ✚ Measurement of Inductance by Anderson's bridge. ✚ To determine the characteristics of resistance transducer - Strain Gauge. ✚ To determine the characteristics of an LVDT. ✚ To study the variations of thermo-emf of a thermocouple. (Type J/Type K) ✚ To study the 1-V characteristics of Solar Cell. ✚ To study the Characteristics of LOR, Photodiode (i) Variable Illumination (ii) Linear Displacement. ✚ Characteristics of one Solid State sensor/ Fiber optic sensor.	B.Sc.(Hons) Electronics, Semester II	Discipline Specific Core Course IV/Basic Instrumentation and Measurement Techniques
		✚ Activities/Discussions/Watching Movies/Reading Books/Maintaining A Reflective Journal/Field Engagement/Mindfulness Exercises, etc. as per the syllabus	B.Sc./B.A. (Hons/Prog) ,Semester II	Value Addition Course II/Social and Emotional Learning
		✚ Designing of a differentiator using op-amp for a given specification and study its frequency response. ✚ Designing of a First Order Low-pass filter using op-amp. ✚ Designing of a First Order High-pass filter using op-amp ✚ Designing of a RC Phase Shift Oscillator using op-amp. ✚ Study of IC 555 as an astable multivibrator. ✚ Study of IC 555 as monostable multivibrator. ✚ Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series	B.Sc.(Hons) Electronics, Semester IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		✚ Laplace transform and Fourier transform of continuous-time signals. ✚ generation of Fourier series through Simulink	B.Sc.(Hons) Electronics, Semester IV	Core-Course-IX/ Signals and Systems Lab
Apr	**Theory**	Unit I: Fundamentals of Electronic Measurements DC measurement-ammeter, voltmeter, ohm meter, AC measurement (rectifier type, electro dynamo meter), Watt meter. Digital voltmeter systems (integrating and non-integrating types), digital multimeter, Connectors and Probes: low capacitance probes, high voltage probes, current probes, identifying electronic connectors - audio and video, RF/Coaxial, USB etc.	B.Sc.(Hons) Electronics, Semester II	Discipline Specific Core Course IV/Basic Instrumentation and Measurement Techniques
		Unit I: Introduction - Self-Awareness and Happiness • What Makes One Happy/ Unhappy? Outer vs Inner Sources of Happiness, Joy of Giving Unit II: Social Relationships | Mindfulness • Sharing vs Power: Peers, Family and Society • Going Beyond Power Relationships Through Open Conversation • The Value of Silence and Reflection	B.Sc./B.A. (Hons/Prog) ,Semester II	Value Addition Course II/Social and Emotional Learning

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	Practical	➕ Design of ammeter and voltmeter using galvanometer. ➕ Measurement of resistance by Wheatstone bridge. ➕ Measurement of Capacitance by De Sauty's bridge. ➕ Measurement of Inductance by Anderson's bridge. ➕ To determine the characteristics of resistance transducer - Strain Gauge. ➕ To determine the characteristics of an LVDT. ➕ To study the variations of thermo-emf of a thermocouple. (Type J/Type K) ➕ To study the 1-V characteristics of Solar Cell. ➕ To study the Characteristics of LOR, Photodiode (i) Variable Illumination (ii) Linear Displacement. ➕ Characteristics of one Solid State sensor/ Fiber optic sensor.	B.Sc.(Hons) Electronics, Semester II	Discipline-Specific Core Course IV/Basic Instrumentation and Measurement Techniques
		➕ Activities/Discussions/Watching Movies/Reading Books/Maintaining A Reflective Journal/Field Engagement/Mindfulness Exercises, etc. as per the syllabus	B.Sc./B.A. (Hons/Prog) ,Semester II	Value Addition Course II/Social and Emotional Learning
		➕ Designing of a differentiator using op-amp for a given specification and study its frequency response. ➕ Designing of a First Order Low-pass filter using op-amp. ➕ Designing of a First Order High-pass filter using op-amp ➕ Designing of a RC Phase Shift Oscillator using op-amp. ➕ Study of IC 555 as an astable multivibrator. ➕ Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series	B.Sc.(Hons) Electronics, Semester IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		➕ Using Simulink for designing systems through transfer functions. ➕ Design of Low pass, high pass, band pass filters and studying the frequency response.	B.Sc.(Hons) Electronics, Semester IV	Core-Course-IX/ Signals and Systems Lab
May	**Theory**	Unit II: Impedance Measurement and Power Supplies Regulated Power Supplies: Power Supply characteristics, Fixed power supply (78XX based), Dual power supplies (78XX and 79XX based), Variable power supply (LM317 based), current limiting, short-circuit shut down. Introduction of switch mode power supply (SMPS) Unit III: Oscilloscopes and Signal Generators Electronic Displays: The Cathode Ray Oscilloscope (CRO): Block diagram of a General Purpose Oscilloscope and its basic operation. Measurement of voltage, frequency and phase by oscilloscope. Oscilloscope probes. Sampling Oscilloscope.	B.Sc.(Hons) Electronics, Semester II	Discipline Specific Core Course IV/Basic Instrumentation and Measurement Techniques
		Unit II: Social Relationships | Mindfulness • Practice of Mindfulness Unit III: Identity, Self-Image, Status, Self-Worth- Digital Identity • Identity Construction and Expression: Individual and Collective	B.Sc./B.A. (Hons/Prog) ,Semester II	Value Addition Course II/Social and Emotional Learning

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		• Accepting and Valuing Oneself • Understanding the Gendered World • Identifying and transcending stereotypes		
	Practical	✚ Design of ammeter and voltmeter using galvanometer. ✚ Measurement of resistance by Wheatstone bridge. ✚ Measurement of Capacitance by De Sauty's bridge. ✚ Measurement of Inductance by Anderson's bridge. ✚ To determine the characteristics of resistance transducer - Strain Gauge. ✚ To determine the characteristics of an LVDT. ✚ To study the variations of thermo-emf of a thermocouple. (Type J/Type K) ✚ To study the 1-V characteristics of Solar Cell. ✚ To study the Characteristics of LOR, Photodiode (i) Variable Illumination (ii) Linear Displacement. ✚ Characteristics of one Solid State sensor/ Fiber optic sensor.	B.Sc.(Hons) Electronics, Semester II	Discipline Specific Core Course IV/Basic Instrumentation and Measurement Techniques
		✚ Activities/Discussions/Watching Movies/Reading Books/Maintaining A Reflective Journal/Field Engagement/Mindfulness Exercises, etc. as per the syllabus	B.Sc./B.A. (Hons/Prog) ,Semester II	Value Addition Course II/Social and Emotional Learning
Mid-Term Test and Assignment		**As per the syllabus covered**		
Jun	**Theory**	Unit III: Oscilloscopes and Signal Generators Digital Storage Oscilloscope (DSO), advantages and applications, Oscilloscope specifications (bandwidth, sensitivity, rise time). Signal Generators: Types of generators and their operation: Audio oscillator, Function generators, Pulse generators, RF generators, Random noise generators. Unit IV: Transducers and Sensors Transducers and sensors: Classification of transducers, Basic requirement/characteristics of transducers, active & passive transducers, Resistive (Potentiometer, Strain gauge - Theory, types, temperature compensation and applications), Capacitive (Variable Area, air gap and permittivity Type), Inductive (LVDT) and piezoelectric transducers.	B.Sc.(Hons) Electronics, Semester II	Discipline Specific Core Course IV/Basic Instrumentation and Measurement Techniques
		Unit III: Identity, Self-Image, Status, Self-Worth- Digital Identity • Identity Formation and Validation in the Digital World • Discrimination and its Forms Unit IV: Lifestyle Choices I Stress and Its Management • What Choices Does One Get To Make? • Is Choice influenced? Relationships, Career Choices • Career Pressures, Examinations • Dealing with Disappointment, Coping Skills, Health and Fitness	B.Sc./B.A. (Hons/Prog) ,Semester II	Value Addition Course II/Social and Emotional Learning
	Practical	✚ Design of ammeter and voltmeter using galvanometer. ✚ Measurement of resistance by Wheatstone bridge. ✚ Measurement of Capacitance by De Sauty's bridge. ✚ Measurement of Inductance by Anderson's bridge. ✚ To determine the characteristics of resistance transducer - Strain Gauge. ✚ To determine the characteristics of an LVDT. ✚ To study the variations of thermo-emf of a thermocouple. (Type J/Type K) ✚ To study the 1-V characteristics of Solar Cell.	B.Sc.(Hons) Electronics, Semester II	Discipline Specific Core Course IV/Basic Instrumentation and Measurement Techniques

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		➕ To study the Characteristics of LOR, Photodiode (i) Variable Illumination (ii) Linear Displacement. ➕ Characteristics of one Solid State sensor/ Fiber optic sensor. ➕ Activities/Discussions/Watching Movies/Reading Books/Maintaining A Reflective Journal/Field Engagement/Mindfulness Exercises, etc. as per the syllabus	B.Sc./B.A. (Hons/Prog) ,Semester II	Value Addition Course II/Social and Emotional Learning
Jul	**Theory**	Unit IV: Transducers and Sensors Measurement of displacement, Measurement of temperature (RTD, thermistor, thermocouple, semiconductor IC sensors), Light transducers (photo resistors, photovoltaic cells, photodiodes). Unit IV: Lifestyle Choices I Stress and Its Management • Connect With Nature: Sensitivity Towards Other Sentient Beings	B.Sc.(Hons) Electronics, Semester II B.Sc./B.A. (Hons/Prog) ,Semester II	Discipline Specific Core Course IV/Basic Instrumentation and Measurement Techniques Value Addition Course II/Social and Emotional Learning
	Practical	➕ Design of ammeter and voltmeter using galvanometer. ➕ Measurement of resistance by Wheatstone bridge. ➕ Measurement of Capacitance by De Sauty's bridge. ➕ Measurement of Inductance by Anderson's bridge. ➕ To determine the characteristics of resistance transducer - Strain Gauge. ➕ To determine the characteristics of an LVDT. ➕ To study the variations of thermo-emf of a thermocouple. (Type J/Type K) ➕ To study the 1-V characteristics of Solar Cell. ➕ To study the Characteristics of LOR, Photodiode (i) Variable Illumination (ii) Linear Displacement. ➕ Characteristics of one Solid State sensor/ Fiber optic sensor. ➕ Activities/Discussions/Watching Movies/Reading Books/Maintaining A Reflective Journal/Field Engagement/Mindfulness Exercises, etc. as per the syllabus	B.Sc.(Hons) Electronics, Semester II B.Sc./B.A. (Hons/Prog) ,Semester II	Discipline Specific Core Course IV/Basic Instrumentation and Measurement Techniques Value Addition Course II/Social and Emotional Learning

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SEMESTER WISE TEACHING PLANSRI

VENKATESWARA COLLEGE

January-April 2022-23

Name of the Faculty: Dr. Rakhi Narang

Department: Electronics **Semester: IV/VI**

Semester: Theory : B.Sc. (H) Electronics, Sem IV

Practical : B.Sc. (H) Electronics, Sem IV
B.Sc. (H) Electronics, Sem VI

Month		**Topics**	**Course**	**Paper Code/Name**
January	Theory	Sem IV: Continuous and discrete time signals, Transformation of the independent variable, Exponential and sinusoidal signals, Impulse and unit step functions, Continuous-Time and Discrete-Time Systems, Basic System Properties. Discrete time LTI systems, the Convolution Sum, Continuous time LTI systems, the Convolution integral.	B.Sc. (H) Electronics II	Core course-IX Signals and Systems
	Practicals	Sem IV: 1. Generation of Signals: continuous time 2. Generation of Signals: discrete time 3. Time shifting and time scaling of signals. Sem VI: Transfer function, Pole zero graph	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	Core course-IX Signals and Systems DSE: Control Systems Lab

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February	Theory	**Sem IV**: Properties of LTI systems Commutative, Distributive, Associative. LTI systems with and without memory, Invariability, Causality, Stability, Unit Step response. Differential and Difference equation formulation, Block diagram representation of first order systems, Laplace Transform, Inverse Laplace Transform	B.Sc. (H) Electronics II	Core course-IX/ Signals and Systems
	Practicals	**Sem IV:** 1. Convolution 2. Solution of Difference equation. 3. Step and impulse response **Sem VI:** Simulink, siso tool, ltiviewer, steady state error evaluation, stability using Routh Hurwitz criteria.	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	Core course-IX/ Signals and Systems DSE: Control Systems Lab
March	Theory	**Sem IV:** Properties of the Laplace Transform, Laplace Transform Pairs, Laplace Transform for signals, Laplace Transform Methods in Circuit Analysis, Impulse and Step response of RL, RC and RLC circuits. Continuous-Time periodic signals, Convergence of the Fourier series, Properties of continuous Time Fourier series, Discrete-Time period	B.Sc. (H) Electronics II	Core course-IX/ Signals and Systems
	Practicals	**Sem IV:** Laplace transform and Fourier transform of continuous time signals, generation of Fourier series through Simulink **Sem VI** Root Locus plot, DC motor speed and position control, AC servomotor, , Frequency response of Lead and Lag networks	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	Core course-IX Signals and Systems DSE: Control Systems Lab

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	<u>Mid Term Test</u>	Sem IV: Based on Unit I, II	B.Sc. (H) Electronics II	Core course-IX/ Signals and Systems
	Assignment	Presentations based on topics of the curriculum as well as its applications	B.Sc. (H) Electronics II	Core course-IX/ Signals and Systems
April	Theory	**Sem IV**: Properties of Discrete-Time Fourier series. Frequency-Selective filters, Simple RC highpass and lowpass filters Fourier Transform: Aperiodic signals, Periodic signals, Properties of Continuous-time Fourier transform, Convolution and Multiplication Properties, Properties of Fourier transform and basic Fourier transform Pairs	B.Sc. (H) Electronics II	Core course-IX/ Signals and Systems
	Practicals	**Sem IV:** Using Simulink for designing systems through transfer function. 2. Design of Low pass, high pass, band pass filters and studying the frequency response. **Sem VI**: P, PI, PD and PID controller design, Automatic PID controller, Nyquist criterion, State space analysis**.**	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	Core course-IX/ Signals and Systems DSE: Control Systems Lab

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Session 2022-23 (EVEN)

Name of the Faculty: Ms. Hina Yadav

Department: Electronics **Semester: IV**

Semester: Theory : B.Sc(H) Electronics, Sem IV

Practical : B.Sc(H) Electronics, Sem IV

Month		Topics	Course	Paper Code/Name
January	Theory	Qualities of Measurement: Specifications of instruments, their static and dynamic characteristics, Error (Gross error, systematic error, absolute error and relative error) and uncertainty analysis. Statistical analysis of data and curve fitting. Basic Measurement Instruments: PMMC instrument, galvanometer, DC measurement - ammeter, voltmeter, ohm meter, AC measurement, Digital voltmeter systems (integrating and non-integrating types), digital multimeters, digital frequency meter system (different modes and universal counter). Connectors and Probes: low capacitance probes, high voltage probes, current probes, identifying electronic connectors – audio and video, RF/Coaxial, USB etc.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation
		Numerical Errors: Floating point, Round-off error, Error propagation, Stability, Programming errors. Solution of Transcendental and Polynomial Equations f(x)=0: Bisection method, Secant and Regula Falsi Methods, Newton Raphson method, Muller Method, Rate of convergence,	B.Sc.(Hons) Electronics, Sem IV	GE-IV Computational Mathematics
	Practicals	Design of multi range ammeter and voltmeter using galvanometer. Measurement of resistance by Wheatstone bridge and measurement of bridge sensitivity Measurement of Capacitance by de'Sautys.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation Lab
		Study of op-amp characteristics: CMRR and Slew rate. Designing of an amplifier of given gain for an inverting and non-inverting configuration using an opamp. Designing of analog adder and subtractor circuit. Designing of an integrator using op-amp for a given specification and study its frequency response.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab

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February	Theory	Measurement of Resistance and Impedance: Low Resistance: Kelvin's double bridge method, Medium Resistance by Voltmeter Ammeter method, Wheatstone bridge method, High Resistance by Megger. A.C. bridges, Measurement of Self Inductance, Maxwell's bridge, Hay's bridge, and Anderson's bridge, Measurement of Capacitance, Schering's bridge, DeSauty's bridge, Measurement of frequency, Wien's bridge. A-D and D-A Conversion: 4 bit binary weighted resistor type D-A conversion, circuit and working. Circuit of R-2R ladder. A-D conversion characteristics, successive approximation ADC. (Mention of relevant ICs for all).	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation
		General Iteration Methods, Newton‘s Method for Systems, Method for Complex Roots, Roots of Polynomial Equations.	B.Sc.(Hons) Electronics, Sem IV	GE-IV Computational Mathematics
	Assignment	**As per syllabus covered**		
	Practicals	Measure of low resistance by Kelvin‘s double bridge. To determine the Characteristics of resistance transducer - Strain Gauge (Measurementof Strain using half and full bridge.) To determine the Characteristics of LVDT	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation Lab
		Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
March	Theory	Oscilloscopes: CRT, wave form display and electrostatic focusing, time base and sweep synchronization, measurement of voltage, frequency and phase by CRO, Oscilloscope probes, Dual trace oscilloscope, Sampling Oscilloscope, DSO and Powerscope: Block diagram, principle and working, Advantages and applications, CRO specifications (bandwidth, sensitivity, rise time). Signal Generators: Audio oscillator, Pulse Generator, Function generators.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation
		Trapezoidal Rule, Error bounds and estimate for the Trapezoidal rule, Simpson‘s Rule, Error of Simpson‘s rule	B.Sc.(Hons) Electronics, Sem IV	GE-IV Computational Mathematics
		Internal test conducted		
	Practicals	To determine the Characteristics of Thermistors and RTD. 8. Measurement of temperature by Thermocouples and study of transducers like	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation Lab

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		AD590 (two terminal temperature sensor), PT-100, J- type, K-type.		
		Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
April	Theory	Transducers and sensors: Classification of transducers, Basic requirement/characteristics of transducers, active & passive transducers, Resistive (Potentiometer, Strain gauge – Theory, types, temperature compensation and applications), Capacitive (Variable Area Type – Variable Air Gap type – Variable Permittivity type), Inductive (LVDT) and piezoelectric transducers. Measurement of displacement, velocity and acceleration (translational and rotational). Measurement of pressure (manometers, diaphragm, bellows), Measurement of temperature (RTD, thermistor, thermocouple, semiconductor IC sensors), Light transducers (photoresistors, photovoltaic cells, photodiodes).	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation
		Linear systems Ax=B, Gauss Elimination, Partial Pivoting	B.Sc.(Hons) Electronics, Sem IV	GE-IV Computational Mathematics
	Practicals	To study the Characteristics of LDR, Photodiode, and Phototransistor: (i) Variable Illumination. (ii) Linear Displacement. 10. Characteristics of one Solid State sensor/ Fiber optic sensor **ASSIGNMENT TAKEN AND PRACTICAL TEST CONDUCTED**	B.Sc.(Hons) Electronics, Sem IV	Core-Course-X/ Electronic Instrumentation Lab
		Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session(2022-23) (Even)

Name of the Faculty: Dr Rahul

Department: Electronics **Semester: II /VI**

Semester : Theory: B.Sc. (H) Electronics II Sem
B.Sc.(H) Electronics VI Sem
Practical : B.Sc. (H) Electronics II Sem
B.Sc.(H) Electronics VI Sem

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	**SEM VI** Unit-1 Multiplexing: TDM and FDM Digital Modulation Technique: Block diagram of digital transmission and reception, Information capacity, Bit Rate, Baud Rate and M-ary coding. Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK), Phase Shift Keying (PSK), Binary Phase Shift Keying (BPSK)	BSc(H) Electronics	Modern Communication Systems
	Practicals:	**SEM VI** 1. Modulation of LED and detection through Photo detector. 2. Calculation of the transmission losses in an optical communication system.	BSc(H) Electronics	Modern Communication Systems
FEBRUARY	**Theory:**	**SEM VI** Quadrature Phase Shift Keying (QPSK). Binary Line Coding Technique, Multi level coding, QAM (Modulation and Demodulation) **Unit-2** Optical Communication: Introduction of Optical Fiber, Types of Fiber, Guidance in Optical Fiber, Attenuation and Dispersion in Fiber, Optical Sources and Detectors, Block Diagram of optical communication system, optical power budgeting	BSc(H) Electronics	Modern Communication Systems

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	Practicals:	**SEM VI** 3. Study of 16 QAM modulation and Detection with generation of Constellation Diagram 4. Study of Amplitude Shift Keying	BSc(H) Electronics	Modern Communication Systems
MARCH	**Theory:**	**SEM VI** **Unit-3** Cellular Communication: Concept of cellular mobile communication – cell and cell splitting, frequency bands used in cellular communication, absolute RF channel numbers (ARFCN), frequency reuse, roaming and hand off, authentication of the SIM card of the subscribers, IMEI number, concept of data encryption, architecture (block diagram) of cellular mobile communication network, CDMA technology, CDMA overview, simplified block diagram of cellular phone handset, Comparative study of GSM and CDMA, 2G, 3G and 4G concepts. **SEM II** **UNIT – I Diode applications** Diode Circuits: Ideal diode, piecewise linear equivalent circuit, dc load line, static and dynamic resistance, Quiescent (Q) point.	BSc(H) Electronics BSc(H) Electronics	Modern Communication Systems Analog Electronics-I ELDSC-6
	Practicals:	**SEM VI** 5. Study of Frequency Shift Keying 6. Study of Phase Shift Keying 7. Study of architecture of Mobile phone. **SEM II** 1. Study of the half wave or full wave rectifier	BSc(H) Electronics BSc(H) Electronics	Modern Communication Systems Analog Electronics-I ELDSC-6
	<u>Mid-term Test</u>	**SEM VI** 10 Marks Mid-term test was conducted based on UNIT I and II to assess the preparation of the students	BSc(H) Electronics	Modern Communication Systems

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APRIL	**Theory:**	**SEM VI** Unit-4 (15 Lectures) Satellite communication: Introduction, need, satellite orbits, advantages and disadvantages of geostationary satellites. Satellite visibility, satellite system – space segment, block diagrams of satellite sub systems, up link, down link, cross link, transponders (C- Band), effect of solar eclipse, path loss, ground station, simplified block diagram of earth station. Satellite access, TDMA, FDMA, CDMA concepts, comparison of TDMA and FDMA, Satellite antenna (parabolic dish antenna), GPS-services like SPS & PPS. Local area networks (LAN): Primary characteristics of Ethernet-mobile IP, OSI model, wireless LAN requirements-concept of Bluetooth, Wi-Fi and WiMAX.	BSc(H) Electronics	Modern Communication Systems
		SEM II Clipping and clamping circuits. Rectifiers: HWR, FWR (center tapped and bridge). Circuit diagrams, working and waveforms, ripple factor & efficiency, Voltage doubler Filters: Circuit diagram and explanation of shunt capacitor filter with waveforms. Voltage Regulator: Zener diode regulator circuit diagram and explanation for load and line regulation. **UNIT – II BJT based Amplifiers and Oscillator (4 Weeks)** Transistor: Input and Output Characteristics	BSc(H) Electronics	Analog Electronics-I ELDSC-6
	Practicals:	**SEM VI** 8. Study of Satellite Communication System. 9. Study of Optical Fiber Communication System	BSc(H) Electronics	Modern Communication Systems
		SEM II 2. Study of Zener diode as voltage regulator. 3. Study of any two types of (a) clipping circuits (b) clamping circuits.	BSc(H) Electronics	Analog Electronics-I ELDSC-6
	<u>Assignment</u>	**SEM VI** Presentations based on topics of the curriculum as well as its applications	BSc(H) Electronics	Modern Communication Systems

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MAY	**Theory:**	**SEM II** Concept of Biasing and its significance, Concept of DC and AC analysis. Overview of Common Emitter BJT amplifier, Concept of Darlington pair Power Amplifiers: Difference between voltage and power amplifier, classification of power amplifiers (Class A, Class B, Class AB, Class C, Class D), Concept of Class A single ended power amplifier, Transformer coupled Class A power amplifier and complementary symmetry Class B push pull power amplifier, overall efficiency, concept of crossover distortion, harmonic distortion and heat sinks. Feedback Amplifiers: Concept of feedback, negative and positive feedback, voltage (series and shunt), feedback amplifiers gain, input and output impedances. Barkhausen criterion for oscillations, RC phase shift oscillator	BSc(H) Electronics	Analog Electronics-I ELDSC-6
	Practicals:	**SEM II** 4. Study of a Single Stage CE amplifier. 5. Study of Class A or Class B Power Amplifiers.	BSc(H) Electronics	Analog Electronics-I ELDSC-6
	Assignment	**SEM II** 12 marks assignment was given to learn and practice the topics which have been covered in classroom teaching.	BSc(H) Electronics	Analog Electronics-I ELDSC-6
JUNE	**Theory**	**SEM II** UNIT – III MOSFET Fundamentals (4 Weeks) MOSFET: Operation of n-channel and p-channel MOSFETs, Overview of Depletion and Enhancement MOSFET, Transfer Characteristics, Drain Characteristics, MOSFET as a switch. short channel effects, non-ideal effects in MOS transistors: the finite output resistance in the saturation region, the body effect, subthreshold conduction, breakdown effects, and temperature effects. MOSFET DC analysis: Biasing circuits- drain feedback, voltage divider, source feedback, bias stability, Graphical analysis, load line.	BSc(H) Electronics	Analog Electronics-I ELDSC-6
	Practicals:	**SEM II** 6. Study of Voltage divider bias for MOSFET 7. Study of the frequency response of Common Source MOSFET amplifier.	BSc(H) Electronics	Analog Electronics-I ELDSC-6
	Mid Term Test	**SEM II** 12 Marks Mid-term test was conducted based on unit I & II to assess the preparation of the students	BSc(H) Electronics	Analog Electronics-I ELDSC-6
JULY	**Theory:**	**SEM II** UNIT – IV MOSFET based Amplifiers (4 Weeks) MOSFET AC analysis: AC equivalent circuit of MOSFET, MOSFET parameters, MOSFET Amplifiers: circuit and small signal	BSc(H) Electronics	Analog Electronics-I ELDSC-6

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		model of Common Source amplifier, small signal parameters: input resistance, output resistance and voltage gain, circuits of Common Drain and Common Gate configurations. Comparison of BJT based (CE, CB and CC) and MOSFET based (CS, CD, CG) - Qualitative only. Multistage MOSFET circuits: Cascaded circuits and Cascode circuits, effect of multistage circuits on gain and bandwidth. MOSFET Application circuits: CMOS as inverter circuit, depletion mode n-MOSFET and p-MOSFET as load device	BSc(H) Electronics	Analog Electronics-I ELDSC-6
	Practicals:	**SEM II** 8. Study of MOSFET based Phase Shift Oscillator	BSc(H) Electronics	Analog Electronics-I ELDSC-6

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

January-April 2022-23

Name of the Faculty: Dr.Tarakeswara Rao Kaviti

Department: Electronics **Semester: IV/VI**

Semester: Theory : B.Sc. (H) Electronics, Semester IV
B.Sc. (H) Electronics, Semester VI

Practical : B.Sc. (H) Electronics, Semester IV
B.Sc. (H) Electronics, Semester VI

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Month		Topics	Course	Paper Code/Name
January	Theory	**Sem IV:** Architectural Overview, Design principles and needed capabilities, IoT Applications, Sensing, Actuation, Basics of Networking, M2M and IoT Technology Fundamentals-Devices and gateways, Data management, Business processes in IoT, Everything as a Service(XaaS), Role of Cloud in IoT, Security aspects in IoT **Sem VI:** Open loop and Closed loop control systems, Mathematical modeling of physical systems (Electrical, Mechanical and Thermal), Derivation of transfer function, Armature controlled and field controlled DC servomotors	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	SEC-Internet of Things DSE-III Control Systems
	Practicals	Sem IV: ✓ Familiarization with Arduino/Raspberry Pi and perform necessary software installation. ✓ To interface LED/Buzzer with Arduino/Raspberry Pi and write a program to turn ON LED for 1 sec after every 2 seconds. ✓ To interface Push button/Digital sensor (IR/LDR) with Arduino/Raspberry Pi and write a program to turn ON LED	B.Sc. (H) Electronics II	SEC-Internet of Things

		when push button is pressed or at sensor detection. ✓ To interface DHT11 sensor with Arduino/Raspberry Pi and write a program to print temperature and humidity readings. Sem VI: Transfer function , Pole zero graph for type 0, type1 and type 2 systems in s-plane and z-plane.	B.Sc. (H) Electronics III	DSEIII: Control Systems Lab

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February	Theory	**Sem IV**: Hardware Components- Computing (Arduino, Raspberry Pi), Communication, Sensing, Actuation, I/O interfaces. Software Components- Programming API's (using Python/Node.js/Arduino) for Communication Protocols-MQTT, ZigBee, Bluetooth, CoAP, UDP, TCP. **Sem VI:** AC servomotors, block diagram representation & signal flow graph, Reduction Technique, Mason's Gain Formula. Effect of feedback on control systems.	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	SEC- Internet of Things DSE-III Control Systems
	Practicals	**Sem IV:** ✓ To interface motor using relay with Arduino/Raspberry Pi and write a program to turn ON motor when push button is pressed. ✓ To interface OLED with Arduino/Raspberry Pi and write a program to print temperature and humidity readings on it. ✓ To interface Bluetooth with Arduino/Raspberry Pi and write a program to send sensor 97 data to smartphone using Bluetooth. ✓ To interface Bluetooth with Arduino/Raspberry Pi and write a program to turn LED ON/OFF when _1'/'0' is received from smartphone using Bluetooth. **Sem VI:** ✓ To study time response of type 0, 1 and 2 systems ✓ To study frequency response of first and second order systems	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	SEC- Internet of Things DSEIII: Control Systems Lab
March	Theory	**Sem IV:** Solution framework for IoT applications- Implementation of Device integration, Data acquisition and integration, Device data storage- Unstructured data storage on cloud/local server, Authentication, authorization of devices. **Sem VI:** State Space Analysis: Definitions of state, state variables, state space, representation of systems, Solution of time invariant, homogeneous state equation, state transition matrix and its properties	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	SEC- Internet of Things DSE-III Control Systems
	Practicals	**Sem IV:** ✓ Write a program on Arduino/Raspberry Pi to upload temperature and humidity data to thingspeak cloud.	B.Sc. (H) Electronics II	SEC- Internet of Things

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		✓ Write a program on Arduino/Raspberry Pi to retrieve temperature and humidity data from thingspeak cloud. ✓ To install MySQL database on Raspberry Pi and perform basic SQL queries. ✓ Write a program on Arduino/Raspberry Pi to publish temperature data to MQTT broker. **Sem VI** ✓ To study time response characteristics of a second order system. ✓ To study effect of damping factor on performance of second order system ✓ To study frequency response of Lead and Lag networks.	B.Sc. (H) Electronics III	DSEIII: Control Systems Lab

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	Mid Term Test	Sem IV: Based on Unit I, II Sem VI: Based on Unit I, II	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	SEC-Internet of Things DSEIII: Control Systems
	Assignment	Presentations based on topics of the curriculum as well as its applications	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	SEC-Internet of Things DSEIII: Control Systems
April	Theory	**Sem IV**: IoT case studies and mini projects based on Industrial automation, Transportation, Agriculture, Healthcare, Home Automation **Sem VI**: Controllers and Compensation Techniques: Response with P, PI and PID Controllers, Concept of compensation, Lag, Lead and Lag-Lead networks	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	SEC-Internet of Things DSE-III Control Systems
	Practicals	**Sem IV:** ✓ Write a program on Arduino/Raspberry Pi to subscribe to MQTT broker for temperature data and print it. ✓ Write a program to create TCP server on Arduino/Raspberry Pi and respond with humidity data to TCP client when requested. ✓ Write a program to create UDP server on Arduino/Raspberry Pi and respond with humidity data to UDP client when requested. **Sem VI**: . ✓ To study characteristics of: a. Synchro transmitter receiver, b. Synchro as an error detector ✓ To study position control of DC motor ✓ To study speed control of DC motor ✓ To find characteristics of AC servo motor	B.Sc. (H) Electronics II B.Sc. (H) Electronics III	SEC-Internet of Things DSE: Control Systems Lab

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Session 2022-23 (EVEN)

Name of the Faculty: Ms. Priya Vinayak

Department: Electronics **Semester: IV**

Semester: Theory : B.Sc(H) Electronics, Sem IV

Practical : B.Sc(H) Electronics, Sem IV

Month		**Topics**	**Course**	**Paper Code/Name**
February	Theory	Taylor Series and Calculation of Functions, Langrange Interpolation, Newton Divided Difference Interpolation (forward and backward difference formulae), Truncation errors. Curve Fitting: Least square fitting, Curve fitting, Interpolation by Spline functions.	B.Sc.(Hons) Electronics, Sem IV	GE-IV Computational Mathematics
March	Theory	Gauss Integration formula. Numerical Differentiation: Finite difference method. Numerical methods for first order differential equations: Euler-Cauchy Method, Heun's Method, Classical Runge Kutta method of fourth order. Methods for system and higher order equations.	B.Sc.(Hons) Electronics, Sem IV	GE-IV Computational Mathematics
	Assignment and Internal test	**As per syllabus covered**		
April	Theory	Partial Pivoting, LU factorization, Doolittle's, Crout's and Cholesky's method. Matrix Inversion, Gauss-Jordon, Iterative Methods: Gauss-Seidel Iteration, Jacobian Iteration. Matrix Eigenvalue: Power Method.	B.Sc.(Hons) Electronics, Sem IV	GE-IV Computational Mathematics

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2022-2023 (Even Semester)

Name of the Faculty : Ms. Priyanka Pandey

Department : Electronics

Semester: Theory : B.Sc. (H) Electronics, Semester VI

Practical : B.A./B.Sc. (H)/B. Com, Semester II

B.Sc. (H) Electronics, Semester IV

B.Sc. (H) Electronics, Semester VI

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Month		Topics	Course	Paper Code/Name
FEB	**Theory:**	**Sem VI:** Transient response of first, second and higher order systems	B.Sc. (H) Electronics VI	DSE: Control Systems
	Practicals:	**Sem IV:** ➢ To interface LED/Buzzer with Arduino/Raspberry Pi and write a program to turn ON LED for 1 sec after every 2 seconds ➢ To interface Push button/Digital sensor (IR/LDR) with Arduino/Raspberry Pi and write a program to turn ON LED when push button is pressed or at sensor detection	B.Sc. (H) Electronics IV	SEC- Internet of Things
		Sem VI: ➢ Transfer function ➢ Pole zero graph for type 0, type-1 and type-2 systems in s-plane ➢ Determination of steady state errors	B.Sc. (H) Electronics VI	DSE: Control Systems Lab
MAR	**Theory:**	**Sem VI:** Steady state errors, static error and generalized coefficients, performance indices, asymptotic, marginal and conditional stability, Routh Hurwitz stability criterion, relative stability analysis	B.Sc. (H) Electronics VI	DSE: Control Systems
	Practicals:	**Sem IV:** ➢ To interface DHT11 sensor with Arduino/Raspberry Pi and write a	B.Sc. (H) Electronics IV	SEC- Internet of Things

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		program to print temperature and humidity readings ➢ To interface stepper motor using relay with Arduino/Raspberry Pi and write a program to turn ON motor when push button is pressed (using joystick and potentiometer)		
		Sem VI: ➢ Root Locus plot ➢ Frequency response of Lead and Lag networks	B.Sc. (H) Electronics VI	DSE: Control Systems Lab
APR	**Theory:**	**Sem VI:** Root locus technique, correlation between time and frequency domain parameters/response, frequency domain specifications, Bode plot, gain margin, phase margin, Polar plot, Inverse polar plot, Nyquist stability criterion and constant M and N circles	B.Sc. (H) Electronics VI	DSE: Control Systems
	Practicals:	**Sem II:** ➢ Visualization of Spreadsheet Models ➢ Visualization of Semi-Structured Data ➢ Interactive Plots in Python and Tableau ➢ Hierarchical and Topographical Data Visualizations in Tableau.	B.A./B.Sc. (H)/ B. Com, Semester II	GE: Data Visualization
		Sem II: ➢ Introduction to R and familiarization of R Studio, Basic components in R Studio ➢ R Syntax and programming	B.A./B.Sc. (H)/ B. Com, Semester II	SEC: R Programming for Data Analytics
		Sem IV: ➢ To interface servo-motor using relay with Arduino/Raspberry Pi and write a program to turn ON motor when push button is pressed (using joystick and potentiometer) ➢ To interface water level sensor with Arduino/Raspberry Pi and write a program to detect water level when sensor is immersed in water	B.Sc. (H) Electronics IV	SEC- Internet of Things
		Sem VI: ➢ P, PI, PD and PID controller design ➢ Automatic PID controller ➢ Nyquist criterion ➢ State space analysis	B.Sc. (H) Electronics VI	DSE: Control Systems Lab

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MAY	**Practicals:**	**Sem II:** ➢ Calendar Heatmaps and Flow Data Visualizations in Python. ➢ Time Series Data Visualization in 'Plotly.	B.A./B.Sc. (H)/ B. Com, Semester II	GE: Data Visualization
		Sem II: ➢ Understanding tidyverse, tibble, dplyr, ggplot2, tidyr, purrr, readr, forcats, stringr for tidying, manipulating and plotting data ➢ Linear Programming Models, Optimization models, understanding optim() ➢ Classification based on similarities with k-nearest neighbours, odds with logistic regression, maximizing separation with discriminant analysis, classifying with decision tress	B.A./B.Sc. (H)/ B. Com, Semester II	SEC: R Programming for Data Analytics
JUNE	**Practicals:**	**Sem II:** ➢ Creating cloud account Amazon/Azure/Google/IBM to store images /files / programs. ➢ Use a dataset that contains immigration details e.g. Canada for a given duration of 30 years (Canada Immigration Dataset, source: https://open.canada .ca) or any other a. Create an area plot for top 6 immigrant countries in a given duration. b. Create and year-wise immigrant bar chart from India to Canada in a given duration. c. Create a boxplot of immigrants for three given countries. d. Show the total no. of immigrants using Area Chart and Pie chart for two given countries. e. Create a scatter Histogram for the immigrants in the given year for two specific countries.	B.A./B.Sc. (H)/ B. Com, Semester II	GE: Data Visualization
		Sem II: ➢ Dimension Reduction- Maximizing variance with Principal Component Analysis; k-mean cluster, understanding cluster.	B.A./B.Sc. (H)/ B. Com, Semester II	SEC: R Programming for Data Analytics
JULY	**Practicals:**	**Sem II:** Final Assessment	B.A./B.Sc. (H)/ B. Com, Semester II	GE: Data Visualization

		Sem II: Final Assessment	B.A./B.Sc. (H)/ B. Com, Semester II	SEC: R Programming for Data Analytics

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Prof MEENAKSHI BHARAT

Department: ENGLISH

Semester: II/IV/VI

Even 2022-2023

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Month		Topics	Course	Paper Code/Name
January	**Theory**	Introduction to Postcolonialism, the Novel form, the Postcolonial novel Background of Postcolonialism Postcolonial Theory	B.A.(H) English Semester VI	Postcolonial Literatures (Paper 14)
		Introduction to the Partition and Partition Literature Introduction to the short story form	B.A.(H) English Semester VI	Partition Literature (DCE 3)
		Introduction to the Victorian Novel The Novel Form	B.A.(H) English Semester IV	Victorian Literature Paper
February	**Theory**	Introduction to Things Fall Apart and Part 1	BA (H) III Semester VI	Postcolonial Literature Paper 14
		Introduction to The Partition Short Story Manto	B.A.(H) English III Semester VI	Partition Literature (Paper 10)

Month		Topics	Course	Paper Code/Name
		Introduction to Charlotte Bronte Chapters 1-10	B.A.(H) English III Semester IV	Victorian Literature
March	**Theory**	Part II Things Fall Apart	BA (H) English Semester VI	Paper 14: Postcolonial Literatures
		Krishan Chander 'Manik Bandopadhyaya	B.A.(H) English III Semester VI	DSE 3: Partition Literature
		Jane Eyre Chapters 11-21	B.A. (H) Semester IV	Paper Victorian Literature
	Assignment	Things Fall Apart as a postcolonial novel.	B.A.(H) English Semester VI	Paper 14 Postcolonial Literature
April	**Theory**	Part III Things Fall Apart Conclusion	B.A.(H) English Semester VI	Paper 14 Postcolonial Literature
		Sunanda Bhattachaya Syed Waliullah	B.A.(H) Semester VI	DSE 3 Partition Literature
		Jane Eyre Remainder of Novel	BA (H) English Semester	Victorian Literature

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Month		Topics	Course	Paper Code/Name
			IV	
	Mid Term Test	Postcolonial Literatures Achebe Short Stories	B.A.(H) English Semester VI	Postcolonial Literatures Paper 14
		Reading the novel from different critical perspectives and placing it in context. Tying up –problem solving	B.A.(H) English III Semester VI	Postcolonial Literatures Paper 14
		Concluding critical analysis of the Partition Winding up	B.A.(H) English III Semester VI	Partition Literature DSE 3
		Concluding remarks on women's writing. General lectures and problem solving. Jane Eyre	BA (H) English III Semester IV	Victorian Literature

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Name of the Faculty: NIKHIL YADAV **Department: ENGLISH**

Semester: II/IV/VI

2022-2023

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introduction to the Rise of the Novel, Novel and its conventions	B.A.(H) English II yr.	British Literature: 18th Century
		Introduction to Psychoanalysis, the Birth and Development, Key Terms of Psychoanalytic Theory	B.A.(H) English III yr	Literary Criticism and Theory
		Introduction to Cinema Studies	B.A.(H) English III yr	Literature and Cinema
		Introduction to Cultural Diversity and Linguistic Plurality in India	SEM IV	GE
		Started with Syllabus Readings	BA Prog I	MIL English A
		Introduction to the Victorian Novel, Women and the Novel Form	BA Prog II	English Discipline
FEBRUARY	**Theory**	Beginning Reading of Joseph Andrews, Book I	B.A.(H) English Iiyr.	British Literature: 18th Century
		Readings from prescribed Passages from Freud's Uncanny	B.A.(H) English IIIyr	Literary Criticism and Theory
		Begin Readings from the Prescribed Passages for James Monaco	B.A.(H) English IIIyr	Literature and Cinema

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		Continue Readings from Section I, Introduction to Literary Diversity and Cultural Plurality in India	SEM IV	GE
		Reading Journalistic Prose	BA Prog I	MIL English A
		Started Reading Charlotte Bronte's Jane Eyre	BA Prog II	English Discipline
MARCH	**Theory**	BookI, II& III- Joseph Andrews	B.A.(H) English IIyr	British Literature: 18th Century
		Concluding Freud, Beginning with prescribed passages from Lacan	B.A.(H) English IIIyr	Literary Criticism and Theory
		Readings from James Monaco continued, Literary Terms and Application to Cinema Studies	B.A.(H) English IIIyr	Literature and Cinema
		Section II, Linguistic Plurality and Cultural Diversities in India	Sem IV	GE
		Readings from Literature and everyday life, Journalistic Prose continued	BA Prog I	MIL English A
		Introduction to Gothic genre, Continued Reading of Charlotte Bronte's Jane Eyre	BA Prog II	English Discipline
APRIL	**Theory**	Book IV and Conclusion to Joseph Andrews, Key themes and Possible questions from Joseph Andrews. Beginning with Introduction to late Restoration Drama and Sentimental Comedy	B.A.(H) English IIyr	British Literature: 18th Century
		Continuing with Lacan, Early Lacan and the Mirror Stage	B.A.(H) English IIIyr	Literary Criticism and Theory
		Continuing James Monaco, Cinematic Language	B.A.(H) English IIIyr	Literature and Cinema
		Continuing with Literary Diversity and Cultural Plurality, Section II, Sufi Writings	Semester IV	GE

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	Mid Term Test	From Psychoanalytic Theory	B.A.(H) English III yr	Literary Criticism and Theory
		Concluding Journalistic Prose and Beginning with introduction to short story, genre and themes	BA Prog I	MIL English A
		Continuing with Charlotte Bronte's Jane Eyre, Female Bildungsroman	BA Prog II	English Discipline
MAY	**Theory:** **Assign ment**	Continuing Reading of Congreve "The Way of the World"	B.A.(H) English II yr	British Literature: 18th Century
		Concluding Lacan and Starting with Kristeva ' Revolution in Poetic Language'	B.A.(H) English IIIyr	Literary Criticism and Theory
		Conclusion and Overview of James Monaco "The Language of Films: Signs and Syntax"	B.A.(H) English IIIyr	Literature and Cinema
		Concluding remarks on Section I & II, Literary Diversity and Cultural Plurality in India	SEM IV	GE
		Concluding Short Story Unit and Overview of the term	BA Prog I	MIL English A
		Concluding Reading of Jane Eyre, Key Themes, Characters, Plot and Overview	BA Prog II	English Discipline

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

2023

Name of the Faculty: Rupleena Bose **Department: English**

Semester : II/IV/ VI

Jan- May 2023

		Topics	Course	Paper
April	**Theory**	Introduction to Shakespeare. Introduction to Macbeth.	B. A Prog DSC Minor SEM 2	14th-17th Century British Lit
	Tutorials	NA	NA	NA
	Assignment			

		Topics	Course	Paper
May	**Theory**	Macbeth Scene 1 and Scene 2	BA Prog Dsc Minor	14th-17th Century British Lit
	Tutorials	-	-	-
	Assignment	-	-	-

		Topics	Course	Paper
APRIL	**Theory**	Introduction to Poetry	Bcom Prog GE Sem 2	GE Language

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		Topics	Course	Paper
	Tutorials	Critical Thinking and Writing. How to Write Book Reviews. How to develop essay and writing skills	BCOM Prog Bcom Prog Sem 2	
	Assignment	Write a Book Review and a Film Review. Project: Critical Examination of use of Indian English Language in Poetry	-	-

		Topics	Course	Paper
MAY	**Theory**	Critical Reading of the Non Fiction Segment. News paper Reports. Articles.	BCOM Prog SEM 2	GE language
	Tutorials	Critical Differences in Reading Fiction and Non Fiction	-	-
	Assignment	Class presentations: Project: Critical Examination of use of Indian English	-	-

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		Language in Poetry		

		Topics	Course	Paper
APRIL	**Theory**	GE: Individual and Society. Introduction to race, identity, culture	BA PROG Sem 2	GE: Individual and Society
	Tutorials	Literature and Introduction to Writings on Race	-	-
	Assignment	Project: Gender in Society	-	-

		Topics	Course	Paper
MAY	**Theory**	GE: Readings on Race. Langston Hughes, Nadine Gordimer Introduction to race, Harlem Renaissance	BA PROG Sem 2	GE: Individual and Society
	Tutorials	Literature and Introduction to Writings on Race. American Literature and race	-	-

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		Topics	Course	Paper
	Assignment	Project: Gender in Society through Virginia Woolf	-	-

		Topics	Course	Paper
APRIL	**Theory**	Gender and Literature. Critical Questioning of Gender Roles through Literature	BA PROG Sem 6	GE: Individual and Society
	Tutorials	-	-	-
	Assignment		-	-

		Topics	Course	Paper
MAY	**Theory**	Critical Writing and analysis of Texts from Gender Class Segment	BA PROG Sem 6	GE: Individual and Society
	Tutorials	-	-	-
	Assignment		-	-

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		Topics	Course	Paper
APRIL	**Theory**	English Language Writing skills. Beginning Middle and Ending of essay writing. Teaching how to write long form essays and Reviews	BCOM Prog Sem 4	IELTS
	Tutorials	-	-	-
	Assignment		-	-

		Topics	Course	Paper
MAY	**Theory**	Teaching Writing Skills, Review Articles. Essays. Dialogue Writing skills	B COM Sem 4	IELTS
	Tutorials	-	-	-
	Assignment		-	-

		Topics	Course	Paper
APRIL	**Theory**	Fluency in English. Developing analytical skills of poems through class, caste and gender	BA PROG Sem 4	English B

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		Topics	Course	Paper
	Tutorials	Discussing texts from Fluency in English. Modern Poetry and Modern Indian Writing. Modernism in Indian Poetry	-	-
	Assignment		-	-

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SRI VENKATESWARA COLLEGE

2023

Name of the Faculty: DEBARATI SEN **Department: ENGLISH**

Semester : II/IV/VI

January – May 2023

Month		Topics	Course	Paper Code/ Name
January	**Theory**	Introduction to Middle English & Chaucer and his times.	B.A.(H) English Sem II.	DSC 4: 14th to 17th Century English Poetry
		Introduction to Modern Bengali Literature and Sunil Gangopadhay+ Sec I , II & III	B.A.(H) English Sem VI	Paper D16: Partition Literature
		Introduction to Sex and Gender, Femininities and Masculinities and Patriarchy	B.A./B.Sc/ B.com (H) Sem IV	GE: Contemporary India: Women and Empowerment
		Introductionto Chinua Achehe, African Literature in Translation and Post Colonialism	B.A. (P) Sem VI	English Discipline: World Literatures
		Introduction to the idea of Disability	B.A. (P) Sem VI	GE: Marginalities in Indian Writing
		Introduction to the idea and theory of Gender and Media in the Indian and Global context	B.A. (P) Sem VI	SEC: Applied Gender Studies: Media Literacies

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Month		Topics	Course	Paper Code/ Name
		Introduction to Modernism and Modernist Poetry	B.A. (P) Sem IV	English DSC Literary Crosscurrents: Selections from Living Literatures
February	**Theory**	Introduction to the literary conventions in the times of Chaucer. Introduction to The Canterbury Times	B.A.(H) English Sem II.	DSC 4: 14th to 17th Century English Poetry
		Arjun + Sec IV , V & VI	B.A.(H) English Sem VI	Paper D16: Partition Literature
		Baby Kamble	B.A./B.Sc/ B.com (H) Sem IV	GE: Contemporary India: Women and Empowerment
		Part 1	B.A. (P) Sem VI	English Discipline: World Literatures
		Tagore	B.A. (P) Sem VI	GE: Marginalities in Indian Writing
		W.H.Auden	B.A. (P) Sem IV	English DSC Literary Crosscurrents: Selections from Living Literatures
		Readings 7 & 8	B.A. (P) Sem VI	SEC: Applied Gender Studies: Media Literacies
March	**Theory**	General Prologue and The Pardoner's Tale from The	B.A.(H) English Sem	DSC 4: 14th to 17th Century English

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Month		Topics	Course	Paper Code/ Name
		Canterbury Tales	II.	Poetry
		Introduction to Arjun + Sec I , II, III, IV	B.A.(H) English Sem VI	Paper D16: Partition Literature
		Rassundari Devi & Rokeya S. Hossain	B.A./B.Sc/ B.com (H)	GE: Contemporary India: Women and Empowerment
		Part 2	B.A. (P) Sem VI	English Discipline: World Literatures
		Malini Chib	B.A. (P) Sem VI	GE: Marginalities in Indian Writing
		T.S. Eliot	B.A. (P) Sem IV	English DSC Literary Crosscurrents: Selections from Living Literatures
		Readings 9 & 10	B.A. (P) Sem VI	SEC: Applied Gender Studies: Media Literacies
	Assignment	Chaucer	B.A.(H) English Sem II.	DSC 4: 14th to 17th Century English Poetry
			B.A./B.Sc/ B.com (H) sem IV	GE: Contemporary India: Women and Empowerment
			B.A. (P) Sem VI	GE: Marginalities in Indian Writing
April	**Theory**	Critical perspectives on The Canterbury Tales	B.A.(H) English Sem II.	DSC 4: 14th to 17th Century English Poetry

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Month		Topics	Course	Paper Code/ Name
		Arjun + Sec VII, VIII, IX, X, XI & XII	B.A.(H) English Sem VI	Paper D16: Partition Literature
		V Geetha	B.A./B.Sc/ B.com (H) Sem IV	GE: Contemporary India: Women and Empowerment
		Part 3 and Critical Perspectives	B.A. (P) Sem VI	English Discipline: World Literatures
		Raghuvir Sahay & Karnad	B.A. (P) Sem VI	GE: Marginalities in Indian Writing
		Slyvia Plath	B.A. (P) Sem IV	English DSC Literary Crosscurrents: Selections from Living Literatures
		Readings 11 & 12	B.A. (P) Sem VI	SEC: Applied Gender Studies: Media Literacies
	Mid Term Test	Chaucer	B.A.(H) English Sem II.	DSC 4: 14th to 17th Century English Poetry
			B.Sc (H) Bio-Chemistry, B.Sc (H) Botany	AECC
May	**Theory:**	Literary Criticism: The Canterbury Tales contd.	B.A.(H) English Sem II.	DSC 4: 14th to 17th Century English Poetry

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Month		Topics	Course	Paper Code/ Name
		Critical Perspectives	GE: Contemporary India: Women and Empowerment	Paper D16: Partition Literature
		Critical Perspectives	B.A./B.Sc/ B.com (H)	GE: Contemporary India: Women and Empowerment
		Concluding remarks	B.A. (P) Sem VI	English Discipline: World Literatures
		Concluding remarks	B.A. (P) Sem VI	GE: Marginalities in Indian Writing
		Critical Perspectives	B.A. (P) Sem IV	English DSC Literary Crosscurrents: Selections from Living Literatures
		Concluding remarks	B.A. (P) Sem VI	SEC: Applied Gender Studies: Media Literacies

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2023

Name of the Faculty: Dr. Ritika Singh **Department: English**

Semester : II/IV/VI

January – May 2023

		Topics	Course	Paper
January	**Theory**	Renaissance – introduction to the period via paintings	BA (H) English Sem II	DSC 4: 14th to 17th Century English Poetry
		Introduction to Romantic Literature	BA (H) English Sem IV	Paper 9: British Romantic Literature
		Introduction to postcolonial literature, theory, and canon	BA (H) English Sem VI	Paper 14: Postcolonial Literatures
		Introduction to history of the Indian Partition	BA (H) English Sem VI	DSE 3 PAPER 10: Partition Literature
		Introduction to literary theory: meaning and scope	BA (H) English Sem VI	DSE 2 PAPER 13: Literary Theory & Criticism 2
		Exploring links between language, literature, culture, and society	BCom (P) Sem IV	English A – ELTL

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		Topics	Course	Paper
		Introduction to theories of gender	BA (P) Sem VI	DSC – Applied Gender and Media Literacies
		Introduction to the meaning and politics of 'world' literature	BA (P) Sem VI	DSC – World Literatures
	Tutorials	-	-	-
	Assignment	-	-	-

		Topics	Course	Paper
February	**Theory**	Renaissance – literary currents, humanism, religion, and poetry	BA (H) English Sem II	DSC 4: 14th to 17th Century English Poetry
		Rousseau's "Discourse on Origin of Inequality" – background, impact, and theory	BA (H) English Sem IV	Paper 9: British Romantic Literature
		Pablo Neruda and Derek Walcott – poetry, politics, context. Postcolonial poetry and 'writing back'	BA (H) English Sem VI	Paper 14: Postcolonial Literatures

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		Memoirs, witnessing, and autobiography – modes of writing history	BA (H) English Sem VI	DSE 3 PAPER 10: Partition Literature
		Poststructuralism – Derrida's concept of aporia, play, and rupture	BA (H) English Sem VI	DSE 2 PAPER 13: Literary Theory & Criticism 2
		Reading and discussion of two short stories – "Thanda Gosht" by Manto, and "Joothan" by Valmiki	BCom (P) Sem IV	English A – ELTL
		Queer theory, body and gender, the psychology of gender	BA (P) Sem VI	DSC – Applied Gender and Media Literacies
	Tutorials			
	Assignment	Write a 1500 word article exploring gender in any film of choice.	BA (P) Sem VI	DSC – Applied Gender and Media Literacies

		Topics	Course	Paper
March	**Theory**	Walter Raleigh, and Sidney – courtly love, sonnet form and development, biographical background	BA (H) English Sem II	DSC 4: 14th to 17th Century English Poetry

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		Topics	Course	Paper
		Kant's "Analytic of the Sublime" – theory, philosophy, and application	BA (H) English Sem IV	Paper 9: British Romantic Literature
		Reading Pablo Neruda and Derek Walcott's poetry. Introduction to Mamang Dai's works	BA (H) English Sem VI	Paper 14: Postcolonial Literatures
		Reading and discussion of the three memoirs in the course	BA (H) English Sem VI	DSE 3 PAPER 10: Partition Literature
		Reading "Structure, Sign, and Play" by Derrida. Introduction to Foucault	BA (H) English Sem VI	DSE 2 PAPER 13: Literary Theory & Criticism 2
		Reading and discussion of two poems. Analysing unseen comprehension	BCom (P) Sem IV	English A – ELTL
		Reading 1-4 of the syllabus	BA (P) Sem VI	DSC – Applied Gender and Media Literacies
	Tutorials	-	-	-
	Assignment	Write a 1000 word research article on	BA (P) Sem VI	DSC – Applied Gender and Media Literacies

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		Topics	Course	Paper
		gender related themes discussed in class		

		Topics	Course	Paper
April	**Theory**	Introduction to John Donne – life, work, metaphysical poetry, symbolism, holy sonnets	BA (H) English Sem II	DSC 4: 14th to 17th Century English Poetry
		Wordsworth's "Preface" – redefinition of poetry.	BA (H) English Sem IV	Paper 9: British Romantic Literature
		Bessie Head and Aidoo: African Feminism and postcolonial short-stories.	BA (H) English Sem VI	Paper 14: Postcolonial Literatures
		Introducing the themes of the novel *Basti* by Hussain	BA (H) English Sem VI	DSE 3 PAPER 10: Partition Literature
		Reading Foucault; introduction to Levi Strauss	BA (H) English Sem VI	DSE 2 PAPER 13: Literary Theory & Criticism 2
			BCom (P) Sem IV	English A – ELTL

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		Topics	Course	Paper
	Tutorials	-	-	-
	Assignment	Write an original poem of a minimum of 14 lines	BCom (P) Sem IV	English A – ELTL

		Topics	Course	Paper
May	**Theory**	Reading Donne's poems	BA (H) English Sem II	DSC 4: 14th to 17th Century English Poetry
		Gilpin's "On Picturesque Travel" – nationalism, romanticism, and idea of the landscape	BA (H) English Sem IV	Paper 9: British Romantic Literature
		Dalit Feminism and Vinodini's works	BA (H) English Sem VI	Paper 14: Postcolonial Literatures
		Trauma, history, and memory and the area of partition literature	BA (H) English Sem VI	DSE 3 PAPER 10: Partition Literature
		Reading Levi Strauss	BA (H) English Sem VI	DSE 2 PAPER 13: Literary Theory & Criticism 2

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		Topics	Course	Paper
		Discussing previous year question papers	BCom (P) Sem IV	English A – ELTL
	Tutorials	-	-	-
	Assignment	-	-	-

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2023

Name of the Faculty: Aman Nawaz **Department: English**

Semester : VI

January – May 2023

		Topics	Course	Paper
January	**Theory**	Introducing Literary Theory	BA Hons English	DSE 13: Literary Theory and Criticism-2
		Reading Peter Barry and Terry Eagleton Introduction to literary theory	-	-
		Understanding theory and praxis	-	-

		Topics	Course	Paper
February	**Theory**	Basics of Marxism Discussion on Labour theory of value, surplus value		
		The analytical turn in Marxism	-	-
		Post war marxism	-	-

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		Topics	Course	Paper
March	**Theory**	Introducing Althusser and close reading of ISAs and RSAs	-	
		Understanding ideology And interpellation	-	-
		Limitations of ideological criticism	-	-

		Topics	Course	Paper
April	**Theory**	Introduction to Cultural Turn in Marxism and Gramsci	-	
		State and Civil Society	-	-
		Close reading Gramsci's Hegemony and Civil Society	-	-

		Topics	Course	Paper

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May	**Theory**	Lukacs' reification	-	
		Commodity Fetishism and Alienation	-	-
		Previous Years Question Papers and Doubt Clearing	-	-

Semester : VI

January – May 2023

		Topics	Course	Paper
January	**Theory**	Introduction to Cinema studies	BA (Hons) English	DSE 14: Literature and Cinema
		Cinema as new form of art	-	-
		-	-	-

		Topics	Course	Paper
February	**Theory**	Introducing Benjamin's Work of Art in the age of Mechanical Reproduction	-	

		Topics	Course	Paper

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March	**Theory**	Close reading of the essay	-	

		Topics	Course	Paper
April	**Theory**	Screening of Modern Times and a discussion on the cinema as the new mode of art	-	

		Topics	Course	Paper
May	**Theory**	Previous Years Question Papers and Doubt Clearing	-	

Semester : IV

January – May 2023

		Topics	Course	Paper
January	**Theory**	Introduction to gender and law and gender analysis of law	GE Hons	GE Women and Empowerment

		Topics	Course	Paper

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February	**Theory**	Reading Janki Nair's The Foundations of Modern Legal Structures in India	-	

		Topics	Course	Paper
March	**Theory**	Reading Flavia Agnes' Conjugality, Property, Morality, and Maintenance	-	

		Topics	Course	Paper
April	**Theory**	Discussing Personal Laws and Gender	-	

		Topics	Course	Paper
May	**Theory**	Previous Year Question papers and doubt clearing sessions	-	

Semester : IV

January – May 2023

		Topics	Course	Paper
January	**Theory**	Introducing Gender and its representation in various cultural productions	BA (Hons) SEC	**SEC: Applied Gender Studies: Media Literacies**

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	Tutorials	Discussion on Trans Discourse and its representation in media	-	-
	Assignment	Portfolio on Gender in Media Podcast, video, PPT on the same	-	-

		Topics	Course	Paper
February	**Theory**	Analysing representation of gender in reporting and journalism	-	
	Tutorials	Discussion on intersectionalities and gender	-	-
	Assignment	Analysis of Gender in Media with reference to any one reading in the course	-	-

		Topics	Course	Paper
March	**Theory**	Discussion on the movie unlimited girls	-	

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	Tutorials	Close reading of the documentary Unlimited Girls	-	-

		Topics	Course	Paper
April	**Theory**	Discussion on “Open Letter to our Male Collegues in the media world”, from Khabar Lahariya	-	
	Tutorials	Doubt clearing session	-	-

		Topics	Course	Paper
May	**Theory**	Discussion on gender and films Reading Sharmila Rege “Dalit women talk differently”	-	
	Tutorials	Previous years Question paper	-	-
		-	-	-

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Semester : IV

January – May 2023

		Topics	Course	Paper
January	**Theory**	Understanding Life Narratives	BA Prog Semester, BCom Prog	English A: English Language Through Literature
	Tutorials	Writing Life Narratives	-	-
	Assignment	Comprehension Question on Life Narratives	-	-

		Topics	Course	Paper
February	**Theory**	Reading Kamala Das' The Park Street Home	-	

		Topics	Course	Paper
March	**Theory**	Reading Mayank Austen Sufi's Nobody Can Love You More	-	

		Topics	Course	Paper

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April	**Theory**	Reading Kishalay Bhattacharjee Back to Where I Never Belonged And Steve Jobs	-	

		Topics	Course	Paper
May	**Theory**	Doubt Clearing Sessions and previous years Question Papers	-	

Semester : II

April- July 2023

		Topics	Course	Paper
April	**Theory**	Introduction to 17th England and Civil War	BA (Hons) English	DSC 4: 14th to 17th Century English Poetry

		Topics	Course	Paper
May	**Theory**	Introduction to John Milton's Paradise Lost		

		Topics	Course	Paper

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June	**Theory**	Close Reading of Book 1 Paradise Lost	-	

		Topics	Course	Paper
July	**Theory**	Discussion on various themes of Paradise Lost and previous years question papers	-	

Semester : II

April -July 2023

		Topics	Course	Paper
January	**Theory**	Introduction to 17th Century English and Civil War	BA Prog	ENG DSC (Minor): 14th-17th Century British Poetry

		Topics	Course	Paper
May	**Theory**	Introduction to Restoration Comedy and Aphra Behn's The Rover	-	

		Topics	Course	Paper

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June	**Theory**	Screening of the play and close reading of The Rover and its various themes	-	

		Topics	Course	Paper
July	**Theory**	Discussion on various thematic concerns and previous years question papers	-	

Semester : II

April – July 2023

		Topics	Course	Paper
April	**Theory**	Introduction to Life Skill Development	Skill Enhancement Course	
		Introduction to Basic Life Skills: Concept, Components and Significance	-	-

		Topics	Course	Paper
May	**Theory**	Discussion on Career Building Skills: Exploring Career Opportunities	-	

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		Discussion on Career Building Skills: Exploring Career Opportunities	-	-
		Understanding Team Work Skills: Social Etiquettes, Democratic Decision, and Collaboration	-	-

		Topics	Course	Paper
June	**Theory**	Understanding potential changes that be brought by applying life skills	-	
		Understanding Solution focus thinking	-	-

		Topics	Course	Paper

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July	**Theory**	Understanding Simulation exercises: Brainstorming, Role plays for Team building	-	
		Discussing Stress Management and Coping strategies	-	-

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Name of the Faculty: Mr Nishant **Department: ENGLISH**

Semester : II/IV/VI

January – May 2023

		Topics	Course	Paper
January	**Theory**	-Introduction to Jonathan Swift -Introduction to Laura Mulvey -Introduction to Victorian Era and its poetry -Introduction to Dalit Literature and Om Prakash Valmiki	-BA (H) English Semester IV -BA (H) English Semester VI -BA (P) Semester IV -BA (P) Semester VI	-Paper 8:British Literature: 18th Century -Paper D14: Literature and Cinema -ENG DSC: Literary Crosscurrents -ENG DSC: World Literatures
	Tutorials	NA	NA	NA
	Assignment	NA	NA	NA

		Topics	Course	Paper
February	**Theory**	-Book 3 of Gulliver's Travels -Cinematic Discussion on	-BA (H) English Semester IV -BA (H) English Semester VI	-Paper 8:British Literature: 18th Century -Paper D14: Literature and

		Topics	Course	Paper
		Margarita with a straw. -Critical reading of Tennyson's The Lady of Shalott. -Reading of Valmiki's Joothan in class.	 -BA (P) Semester IV -BA (P) Semester VI	Cinema -ENG DSC: Literary Crosscurrents -ENG DSC: World Literatures
	Tutorials	-Reading group discussions on the Age of Enlightenment.	-BA (H) English Semester IV	-Paper 8:British Literature: 18th Century
	Assignment	NA	NA	NA

		Topics	Course	Paper
March	**Theory**	-Reading of Book 4 of Gulliver's Travels. -Gender and sexuality discussion on Thelma and Louise. -Critical reading of Browning's My Last Duchess. -Reading of Valmiki's Joothan continued.	-BA (H) English Semester IV -BA (H) English Semester VI -BA (P) Semester IV -BA (P) Semester VI	-Paper 8:British Literature: 18th Century -Paper D14: Literature and Cinema -ENG DSC: Literary Crosscurrents -ENG DSC: World

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		Topics	Course	Paper
				Literatures
	Tutorials	Writing exercises on nature and style of satire used in Travels.	-BA (H) English Semester IV	-Paper 8:British Literature: 18th Century
	Assignment	NA	NA	NA

		Topics	Course	Paper
April	**Theory**	-Discussion of critical material on Swift's Travels. -Discussion on Laura Mulvey's Visual Pleasure and Narrative Cinema. -Reading poetries of Thomas Hardy and Emily Dickinson. -Discussion on critical material on Valmiki's Joothan. -Introduction to the life of Jonathan Swift and Gulliver's Travels. -Introduction to the	-BA (H) English Semester IV -BA (H) English Semester VI -BA (P) Semester IV -BA (P) Semester VI -BA (H) English Semester II -BA (P)	-Paper 8:British Literature: 18th Century -Paper D14: Literature and Cinema -ENG DSC: Literary Crosscurrents -ENG DSC: World Literatures -DSC 6: 18th Century Literature. ENG DSC

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		Topics	Course	Paper
		life of Jonathan Swift and Gulliver's Travels.	Semester II	(major): 18th Century Literature.
	Tutorials	-Discussions on individual class tests and writing exercises in smaller groups.	-BA (H) English Semester IV	-Paper 8:British Literature: 18th Century
	Assignment	-Long answer based research oriented assignment on Swift's style of satire in Book 3 of Travels and Travels historical placement in England's larger history.	-BA (H) English Semester IV	-Paper 8:British Literature: 18th Century

		Topics	Course	Paper
May	**Theory**	-Revision and previous years' question papers' discussions. -Revision and previous years' question papers' discussions.	-BA (H) English Semester IV -BA (H) English Semester VI	-Paper 8:British Literature: 18th Century -Paper D14: Literature and Cinema

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		Topics	Course	Paper
		-Revision and previous years' question papers' discussions. -Revision and previous years' question papers' discussions. -Reading Book 1 of Gulliver's Travels -Reading Book 1 of Gulliver's Travels	-BA (P) Semester IV -BA (P) Semester VI -BA (H) English Semester II -BA (P) Semester II	-ENG DSC: Literary Crosscurrents -ENG DSC: World Literatures -DSC 6: 18th Century Literature. ENG DSC (major): 18th Century Literature
	Tutorials	NA	NA	NA
	Assignment	NA	NA	NA

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

2023

Name of the Faculty: POOJA SHARMA **Department: English**

Semester : II/IV/VI

March – May 2023

		Topics	**Course**	**Paper**
March	**Theory**	Continuing The Trial of Dedan Kimathi; close reading of text, key themes, devices	BA Hons Eng 3rd Year	Paper 14: Postcolonial Literatures
		Continuing Can't Pay Won't Pay; discussing use of humour in protest drama, use of farce, burlesque, physical comedy, language of the play.	BA HONS ENG 3ND YEAR	PAPER 13: Modern European Drama
		Continuing Unit 3 – Tribe; complete readings 'Orge', 'Song on Inauguration of A House'; discussing possible questions from this unit	BA Prog 3rd Year	GE: Marginalities in Indian Writings
		Continuing Blake – Complete close reading of poems 'Little Black Boy' and 'London'; discussion about pre/early Romantics, Enlightenment & Romanticism	BA Hons Eng 2nd Year	PAPER 9: British Romantic Literature
		Continuing and completing chapters from Radha Kumar; discussion about women movements, challenges, and outcomes achieved.	BA Hons 2nd Year	GE: Contemporary India: Women and Empowerment

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		Topics	Course	Paper
		Overview of 16th & 17th cent England, why is Shakespeare important? Why read Macbeth? What makes Macbeth important? Understanding the impact of Drama	BA Hons Eng 1st Year	DSC 5: 16th & 17th Cent English Drama
	Tutorials	Practicing and Resolving doubts related letter writing, dialogue and interview	B.Com Prog 2nd Year	English B
		Students view TedEd video on 'Why You need to Read Macbeth' and discuss it in Tut	BA Hons Eng 1st Year	DSC 5: 16th & 17th Cent English Drama
	Assignment	Assignment on Letter Writing and Dialogue Writing	B.Com Prog 2nd Year	English B

		Topics	Course	Paper
April	**Theory**	Finishing 'Trial of Dedan Kimathi', discussion of possible questions, important literary themes. Starting Animal's People; analysis as a Postcolonial text. Discussion on important themes of disability, normativity, ecological impact, etc. Important questions and essays.	BA Hons Eng 3rd Year	Paper 14: Postcolonial Literatures

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		Topics	Course	Paper
		Finishing 'Can't Pay, Won't Pay'; discussion on possible questions Starting 'Rape' by Rame – discussion on creative output and journey of Fo and Rame, Style and impact of rape, narrative style used; comparative view of CPWP and Rape	BA HONS ENG 3ND YEAR	PAPER 13: Modern European Drama
		Unit 1: Taking students through Bama, Ajay Navaria, Aruna Gogulamanda & Ambedkar readings prescribed in the syllabus. Discussing caste based marginalisation and its impact through these readings. Discussion on possible questions and how to attempt them.	BA Prog 3rd Year	GE: Marginalities in Indian Writings
		Discussing Charlotte Smith as an early Romantic, close reading of her poems 'Melancholy' and 'Nightingale'.	BA Hons Eng 2nd Year	PAPER 9: British Romantic Literature
		Discussion on Partition and its impact on women in light of Urvashi Butalia's Blood. Students to talk about any stories they may have heard from grandparents. Discussion on Women in Ambedkarite Movement.	BA Hons 2nd Year	GE: Contemporary India: Women and Empowerment
		Reading of first Act of Macbeth discussion on the importance and impact of first scene	BA Hons Eng 1st Year	DSC 5: 16th & 17th Cent English Drama

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		Topics	Course	Paper
	Tutorials	Resolving doubts and practice of job application, paragraph writing and comprehension	B.Com Prog 2nd Year	English B
		Discussion on the essay 'Social Energy in Renaissance England'. Discussion on what makes a work of drama survive through the centuries.	BA Hons Eng 1st Year	DSC 5: 16th & 17th Cent English Drama
		Discussion on Preface to Lyrical Ballads and impact of French Revolution on Romantic period.	BA Hons Eng 2nd Year	PAPER 9: British Romantic Literature
	Assignment	On Frankenstein	BA Hons Eng 2nd Year	PAPER 9: British Romantic Literature

		Topics	Course	Paper
May	**Theory**	Continuing with close reading of Macbeth; Discussion on the essay Suffocating Mothers and women characters of Shakespeare	BA Hons Eng 1st Year	DSC 5: 16th & 17th Cent English Drama
	Tutorials	Students to compare the opening scenes of the three plays in this paper – Macbeth, Dr Faustus, The Rover	BA Hons Eng 1st Year	DSC 5: 16th & 17th Cent English Drama

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

2023

Name of the Faculty: Dr. Amrita Sharma **Department: English**

Semester : II/IV/VI

March – May2023

		Topics	Course	Paper
March	**Theory**	"The Negro and the Language" from *Black Skin, White Masks* by Franz Fanon	BA (H) English Semester VI	Paper 14: Postcolonial Literatures
		Theory of Adaptation in Cinema	BA (H) English Semester VI	Paper D 14: Literature and Cinema
		"The Schema of Mass Culture" by Theodor Adorno	BA (H) English Semester VI	Paper D 13: Literary Theory and Criticism- 2
		Discussion on Henrik Ibsen as a playwright	BA (H) English Semester VI	Paper 13: Modern European Drama
		Introduction to Victorian Poetry. Discussion on prescribed poems by Alfred Lord Tennyson.	BA (H) English Semester IV	Paper 10: British Literature 19th Century

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		Topics	Course	Paper
		Discussion on Gender and Media	BA (H) English Semester IV	SEC: Applied Gender Studies: Media Literacies
		Introduction to Alexander Pope and the Mock Epic	BA (H) English Semester II	DSC 6: 18th Century Literature
	Tutorials	Discussions on Postcolonial Literary Theory	BA (H) English Semester VI	Paper 14: Postcolonial Literatures
		Relationship between Film and Literature	BA (H) English Semester VI	Paper D 14: Literature and Cinema
	Assignment	Textual Analysis using Postcolonial Literary Theory	BA (H) English Semester VI	Paper 14: Postcolonial Literatures
		Shakespearian Adaptations in Cinema	BA (H) English Semester VI	Paper D 14: Literature and Cinema

		Topics	Course	Paper

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		Topics	Course	Paper
April	**Theory**	"Introduction" in Orientalism by Edward Said. "Colonialism and the Politics of Postcolonial Critique" by Robert Young. "The Language of African Literature," Chapter 1, Sections 4-6, in *Decolonising the Mind* by Ngugi wa Thiongo.	BA (H) English Semester VI	Paper 14: Postcolonial Literatures
		Maqbool and *Throne of Blood* as cinematic adaptations of Shakespeare's *Macbeth*	BA (H) English Semester VI	Paper D 14: Literature and Cinema
		"How Newness Enters the World" in The Location of Culture by Homi Bhabha "Postmodernism Or The Cultural Logic of Late Capitalism" by Frederic Jameson	BA (H) English Semester VI	Paper D 13: Literary Theory and Criticism- 2

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		Topics	Course	Paper
		Ghosts by Henrik Ibsen	BA (H) English Semester VI	Paper 13: Modern European Drama
		Discussion on prescribed poems by Robert Browning, Matthew Arnold and Christina Rossetti. *Pride and Prejudice* by Jane Austen.	BA (H) English Semester IV	Paper 10: British Literature 19th Century
		Analyzing representations of gender in reporting and journalism	BA (H) English Semester IV	SEC: Applied Gender Studies: Media Literacies
		The Rape of the Lock by Alexander Pope	BA (H) English Semester II	DSC 6: 18th Century Literature
	Tutorials	Prescribed Readings	BA (H) English Semester VI	Paper 14: Postcolonial Literatures
		Adaptations of *Macbeth* in Cinema	BA (H) English Semester VI	Paper D 14: Literature and Cinema

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		Topics	Course	Paper
	Assignment	Textual Analysis	BA (H) English Semester VI	Paper 14: Postcolonial Literatures
		Cinema as an art form	BA (H) English Semester VI	Paper D 14: Literature and Cinema

		Topics	Course	Paper
May	**Theory**	Close reading of *The Rape of the Lock*	BA (H) English Semester II	DSC 6: 18th Century Literature

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

2023

Name of the Faculty: N. TEJASWINI **Department: English**

Semester : II/IV/VI

March – May2023

		Topics	Course	Paper
March	**Theory**	Introduction to 18th century literature Introduction to the life and works of Samuel Johnson	BA (H) English Semester IV	Paper 8: British Literature 18th Century
		Introduction to Romantic Literature Introduction to the life and works of John Keats	BA (H) English Semester IV	Paper 9: British Romantic Literature
		Introduction to 19th century England Discussion on Industrial Revolution	BA (H) English Semester IV	Paper 10: British Literature 19th Century

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		and Socio- political turmoil of the times		
		Socio Political milieu of first half of the 20th century Hitler' s regime, reaction and resistance Close reading of the prescribed play by Berlot Brecht *The Good Person of Setzuan*	BA (H) English Semester VI	Paper 13: Modern European Drama
		Discussion on Three waves of women' s Movements	BA (H) English Semester VI	Paper D 13: Literary Theory and Criticism- 2
		Introduction to Christopher Marlowe' s life and works	BA (H) English Semester II	DSC 5: 16th and 17th century English Drama
	Tutorial	Converted most of the tutorials into classes	Eng (H) Sem VI	Paper 13: Modern European Drama

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	Assign ment	Relevance of the Themes and motifs from the prescribed Texts to the current times	BA (H) English Semester VI	Paper 13: Modern European Drama

		Topics	Course	Paper
April	**Theory**	Poem " London" by Samuel Johnson	BA (H) English Semester IV	Paper 8: British Literature 18th Century
		Introduction to the life and works of John Keats Pomes 1. Ode to Nightingale 2. Ode on a Grecian Urn 3. Ode to Autumn Introduction to the life and works of Shelley Poems 1. Ozymandias 2. Ode to the west	BA (H) English Semester IV	Paper 9: British Romantic Literature

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		wind Introduction to the life and works of Coleridge Pomes 1. Khubla Khan 2. Dejection: An Ode		
		Discussion on the Essay " Signs of the Times" by Thomas Carlyle	BA (H) English Semester IV	Paper 10: British Literature 19th Century
		Introduction to Modern European Drama Key Concepts of Brecht' s Theatrical Theory and Techniques Close reading of the prescribed play by Berlot Brecht *The Good Person of Setzuan*	BA (H) English Semester VI	Paper 13: Modern European Drama
		Discussion on prescribed essay by Lucy Irigary	BA (H) English Semester VI	Paper D 13: Literary Theory and Criticism- 2

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		" This Sex which is not one"		
		Close reading of the Prescribed text Doctor Faustus	BA (H) English Semester II	DSC 5: 16th and 17th century English Drama
		Discussion on the relation between Ecology and Literature throughout the history of humankind	VAC Sem II	VAC: Ecology and Literature
	Tutorial	Converted most of the tutorials into classes	Eng (H) Sem VI	Paper 13: Modern European Drama
	Assign ment	Relevance of the Themes and motifs from the prescribed Texts to the current times	BA (H) English Semester VI	Paper 13: Modern European Drama
		Gave Three Assignment Questions	BA Prog Sec A+B Eng B	English B Fluency

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		Topics	Course	Paper
May	**Theory**	Prescribed Cantos by Byron Canto 3 verse (36 - 45) Canto 4 Verse (178-186)	BA (H) English Semester IV	Paper 9: British Romantic Literature
		Discussion on the Essay By Oscar Wilde " The Critic as an Artist"	BA (H) English Semester IV	Paper 10: British Literature 19th Century
		Close reading of the prescribed text by Berlot Brecht *The Good Person of Setzuan* Marxists Analysis of the text	BA (H) English Semester VI	Paper 13: Modern European Drama
		Discussion on prescribed essays by Judith Butler and Joan W. Scott	BA (H) English Semester VI	Paper D 13: Literary Theory and Criticism- 2
		Close reading of the Prescribed text Doctor Faustus	BA (H) English Semester II	DSC 5: 16th and 17th century English Drama

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		Discussion on the prescribed reading materials. 1. A K Ramnujan's Flowering Tree 2. Amitav Gosh's Prescribed story 3. Thangiamlbopishak's Prescribed Poems	VAC Sem II	VAC: Ecology and Literature
	Tutorial	NA	Eng (H) Sem VI	Paper 13: Modern European Drama
	Assignment	NA	BA (H) English Semester VI	Paper 13: Modern European Drama
		Class Oral Assessment To speak for five mins on a given topic	BA Prog Sec A+B Eng B	English B Fluency

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January[1] – April/May, 2023

Name of the Faculty: Jhansi Rangu

Department: History

Semester: VI BA Hons., VI BA (Prog)* & IV BA Hons.

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Month		Topics	Course	Paper Code/Name
JANUARY	Theory:	Introduction to understanding 19th century India I. Caste Community and Nation (19th Century) (a) Regional, religious and linguistic identities (b)Gender and Caste Identities- Women and Social Reform, Jyotirao Phule (c) Sanskritizing trends and lower caste movements II. Economy and Social classes (a)Economic critique of colonial rule-Drain of wealth theory (b)Rise of modern industry: capitalists and working class (c) Famines and their impact	B.A. (Hons.) Core Course XIII Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603
		I. Perspectives on Indian Art and Architecture (a) Historiography of Indian art: Orientalist, nationalist & the making of 'Indian art' (b) Categories of art classical/high/elite and popular/folk/tribal art and crafts; regional variations.	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405
		III. Early Years of Indian Cinema (a) Silent era to talkies: Social, Historical, Mythological and action (b) Women enter films	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History
	Tutorials	Introduction to the paper and discussion of Historiography on the given themes.	B.A. (Hons.) Core Course XIII Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603

[1] I have joined the college on 28th January 2023.
* indicated shared course

		Introduction and historical debates around art and architecture	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405
		Discuss on genre/s in Indian films	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History
FEBRUARY	**Theory:**	III. Early nationalism (a) Emergence of Indian National Congress-theories and debates (b)Moderates and extremists (c) Swadeshi movement-trends and analysis (d) Revolutionary movements IV. Gandhian Nationalism-introduction	B.A. (Hons.) Core Course Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603
		II. Sculpture: styles and iconography (a) Gandhara and Mathura (b)Chola bronzes (c) Terracotta art	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405
		III (c) Studio Era: AVM & Gemini (d) Colonial Censorship and Patriortic Creativity	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History
	Tutorials	Discussion of scholarly works on moderates and extremists	B.A. (Hons.) Core Course XIII Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603
		Understanding Gandhra and Mathura school of art through visual media	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405
		Discussion on colonial cinema and screening of selected clips from movies	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History
	Assignment:	25 topics were allotted to a class of 50 students roll number wise.	B.A. (Hons.) Core Course XIII Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603
		Choose any **one** of the following topic/s for your assignment 1. Historiography of Indian Art 2. Gandhara and Mathura Schools of Art 3. Chola Bronzes 4. Sanchi Stupa 5. Temple architecture: Nagara and Dravida school of architecture	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405

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		6. Humayun's tomb 7. Construction of Lutyen's Delhi 8. Any school of Painting 9. Music/Dance		
		Assignment was taken by Prabhal Saran Agarwal on Radio	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History
MARCH	**Theory:**	IV. (a) Gandhian Philosophy and ideology (b) Early Struggles: Champaran, Kheda and Ahmedabad (c) Rowlatt, Khilafat and Non-Cooperation Movements (d) Civil Disobedience movement-historiography (e) Quit India movement V. Interfaces: Nationalism & Socio-Political Movements (a) Ambedkar & Dalit movements (b) Bhagat Singh and H.S.R.A (c) Singh Sabha and Akali movements; Dravidian movements (d) Left movements: Peasants and Working Class (e) Tribal Movements	B.A. (Hons.) Core Course Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603
		III. Architecture: Forms and context (a) Sanchi: stupa and monastery architecture, pattern of patronage. (b) Brihadeshwara: the Dravida style, imperial iconography. (c) Khajuraho temple complex: the Nagar style, iconic scheme, patterns of patronage. (d) Jama Masjid: the mosque of Shahjahanabad. (e) Humayun's Tomb: Timurid prototype, introduction of the Persian chaharbagh. (f) Sufi Dargahs: NizamudinAuliya dargah at Delhi. (g) Construction of New Delhi and the imperial vision.	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405
		IV. Social Films of Nehruvian Era and its aftermath (a) Angry Young Man, Melodrama	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History
	Tutorials	Reading the 'Hind Swaraj' & 'Annihilation of Caste'	B.A. (Hons.) Core Course XIII Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603
		Short documentaries on Sanchi stupa and Brihadeswara temple Understanding New Delhi through imperial maps	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405

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		Discussion on the idea of 'Angry young man'	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History
	Mid Term Test:	Q1. With reference to the Drain of Wealth Theory, discuss the impact it had on the Indian economy and society. Q2. Discuss the events that led to the formation of the INC. Q3. Discuss the nature and character of the Indian National Movement during the Moderate phase.	B.A. (Hons.) Core Course XIII Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603
		Q1. What are the historiographical shifts in the study of ancient Indian art and architecture **OR** In what ways did the nationalist historiography on Indian art and architecture differ from the Imperialist school? Q2. Trace the differences between Gandhara and Mathura School of Art? Q3. Discuss the salient features of Stupa architecture with reference to Sanchi or Amaravathi or Bharhut Stupa. Q4. Underline the architectural features of Kajuraho temple or the rathas of Mamallapuram.	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405
		Q1. With reference to the Drain of Wealth Theory, discuss the impact it had on the Indian economy and society Q2. Discuss the events that led to the formation of the INC. Q3. Discuss the nature and character of the Indian National Movement during the Moderate phase.	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History
APRIL	**Theory:**	VI. Communalism: Ideologies & Practices (a) Trends in Communalism (b) Partition VII. Independence and the New State (a)World war II & Post war Crisis (b)Negotiations for Independence (c) Integration of the Princely States (d) The Making of the Constitution	B.A. (Hons.) Core Course Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603
		IV. Painting: styles, representation, popular and folk. (a) Ajanta Murals: characteristics, material culture. (b) Mughal painting: formation of the school, features, themes, artist-patron relationship. (c) Kangra painting: spectatorship and femininity. (d) Colonial art and modernism in India: Raja Ravi Verma; the Bengal school;Amrita Sher-Gil; M. F. Husain.	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405

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		(e) Folk, tribal art: Maithili painting. Field trip to the National Museum and Qutub Complex		
		IV (b) Music: Song genres	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History
	Tutorials	Reading Communalism and partition through scholarly works Revision and discussion of major themes, covered.	B.A. (Hons.) Core Course XIII Semester VI	History of India VIII (c.1857-1950) Unique Paper Code: 12311603
		Virtual visit to the national museum-painting gallery Revision and discussion of major themes, covered.	B.A. (Hons.) SEC-III Semester IV	Indian art and architecture Unique Paper Code: 12313405
		Discussion on genres in music Revision and discussion of major themes, covered.	B.A. (Prog.) SEC-VIII Semester VI	Radia and Cinema in India: a Social History

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January - May 2023

Name of the Faculty: M. Jeevan

Department: History

Semester: IV,VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	I. Reconstruction [a] The Makings of Radical Reconstruction; Radical Reconstruction in the South: Blacks, Carpetbaggers, Scalawags, KKK (Ku Klux Klan) [b] Redemption vs. Failure: an interpretation II. The Gilded Age – Economic and Social Divide [a] Growth of Capitalism - Big Business: Competition, Consolidation, Monopolism [b] Worker's Culture; Organization of Labour Unions and Movements (both men and women)	B.A. (Hons.) IIIrd Year (VIth Semester)	History of USA: Reconstruction to New Age Politics

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		I. India in the 18th century- Background and Debates II. Expansion and consolidation of British power: Special reference to Bengal, Mysore, Maratha and Punjab	B.A. (Prog.) IInd Year (IVth Semester) Section A	History of India c. 1700-1950
	Tutorials:	Discussions		
FEBRUARY	**Theory:**	III. Resistance vs. Reform [a] The Populist Challenge: Agrarian Crisis and Discontent [b] The Politics of Progressivism: Varieties and Limitations [c] The New Deal: Response to the Great Depression, Reformism or Economic Experi-mentation IV. Gender Roles [a] Cult of Womanhood in the Nineteenth Century; The 'Feminist Mystique': Women's Liberation [b] White and Black Women in 'Public' Space [c] Class and Gender: 'Pastoralization' of Housework; Sexual Division of Labor and Ar-tisan Tradition; Lowell Textile Mill Workers	B.A. (Hons.) IIIrd Year (VIth Semester)	History of USA: Reconstruction to New Age Politics

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		III. Making of the British Colonial Economy: [a] Land revenue settlements; [b] Commercialisation of agriculture; [c] Deindustrialisation; [d] Drain of wealth IV. The Revolt of 1857: Causes, nature and consequences	B.A. (Prog.) IInd Year (IVth Semester) Section A	History of India c. 1700-1950
	Tutorials: **<u>Assignment:</u>**	Group Discussions on problems and concepts. Assignment Questions given to students.		
MARCH	**Theory:**	V. African-American Movement [a] Black Leadership: Booker T. Washington; W.E.B. Dubois; NAACP and Marcus Gar- vey, Malcolm X [b] Civil Rights Movement: Martin Luther King Jr. VI. USA in World Politics [a] Imperial ambition and power: the Spanish-American War; USA and East Asia; USA and Latin America; America in the First World War [b] America in the Second World War; The Cold War: Strategy of 'Containment'; Truman Doctrine [c] Anti-Communist Crusade: McCarthyism; Korean War; Cuban Project	B.A. (Hons.) IIIrd Year (VIth Semester)	History of USA: Reconstruction to New Age Politics

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		V. Social and Religious Reform Movements in Colonial India:[a] Overview of reformist and revivalist movements in the 19th century; [b] Caste Movements (Phule, Sree Narayan Guru, Ambedkar); [c] Peasant and tribal movements: an overview VI. Growth of the National Movement, 1858-1947:[a] Early nationalism and foundation of the Indian National Congress; [b] A critique of colonialism (moderates, extremists and militant nationalists); [c] Mahatma Gandhi and mass nationalism: Non-cooperation, Civil Disobedience, and Quit India movements; relationship between the masses and leaders	B.A. (Prog.) IInd Year (IVth Semester) Section A	History of India c. 1700-1950
	Tutorials: **<u>Mid Term Test:</u>**	Question Answer sessions Internal Class Test on Themes covered so far for the courses.		
APRIL	**Theory:**	Revision	B.A. (Hons.) IIIrd Year (VIth Semester)	History of USA: Reconstruction to New Age Politics

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		VII. Development of Communalism and the Partition of India: [a] An overview of the growth of communalism; [b] Towards Freedom and Partition VIII. Independent India: Making of the Constitution: The evolution of the Constitution and its Main Provisions; basic features of the Constitution	B.A. (Prog.) IInd Year (IVth Semester) Section A	History of India c. 1700-1950
	Tutorials:	Revision & Presentations		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January - April, 2023
March-July, 2023

Name of the Faculty: Dr. Ningmuanching

Department: History

Semester: (IInd Semester) - March - July 2023

(IVth Semester) - Jan - May 2023

PRINCIPAL (Acting)
Sri Venkateswara College
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Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory:**	Structure of inequalities: Caste-Normative and historical experience Discussion on untouchability through the documentary film by V. Stalin, "India Untouched"	BA (H) HISTORY GE	Inequality and Difference
	Tutorials:	Discussion		
FEBRUARY	**Theory:**	• Race, Tribe and Colonial Knowledge • Gender, Household and Public Sphere	BA (H) HISTORY GE	Inequality and Difference
	Tutorials:	Discussion		
	Assignment:	Written Assignment on selected topic		
MARCH	**Theory:**	• Gender, Household and Public sphere • Forms of Bondage: Ganikas, Slavery and Servitude	BA (H) HISTORY GE	Inequality and Difference
		• Introducing the course • Ancient Greece and Rome	BA (H) HISTORY	Social Formations and Cultural Patterns of the Medieval World-II

	Tutorials: **<u>Mid Term Test:</u>**	• Introducing the course • Understanding European and Indian Feudalism	BA (P) HISTORY MAJOR	Medieval Societies
		Test on topics covered for Inequality and Difference		
APRIL	**Theory:**	• Social Distancing and Exclusion: Forest Dwellers and Untouchables	BA (H) HISTORY GE	Inequality and Difference
		• Feudal Societies in Medieval Europe (8th to 14th Centuries)	BA (H) HISTORY	Social Formations and Cultural Patterns of the Medieval World-II
		• Medieval World:Feudal relationships and socio-economic changes, Feudal crisis and cultural patterns	BA (P) HISTORY MAJOR	Medieval Societies
May		• Indian Constitution and Questions of Equality	BA (H) HISTORY GE	Inequality and Difference
		• Genesis of a new social order and Islamic Culture	BA (P) HISTORY MAJOR	Medieval Societies
	Tutorials and Assignment:	• Group Discussion • Assignment on selected topics		
June		• Transition in the Feudal Economy and Feudal crisis • Early Islamic Societies in West Asia	BA (H) HISTORY	Social Formations and Cultural Patterns of the Medieval World-II
		• Medieval China	BA (P) HISTORY MAJOR	Medieval Societies

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	<u>Mid Term Test:</u>	• Tests on topics covered		
July		• The Caliphate-Early Abbasids	BA (H) HISTORY	Social Formations and Cultural Patterns of the Medieval World-II
		• Cultural efflorescence	BA (P) HISTORY MAJOR	Medieval Societies
	Tutorials:	Discussion		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
March - May 2023

Name of the Faculty: Dr. Nirmal Kumar

Department: History

Semester: VI

PRINCIPAL (Acting)
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Month		Topics	Course	Paper Code/Name
MARCH	**Theory:**	III. Consolidation of Political authority: Mughals, Rajputs and Nayakas a. Evolution of Mughal administrative institutions: Mansab, Jagir Land Revenue Systems b. Agrarian and revenue relations: Zamindars and Peasants c. Rajput states (Mewar/Marwar/ Amber) d. State formation under the Nayakas: Madurai, Thanjavur and Senji	B.A. Hons. CC IX IInd Year IVth Semester	History of India - V (c. 1500-1600)
		Unit 3: Oral culture/ performances: folktales, folk theatre with social messages and themes- swang and nautanki; music- folksongs and folkdances	B.A. Hons. SEC IV IInd Year IVth Semester	Understanding Popular Culture
	Tutorials:	Discussion on primary sources and essential readings for the courses.		

APRIL	**Theory:**	IV. Articulation of authority a. Fatehpur Sikri b. Temples and Gopurams of the Nayakas V. Political and Religious ideas a. Akhlaqi traditions; sulh-i kull b. Revivalist trends in Indian Islam: Shaikh Ahmad Sirhindi	B.A. Hons. CC IX IInd Year IVth Semester	History of India - V (c. 1500-1600)
		Unit 4: The audio-visual medium: cinema, television and internet (a) Indian cinema: major themes and trends like freedom struggle and nation building (b) Television: Case study of televised serials, Ramayana, Women and Family Unit 5: Fairs, festivals and rituals, pilgrimage: disentangling mythological stories; patronage; religion as culture	B.A. Hons. SEC IV IInd Year IVth Semester	Understanding Popular Culture
	Tutorials:	Discussion with the tutorial groups on the topics already taken up in the lectures. Presentations		
MAY	**Theory:**	c. Vaishnava Bhakti Traditions of North India d. Deccan Sultanates, trans-regional links and Shia Ideology	B.A. Hons. CC IX IInd Year IVth Semester	History of India - V (c. 1500-1600)
		Unit 6: Food Cultures: Regional cuisines and the National Project	B.A. Hons. SEC IV IInd Year IVth Semester	Understanding Popular Culture
	Tutorials:	Presentations		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

April-July ,2023 (2nd Semester):
January-April,2023(6th Semester)

Name of the Faculty: NUTI NAMITA

Department: HISTORY

Semester: EVEN SEMESTER 2023

PRINCIPAL (Acting)
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Month		Topics	Course	Paper Code/Name
APRIL	**THEORY:**	1.Delhi in the 19th century: Mughal Court, Company Raj	B.A(Hons.) First year (2nd semester)	GE Course 1: Delhi Through the Ages: From Colonial to Contemporary Times
	TUTORIAL:	Oral Quiz, impromptu class discussion	B.A(Hons.) First year (2nd semester)	GE Course 1: Delhi Through the Ages: From Colonial to Contemporary Times
	Theory/Practical	Physical Activity: Fit India Protocol; Indicators of Fitness	B.A(Hons.) First year (2nd semester)	Value Addition Course VAC: Fit India
JANUARY	**THEORY**	1. Transition from Feudalism to Capitalism 2. Crisis of the Tokugawa Bakuhan 3. The Meiji Restoration	B.A Hons Third Year. History V1 SEMESTER	DSE History of Modern Japan(1868-1950s)
	TUTORIAL	Tutorial: Question-Answer sessions, group discussion	B.A Hons Third Year. History V1 SEMESTER	DSE History of Modern Japan(1868-1950s)
MAY	**THEORY:**	2. 1857 in Delhi; Rebel Violence and British Re-conquest. Aftermath of 1857 revolt in Delhi	B.A(Hons.) First year (2nd semester)	GE Course 1: Delhi Through the Ages: From Colonial to Contemporary Times
		TUTORIAL: Continuous Assessment Surprise Test	B.A(Hons.) First year (2nd semester)	GE Course 1: Delhi Through the Ages: From Colonial to Contemporary Times
	Theory/Practical	Aerobic Workout, Yoga Lessons; Cardiovascular testing by 12 minute Cooper run	B.A(Hons.) First year (2nd semester)	Value Addition Course VAC: Fit India

FEBRUARY	**THEORY**	4. Popular Rights Movement 5. Economic Change; Agrarian Settlement, Fiscal policies, Industrialization	B.A Hons Third Year. History V1 SEMESTER	DSE History of Modern Japan (1868-1950S)
	Tutorials:	Assignment was given: Q. What were the internal and external crises of the Tokugawa Shogunate which led to its decline?	B.A Hons Third Year. History V1 SEMESTER	DSE History of Modern Japan (1868-1950S)
JUNE	**THEORY:**	3) Making of New Delhi: Imperial Ideology and Urban Morphology 4) Delhi in 1947; Partition and its Aftermath	B.A(Hons.) First year (2nd semester)	GE Course 1: Delhi Through the Ages: From Colonial to Contemporary Times
		TUTORIAL: ASSIGNMENT WAS GIVEN DISCUSSION ON THE ASSIGNMENT. Q. Revolt of 1857 was an expression of anger by the soldiers and people of India against East India Company. Explain. What was the aftermath of British reconquest of Delhi in September 1857?	B.A(Hons.) First year (2nd semester	GE Course 1: Delhi Through the Ages: From Colonial to Contemporary Times
	Theory/ Practical	**Muscular Strength and Endurance: Body Composition and Flexibility; Endurance Training- 1 mile Rockport test**	B.A(Hons.) First year (2nd semester	Value Addition Course VAC: Fit India
MARCH	**THEORY**	Meiji Constitution; Japanese Imperialism; Ideology, Expansion and Conflict	B.A Hons Third Year. History V1 SEMESTER	DSE History of Modern Japan and Korea
	TUTORIAL	CLASS TEST	B.A Hons Third Year. History V1 SEMESTER	DSE History of Modern Japan(1868-1950s)
JULY	**THEORY**	5) Making of Contemporary Delhi: Capital Culture; Public Spaces, Politics and Socialites	B.A(Hons.) First year (2nd semester)	GE Course 1: Delhi Through the Ages: From Colonial to Contemporary Times
		TUTORIAL: Class test and Presentations	B.A(Hons.) First year (2nd semester)	GE Course 1: Delhi Through the Ages: From Colonial to Contemporary Times
	Theory/ Practical	Nutrition and Fitness: Sports Physiology and Psychology: Depression; Anxiety; Stress Scale	B.A(Hons.) First year (2nd semester)	Value Addition Course VAC: Fit India
APRIL	**THEORY**	1. Militarism 2. American Occupation of Japan 3. Women's Movement in Japan	B.A Hons Third Year. History V1 SEMESTER	DSE History of Modern Japan(1868-1950S)

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	Tutorials:	REMEDIAL CLASSES FOR HINDI MEDIUM STUDENTS: GROUP DISCUSSION	B.A Hons Third Year. History V1 SEMESTER	DSE History of Modern Japan(1868-1950S)

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January 2023

Name of the Faculty: Prabal Saran Aggarwal

Department: History

Semester: VI,VI

PRINCIPAL (Acting)
Sri Venkateswara College
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Dhaula Kuan, New Delhi-110021

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	I. Sources and Historiography a. Persian Literary traditions: *Tawarikh*, *Insha* and Translations b. Vernacular Literature: *Brajbhasha* and *Telugu/Tamil*	B.A. Hons. CC IX IInd Year IVth Semester	History of India - V (c. 1500-1600)
		Unit 1: Defining Popular Culture: Popular Culture as Folk Culture, Mass Culture- High Culture, People's culture	B.A. Hons. SEC IV IInd Year IVth Semester	Understanding Popular Culture
		Unit 1: Broadcasting in India (Colonial period) a. Colonial Foundations in Inter-War Years b. AIR Programming, Policies and Propaganda c. Quit India Movement and Congress Radio	B.A. Prog. SEC VIII IIIrd Year VIth Semester	Radio and Cinema in India: A Social History
	Tutorials:	Discussion on primary sources and essential readings for the courses.		

FEBRUARY	**Theory:** **Tutorials:**	II. Establishment of Political authority: Mughals and Rajputs a. Historiographies on the nature of 16th century political formations. b. Contexts, Campaigns and Conquests: Military tactics and technology c. Chaghatayid notions of Kingship; Abu'l Fazl's interventions d. Rajputs and other warrior groups	B.A. Hons. CC IX IInd Year IVth Semester	History of India - V (c. 1500-1600)
		Unit 2: Visual expressions: folk art, calendar art, photography, advertisements	B.A. Hons. SEC IV IInd Year IVth Semester	Understanding Popular Culture
		Unit 2: Establishment and Expansion of Akashvani under Keskar a. Classical vs. Popular b. 'Ban' on Film Music; Radio Ceylon, VividhBharati	B.A. Prog. SEC VIII IIIrd Year VIth Semester	Radio and Cinema in India: A Social History
		Group Discussions and SEC project work introduced to the students.		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January - April, 2023

Name of the Faculty: Dr Praveen Verma

Department: History

Semester: IV, IV

PRINCIPAL (Acting)
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Month		Topics	Course	Paper Code/Name
January	**Theory:**	Unit 1- 17th Century Crisis	BA (Hons) II year (IV Semester)	RMW-II
		II.Consolidation and expansion of British Power (Bengal, Marathas, Mysore and Punjab	BA (Prog) II year (IV Semester)	History of India c. 1700-1950
	Tutorials:	Introducing the course and its theme to the students. Discussion in Hindi took place.		
		discussion on same themes took place		
FEBRUARY	**Theory:**	Unit 2- English Revolution Unit 3- Scientific Revolution	BA (Hons) II yr (IV Semester)	RMW-II
		Unit III. Making of the British Colonial Economy: [a] Land revenue	BA (Prog) IIyr (IV Semester)	History of India c. 1700-1950

		settlements; [b] Commercialisation of agriculture; [c] Deindustrialisation; [d] Drain of wealth IV. The Revolt of 1857: Causes, nature and consequences		
	Tutorials: **<u>Assignment:</u>**	discussions and doubts on concepts and class notes. Assignment were given		
MARCH	**Theory:**	Unit 4- Mercantilism	BA (Hons) II yr (IV Semester)	RMW-II
		V. Social and Religious Reform Movements in Colonial India. (related to various Identities; Caste, Tribe, Peasant) VI. Growth of the National Movement, 1858-1947	BA (Prog) II yr (IV Semester)	History of India c. 1700-1950
	Tutorials: **<u>Mid Term Test:</u>**	Discussions over class notes and doubts. discussions in Hindi. Internal exam took place.		

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APRIL	**Theory:**	Unit 5- Enlightenment Unit 6- Industrial Revolution	BA (Hons) II yr (IV Semester)	RMW-II
		VII. Development of Communalism and the Partition of India VIII. Independent India: Making of the Constitution	BA (Prog) II yr (IV Semester)	History of India c. 1700-1950
	Tutorials:	Revision and discussions on Class notes.		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January - May 2023

Name of the Faculty: Rajbir Kaur

Department: History

Semester: IV, VI

PRINCIPAL (Acting)
Sri Venkateswara College
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Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory:**	I. (a.) Eighteen Century Debate (b.) India in the mid-eighteenth century: society, economy and polity	B.A. (Hons.) IInd Year	Core (CC X) History of India – VI (c.1750-1857)
		I. Many pasts of Delhi: Ecology, Archaeology and History II. Cities of Delhi: Urban Settlements from the 13th and 14th centuries – Focus on any two Mehrauli, Siri, Tughluqabad, Firuzabad	B.A. (Prog.) IIIrd Year	GE VI Delhi through the Ages
	Tutorials:	Introducing the course and its themes.		
		Discussion		
FEBRUARY	**Theory:**	II. Expansion and consolidation of colonial power III. Colonial state and ideology: emergence of the Company State	B.A. (Hons.) IInd Year	Core (CC X) History of India – VI (c.1750-1857)
		III. 18th and early 19th Century Shahjahanabad: Politics, Literary Culture and Delhi College IV. Delhi in 1857: Revolt and Re-conquest	B.A. (Prog.) IIIrd Year	GE VI Delhi through the Ages

	Tutorials:	Discussion with the tutorial groups on the topics already taken up in the lectures		
	<u>Assignment:</u>	To what extend has the focus on regional studies in recent writings influenced our understanding of the eighteenth century in India?	B.A. (Hons.) IInd Year	Core (CC X) History of India – VI (c.1750-1857)
		What changed in the life of the city and its landscape after the British recaptured Delhi in 1857.	B.A. (Prog.) IIIrd Year	GE VI Delhi through the Ages
MARCH	**Theory:**	IV. Law and education V. Economy and Society	B.A. (Hons.) IInd Year	Core (CC X) History of India – VI (c.1750-1857)
		V. Making of the New Imperial Capital: Delhi 1911-1930 VI. Delhi in 1947: Partition and After	B.A. (Prog.) IIIrd Year	GE VI Delhi through the Ages
	Tutorials:	Discussion with regard to specific readings given for study		
		Discussion group for Hindi medium students		
	<u>Mid Term Test:</u>	Internal Class Test from the Themes covered till then		
APRIL	**Theory:**	VI. Early 19th Century: Reforms and Revival VII. Popular resistance - 1857	B.A. (Hons.) IInd Year	Core (CC X) History of India – VI (c.1750-1857)
		VII. Delhi as economic and cultural centre: Case study (Any Two) a. Crafts and artisans b. Music c. Hazrat-i Dehli d. Tombs of Delhi e. Coronation park	B.A. (Prog.) IIIrd Year	GE VI Delhi through the Ages

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	Tutorials:	Discussion on previous year's question papers		
MAY	**Theory:**	Revision	B.A. (Hons.) IInd Year	Core (CC X) History of India – VI (c.1750-1857)
		Revision	B.A. (Prog.) IIIrd Year	GE VI Delhi through the Ages

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January 2023

PRINCIPAL (Acting)
Sri Venkateswara College
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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Rajni Chandiwal

Department: History

Semester: IV,VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Unit 1: The 17th century European crisis: economic, social, and political dimensions.	B.A. Hons. CC VIII IInd Year IVth Sem	Rise of the Modern West - II
		Unit 1: Caste, Community and Nation a) Regional, religious and linguistic identities b) Assertions of gender and caste identity: Sanskritizing trends and lower caste movements, regional vari-ations	B.A. Hons. CC XIII IIIrd Year VIth Sem	History of India VIII (c. 1857-1950)
	Tutorials:	Discussion on the theme and reading of fiction of the same.		

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PRINCIPAL (Acting)
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Name of the Faculty: Saurabh Kumar
Department: History
Semester: BA Prog. Sem IV

Month		Topics	Course	Paper Code/Name
JANUARY		Unit I. Foundation, expansion and consolidation of the Sultanates of Delhi c.13th to 15th century: Expansion; Iqta system; administrative reforms; nobility	BA-Prog Sem 4 CC IV	History of India c. 1700-1950
	Tutorials:	Discussion on primary sources and essential readings for the courses.		

SEMESTER WISE TEACHING PLAN
(2022-2023)
SRI VENKATESWARA COLLEGE
March – July, 2023

PRINCIPAL (Acting)
Sri Venkateswara College
(University of Delhi)
Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Sunitaa Saikia
Department: History
Semester: II

Month		Topics	Course	Paper Code/Name
MARCH	**Theory:**	I. Development of Political Structures (c. 4th cent BCE to c. 300 CE): 1. Mauryan Empire, Nature of Dhamma 2. Post Mauryan Polities (Kushanas, Satavahanas)	B.A. (Hons.) 1st Year	DSC-1: HISTORY OF INDIA – II (c. 300 – 750 CE)
		I. Survey of Sources II. The Guptas & the Vakatakas: Administration, Economy, Society, Culture	B.A. (Prog.) 1st Year	DSC-1: HISTORY OF INDIA (300 CE to 1200 CE)
		Introducing the concept of E-Waste	B. A. 1st Year	SEC: Prospecting E-Waste for Sustainability
	Tutorials:	Introducing the courses and the consisting themes.		
APRIL	**Theory:**	I. 3. Tamilakam II. Economy & Society (c. 4th cent BCE to c. 300 CE): 1. Agrarian economy & production relations 2. Urban Growth, Craft Production, trade interactions	B.A. (Hons.) 1st Year	DSC-1: HISTORY OF INDIA – II (c. 300 – 750 CE)
		III. Changes in Post-Gupta period (Towards Early Medieval): Varshanas, Pallavas, Chalukyas	B.A. (Prog.) 1st Year	DSC-1: HISTORY OF INDIA (300 CE to 1200 CE)
		Classification of E-Waste, composition, sources, various heavy metals and their environmental and health impact due to improper disposal	B. A. 1st Year	SEC: Prospecting E-Waste for Sustainability
	Tutorials:	Discussion on recommended readings given in syllabus		

	Assignment:	1.Discuss the various sources that help in the reconstruction of the history of your period of study. 2.Analyze the nature of Ashoka's Dhamma as discussed by various historians. 3.In the light of the concept of Saptanga Rajya, elaborate on the political and administrative machinery of the Mauryan Empire.	B.A. (Hons.) 1st Year	DSC-1: HISTORY OF INDIA – II (c. 300 – 750 CE)
		1.Discuss the various sources that help in the reconstruction of the history of your period of study. 2.Critically examine the various features of the Gupta Empire which frame our understanding of Gupta Age as (either) Classical (or Dark) Age? (Choose one perspective) 3. Discuss the various theories of decline of the Gupta Empire.	B.A. (Prog.) 1st Year	DSC-1: HISTORY OF INDIA (300 CE to 1200 CE)
MAY	**Theory:**	II. 3. Social Stratification, Marriage & Property relations III. Polity, Economy & Society (c. 4th cent BCE to c. 750 CE): Nature, agrarian developments, land grants, urban patterns, trade & currency	B.A. (Hons.) 1st Year	DSC-1: HISTORY OF INDIA – II (c. 300 – 750 CE)
		IV. Tripartite Struggle for Supremacy (Rashtrakutas, Palas & Pratiharas)	B.A. (Prog.) 1st Year	DSC-1: HISTORY OF INDIA (300 CE to 1200 CE)
		1.Various methods of analysis of E_Waste generation and its quantification 2.Case study 3.Economic Assessment 4. Environment Protection Laws, E-Waste Management Rules, Circular Economy	B. A. 1st Year	SEC: Prospecting E-Waste for Sustainability
	Tutorials:	General clarification of topics already taken up in class lectures		
	Mid-Term Test:	Internal Class Test from the themes already covered from the syllabus		

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JUNE	**Theory:**	III.4.Society: Proliferation of Jatis, changing norms of Marriage and inheritance IV. Religion and Cultural Developments: 1.Theistic Traditions	B.A. (Hons.) 1st Year	DSC-1: HISTORY OF INDIA – II (c. 300 – 750 CE)
		V.Socio-Economic Foundations of Rajputana in North India	B.A. (Prog.) 1st Year	DSC-1: HISTORY OF INDIA (300 CE to 1200 CE)
	Practicals:	International laws and legislations	B. A. 1st Year	SEC: Prospecting E-Waste for Sustainability
		1.Visiting nearby E-Waste handling/recycling facility 2. Seeking outreach from environmental Consultancies/Pollution Boards/Environmental NGOs		
	Tutorials:	Discussion of previous years' question papers and revision of important topics.		
JULY	**Theory:**	IV.2 Art & Architecture, forms of Patronage	B.A. (Hons.) 1st Year	DSC-1: HISTORY OF INDIA – II (c. 300 – 750 CE)
		VI.Cholas: State, Administration, Economy & Culture	B.A. (Prog.) 1st Year	DSC-1: HISTORY OF INDIA (300 CE to 1200 CE)
	Practicals:	Students will submit their Projects and give presentations on their field work	B. A. 1st Year	SEC: Prospecting E-Waste for Sustainability

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SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA
January - April, 2023

Name of the Faculty: Dr. Vandana Joshi

Department: History

Semester: VI 2023

PRINCIPAL (Acting)
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Dhaula Kuan, New Delhi-110021

Papers: History of Modern Europe BAH and Twentieth Century World BAP VI

Month		Topics	Course	Paper Code/ Name
January	**Theory:**	I. Varieties of Nationalisms and the remaking of states in the 19th and 20th centuries [a] Intellectual currents, popular movements and the formation of national identities in Germany, Italy and the Balkans. [b] Post-Unification: problems of state building in Germany and Italy II. Tsarist Russia and the coming of the Bolshevik revolution [a] Serfdom, Populism and Social Democracy [b] The Revolution of 1905; the revolutions of 1917: origins, visions, movements	**BA HON Core Course XIV**	**History of Modern Europe- II** I.
		Unit I: The World Divided : The Cold War-case studies,Vietnam	BA Programme DSE	Twentieth Century World history II
	Practicals :			
	Tutorials:	Presentations		
		Presentation		

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February	**Theory:**	III. Imperialism, war and crisis, c. 1880-1939 [a] Theories and mechanisms of Imperialism [b] War of 1914-18: historiographical debates; developments leading to the War; power blocs and alliances	**BA HON Core Course XIV**	**History of Modern Europe- II** I.
		II. **Unit II: Decolonization and the long shadow of colonial exploitation** : Ghana/Algeria **Unit III: Popular Movements** a)Environmental Struggles: Chipko Movement; Struggles for the Amazon; Bhopal (b)Student Movements: Paris 1968	BA Programme DSE	Twentieth Century World history II Europe
	Practicals :			
	Tutorials:			
March	**Theory:**	[c] Fascism and Nazism: origins and forms; nature of the fascist state	**BA HON Core Course XIV**	**History of Modern Europe- II**
		(c) Anti-apartheid movements in S. Africa and Civil Rights Movement USA (d) Women's Movements: Issues and Debates/Women and Work Place-Vishakha	BA Programme DSE	Twentieth Century World history II
	Practicals :			

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	Tutorials:	presentattions		
	<u>Assignment</u>			
April	**Theory**	IV. Cultural and intellectual developments since c.1850 [a] Creation of a new public sphere, print culture, mass education and the extension of literacy [b] Creation of new cultural forms: romanticism to abstract art [c] Institutionalization of disciplines: history, anthropology, psychology	**BA HON Core Course XIV**	**History of Modern Europe- II**
		Unit IV: Leisure and Entertainment (a) Spectator Sports (football/ Olympics) (b) Cinema (James Bond films in the context of the Cold War, Satyajit Ray's films and Bicycle Thief in the context of the Depression	BA Programme DSE	Twentieth Century World history II
	Practicals:			
	Tutorials:			
	<u>Mid Term Test</u>			

May	**Theory:**	[d] Culture and empire: race, gender and Imperialism; Orientalism	**BA HON Core Course XIV**	**History of Modern Europe- II**
		Revision	BA Programme DSE	Twentieth Century World history II
	Practicals :			
	Tutorials:			

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Department of Mathematics
Sri Venkateswara College

Even Semester Teaching Plan (January-April 2023)

PRINCIPAL (Acting)
Sri Venkateswara College
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Dhaula Kuan, New Delhi-110021

Faculty: Ms. Shakuntla Wadhwa

Month		Topics	Course	Paper Name and code
January	Theory	Linear Diophantine equation, prime counting function, statement of prime number theorem, Goldbach conjecture, linear congruence	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV
February	Theory	Set of residues, Chinese remainder theorem, Fermat's little theorem, Wilson's theorem, Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of Dirichlet function.	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV
March	Theory	The Mobius inversion formula, the greatest integer function, Euler's phi function, Euler's theorem, reduced set of residues, Order of an integer modulo n, primitive roots for primes, composite numbers having primitive roots.	B.Sc. (H) Mathematics III year	DSE IV Number Theory

	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics III year	DSE IV
	Internal Test	Internal Exam will be conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics III year	DSE IV
April	Theory	Euler's criteria, the Legendre symbol and its properties, quadratic reciprocity, quadratic congruences, Public key encryption and decryption, Fermat's last theorem.	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV

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Semester Wise Teaching plan
Sri Venkateswara College
2022 - 2023 Even Semester

PRINCIPAL (Acting)
Sri Venkateswara College
(University of Delhi)
Dhaula Kuan, New Delhi-110021

Name of Faculty: **Dr. Ramesh K Budhraja**
Department: **Mathematics**
Semester: **VI/ Even**

Month		**Topics**	**Course**	**Paper Code and Name**
January	Theory	Introduction to Linear Programming, Graphical solution, Basics of Simplex Method, Basic Feasible solutions, Reduction of feasible solution to BFS, Examples, Illustrations and Questions based on these topics.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Practicals	1. Make a geometric plot to show that the *n*th roots of unity are equally spaced points that lie on the unit circle and form the vertices of a regular polygon with *n* sides, for *n* = 4, 5, 6, 7, 8. 2. Find all the solutions of the equation z^3=8i and represent these geometrically. 3. Write parametric equations and make a parametric plot for an ellipse centered at the origin with horizontal major axis of 4 units and vertical minor axis of 2 units. Show the effect of rotation of this ellipse by an angle of Pi/6 radians and shifting of the centre from (0,0) to (2,1), by making a parametric plot. 4. Image of open disk under the given linear transformation	B.Sc. (H) Mathematics VI B	BMATH613 Complex Analysis
	Tutorials	Doubts and Questions based on these Theory Topics will be taken up.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications

February	Theory	Simplex Method along with statement of Theorems, Solving LPPs using Simplex method. Solution of System of Equations and Inverse finding method.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Practicals	5. Plotting image of right half plane under the given linear transformation 6. To plot the given polygonal path 7. Performing contour integration of the given functions along the given path	B.Sc. (H) Mathematics VI B	BMATH613 Complex Analysis
	Tutorials	Doubts and Questions based on these Theory Topics will be taken up.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
March	Theory	Duality Theory. Introduction to Transportation problem, Basics and Solving Transportation problem using MODI's uv – method, Assignment problem and its solution using Hungarian method.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Practicals	8. Some more problems on contour integration 9. Finding and plotting three different Laurent series representations of the given function 10. To compute the poles of given complex functions.	B.Sc. (H) Mathematics VI B	BMATH613 Complex Analysis
	Tutorials	Doubts and Questions based on these Theory Topics will be taken up.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications

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	Test	Internal Exam will be conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
April	Theory	Theory of Games. Rectangular Games, Saddle point, Equivalent Primal Dual problems of a rectangular game. 1 – 1 correspondence theorem. Proof of Improvement theorem, Unbounded theorem and Optimality Criteria in Simplex method.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Practicals	11. Finding residues of given functions 12. Evaluation of integrals by finding residues	B.Sc. (H) Mathematics VI B	BMATH613 Complex Analysis
	Tutorials	Doubts and Questions based on these Theory Topics will be taken up.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications

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Dr. Ramesh K Budhraja

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Teaching Plan (Jan-April 2023)

PRINCIPAL (Acting)
Sri Venkateswara College
(University of Delhi)
Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Mainak Mukherjee **Department: Mathematics**

Semester: IV/VI

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Definition of Riemann integration, Inequalities for upper and lower Darboux sums, Necessary and sufficient conditions for the Riemann integrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions, Riemann integrability of monotone functions and continuous functions, Properties of Riemann integrable functions, Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, intermediate value theorem for integrals.	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of Definition of Riemann integration, Inequalities for upper and lower Darboux sums, Necessary and sufficient conditions for the Riemann integrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions, Riemann integrability of monotone functions and continuous functions, Properties of Riemann integrable functions, Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, intermediate value theorem for integrals.	B.Sc(H) Sem-IVA	Riemann Integration & Series of Functions

	Practicals	1. Make a geometric plot to show that the n th roots of unity are equally spaced points that lie on the unit circle and form the vertices of a regular polygon with n sides, for n = 4, 5, 6, 7, 8. 2. Find all the solutions of the equation m = 89 and represent these geometrically. 3. Write parametric equations and make a parametric plot for an ellipse centered at the origin with horizontal major axis of 4 units and vertical minor axis of 2 units. Show the effect of rotation of this ellipse by an angle of radians and shifting of the Centre	B.Sc(H) Maths Sem-VI A/B	Complex Analysis (Analysis V)
Feb	**Theory**	Fundamental theorems (I and II) of calculus, and the integration by parts, Improper integrals of Type-I, Type-II and mixed type, Convergence of Beta and Gamma functions, and their properties.	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Practical	4. Show that the image of the open disk $D_1(-1-i)=\{z: \lvert z+1+i\rvert<1\}$ under the linear transformation w = f(z) = (3 – 4i)z + 6 + 2i is the open disk: $D_5(-1 + 3i) = \{w: \lvert w + 1 - 3i\rvert < 5\}$. 5. Show that the image of the right half plane Re z = x > 1 under the linear transformation w = (–1 + i)z – 2 + 3i is the half plane v>u+7, where u = Re(w), etc. Plot the map. 6. Show that the image of the right half plane A = {z : Re z ≥ 1/2 } under the mapping w=f(z)=1/z is the closed disk $D_1(1) = \{w : \lvert w - 1\rvert \le 1\}$ in the w-plane.	B.Sc(H) Maths Sem-VI A/B	Complex Analysis (Analysis V)
	Test	To take class test related to syllabus And lab test related to above Practicals.	B.Sc(H) Maths Sem-IVB/VIA/B	

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March	**Theory**	Pointwise and uniform convergence of sequence of functions, Theorem on the continuity of the limit function of a sequence of functions, Theorems on the interchange of the limit and derivative, and the interchange of the limit and integrability of a sequence of functions. Pointwise and uniform convergence of series of functions, Theorems on the continuity, Derivability and integrability of the sum function of a series of functions, Cauchy criterion and the Weierstrass M-Test for uniform convergence	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of Pointwise and uniform convergence of sequence of functions, Theorem on the continuity of the limit function of a sequence of functions, Theorems on the interchange of the limit and derivative, and the interchange of the limit and integrability of a sequence of functions. Pointwise and uniform convergence of series of functions, Theorems on the continuity,	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Practicals	7. Make a plot of the vertical lines x = a, for a = −1, -1/2 ,1/2,1 and the horizontal lines y = b, for b= −1, -1/2,1/2,1. Find the plot of this grid under the mapping w=f(z)=1/z. 8. Find a parametrization of the polygonal path C = C1 + C2 + C3 from –1 + i to 3 – i, where C1 is the line from: –1 + i to –1, C2 is the line from: –1 to 1 + i and C3 is the line from 1 + i to 3 – i. Make a plot of this path. 9. Plot the line segment 'L' joining the point A = 0 to B = 2 + t j 9 and give an exact calculation of $\int_C e^z dz$.	B.Sc(H) Maths Sem-VI A/B	Complex Analysis (Analysis V)
	Assignments	To give assignment related to syllabus		
	Test	To take internal test related to syllabus And internal lab test related to above Practicals		

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April	**Theory**	Definition of a power series, Radius of convergence, Absolute convergence (Cauchy-Hadamard theorem), Uniform convergence, Differentiation and integration of power series, Abel's Theorem to Revise whole syllabus, to Discuss last previous year questions papers	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of Definition of a power series, Radius of convergence, Absolute convergence (Cauchy-Hadamard theorem), Uniform convergence, Differentiation and integration of power series, Abel's Theorem to Revise whole syllabus, to Discuss last previous year questions papers.	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Practicals	10. Plot the semicircle 'C' with radius 1 centered at z = 2 and evaluate the contour integral $\int_C \frac{1}{z-2} dz$ 11. Show that $\int_{C_1} zdz = \int_{C_2} \frac{1}{z-2} dz$=4+2i where C_1 is the line segment from –1–i to 3 + i and C_2 is the portion of the parabola x = y^2 + 2y joining –1 – i to 3 + i. Make plots of two contours C_1 and C_2 joining –1 – i to 3 + I.	B.Sc(H) Maths Sem-VI A/B	Complex Analysis (Analysis V)

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2022-23 Even Semester

Name of the Faculty: **Dr. Swarn Singh**

Department: **Mathematics**

Semester: IV

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Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Floating point representation and computer arithmetic, Significant digits; Errors: Roundoff error, Local truncation error, Global truncation error; Order of a method, Convergence and terminal conditions; Bisection method, Secant method,	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco Sem IV	GE Numerical Methods
	Practicals:	Basic concepts of Mathematica and Practical (1) Bisection method	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE Numerical Methods
	Tutorials:			
FEBRUARY	**Theory:**	Regula−Falsi method, Newton−Raphson method., Gaussian elimination method (with row pivoting), Gauss−Jordan method; Iterative methods: Jacobi method, Gauss−Seidel method;	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco Sem IV	GE Numerical Methods
	Practicals:	Practicals (2) Secant method and Regula Falsi Method (3)Newton Raphson Method	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco Sem IV	GE Numerical Methods
	Tutorials:			
MARCH	**Theory:**	Interpolation: Lagrange form, Newton form, Finite difference operators, Gregory−Newton forward and backward difference interpolations, Piecewise polynomial interpolation (linear and quadratic).	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco Sem IV	GE Numerical Methods
	Practicals:	Practicals: (4) Gauss elimination method and Gauss-Jordan method (5) Jacobi method and Gauss Siedel method (6) Lagrange Interploation and Newton Interpolation	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco Sem IV	GE Numerical Methods
	Tutorials:			
	Assignment	Assignment to be given related to syllabus.	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE Numerical Methods

			Sem IV	
APRIL	**Theory**	Numerical differentiation: First and second order derivatives, Richardson extrapolation method; Numerical integration: Trapezoidal rule, Simpson's rule; Ordinary differential equation: Euler's method, Modified Euler's methods (Heun's and midpoint) and to revise whole syllabus. To discuss previous year questions papers some of which are available on my Blog https://numericalmaths.wordpress.com/	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco Sem IV	GE Numerical Methods
	Practicals:	Practicals: (7) Trapezodial rule and Simpson's rule (8) Euler methods for solving first order initial value problems of ODE's and revise all practicals	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco Sem IV	GE Numerical Methods
	Tutorials:			
	Internal Test	To take internal Test based on the syllabus covered.	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco Sem IV	GE Numerical Methods
		To take internal Lab Test based on the syllabus covered.	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco Sem IV	GE Numerical Methods

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Signature of the teacher

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2022-23 Even Semester

PRINCIPAL (Acting)
Sri Venkateswara College
(University of Delhi)
Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr Deepti Jain
Department: Mathematics
Semester: II

Month		Topics	Course	Paper Code/Name
March	**Theory**	Fundamental operation with vectors in Euclidean space $\mathbb{R}^n$, Linear combinations of vectors, Dot product and their properties, Cauchy-Schwarz inequality, Triangle inequality.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Tutorial	Exercises and doubts based on vector addition, dot product, parallel and orthogonal vectors.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Tutorial	Exercise questions and doubts based on vector addition, dot product, parallel and orthogonal vectors.	B.Sc. (H) II Sem	GE-2 Introduction to Linear Algebra
	Practical	1. Solutions of first, second and third order differential equations. 2. Plotting of family of solutions of differential equations of first, second and third order.	B.Sc. (H) Mathematics II Sem	DSC-6 Ordinary Differential Equations
April	**Theory**	Solving system of linear equations using Gaussian elimination, Gauss-Jordan row reduction, Reduced row echelon form. Equivalent systems, Rank and row space of a matrix, Eigenvalues, Eigenvectors, Eigenspace, Diagonalization, Characteristic polynomial of a matrix, Cayley-Hamilton theorem.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Tutorial	Exercise questions and doubts based on Gauss Elimination Method and Gauss-Jordan Method, Eigenvalues and Eigenvectors, Cayley-Hamilton Theorem.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Tutorial	Exercise questions and doubts based on Gauss Elimination Method and Gauss-Jordan Method, Eigenvalues and Eigenvectors, Cayley-Hamilton Theorem.	B.Sc. (H) II Sem	GE-2 Introduction to Linear Algebra
	Practical	3. Solution of differential equations using method of variation of parameters. 4. Growth and decay model (exponential case).	B.Sc. (H) Mathematics II Sem	DSC-6 Ordinary Differential Equations

May	**Theory**	Fields, Vector spaces, Subspaces, Algebra of subspaces, Linear combination of vectors, Linear span, Linear independence, Bases and dimension, Dimension of subspaces.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Tutorial	Exercises and doubts based on Linear span, Linear independence and dependence, bases and dimension of vector spaces.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Tutorial	Exercises and doubts based on Linear span, Linear independence and dependence, bases and dimension of vector spaces.	B.Sc. (H) II Sem	GE-2 Introduction to Linear Algebra
	Practical	5. Lake pollution model (with constant/seasonal flow and pollution concentration). 6. Density-dependent growth model.	B.Sc. (H) Mathematics II Sem	DSC-6 Ordinary Differential Equations
	Assignment	Questions from the topics including Vectors, Systems of linear equations, eigenvalues, eigenvectors, diagonalization.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Test	Questions from the topics including Vector spaces, subspaces, bases, dimension of subspaces, linear independence and dependence.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
June	**Theory**	Linear transformations, Null space, Range, Rank and nullity of a linear transformation, Matrix representation of a linear transformation, Algebra of linear transformations, Invertibility and isomorphisms	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Tutorial	Exercises and doubts based on Linear transformations, rank and nullity, invertibility and isomorphism.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Tutorial	Exercises and doubts based on Linear transformations, rank and nullity, invertibility and isomorphism.	B.Sc. (H) II Sem	GE-2 Introduction to Linear Algebra
	Practical	7. Predatory-prey model (basic Volterra model, with density dependence, effect of DDT, two prey one predator). 8. Epidemic model of influenza (basic epidemic model, contagious for life, disease with carriers).	B.Sc. (H) Mathematics II Sem	DSC-6 Ordinary Differential Equations
July	**Theory**	Application: Computer graphics – Fundamental movements in a plane, homogenous coordinates, and composition of movements.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra
	Tutorial	Exercise questions and doubts based on applications of linear transformations to computer graphics.	B.Sc. (H) Mathematics II Sem	DSC-4 Linear Algebra

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	Tutorial	Exercise questions and doubts based on applications of linear transformations to computer graphics.	B.Sc. (H) II Sem	GE-2 Introduction to Linear Algebra
	Practical	Revision and test of practical done in the entire semester.	B.Sc. (H) Mathematics II Sem	DSC-6 Ordinary Differential Equations

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Deepti Jain

Signature of the teacher

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Even Semester Teaching Plan (Jan-April 2023)

PRINCIPAL (Acting)
Sri Venkateswara College
(University of Delhi)
Dhaula Kuan, New Delhi-110021

Name of the Faculty: Amit Kumar **Department: Mathematics**

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Definition of Riemann integration, Inequalities for upper and lower Darboux sums. Necessary and sufficient conditions for the Riemann inerrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions.	B.Sc(H) Maths Sem-IV B	BMATH409: Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to upper, lower Darboux sum, and Riemann Integration.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Theory:	Basic definition of differential equation with examples, Order and Degree of the differential equation with examples, Linear and Nonlinear differential equations with examples, General solutions, Particular solutions and singular solutions with examples, Discuss the first order differential equations.	BA (Prog.) Sem-VI	Differential Equation
	Practicals	Presentation and analysis of data by frequency table, descriptive statistics, stem-and-leaf plots, histogram, box plots, and probability plots, Fitting of binomial, poission and normal distribution	B.Sc(H) Maths Sem -I Batch-A+B and Batch-B	Probability and statistics
		Solution of Cauchy Problem of first order PDE, Plot the integral surface of given first order PDE with initial data.	B.Sc(H) Maths Sem-IV Batch-A+ B	Partial differential equations

Feb	**Theory**	Riemann integrability of monotone functions and continuous functions, Algebra and properties of Riemann integrable functions. Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, Intermediate value theorem for integrals. First and second fundamental theorems of integral calculus, and the integration by parts. Related Examples and Exercise questions.	B.Sc(H) Maths Sem-IV B	BMATH409: Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to monotone functions and continuous functions, and piecewise continuous and piecewise monotone functions.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Theory	First order exact differential equations including rules for finding integrating factors. First order higher degree equations solvable for x, y, p and Clairut's equations. Examples and exercise questions.	BA (Prog) Sem-VI	Differential equations
	Practicals	Illustrating the Central Limit Theorem through Excel. Fitting of regression line using the principle of least squares. P-3 Solutions of wave equations P-5 Solution of one-dimensional heat equation for a homogenous rod of length l.	B.Sc(H) Maths Sem -I Batch-A+B and Batch-B B.Sc(H) Maths Sem-IV Batch-A+ B	Probability and statistics Partial differential equations
	Assignment	To take class test related to syllabus and lab test related to above Practicals.	B.Sc(H) Maths Sem-IV	BMATH409: Riemann Integration & Series of Functions

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March				
	Theory	Improper integrals of Type-I, Type-II and mixed type. Definitions and examples of pointwise and uniformly convergent sequence of functions. Motivation for uniform convergence by giving examples, Theorem on the continuity of the limit function of a sequence of functions. The statement of the theorem on the interchange of the limit function and derivative, and its illustration with the help of examples, The interchange of the limit function and integrability of a sequence of functions.	B.Sc(H) Maths Sem-IV B	BMATH409: Riemann Integration & Series of Functions
	Tut	To discuss the doubt of students and various exercise questions and examples related to work done in class.	B.Sc(H) Maths Sem-IV B	BMATH409: Riemann Integration & Series of Functions
	Theory	Higher order differential equations, homogeneous and non homogeneous equations. Wronskian and its properties linearly independence and linearly dependence solutions, examples and exercise questions, homogeneous with constant coefficient, Variation of parameters.	BA (Prog) Sem-VI	Differential equations
	Assignments	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-IV A BA(Prog)-VI	BMATH409: Riemann Integration & Series of Functions/Differential equations
	Practicals	Computation of sample correlation coefficient. Internal Test assignment .P-6 Solving system of ordinary differential equations	B.Sc(H) Maths Sem -I Batch-A+B and Batch-B B.Sc(H) Maths Sem-IV Batch- A and A+ B	Probability and statistics Partial differential equations

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April	**Theory**	Pointwise and uniform convergence of series of functions, Theorems on the continuity, derivability and integrability of the sum function of a series of functions. Cauchy criterion for the uniform convergence of series of functions, and the Weierstrass M-test for uniform convergence. Definition of a power series, Radius of convergence, Absolute and uniform convergence of a power series. Differentiation and integration of power series, Statement of Abel's theorem and its illustration with the help of examples.	B.Sc(H) Maths Sem-IV B	BMATH409: Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related.	B.Sc(H) Maths Sem-IV B	BMATH409: Riemann Integration & Series of Functions
	Practical	P-7 Draw the following sequence of functions on the given interval and discuss the pointwise convergence, P-8 Discuss the uniform convergence of sequence of functions	B.Sc(H) Maths Sem-IV Batch-A and A+ B	Partial differential equations
Theory	**Theory**	Euler's equations, Simultaneous differential equations, Total differential equations with examples and exercise questions	BA (Prog) Sem-VI	Differential equations

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Dhaula Kuan, New Delhi-110021

Semester Wise Teaching plan
Sri Venkateswara College
2022- 2023 Even Semester

Name of Faculty: Dr. Nisha Bohra
Department: Mathematics
Semester: VI

PRINCIPAL (Acting)
Sri Venkateswara College
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Dhaula Kuan, New Delhi-110021

Month		Topics	Course	Paper Code and Name
January	Theory 1	Properties of Complex Numbers, Regions in Complex plane, Functions of Complex variable, Mappings, Differentiability, Cauchy- Riemann equations, Analytic function, Exponential function, Logarithmic function, Trigonometric function.	B.Sc. (H) Mathematics VI A	Complex Analysis, BMATH613
	Practicals	1. Make a geometric plot to show that the *n*th roots of unity are equally spaced points that lie on the unit circle and form the vertices of a regular polygon with *n* sides, for *n* = 4, 5, 6, 7, 8. 2. Find all the solutions of the equation z^3=8i and represent these geometrically. 3. Write parametric equations and make a parametric plot for an ellipse centered at the origin with horizontal major axis of 4 units and vertical minor axis of 2 units. Show the effect of rotation of this ellipse by an angle of Pi/6 radians and shifting of the centre from (0,0) to (2,1), by making a parametric plot. 4. Image of open disk under the given linear transformation	B.Sc. (H) Mathematics VI A	Complex Analysis, BMATH613
February	Theory 1	Derivatives of function, Definite Integrals of functions, Contours, Contour Integrals and its examples, Upper bounce for moduli of contour Integrals, Antiderivatives, Proof of Antiderivative Theorem, Cauchy-Goursat Theorem.	B.Sc. (H) Mathematics VI A	Complex Analysis, BMATH613

	Practicals	5. Plotting image of right half plane under the given linear transformation 6. To plot the given polygonal path 7. Performing contour integration of the given functions along the given path	B.Sc. (H) Mathematics VI A	Complex Analysis, BMATH613
March	Theory 1	Cauchy Integral Formula, Extension of Cauchy Integral formula, Some consequences of the extension, Exercise problems. Liouville's theorem, Fundamental theorem of Algebra, Convergence of sequences and series. Taylor series and its examples, Laurent series and its examples, Absolute and Uniform convergence of power series.	B.Sc. (H) Mathematics VI A	Complex Analysis, BMATH613
	Theory 2	Inner product spaces, Orthonormal basis, Gram Schmidt orthogonalization process	B.Sc. (H) Mathematics VI B	Ring Theory and Linear Algebra-1I, BMATH614
	Practicals	8. Some more problems on contour integration 9. Finding and plotting three different Laurent series representations of the given function 10. To compute the poles of given complex functions.	B.Sc. (H) Mathematics VI A	Complex Analysis, BMATH613
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics VI B	BMATH614
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics VI A and VI B	Ring Theory and Linear Algebra-1I and Complex Analysis
	Test	Internal Exam will be conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics VI A and VI B	Ring Theory and Linear Algebra-1I and Complex Analysis
April	Theory 1	Uniqueness of series representations of power series. Isolated singular point, Residues, Cauchy's Residue Theorem, Types of Isolated Singular point, Residues at poles	B.Sc. (H) Mathematics VI A	Complex Analysis, BMATH613

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	Theory 2	Orthogonal Complements, Adjoint of a Linear Operator, Least Square Approximation, Minimal solution, Normal, self-adjoint operators, Unitary and orthogonal operators.	B.Sc. (H) Mathematics VI B	Ring Theory and Linear Algebra-1I, BMATH614
	Practicals	11. Finding residues of given functions 12. Evaluation of integrals by finding residues	B.Sc. (H) Mathematics VI A	Complex Analysis, BMATH613

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Dr. Nisha Bohra
Signature of Teacher

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Teaching Plan: Even Sem 2022-23

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Name of the Faculty: Dr. Sudhakar Yadav **Department: Mathematics**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Order and degree of partial differential equations, Concept of linear partial differential equations, Formation of first order partial differential equations.	BA(P) Sem VI	Differential Equations
	Theory	Functions of complex variable, Mappings, Mappings by the exponential function, Limits, Theorems on limits, Limits involving the point at infinity, Continuity, Derivatives, Differentiation formulae, Cauchy-Riemann equations, Sufficient conditions for differentiability.	B.Sc(H) Maths Sem-VI B	Complex Analysis
	Practicals	1. Solution of Cauchy problem for first order PDE. 2. Plotting the characteristics for the first order PDE.	B.Sc(H) Maths Sem-IV Batch-A	Partial Differential Equations

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	Practicals	1. A geometric plot to show that the nth roots of unity are equally spaced points that lie on the unit circle and form the vertices of a regular polygon with n sides, for n = 4, 5, 6, 7, 8. 2. The solutions of the equation m ⍰ = 8i and represent these geometrically. 3. The Parametric equations and make a parametric plot for an ellipse centered at the origin with horizontal major axis of 4 units and vertical minor axis of 2 units. Show the effect of rotation of this ellipse by an angle of radians and shifting of the centre from (0,0) to (2,1), by making a parametric plot. 4. The image of the open disk D_1 (-1-i)={z|z+1+i|<1}under the linear transformation w = f(z) = (3 – 4i)z + 6 + 2i is the open disk: $D_5(-1 + 3i) = \{w: \|w + 1 - 3i\| < 5\}$.	B.Sc(H) Maths Sem-VI A and VI B	Complex Analysis (Analysis V)
	Practicals	To be familiar with R syntax and use R as a calculator. Understand the concepts of objects, vectors and data types.	BA(P) Sem: 6	SEC-4: Statistical Software: R
Feb	**Theory**	Linear partial differential equations of first order and their solutions.	BA(P) Sem VI	Differential Equations
	Theory	Analytic functions, Examples of analytic functions, Exponential function, Logarithmic function, Branches and Derivatives of Logarithms, Trigonometric functions, Derivatives of functions, Definite integrals of functions, Contours, Contour integrals and its examples, upper bounds for moduli of contour integrals.	B.Sc(H) Maths Sem-VI B	Complex Analysis
	Practicals	3. The integral surfaces of a given first order PDE with initial data. 4. The solution of wave with various associated conditions.	B.Sc(H) Maths Sem-IV Batch-A	Partial Differential Equations

Practicals	5. The image of the right half plane Re z = x > 1 under the linear transformation w = (−1 + i)z − 2 + 3i is the half plane v > u + 7, where u = Re(w), etc. Plot the map. 6. Show that the image of the right half plane A = {z : Re z ≥ 1/2 } under the mapping w=f(z)=1/z⍰ is the closed disk {w : |w − 1| ≤ 1} in the w- plane. 7. Make a plot of the vertical lines x = a, for a = −1, -1/2,1/2,1 and the horizontal lines y = b, for b=-1,-1/2,1/2,1. Find the plot of this grid under the mapping w=f(z)=1/z. 8. Find a parametrization of the polygonal path C = C1 + C2 + C3 from −1 + i to 3 − i, where C1 is the line from: −1 + i to −1, C2 is the line from: −1 to 1 + i and C3 is the line from 1 + i to 3 − i. Make a plot of this path. 9. The line segment 'L' joining the point A = 0 to B = 2 + Pi/4 I and give an exact calculation of integration of e^z .	B.Sc(H) Maths Sem-VI A and VI B	Complex Analysis (Analysis V)
Practicals	Summary commands: Summary statistics for vectors, Data frames, Matrices and lists; Summary tables.	BA(P) Sem: 6	SEC-4: Statistical Software: R
Test	Class tests	B.Sc(H) Maths/ BA(P)	

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March	**Theory**	Concept of non-linear partial differential equations, Lagrange's method, Charpit's method.	BA(P) Sem VI	Differential Equations
	Theory	Antiderivatives, proof of antiderivative theorem, State Cauchy–Goursat theorem, Cauchy integral formula, An extension of Cauchy integral formula, Consequences of Cauchy integral formula, Liouville's theorem and the fundamental theorem of algebra, Convergence of sequences.	B.Sc(H) Maths Sem-VI A	Complex Analysis
	Practicals	5. Solution of one-dimensional heat equation. 6. Solving systems of ordinary differential equations.	B.Sc(H) Maths Sem-IV Batch-A	Partial Differential Equations
	Practicals	10. Plot the semicircle 'C' with radius 1 centered at z = 2 and evaluate the contour integral of 1/(z-2). 11. Show that integral of z over C1= integral of z over C2 ,where C1 is the line segment from −1 − i to 3 + i and C2 is the portion of the parabola x = y^2 + 2y joining −1 − i to 3 + i. Make plots of two contours C1 and C2 joining −1 − i to 3 + i 12. ML inequality 13. Integral related to the principal branch of the square root function.	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)
	Practicals	Stem and leaf plot, Histograms, Density function and its plotting, The Shapiro–Wilk test for normality, The Kolmogorov-Smirnov test.	BA(P) Sem: 6	SEC-4: Statistical Software: R

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	Assignments	To provide an assignment related to the above the course of study.		
	Test	Mid-term examinations.	B.Sc(H) Maths Sem-VI B/VI A/ BA(P) Sem-VI	
April	**Theory**	Classification of second order partial differential equations into elliptic, Parabolic and hyperbolic through illustrations only.	BA(P) Sem VI	Differential Equations
	Theory	Convergence of series, Taylor series, proof of Taylor's theorem, Examples, Laurent series and its examples, Absolute and uniform convergence of power series, uniqueness of series representations of power series, Isolated singular points, Residues, Cauchy's residue theorem, Residue at infinity, Types of isolated singular points, Residues at poles and its examples.	B.Sc(H) Maths Sem-VI B	Complex Analysis
	Practicals	7. The pointwise convergence. 8. The uniform convergence of sequence of functions.	B.Sc(H) Maths Sem-IV Batch-A	Partial Differential Equations
	Practicals	Plotting in R: Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts, Bar charts; Copy and save graphics to other applications.	BA(P) Sem: 6	SEC-4: Statistical Software: R
	Practicals	14. Laurent series representations 15. The poles and specify their order. 16. The zeros, poles, and Residue of the function. 17. To evaluate integral using Residue. 18. To revise the whole Practicals.	B.Sc(H) Maths Sem-VI A/VI B	Complex Analysis (Analysis V)

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SEMESTER WISE TEACHING PLAN
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Teaching Plan: Even Sem 2022-23

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Name of the Faculty: Ms. Monika Meena **Department: Mathematics**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Definition and examples of rings, Properties of rings, Subrings. Integral domains and fields, Characteristic of a ring, Ideals	B.Sc(H) Mathematics Sem-IV B	Ring Theory and Linear Algebra-I
	Theory	Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, Plotting functions of two variables using Plot3D and Contour Plot, Plotting parametric curves surfaces, Customizing plots, Animating plots, Producing tables of values, working with piecewise defined functions, Combining graphics.	B.Sc(H) Mathematics Sem-IV B	CAS and R Software
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to rings, subrings and Integral Domain	B.Sc(H) Mathematics Sem-IV B	Ring Theory and Linear Algebra-I
	Practicals	Practical based on Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, Plotting functions of two variables using Plot3D and Contour Plot, Plotting parametric curves surfaces, Customizing plots, Animating plots, Producing tables of values, working with piecewise defined functions, Combining graphics.	B.Sc(H) Mathematics Sem-IV B	CAS and R Software

Feb	**Theory**	Ideal generated by a subset of a ring, Factor rings, Operations on ideals, Prime and maximal ideals. Ring homomorphisms, Properties of ring homomorphisms, First, Second and Third Isomorphism theorems for rings, The Field of quotients.	B.Sc(H) Mathematics Sem-IV B	Ring Theory and Linear Algebra-I
	Theory	Simple programming in a CAS, Working with matrices, Performing Gauss elimination, operations (transpose, determinant, inverse), Minors and cofactors, Working with large matrices, Solving system of linear equations, Rank and nullity of a matrix, Eigenvalue, eigenvector and diagonalization.	B.Sc(H) Mathematics Sem-IV B	CAS and R Software
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to ideals and ring homomorphism.	B.Sc(H) Mathematics Sem-IV B	Ring Theory and Linear Algebra-I
	Practicals	To perform practical Simple programming in a CAS, Working with matrices, Performing Gauss elimination, operations (transpose, determinant, inverse), Minors and cofactors, Working with large matrices, Solving system of linear equations, Rank and nullity of a matrix, Eigenvalue, eigenvector and diagonalization.	B.Sc(H) Mathematics Sem-IV B	CAS and R Software

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March	**Theory**	Vector spaces, Subspaces. Algebra of subspaces, Linear combination of vectors, Linear span. Linear independence, Bases. Dimension, Dimension of subspaces	B.Sc(H) Mathematics Sem-IV B	Ring Theory and Linear Algebra-I
	Theory	**R** as a calculator, Explore data and relationships in **R.** Reading and getting data into **R:** Combine and scan commands, Types and structure of data items with their properties, Manipulating vectors, Data frames, Matrices and lists, Viewing objects within objects, Constructing data objects and conversions.	B.Sc(H) Mathematics Sem-IV B	CAS and R Software
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related vector space and subspace. Linear Independence and bases and dimension.	B.Sc(H) Mathematics Sem-IV B	Ring Theory and Linear Algebra-I
	Practicals	**R** as a calculator, Explore data and relationships in **R.** Reading and getting data into **R:** Combine and scan commands, Types and structure of data items with their properties, Manipulating vectors, Data frames, Matrices and lists, Viewing objects within	B.Sc(H) Mathematics Sem-IV B	CAS and R Software
	Assignments	To give assignment Related to above syllabus.		
	Test	To take internal test related to syllabus And internal lab test related to above Practicals.	B.Sc(H) Mathematics Sem-IV B	
April	**Theory**	Linear transformations, Null space, Range. Rank and nullity of a linear transformation. Matrix representation of a linear transformation, Algebra of linear transformations	B.Sc(H) Mathematics Sem-IV B	Ring Theory and Linear Algebra-I

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	Theory	Summary commands**:** Summary statistics for vectors, Data frames, Matrices and lists, Summary tables, Stem and leaf plot, Histograms, Plotting in **R:** Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts and bar charts, Copy and save graphics to other applications.	B.Sc(H) Mathematics Sem-IV B	CAS and R Software
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Linear transformation and ,matrix representation and invertible transformation.	B.Sc(H) Mathematics Sem-IV B	Ring Theory and Linear Algebra-I
	Practicals	Perform practical based on Summary statistics for vectors, Data frames, Matrices and lists, Summary tables, Stem and leaf plot, Histograms, Plotting in **R:** Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts and bar charts, Copy and save graphics to other applications.	B.Sc(H) Mathematics Sem-IV B	CAS and R Software

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TEACHING PLAN (2022-23)

Name of the Faculty: Dr. Vikas Jorwal **Department: Mathematics**
Semester: IV **Program: B.Sc. (H) Mathematics**

Course Title and Course Code: SEC-2: Computer Algebra System and Related Software (32353401)

MONTH	TOPIC/Unit	Tutorial	Tentative Test/Assignment Work/Schedule
January, 2023	Unit 1: Introduction to CAS and Applications- [1] Chapter 12 (Sections 12.1 to 12.5) and [2] Chapter 1 and 3 (Sections 3.1 to 3.6 and 3.8).	-	-
February, 2023	Unit 1: Introduction to CAS and Applications [2] Chapter 6 (Section 6.2 and 6.3)	Discuss Exercise Questions	
March, 2023	Unit 2: Working with Matrices [2] Chapter 7 (Section 7.1 to 7.8) and Unit 3: R-The Statistical Programming Language	Discuss Exercise Questions	Internals (Test) on 18-03-2023.
April, 2023	Unit 4: Data Analysis with R. [1] Chapter 14 (Section 14.7) [3] Chapter 5 (up to Page 157), and Chapter 7	Discuss Exercise Questions	Assignment in the 1st-week
Classes begins: 05-01-2023 **Dispersal of classes from 03-05-2023** **Practical Examination begins from 4-05-2023 (if relevant)** **Theory Examination begins from 15-05-2023**			

Reference:

1. Bindner, Donald & Erickson, Martin. (2011). A Student's Guide to the Study, Practice, and Tools of Modern Mathematics. CRC Press, Taylor & Francis Group, LLC.

2. Torrence, Bruce F., & Torrence, Eve A. (2009). The Student's Introduction to Mathematica® : A Handbook for Precalculus, Calculus, and Linear Algebra (2nd ed.). Cambridge University Press.

3. Gardener, M. (2012). Beginning R: The Statistical Programming Language, Wiley. A

Signature of faculty: Mr. Vikas Jorwal

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Name of the Faculty: Mr. Vikas Jorwal **Department: Mathematics**
Semester: VI **Program: B.Sc. (Hons) Mathematics**

Course Title and Course Code: DSE-3 (i): Mathematical Finance

Month	TOPIC/Unit	Tutorial	Tentative Test/Assignment Work/Schedule
January, 2023	Interest rates, Types of rates, Measuring interest rates, Zero rates, Bond pricing, Forward rate, Duration, Convexity. [1] Chapter 4 (Section 4.1 to 4.4, 4.6, 4.8 and 4.9). Exchange traded markets and OTC markets, Derivatives- forward contracts, Futures contract, Options, Types of traders, Hedging, Speculation, Arbitrage. [1] Chapter 1 (Sections 1.1 to 1.9). No Arbitrage principle, Short selling, Forward price for an investment asset. [1] Chapter 5 (Sections 5.2 to 5.4).		-
February, 2023	Types of options, Option positions, Underlying assets, Factors affecting option prices. [1] Chapter 8 (Sections 8.1 to 8.3), and Chapter 9 (Section 9.1). Bounds on option prices, Put-call parity, Early exercise, Effect of dividends. [1] Chapter 9 (Sections 9.2 to 9.7).	Discuss Exercise Questio ns	
March, 2023	Binomial option pricing model, Risk neutral valuation (for European and American options on assets following binomial tree model). [1] Chapter 11 (Sections 11.1 to 11.5).Lognormal property of stock prices, Distribution of rate of return, expected return, Volatility, estimating volatility from historical data. Extension of risk neutral valuation to assets following GBM (without proof), Black−Scholes formula for European options. [1] Chapter 13 (Sections 13.1 to 13.4, 13.7 and 13.8). Hedging parameters (the Greeks: Delta, Gamma, Theta, Rho and Vega). [1] Chapter 17 (Sections 17.1 to 17.9).	Discuss Exercise Questio ns	Internals (Test) on 16-03-2023
April, 2023	Trading strategies Involving options. [1] Chapter 10 (except box spreads, calendar spreads and diagonal spreads).Swaps, Mechanics of interest rate swaps, Comparative advantage argument, Valuation of interest rate swaps, Currency swaps, Valuation of currency swaps [1] Chapter 7 (Sections 7.1 to 7.4 and 7.7 to 7.9).	Discuss Exercise Questio ns	Assignment in the 1st-week
Classes Begin from 02.01.2023 Dispersal of classes from 30.04.2023 Practical Examination begins from 01.05.2023 (if relevant) Theory Examination begins from 11.05.2023			

Reference:

1. Hull, J. C., & Basu, S. (2010). Options, Futures and Other Derivatives (7th ed.). Pearson Education. New Delhi.

Signature of faculty: Mr. Vikas Jorwal

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Name of the Faculty: Mr. Vikas Jorwal **Department: Mathematics**

Semester: VI **Program: B.A. Prog.**

Course Title and Course Code: SEC-4: Statistical Software: R

MONTH	TOPIC/Unit	Tutorial	Tentative Test/Assignment Work/Schedule
January, 2023	[1] Chapter 14 (Sections 14.1 To 14.4) [2] Chapter 2, Chapter 3	Exercises To Be Discussed	-
February, 2023	[2] Chapter 4, Chapter 5	Exercises To Be Discussed	
March, 2023	[2] Chapter 7	Exercises To Be Discussed	Internals (Test) on 16-03-2023
April, 2023	[2] Chapter 14	-	Assignment in the 1st-week
Classes Begin from 02.01.2023 **Dispersal of classes from 30.04.2023** **Practical Examination begins from 01.05.2023 (if relevant)** **Theory Examination begins from 11.05.2023**			

References:

1. Binder, Donald & Erickson, Martin (2011). A Student's Guide to the Study, Practice and Tools of Modern Mathematics. CRC Press, Taylor and Francis Group, LLC.

2. Gardener, M. (2012). Beginning R: The Statistical Programming Language, Wiley Publications.

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Teaching Plan: Even Sem 2022-23

Name of the Faculty: Ms. Arushi **Department: Mathematics**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	Vector spaces, Subspaces, Algebra of subspaces, Quotient spaces	B.Sc(H) Maths Sem-IV A	Ring Theory and Linear Algebra - I
	Theory	Polynomial rings over commutative rings, Division algorithm, PID, Factorization of polynomials, Reducibility and irreducibility tests, Einstein's criterion, Unique factorization in Z[x].	B.Sc(H) Maths Sem-VI A	Ring Theory and Linear Algebra - II
	Tutorials	To discuss the doubt of students and various exercise questions and examples related: Vector spaces, Subspaces, Algebra of subspaces, Quotient spaces	B.Sc(H) Maths Sem-IV A	Ring Theory and Linear Algebra – I
	Tutorials	To discuss the doubt of students and various exercise questions and examples related: Polynomial rings over commutative rings, Division algorithm, PID, Factorization of polynomials, Reducibility and irreducibility tests, Einstein's criterion, Unique factorization in Z[x].	B.Sc(H) Maths Sem-VI A	Ring Theory and Linear Algebra - II

	Practicals	1. Solution of Cauchy problem for first order PDE. 2. Plotting the characteristics for the first order PDE.	B.Sc(H) Maths Sem-IV A and B	Partial Differential Equations
Feb	**Theory**	Linear combination of vectors, Linear span, Linear independence, Basis and Dimension, Dimension of subspaces	B.Sc(H) Maths Sem-IV A	Ring Theory and Linear Algebra - I
	Theory	Divisiblity in integral domains, Irreducibles, Primes, UFD, ED, dual and double dual space, dual basis, Transpose of a linear transformation and its matrix in the dual basis, Annihilators	B.Sc(H) Maths Sem-VI A	Ring Theory and Linear Algebra - II
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related: Linear combination of vectors, Linear span, Linear independence, Basis and Dimension, Dimension of subspaces	B.Sc(H) Maths Sem-IV A	Ring Theory and Linear Algebra – I

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Tutorials:	To discuss the doubt of students and various exercise questions and examples related: Divisiblity in integral domains, Irreducibles, Primes, UFD, ED, dual and double dual space, dual basis, Transpose of a linear transformation and its matrix in the dual basis, Annihilators	B.Sc(H) Maths Sem-VI A	Ring Theory and Linear Algebra - II
Practicals	1. Plot the integral surfaces of a given first order PDE with initial data. 2. Solution of wave equation.	B.Sc(H) Maths Sem-IV A and B	Partial Differential Equations

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March	**Theory**	Linear transformations, Null Space, Range, Rank and nullity of a linear transformation	B.Sc(H) Maths Sem-IV A	Ring Theory and Linear Algebra - I
	Theory	Eigenvalues, Eigenvectors, Eigenspaces and characteristic polynomial, Diagonalizability, Invariant subspaces and Cayley Hamilton theorem, minimal polynomial.	B.Sc(H) Maths Sem-VI A	Ring Theory and Linear Algebra - II
	Theory **Tutorials**	Fundamental properties with vectors in Euclidean space, Linear combination of vectors, Dot product and properties, Cauchy Schwarz inequality, Triangle inequality Doubts and questions related to the above syllabus	B.A.(Prog.) with Maths	Elementary Linear Algebra
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related Linear transformations, Null Space, Range, Rank and nullity of a linear transformation	B.Sc(H) Maths Sem-IV A	Ring Theory and Linear Algebra – I
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related Eigenvalues, Eigenvectors, Eigenspaces and characteristic polynomial, Diagonalizability, Invariant subspaces and Cayley Hamilton theorem, minimal polynomial.	B.Sc(H) Maths Sem-VI A	Ring Theory and Linear Algebra - II
	Practicals	1. Solving system of ordinary differential equations 2. Discuss pointwise convergence of sequence of functions	B.Sc(H) Maths Sem-IV A and B	Partial Differential Equations

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	Assignments	To give assignment related to above syllabus.	B.Sc(H) Maths Sem-VI and VI A	
	Test	To take internal class test related to above syllabus.	B.Sc(H) Maths Sem-VI and VI A	
April	**Theory**	Matrix representation of a linear transformation, Algebra of linear transformation, Isomorphism, Isomorphism theorems, Invertibility and the change of coordinate matrix	B.Sc(H) Maths Sem-IV A	Ring Theory and Linear Algebra - I
	Theory	Inner product spaces, Norms, Orthonormal basis, Gram-Schmidt orthogonalization process, orthogonal complements, Bessel's inequality, adjoint of a linear operator, least squares approximation, minimal solutions to systems of linear equations, normal, self-adjoint, unitary and orthogonal operators and their properties.	B.Sc(H) Maths Sem-VI A	Ring Theory and Linear Algebra - II
	Theory **Tutorials**	Solving system of linear equations using Gaussian elimination, Application: Curve Fitting, Gauss-Jordan row reduction, reduced row echelon form, Application: solving several systems simultaneously, Equivalent systems, Rank of a matrix, Row space of a matrix, Eigenvalues, eigenvectors, Eigenspace Doubts and questions related to the above syllabus	B.A.(Prog.) with Maths	Elementary Linear Algebra

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	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Matrix representation of a linear transformation, Algebra of linear transformation, Isomorphism, Isomorphism theorems, Invertibility and the change of coordinate matrix	B.Sc(H) Maths Sem-IV A	Ring Theory and Linear Algebra – I
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Inner product spaces, Norms, Orthonormal basis, Gram-Schmidt orthogonalization process, orthogonal complements, bessels inequality, adjoint of a linear operator, least squares approximation, minimal solutions to systems of linear equations, normal, self-adjoint, unitary and orthogonal operators and their properties.	B.Sc(H) Maths Sem-VI A	Ring Theory and Linear Algebra - I
	Practicals **Test**	Discuss pointwise and uniform convergence of sequence of functions To take internal lab test related to above Practicals.	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)
May	**Theory** **Tutorial**	Diagonalization, Characteristic Polynomial of a matrix, Vector spaces: Definition, examples and properties, subspaces, span, Linear independence, linear dependence, Basis, dimension, Maximal linearly independent sets, Minimal spanning sets Doubts and questions related to the above syllabus	B.A.(Prog.) with Maths	Elementary Linear Algebra

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June	**Theory** **Tutorials**	Linear transformations: Definition, examples and properties, the matrix of a linear transformation, kernel and range of a linear transformation, Dimension theorem, One to one and onto linear transformations Doubts and questions related to the above syllabus	B.A.(Prog.) with Maths	Elementary Linear Algebra
July	**Theory** **Tutorials**	Invertible linear transformation, Isomorphic vector spaces Doubts and questions related to the above syllabus	B.A.(Prog.) with Maths	Elementary Linear Algebra

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Department of Mathematics
Sri Venkateswara College
Even Semester Teaching Plan (Jan-May 2023)

Dr. Rahul Thakur

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Algebraic and order properties of $\mathbb{R}$, Absolute value and the real line Suprema and infima, The completeness properties of $\mathbb{R}$, Archimedean property of $\mathbb{R}$.	B.A. (Programme) Sem-IV	Analysis
	Theory	Finite and infinite sets, Examples of countable and uncountable sets; Absolute value of the real line, bounded sets, suprema and infima; Statement of order completeness property of $\mathbb{R}$, Archimedean property of $\mathbb{R}$.	GE Courses for Honours Courses Sem-IV	GE-4: Elements of Analysis
	Practical	Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, producing tables of values, working with piecewise defined functions, Combining graphics	B.Sc. (H) Mathematics Sem-IV Batch-A+B	SEC-2: Computer Algebra Systems and Related Software
	Tutorial	Problems based on supremum and infimum of subsets of R	B.A. (Programme) Sem-IV	Analysis
FEBRUARY	**Theory**	Sequences and their limits, Convergent sequences, Limit theorems. Monotone sequences and monotone convergence theorem. Sub-sequences, Cauchy sequence and Cauchy convergence criterion.	B.A. (Programme) Sem-IV	Analysis
	Theory	Real sequences, Convergence, Sum and product of convergent sequences, Order preservation and squeeze theorem.	GE Courses for Honours Courses Sem-IV	GE-4: Elements of Analysis
	Practical	Plotting functions of two variables using Plot3D and contour plot, plotting parametric curves surfaces, customizing plots, animating plots.	B.Sc. (H) Mathematics Sem-IV Batch-A+B	SEC-2: Computer Algebra Systems and Related Software

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	Tutorial	Problems based on convergence of sequences	B.A. (Programme) Sem-IV	Analysis
MARCH	**Theory**	Infinite series, Convergence of a series, nth term test, Cauchy's criterion for series, The p-series, Comparison tests, Absolute and conditional convergence. Cauchy's nth root test, D'Alembert's ratio test, Raabe's test, Alternating series, Leibnitz test. Limit of functions, Sequential criterion for limits, Algebra of limits.	B.A. (Programme) Sem-IV	Analysis
	Theory	Monotone sequences and their convergence, Proof of convergence of some simple sequences, Sub-sequences and the Bolzano−Weierstrass theorem	GE Courses for Honours Courses Sem-IV	GE-4: Elements of Analysis
	Practical	R as a calculator, Reading and getting data into R: Combine and scan commands, Types and structure of data items with their properties. Manipulating vectors, Data frames, Matrices and lists. Viewing objects within objects. Constructing data objects and conversions.	B.Sc. (H) Mathematics Sem-IV Batch-A+B	SEC-2: Computer Algebra Systems and Related Software
	Tutorial	Problems based on convergence of series	B.A. (Programme) Sem-IV	Analysis
APRIL	**Theory**	Continuous functions, Sequential criterion for continuity and discontinuity, Boundedness theorem, Intermediate value theorem, Uniform continuity, Riemann integral: Upper and lower integrals, Riemann integrable functions Riemann integrability of continuous and monotone functions.	B.A. (Programme) Sem-IV	Analysis
	Theory	Limit superior and limit inferior of a bounded sequence (definition and examples), Statement and illustrations of Cauchy convergence criterion for sequences	GE Courses for Honours Courses Sem-IV	GE-4: Elements of Analysis
	Practical	Data frames, Matrices and lists. Summary tables. Stem and leaf plot, histograms. Plotting in R: Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts	B.Sc. (H) Mathematics Sem-IV Batch-A+B	SEC-2: Computer Algebra Systems and Related Software
	Tutorial	Problems based on continuity of functions	B.A. (Programme) Sem-IV	Analysis

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MAY	**Theory**	Riemann integrability of monotone functions.	B.A. (Programme) Sem-IV	Analysis
	Theory	Exercise problems based on Cauchy sequences	GE Courses for Honours Courses Sem-IV	GE-4: Elements of Analysis
	Practical	Cleveland dot charts and Bar charts, Copy and save graphics to other application	B.Sc. (H) Mathematics Sem-IV Batch-A+B	SEC-2: Computer Algebra Systems and Related Software
	Tutorial	Problems based on Riemann integration	B.A. (Programme) Sem-IV	Analysis

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SEMESTER-WISE TEACHING PLAN
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Teaching Plan: Even Sem Session 2022-23

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Name of the Faculty: Mr. Anuj Kumar **Department: Mathematics**

Semester: II/VI

Month	Teaching Activity	Topics	Course	Paper Code/ Name
Jan	Theory	Communication processes, A model of communication systems, A quantitative measure of information, Binary unit of information, H function of measure of uncertainty, Sources and Binary Sources, Measure of information for 2-D discrete finite probability schemes. A sketch of communication network and entropy function H.	B.Sc.(H) Mathematics Sem VI Sec A, B	DSE-3(ii) Introduction to Information Theory and Coding
	Tutorial	Solving numerical problems associated to the measure of information and entropy function H and summarized these topics.		
Feb	Theory	Basic relationship among different entropies, A measure of mutual information, Interpretation of Shannon's fundamental inequalities, redundancy, efficiency and channel capacity, Binary symmetric channel, Binary erasure channel, Uniqueness of the entropy function, Joint entropy and conditional entropy, Relative entropy and mutual information, Chain rules of entropy and conditional mutual information, Jensen's inequality and its characterizations, The log sum inequality and its applications, Block codes, Hamming distance.	B.Sc.(H) Mathematics Sem VI Sec A, B	DSE-3(ii) Introduction to Information Theory and Coding

Month	Teaching Activity	Topics	Course	Paper Code/ Name
Feb...	Tutorial	Discussion on the key proofs to the problems, theorems based on inter-relationships among different type of entropies. Derived relationships between different types of information and conducted a mock test.	B.Sc.(H) Mathematics Sem VI Sec A, B	DSE-3(ii) Introduction to Information Theory and Coding
March	Theory	Maximum likelihood decoding, Levels of error handling, Error correction, error detection, Erasure correction, Construction of finite fields, Linear codes, Matrix representation of linear codes, Orthogonality relation.	B.Sc.(H) Mathematics Sem VI Sec A, B	DSE-3(ii) Introduction to Information Theory and Coding
	Tutorial	1. Revision for the Mid-term test. 2. Discussion on [n, k, d] and (n. M, d) forms and consolidation of the important results and proofs for the linear block codes. Derivation if the relationship between Generator G matrix and parity check matrix H. Determining the whole linear block code for a given generator matrix.		
	Internal Assessment	1. Conducting In-House Exam 2. Submission of Assignments		
	Theory	Introduction to the prerequisite concepts and key terms used in Calculus, Limits of functions by using epsilon-delta and sequential approach.	B.Sc.(H) Mathematics Sem II Sec B	DSC-5 Calculus
	Tutorial	1. Summarizing limit and algebra of limits. 2. Solving exercise questions.		

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Month	Teaching Activity	Topics	Course	Paper Code/ Name
March...	Practical	1. Solutions of first, second and third order differential equations. 2. Plotting of family of solutions of differential equations of first, second and third order.	B.Sc.(H) Mathematics Sem II Sec B	DSC-6 Ordinary Differential Equations
April	Theory	Encoding of linear codes, Decoding of linear codes, Singleton bound and maximum distance separable codes, Sphere-packing bound and perfect codes, Gilbert-Varshamov bound, Mac-Williams' identities.	B.Sc.(H) Mathematics Sem VI Sec A, B	DSE-3(ii) Introduction to Information Theory and Coding
	Tutorial	1. Solving Encoder-Decoder based problems. 2. Revision of the course.		
	Theory	One sided limits, Infinite limits and limits at infinity. Continuous functions and their various properties on closed and bounded interval, Uniform continuity.	B.Sc.(H) Mathematics Sem II Sec B	DSC-5 Calculus
	Tutorial	Consolidation of the learnt part.		
	Practical	3. Solution of differential equations using method of variation of parameters. 4. Growth and decay model (Exponential case only).	B.Sc.(H) Mathematics Sem II Sec B	DSC-6 Ordinary Differential Equations
	Practical	1. Introduction to Latex and Libre office: Creating a page in Latex, Comments, handling errors, Sectioning, Paragraph and Styling, Document classes- article and book. 2. Styling pages: Induction of packages; Formatting content: Organizing texts into columns, Learning scripts.	All Disciplines Sem II	SEC Paper Document Preparation and Software Presentation

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Month	Teaching Activity	Topics	Course	Paper Code/ Name
May	Theory	Differentiability of a real-valued function, Algebra of differentiable functions, Chain rule, Relative extrema, Interior extremum theorem, Rolle's theorem, Mean-value theorem and its applications, Intermediate value theorem for derivatives, Higher order derivatives and calculation of the nth derivative, Leibnitz's theorem.	B.Sc.(H) Mathematics Sem II Sec B	DSC-5 Calculus
	Tutorial	Consolidation of the learnt part.		
	Internal Assessment	1. Conducting In-House Exam 2. Submission of Assignments		
	Practical	5. Lake pollution model (with constant/seasonal flow and pollution concentration). 6. Density-dependent growth model.	B.Sc.(H) Mathematics Sem II Sec B	DSC-6 Differential Equations
	Practical	3. Handling Tables and Figures, Writing Algorithms and Equations. 4. Revision, Hands-on sessions, Viva and Mock-test.	All Disciplines Sem II	SEC Paper Document Preparation and Software Presentation
	Internal Assessment	1. Internal Practical Exam 2. Submission of Assignments		
June	Theory	Taylor's theorem, Taylor's series expansions of e^x, sin x, cos x. Indeterminate forms, L'Hôpital's rule; Concavity and inflexion points; Singular points, Asymptotes.	B.Sc.(H) Mathematics Sem II Sec B	DSC-5 Calculus

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Month	Teaching Activity	Topics	Course	Paper Code/ Name
June...	Tutorial	Practice of the covered part.	B.Sc.(H) Mathematics Sem II Sec B	DSC-5 Calculus
	Practical	7. Lake pollution model (with constant/seasonal flow and pollution concentration). 8. Density-dependent growth model.	B.Sc.(H) Mathematics Sem II Sec B	DSC-6 Differential Equations
	Practical	5. Referencing, Cross-referencing, Indexing, Using captions and labels 6. Making presentations: Slideshow, logo incorporation, Highlighting important points, Making title page and content, Using special effects.	All Disciplines Sem II	SEC Paper Document Preparation and Software Presentation
July	Theory	Tracing graphs of rational functions and polar equations.	B.Sc.(H) Mathematics Sem II Sec B	DSC-5 Calculus
	Tutorial	Course revision.		
	Practical	Course revision followed by project submission.	B.Sc.(H) Mathematics Sem II Sec B	DSC-6 Differential Equations
	Practical	Course revision followed by project submission.	All Disciplines Sem II	SEC Document Preparation and Software Presentation

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Teaching Plan: Even Semester 2022-23

Name of the Faculty: Dr. P. Devaki **Department: Mathematics**
Semester: II/IV

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Introduction, Classification, Construction and geometrical interpretation of first order partial differential equations (PDE), Method of characteristic and general solution of first order PDE, Canonical form of first order PDE, Method of separation of variables for first order PDE.	B.Sc(H) Maths Sem-IV A	BMH408 /Partial Differential Equations
	Practical's	1. Solution of Cauchy problem for first order PDE. 2. Plotting the characteristics for the first order PDE.	B.Sc(H) Maths Sem-IV Batch-A, Batch-A+B	BMH408 /Partial Differential Equations

Month		Topics	Course	Paper Code/Name
Feb	**Theory**	Gravitational potential, Conservation laws and Burger's equations, Classification of second order PDE, Reduction to canonical forms, Equations with constant coefficients, General solution.	B.Sc(H) Maths Sem-IV A	BMH408 /Partial Differential Equations
	Practical's	3. The integral surfaces of a given first order PDE with initial data. 4. The solution of wave with various associated conditions.	B.Sc(H) Maths Sem-IV Batch-A, Batch-A+B	BMH408 /Partial Differential Equations

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Month		Topics	Course	Paper Code/Name
March	**Theory**	Mathematical modeling of vibrating string, vibrating membrane. Cauchy problem for second order PDE, Homogeneous wave equation, Initial boundary value problems, Non-homogeneous boundary conditions, Finite strings with fixed ends, Non-homogeneous wave equation, Goursat problem.	B.Sc(H) Maths Sem-IV A	BMH408 /Partial Differential Equations
	Theory	Concept of implicit, general and singular solutions for the first order ordinary differential equation;	B.Sc(H) Maths Sem-II B	BMH208 /Ordinary Differential Equations
	Practicals	5. Solution of one-dimensional heat equation. 6. Solving systems of ordinary differential equations.	B.Sc(H) Maths Sem-IV Batch-A, Batch-A+B	BMH408 /Partial Differential Equations
	Practical's	1. Solutions of first, second and third order differential equations. 2. Plotting of family of solutions of differential equations of first, second and third order.	B.Sc(H) Maths Sem-II Section-B	DSC-6 /Ordinary Differential Equations
	Assignment	Assignment to be submitted by Sem-IV students based on above covered topics.		BMH408 /Partial Differential Equations
	Test	Mid-term examinations to Sem-IV students.		BMH408 /Partial Differential Equations

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Month		Topics	Course	Paper Code/Name
April	**Theory**	Method of separation of variables for second order PDE, Vibrating string problem, Existence and uniqueness of solution of vibrating string problem, Heat conduction problem, Existence and uniqueness of solution of heat conduction problem, Non-homogeneous problem.	B.Sc(H) Maths Sem-IV A	BMH408 /Partial Differential Equations
	Theory	Bernoulli's equation, Exact equations, Integrating factors, Initial value problems, Reducible second order differential equations; Applications of first order differential equations to Newton's law of cooling, exponential growth and decay problems. General solution of homogenous equation of second order, Principle of superposition for a homogenous equation, Wronskian and its properties,	B.Sc(H) Maths Sem-II B	DSC-6 /Ordinary Differential Equations
	Practicals	7. The pointwise convergence. 8. The uniform convergence of sequence of functions.	B.Sc(H) Maths Sem-IV Batch-A, Batch-A+B	BMH408 /Partial Differential Equations
	Practicals	3. Solution of differential equations using method of variation of parameters. 4. Growth and decay model (exponential case only).	B.Sc(H) Maths Sem-II Section-B	DSC-6 /Ordinary Differential Equations

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Month		Topics	Course	Paper Code/Name
May	**Theory**	Revision	B.Sc(H) Maths Sem-IV A	BMH408 /Partial Differential Equations
	Theory	Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Method of variation of parameters, Method of undetermined coefficients, Two-point boundary value problems, Cauchy- Euler's equation, System of linear differential equations, Application of second order differential equation: Simple pendulum problem.	B.Sc(H) Maths Sem-II B	DSC-6 /Ordinary Differential Equations
	Practicals	5. Lake pollution model (with constant/seasonal flow and pollution concentration). 6. Density-dependent growth model.	B.Sc(H) Maths Sem-II Section-B	DSC-6 /Ordinary Differential Equations
	Assignment	Assignment to be submitted by Sem-II students based on above covered topics.		DSC-6 /Ordinary Differential Equations
	Test	Mid-term examinations to Sem-II students.		DSC-6 /Ordinary Differential Equations

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Month		Topics	Course	Paper Code/Name
June	**Theory**	Introduction to compartmental models, Lake pollution model; Density-dependent growth model, Interacting population models, Epidemic model of influenza and its analysis	B.Sc(H) Maths Sem-II B	DSC-6 /Ordinary Differential Equations
	Practicals	7. Predatory-prey model (basic Volterra model, with density dependence, effect of DDT, two prey one predator). 8. Epidemic model of influenza (basic epidemic model, contagious for life, disease with carriers).	B.Sc(H) Maths Sem-II B	DSC-6 /Ordinary Differential Equations

Month		Topics	Course	Paper Code/Name
July	**Theory**	Predator-prey model and its analysis, Equilibrium points, Interpretation of phase plane	B.Sc(H) Maths Sem-II B	DSC-6 /Ordinary Differential Equations
	Practicals	Practice	B.Sc(H) Maths Sem-II B	DSC-6 /Ordinary Differential Equations

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SRI VENKATESWARA COLLEGE
Teaching Plan: Even Semester 2022-23

Name of the Faculty: Mr. Mahendra Pratap Pal
Department: Mathematics

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Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Introduction to LPP, Standard Canonical and Matrix form, Graphical solution of LPP: unique, multiple, and infeasible and unbounded solution with suitable examples, Define convex, polyhedral sets with suitable examples and its properties, Hyperplane, extreme Points, Basic solution, Basic feasible solution (BFS), degenerate and non-generate BFS, reduction of any FS to BFS, correspondence between BFS and extreme point.	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
	Tutorials	To discuss the doubt of students and various exercise questions and examples	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
	Practical's	Solution of Cauchy problem forfirst order PDE, Plotting the characteristics for the first order PDE.	B.Sc(H) Maths Sem-IV B	Partial Differential Equations
	Practical's	Basic concepts of Mathematica and Practical, Bisection method	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE-IV Numerical Methods
Feb	**Theory**	Simplex Method algorithm for solving LPP when the number decision variables are more than two, optimal solution, unique, alternative, infeasible and unbounded solution, Artificial variables, two phase method, Big-M method, solve the system of linear equations by using simplex method, find the inverse of any nonsingular matrix by simplex method.	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
	Tutorials:	To discuss the doubt of students and various exercise questions and examples	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
	Practical's	The integral surfaces of a givenfirst order PDE with initial data, The solution of wave with variousassociated conditions	B.Sc(H) Maths Sem-IV B	Partial Differential Equations

	Practical's	Secant method and Regula Falsi Method, Newton Raphson Method	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE-IV Numerical Methods
March	**Theory**	Introduction to duality, mathematical formulation of dual problem, how to convert primal to dual, dual, and primal relationships, dual simplex method, weak, strong duality theorem, fundamental theorem of duality, complementary slackness theorem with suitable examples.	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
	Tutorials:	To discuss the doubt of students and various exercise questions and examples.	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
	Tutorials:	To discuss the doubt of students and various exercise questions and examples.	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE-II Linear Algebra
	Theory	Define implicit and explicit function with suitable examples, General and singular solution of first order differential equations, homogeneous and non-homogeneous ODE, Bernoulli's equation, exact equations, Find the integrating factor of non-exact ODE, Initial value problem, Reducible second order differential equations	B.Sc(H) Maths Sem-II A	Differential Equations
	Practical's	Solution of first, second and third order differential equations	B.Sc(H) Maths Sem-II A	Differential Equations
	Practical's	Solution of one-dimensional heat equation, Solving systems of ordinary differential equations.	B.Sc(H) Maths Sem-IV B	Partial Differential Equations
	Practical's	Gauss elimination method and Gauss-Jordan method, Jacobi method and Gauss Seidel method, Lagrange Interpolation and Newton Interpolation	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE-IV Numerical Methods
	Assignments	To give assignment Related to above syllabus.	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
	Test	To take internal test related to syllabus .	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
April	**Theory**	Introduction to transportation problem, mathematical formulation of TP, Initial feasible solution of TP by using NWCM, LCM and VAM method, Find the optimal solution by using MODI method, Introduction to Assignment problem, mathematical formulation of Assignment problem, solve the assignment problem by using Hungarian method. Introduction to game, define different types of gams likes: two-person zero sum game, n-person zero sum game and non-zero-sum game, game with saddle and without saddle point game. Linear programming method of solving a game.	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
	Tutorials:	To discuss the doubt of students and various exercise questions and examples	B.Sc(H) Maths Sem-VI A	Linear Programming and Applications
	Tutorials:	To discuss the doubt of students and various exercise questions and examples.	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE-II Linear Algebra

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	Theory	Applications of first order ODE to Newton's law of cooling, exponential growth, and decay problems with suitable examples. General solution of homogenous equation of second order, Principle of superposition for a homogenous equation.	B.Sc(H) Maths Sem-II A	Differential Equations
	Practical's	Plotting of family of solutions of differential equations of first, second and third order	B.Sc(H) Maths Sem-II A	Differential Equations
	Practical's	The pointwise convergence, The uniform convergence ofsequence of functions.	B.Sc(H) Maths Sem-IV B	Partial Differential Equations
	Practical's	Trapezodial rule and Simpson's rule, Euler methods for solving first order initial value problems of ODE's and revise all practicals	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE-IV Numerical Methods
May	**Theory**	Linear dependent and independent of solution, Wronskian and its properties, Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Method of variation of parameters, Method of undetermined coefficients, two-point boundary value problem, Cauchy-Euler's equation.	B.Sc(H) Maths Sem-II A	Differential Equations
	Practical's	Solution of differential equations using method of variation of parameters. Growth and decay model, Lake pollution model.	B.Sc(H) Maths Sem-II A	Differential Equations
	Tutorials:	To discuss the doubt of students and various exercise questions and examples.	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE-II Linear Algebra
June	**Theory**	System of linear differential equations, application of second order differential equation: Simple pendulum problem, Introduction to compartmental models, Lake pollution model, Density dependent growth model, Introduction population models, Epidemic model of influenza and its analysis.	B.Sc(H) Maths Sem-II A	Differential Equations
	Practical's	Density dependent growth model, Predatory-prey model.	B.Sc(H) Maths Sem-II A	Differential Equations
	Tutorials:	To discuss the doubt of students and various exercise questions and examples.	B.Sc.(Hons.), B.Com(Hons.) B.A.(Hons.)Eco	GE-II Linear Algebra
July	**Theory**	Predator-prey model and its analysis, Equilibrium points, Interpretation of phase plane.	B.Sc(H) Maths Sem-II A	Differential Equations
	Practical's	Epidemic model of influenza.	B.Sc(H) Maths Sem-II A	Differential Equations

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SEMESTER WISE TEACHING PLAN
Even Semester , 2022 – 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pratima Vyas **Department:** Physics

Semester : II (March – July 2023)

Semester : IV **(Jan 2023 – May 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
Jan	GE: Thermal Phys (Th)	32225415	**Laws of Thermodynamics:** Thermodynamic Description of system: Zeroth Law of thermodynamics and temperature. First law and internal energy, conversion of heat into work, Various Thermodynamical Processes, Applications of First Law: General Relation between CP and CV, Work Done during Isothermal and Adiabatic Processes, Compressibility and Expansion Coefficient, Reversible and irreversible processes, Second law, Entropy, Carnot's cycle & theorem, Entropy changes in reversible and irreversible processes, Entropy-temperature diagrams, Third law of thermodynamics, Unattainability of absolute zero.
	GE: Thermal Phys (Lab)	32225415	As Listed in Syllabus.
	CC: Modern Physics Lab	32221402	As Listed in Syllabus.
Feb	GE: Thermal Phys (Th)	32225415	**Thermodynamical Potentials:** Enthalpy, Gibbs, Helmholtz and Internal Energy functions, Maxwell"s relations and applications - Joule-Thomson Effect, Clausius Clapeyron Equation, Expression for (CP – CV), CP/CV, TdS equations. **Kinetic Theory of Gases:** Derivation of Maxwell's law of distribution of velocities and its experimental verification, Mean free path (Zeroth Order).
	GE: Thermal Phys (Lab)	32225415	As Listed in Syllabus.
	CC: Modern Physics Lab	32221402	As Listed in Syllabus.
March	GE: Thermal Phys (Th)	32225415	**Transport Phenomena:** Viscosity, Conduction and Diffusion (for vertical case), Law of equipartition of energy (no derivation) and its applications to specific heat of gases. **Theory of Radiation:** Blackbody radiation, Spectral distribution, Derivation of Planck's law, Deduction of Wien's law, Rayleigh-Jeans Law, Stefan Boltzmann Law & Wien's displacement law from Planck's law.
	GE: Thermal Phys (Lab)	32225415	As Listed in Syllabus.

	CC: Modern Physics Lab	32221402	As Listed in Syllabus.
April	GE: Thermal Phys (Th)	32225415	**Statistical Mechanics:** Macrostate and Microstate, phase space, Entropy and Thermodynamic Probability, Maxwell-Boltzmann law, Fermi-Dirac distribution law - Bose-Einstein distribution law - comparison of three statistics.
	GE: Thermal Phys (Lab)	32225415	As Listed in Syllabus.
	CC: Modern Physics Lab	32221402	As Listed in Syllabus.

Semester : VI **(Jan 2023 – May 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
Jan			
	CC: Electromagnetic Theory (Lab)	32221601	As Listed in Syllabus.
Feb			
	CC: Electromagnetic Theory (Lab)	32221601	As Listed in Syllabus.
March			
	CC: Electromagnetic Theory (Lab)	32221601	As Listed in Syllabus.
April			
	CC: Electromagnetic Theory (Lab)	32221601	As Listed in Syllabus.

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SEMESTER WISE TEACHING PLAN
Even Semester , 2022 – 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Anunay K. Chaudhary **Department:** Physics

Semester II (March 2023 – July 2023)

Month	Course	Paper Code	Topics Covered

Semester : IV **(Jan 2023 – May 2023)**

Month	Course	Paper Code	Topics Covered
Jan	CC-VIII: Mathematical Physics-3	32221401	**Complex Analysis:** Brief Revision of Complex Numbers and their Graphical Representation. Euler's formula, De-Moivre's theorem, Roots of Complex Numbers. Functions of Complex Variables. Analyticity and Cauchy-Riemann Equations. Examples of analytic functions. Singularities: poles, removable singularity, essential singularity, branch points, branch cut. Integration of a function of a complex variable. Cauchy-Goursat Theorem, Cauchy's Inequality. Cauchy's Integral formula.
	CC-VIII: Mathematical Physics-3 ICT Lab	32221401	As Listed in Syllabus.
Feb	CC-VIII: Mathematical Physics-3	32221401	Simply and multiply connected region. Laurent and Taylor's expansion. Residues and Residue Theorem. Application of Contour Integration in solving Definite Integrals. **Fourier Transforms:** Fourier Integral theorem (Statement only). Fourier Transform (FT). Examples: FT of single pulse, trigonometric, exponential and Gaussian functions. FT of derivatives, Inverse FT, Convolution theorem.
	CC-VIII: Mathematical Physics-3 ICT Lab	32221401	As Listed in Syllabus.
March	CC-VIII: Mathematical Physics-3	32221401	Properties of FT s (translation, change of scale, complex conjugation, etc.). Solution of one dimensional Wave Equation using FT. Fourier Sine Transform (FST) and Fourier Cosine Transform (FCT). **Laplace Transforms:** Laplace Transform (LT) of Elementary functions. Properties of Lts: Change of Scale Theorem, Shifting Theorem. LTs of 1st and 2nd order Derivatives and Integrals of Functions.
	CC-VIII: Mathematical Physics-3 ICT Lab	32221401	As Listed in Syllabus.

April	CC: Mathematical Physics-3	32221401	Derivatives and Integrals of LTs. LT of Unit Step function, Periodic Functions. Convolution Theorem. Inverse LT. Application of Laplace Transforms to 2nd order Differential Equations, Coupled differential equations of 1st order. Solution of 1-D heat equation (semi-infinite bar) using LT. **Dirac delta function:** Definition and properties. Representation of Dirac delta function as a Fourier Integral. Laplace and Fourier Transform of Dirac delta function.
	CC: Mathematical Physics-3 ICT Lab	32221401	As Listed in Syllabus.

Semester VI (Jan 2023 – May 2023)

Month	**Course**	**Paper Code**	**Topics Covered**

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Name of the Faculty: Prof. K. Chandramani Singh **Department:** Physics

Semester II (Mar 2023 – July 2023)

Month	Course	Paper Code	Topics Covered

Semester : IV **(Jan 2023 – May 2023)**

Month	Course	Paper Code	Topics Covered
Jan	CC-IX: Elements of Modern Physics	32221402	**Unit 1 :** Planck's quantum, Planck's constant and light as a collection of photons; Blackbody Radiation: Quantum theory of Light; Photo-electric effect and Compton scattering. De-Broglie wavelength and matter waves; Davisson-Germer experiment. Wave description of particles by wave packets. Group and Phase velocities and relation between them. Double-slit experiment with electrons. Probability. Wave amplitude and wave functions. **Unit 2:** Position measurement : gamma ray microscope thought experiment; Wave-particle duality leading to Heisenberg uncertainty principle; Uncertainty relations involving canonical pair of variables: Derivation from Wave Packets; Impossibility of a particle following a trajectory; Estimating minimum energy of a confined particle using uncertainty principle; Energy-time uncertainty principle: origin of natural width of emission lines as well as estimation of the mass of the virtual particle that mediates a force from the observed range of the force
	CC-IX: Elements of Modern Physics Lab	32221402	As Listed in Syllabus.
Feb	CC-IX: Elements of Modern Physics	32221402	**Unit 3:** Two-slit interference experiment with photons, atoms and particles; linear superposition principle as a consequence; Schrodinger equation for non-relativistic particles; Momentum and Energy operators; stationary states; physical interpretation of a wave function, probabilities and normalization; Probability and probability current densities in one dimension. **Unit 4:** One dimensional infinitely rigid box : energy eigenvalues, eigenfunctions and their normalization; Quantum dot as an example; Quantum mechanical scattering and tunneling in one dimension : across a step potential & across a rectangular potential barrier.
	CC-IX: Elements of Modern Physics Lab	32221402	As Listed in Syllabus.
March	CC-IX: Elements of Modern Physics	32221402	**Lasers:** Metastable states. Spontaneous and Stimulated emissions. Optical Pumping and Population Inversion. **Unit 5:** Size and structure of atomic nucleus and its relation with

			atomic weight; Impossibility of an electron being in the nucleus as a consequence of the uncertainty principle. Nature of nuclear force, N-Z graph, Liquid Drop model: semi-empirical mass formula and binding energy.
	CC: Elements of Modern Physics Lab	32221402	As Listed in Syllabus.
April	CC-IX: Elements of Modern Physics	32221402	**Radioactivity:** stability of the nucleus; Law of radioactive decay; Mean life and half-life; Alpha decay; Beta decay: energy released, spectrum and Pauli's prediction of neutrino; Gamma ray emission, energy-momentum conservation: electron-positron pair creation by gamma photons in the vicinity of a nucleus. Fission and fusion: mass deficit, relativity and generation of energy; Fission : nature of fragments and emission of neutrons. Fusion and thermonuclear reactions driving stellar evolution (brief qualitative discussions).
	CC-IX: Elements of Modern Physics Lab	32221402	As Listed in Syllabus.

Semester : VI **(Jan 2023 – May 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
Jan			
	CC-XIII: Electromagnetic theory Lab	32221601	As Listed in Syllabus.
Feb			
	CC-XIII: Electromagnetic theory Lab	32221601	As Listed in Syllabus.
March			
	CC-XIII: Electromagnetic theory Lab	32221601	As Listed in Syllabus.
April			
	CC-XIII: Electromagnetic theory Lab	32221601	As Listed in Syllabus.

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SEMESTER WISE TEACHING PLAN
Even Semester, 2022 – 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Narender Kumar **Department:** Physics

Semester : II (March 2023 – July 2023)

Month	Course	Paper Code	Topics Covered

Semester : IV (Jan 2023 – May 2023)

Month	Course	Paper Code	Topics Covered

Semester : VI (Jan 2023 – May 2023)

Month	Course	Paper Code	Topics Covered
Jan	CC-XIII: Electro-magnetic Theory (Th)	32221601	**Maxwell Equations:** Review of Maxwell's equations. Displacement Current. Vector and Scalar Potentials. Gauge Transformations: Lorentz and Coulomb Gauge. Poynting's Theorem and Poynting's Vector. Electromagnetic (em) Energy Density. Physical Concept of Electromagnetic Field Energy Density. Momentum Density and Angular Momentum Density. **EM Wave Propagation in Unbounded Media:** Plane em waves through vacuum and isotropic dielectric medium: transverse nature, refractive index, dielectric constant, wave impedance. Plane em waves through conducting medium: relaxation time, skin depth, attenuation constant.
	CC: StatMech (Lab)	32221602	Problems as Listed in Syllabus.
Feb	CC-XIII: Electro-magnetic Theory (Th)	32221601	Wave propagation through dilute plasma: electrical conductivity of ionized gases, plasma frequency, refractive index, skin depth. **EM Waves in Bounded Media:** Boundary conditions at a plane interface between two media. Reflection & Refraction of plane em waves at plane interface between two dielectric media-Laws of Reflection & Refraction. Fresnel's Formulae for perpendicular & parallel polarization, Brewster's law. Reflection & Transmission coefficients. Total internal reflection, evanescent waves. Metallic reflection (normal Incidence).
	CC: StatMech (Lab)	32221602	Problems as Listed in Syllabus.

March	CC-XIII: Electro-magnetic Theory (Th)	32221601	**Polarization of EM Waves:** Propagation of em waves in an Anisotropic Media. Symmetric Nature of Dielectric Tensor. Fresnel's Formula. Uniaxial and Biaxial Crystals. Light Propagation in Uniaxial Crystal. Double Refraction. Polarization by Double Refraction. Description of Linear, Circular and Elliptical Polarization. Nicol Prism. Ordinary & extraordinary refractive indices. Production & detection of Plane, Circularly and Elliptically Polarized Light. Phase Retardation Plates: Quarter-Wave and Half-Wave Plates. Babinet Compensator and its Uses. Analysis of Polarized Light.
	CC: StatMech (Lab)	32221602	Problems as Listed in Syllabus.
April	CC-XIII: Electro-magnetic Theory (Th)	32221601	**Rotatory Polarization:** Optical Rotation. Biot's Laws for Rotatory Polarization. Fresnel's Theory of optical rotation. Calculation of angle of rotation. Experimental verification of Fresnel's theory. Specific rotation. Laurent's half-shade polarimeter. **Wave Guides:** Planar optical wave guides. Planar dielectric wave guide ($-d/2 < x < d/2$). Condition of continuity at interface. Phase shift on total reflection. Eigenvalue equations. Phase and group velocity of guided waves. Field energy and Power transmission. **Optical Fibres:** Acceptance Angle, Numerical Aperture. Step and Graded Index fibres (Definitions Only). Single and Multiple Mode Fibres.
	CC: StatMech (Lab)	32221602	Experiments as Listed in Syllabus.

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Name of the Faculty: Prof. Anant Pandey **Department:** Physics

Semester : II **(Mar 2023 – July 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
March			
	DSC 5 : Electricity and Magnetism Theory		Electric Field and Electric Potential for continuous charge distributions. Electric field due to a line charge, surface charge and volume charge.
	DSC 5 : Electricity and Magnetism Lab		As Listed in Syllabus.
April			
	DSC 5 : Electricity and Magnetism Theory		Divergence of electric field using Dirac Delta function, Curl of electric field, electric field vector as negative gradient of scalar potential, Ambiguities of Electric potential, Differential and integral forms of Gauss's Law, Applications of Gauss's Law to various charge distributions with spherical, cylindrical and planar symmetries. Boundary Value Problems in Electrostatics: Formulation of Laplace's and Poisson equations, First and second uniqueness theorems, Solutions of Laplace and Poisson equations in one dimension using spherical and cylindrical coordinate systems and solutions in three-dimensional using Cartesian coordinates applying separable variable technique, Electrostatic boundary conditions for conductors and capacitors.
	DSC 5 : Electricity and Magnetism Lab		As Listed in Syllabus.

Semester : IV **(Jan 2023 – May 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
January	CC-X: Analog Systems and Applications Lab	32221403	As Listed in Syllabus.
February	CC-X: Analog	32221403	As Listed in Syllabus.

	Systems and Applications Lab		
March	CC-X: Analog Systems and Applications Lab	32221403	As Listed in Syllabus.
April	CC-X: Analog Systems and Applications Lab	32221403	As Listed in Syllabus.

Semester : VI **(Jan 2023 – May 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**

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Name of the Faculty: Dr. Garima Saxena **Department: Physics**

Semester: II (March 2023 – July2023)

Month	**Course**	**Paper Code**	**Topics Covered**
March	DSC-4: Mathematical Physics II (Theory)		**Orthogonal Curvilinear Coordinates:** Orthogonal Curvilinear Coordinates. Scale factors, element of area and volume in spherical and cylindrical coordinate Systems.
	DSC-4: Mathematical Physics II (Lab)		**Root Finding:** Bisection, Newton Raphson and Secant methods for solving roots of equations. Convergence analysis. Recommended List of Programs (At least two): a) Determine the depth up to which a spherical homogeneous object of given radius and density will sink into a fluid of given density. b) Solve transcendental equations like $\alpha = \tan(\alpha)$. c) To approximate nth root of a number up to a given number of significant digits.
	SEC: IT Skills and Data Analysis-1		Concept of datasets (Variables, Observations). Different types of variables (Quantitative and Qualitative).
April	DSC-4: Mathematical Physics II (Theory)		Derivation of Gradient, Divergence, Curl and Laplacian in Spherical and Cylindrical Coordinate Systems Fourier Series: Periodic functions, Orthogonality of sine and cosine functions, Convergence of Fourier series and Dirichlet Conditions (Statement only), Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients, Even and odd functions and their Fourier expansions (Fourier Cosine Series and Fourier Sine Series), Parseval's Identity.
	DSC-4: Mathematical Physics II (Lab)		Least Square fitting (At least one): Algorithm for least square fitting and its relation to maximum likelihood for normally distributed data. a) Make a function for least square fitting, use it for fitting given data (x, y) and estimate the parameters a, b as well as uncertainties in the parameters for the following cases. i. Linear, ii. Power law, iii. Exponential b) Weighted least square fitting of given data (x, y) with known error/uncertainty-values using user defined function. Generating and plotting of a function using series representation (At least one): a) To approximate the elementary functions (e.g. exp(x), sin(x), cos(x), ln(1+x), etc.) by a finite number of terms of Taylor's series and discuss the truncation error. To plot the function as well the nth partial sum of its series for various values of n on the same graph and visualise the convergence of series. b) Generating and plotting Legendre Polynomials using series expansion and verifying recurrence relation.
	SEC: IT Skills and Data		Distinction between primary and secondary sources of data. Basic idea of using questionnaire to collect primary data for analysis.

	Analysis-1		

Semester: IV (Jan 2023 – May 2023)

Month	Course	Paper Code	Topics Covered
Jan	CC-VIII: Mathematical Physics III (Lab)	32221401	Programs/Experiments as listed in the syllabus.
Feb	CC-VIII: Mathematical Physics III (Lab)	32221401	Programs/Experiments as listed in the syllabus.
March	CC-VIII: Mathematical Physics III (Lab)	32221401	Programs/Experiments as listed in the syllabus.
April	CC-VIII: Mathematical Physics III (Lab)	32221401	Programs/Experiments as listed in the syllabus.

Semester: VI (Jan 2023 – May 2023)

Month	Course	Paper Code	Topics Covered
Jan.	DSE: Advanced Mathematical Physics-II (Th)	32227625	Advanced Probability Theory: Fundamental Probability Theorems. Conditional Probability, Bayes' Theorem, Repeated Trials.
Feb.	DSE: Advanced Mathematical Physics-II (Th)	32227625	Binomial and Multinomial expansions. Random Variables and probability distributions, Expectation and Variance.
March	DSE: Advanced Mathematical Physics-II (Th)	32227625	Special Probability distributions: The binomial distribution, The poisson distribution.
April	DSE: Advanced Mathematical Physics-II (Th)	32227625	Continuous distribution: The Gaussian (or normal) distribution, The principle of least squares.

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SEMESTER WISE TEACHING PLAN
Even Semester , 2022 – 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Ram Lal Awasthi **Department: Physics**

Semester II (Mar 2023 – July 2023)

Month	Course	Paper Code	Topics Covered

Semester IV (Jan 2023 – May 2023)

Month	Course	Paper Code	Topics Covered

Semester : VI (Jan 2023 – May 2023)

Month	Course	Paper Code	Topics Covered
Jan	DSE: AQM (Theory)	32227630	Motivation for developing a linear vector space formulation to describe quantum phenomena. Brief review of linear vector spaces with ket notation: Inner product, norm, Schwarz inequality, linear operators, eigenvalue and eigenvector, adjoint of a linear operator, Hermitian or self-adjoint operators and their properties. Orthonormal basis – discrete and continuous. Unitary operators and change of basis. Completeness, closure relation. The position and momentum representations, Relation between wave functions and kets, given an orthonormal basis. Bra vectors.
	CC-XIV: Statistical Mechanics (Theory)	32221602	**Classical Statistics:** Macrostates and Microstates, Phase Space, Entropy and Thermodynamic Probability, Maxwell-Boltzmann Distribution Law, Partition Function, Thermodynamic Functions of an Ideal Gas, Classical Entropy Expression, Gibbs Paradox, Sackur-Tetrode equation. Saha's Ionization Formula. Law of Equipartition of Energy (with proof)–Applications to Specific Heat of gas and solids and its Limitations.
	CC: StatMech (Lab)	32221602	As Listed in Syllabus.
Feb	DSE: AQM (Theory)	32227630	Representation of quantum states by ket vectors and physical observables by Hermitian operators. Unitary time-evolution and Schrodinger equation in ket notation. Measurement of an observable. Expectation value of an observable. Canonical commutation relations - commutators of position and momentum, commutators for orbital and spin angular momentum. **Compatible and incompatible observables:** Commutator brackets and their properties, the uncertainty principle. Ehrenfest's theorem and the classical limit. Correspondence of unitary evolution of ket vectors with Schrodinger wave mechanics.

	CC-XIV: Statistical Mechanics (Theory)	32221602	Thermodynamic Functions of a Finite Level System, Negative Temperature. **Bose-Einstein Statistics:** B-E Distribution law, Thermodynamic functions of a strongly degenerate Bose Gas, Bose Einstein condensation, properties of liquid He (qualitative description), Radiation as a photon gas and Thermodynamic functions of photon gas. Bose derivation of Planck's law.
	CC: StatMech (Lab)	32221602	As Listed in Syllabus.
March	DSE: AQM (Theory)	32227630	**Identical particles:** direct product of kets, symmetric and antisymmetric states. Systems of identical non-interacting particles. Bosons and Fermions; Pauli's exclusion principle. Dynamics of two-level systems (e.g. electron in an external magnetic field). Entangled states, Qubits; One dimensional Harmonic oscillator, its energy eigen values and eigen states using ladder operators.
	CC-XIV: Statistical Mechanics (Theory)	32221602	**Theory of Radiation:** Properties of Thermal Radiation and Radiation Pressure. Blackbody Radiation and its spectral distribution. Kirchhoff law. Stefan-Boltzmann law and its Thermodynamic proof. Wien's Displacement law. Wien's Distribution Law. Rayleigh-Jean's Law. Ultraviolet Catastrophe. Planck's Quantum Postulates. Planck's Law of Blackbody Radiation Deduction of Wien's Distribution Law, Rayleigh-Jeans Law, Stefan-Boltzmann Law and Wien's Displacement law from Planck's law.
	CC: StatMech (Lab)	32221602	As Listed in Syllabus.
April	DSE: AQM (Theory)	32227630	**Angular Momentum Algebra:** Addition of orbital and spin angular momenta, J = L+S. Commutators of Jx, Jy and Jz; Ladder operators, recursion relations, eigenvalues and eigenstates of total angular momentum operators. Composite system of two spin-half particles – singlet and triplet states. Clebsch-Gordan coefficients: formalism, computation (up to $l \oplus 1/2$).
	CC-XIV: Statistical Mechanics (Theory)	32221602	**Fermi – Dirac Statistics:** Fermi-Dirac Distribution Law, Thermodynamic functions of a Completely and strongly degenerate Fermi Gas, Fermi Energy Electron gas in a Metal, Specific Heat of Metals, Relativistic Fermi gas, White Dwarf Stars, Chandrasekhar Mass Limit.
	CC: StatMech (Lab)	32221602	As Listed in Syllabus.

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Name of the Faculty: Dr. Chandrabhan Dohare **Department: Physics**

Semester: II (March 2023 – July 2023)

Semester: IV (Jan 2023 – May 2023)

Month	Course	Paper Code	Topics Covered
Jan	CC-X: Analog Systems and Applications Theory	32221403	**Semiconductor Diodes:** P and N type semiconductors. Energy Level Diagram. Conductivity and Mobility, Concept of Drift velocity. PN Junction Fabrication (Simple Idea). Barrier Formation in PN Junction Diode. Derivation for Barrier Potential, Barrier Width and Current for abrupt Junction. Current Flow Mechanism in Forward and Reverse Biased Diode. **Operational Amplifiers (Black Box approach):** Characteristics of an Ideal and Practical Op-Amp. (IC 741) Open-loop and Closed-loop Gain. Frequency Response. CMRR. Slew Rate and concept of Virtual ground.
	CC-X: Analog Systems and Applications Lab	32221403	Experiments as listed in the syllabus.
	SEC: Computational Physics Skills (Theory)	32223902	**Introduction:** Importance of computers in Physics, paradigm for solving physics problems for solution. Usage of linux as an Editor. **Algorithms and Flowcharts:** Algorithm: Definition, properties and development. Flowchart: Concept of flowchart, symbols, guidelines, types. Examples: Cartesian to Spherical Polar Coordinates, Roots of Quadratic Equation, Sum of two matrices, Sum and Product of a finite series, calculation of sin(x) as a series, algorithm for plotting (1) lissajous figures and (2) trajectory of a projectile thrown at an angle with the horizontal. **Scientific Programming:** Some fundamental Linux Commands (Internal and External commands). Development of FORTRAN, Basic elements of FORTRAN: Character Set, Constants and their types, Variables and their types, Keywords, Variable Declaration and concept of instruction and program. Operators: Arithmetic, Relational, Logical and Assignment Operators. Expressions: Arithmetic, Relational, Logical, Character and Assignment Expressions. Fortran Statements: I/O Statements (unformatted/formatted), Executable and Non-Executable Statements, Layout of Fortran Program, Format of writing Program and concept of coding, Initialization and Replacement Logic. Examples from physics problems.
	SEC: Computational	32223902	Experiments as followed in theory and listed in the syllabus.

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	Physics Skills (Lab)		
	CC-X: Analog Systems and Applications Theory	32221403	**Two-terminal Devices and their Applications:** (1) Rectifier Diode: Half-wave Rectifiers. Centre-tapped and Bridge Full-wave Rectifiers, Calculation of Ripple Factor and Rectification Efficiency, C-filter, (2) Zener Diode and Voltage Regulation. Principle, structure and characteristics of (1) LED, (2) Photodiode and (3) Solar Cell, Qualitative idea of Schottky diode and Tunnel diode. **Applications of Op-Amps:** (1) Inverting and non-inverting amplifiers, (2) Adder, (3) Subtractor, (4) Differentiator, (5) Integrator, (6) Log amplifier, (7) Comparator and Zero crossing detector (8) Wein bridge oscillator.
	CC-X: Analog Systems and Applications Lab	32221403	Experiments as listed in the syllabus.
Feb	SEC: Computational Physics Skills (Theory)	32223902	**Control Statements:** Types of Logic(Sequential, Selection, Repetition), Branching Statements (Logical IF, Arithmetic IF, Block IF, Nested Block IF, SELECT CASE and ELSE IF Ladder statements), Looping Statements (DO- CONTINUE, DO-ENDDO, DO-WHILE, Implied and Nested DO Loops), Jumping Statements (Unconditional GOTO, Computed GOTO, Assigned GOTO) Subscripted Variables (Arrays: Types of Arrays, DIMENSION Statement, Reading and Writing Arrays), Functions and Subroutines (Arithmetic Statement Function, Function Subprogram and Subroutine), RETURN, CALL, COMMON and EQUIVALENCE Statements), Structure, Disk I/O Statements, open a file, writing in a file, reading from a file. Examples from physics problems Programming: 1. Exercises on syntax on usage of FORTRAN 2. Usage of GUI Windows, Linux Commands, familiarity with DOS commands and working in an editor to write sources codes in FORTRAN. 3. To print out all natural even/ odd numbers between given limits. 4. To find maximum, minimum and range of a given set of numbers. 5. Calculating Euler number using exp(x) series evaluated at x=1
	SEC: Computational Physics Skills (Lab)	32223902	Experiments as followed in theory and listed in the syllabus.
March	CC-X: Analog Systems and Applications (Theory)	32221403	**Bipolar Junction transistors:** n-p-n and p-n-p Transistors. I-V characteristics of CB and CE Configurations. Active, Cutoff and Saturation Regions. Current gains α and β. Relations between α and β. Load Line analysis of Transistors. DC Load line and Q point. Physical Mechanism of Current Flow. **Conversion:** D/A Resistive networks (Weighted and R-2R Ladder). Accuracy and Resolution.
	CC-X: Analog Systems and Applications Lab	32221403	Experiments as listed in the syllabus.
	SEC: Computational Physics Skills (Theory)	32223902	Scientific word processing: Introduction to LaTeX: TeX/LaTeX word processor, preparing a basic LaTeX file, Document classes, Preparing an input file for LaTeX, Compiling LaTeX File, LaTeX tags for creating different environments, Defining LaTeX commands and

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			environments, Changing the type style, Symbols from other languages. Equation representation: Formulae and equations, Figures and other floating bodies, Lining in columns- Tabbing and tabular environment, Generating table of contents, bibliography and citation, Making an index and glossary, List making environments, Fonts, Picture environment and colors, errors.
	SEC: Computational Physics Skills (Lab)	32223902	Experiments as followed in theory and listed in the syllabus.
April	CC-X: Analog Systems and Applications (Theory)	32221403	**Amplifiers:** Transistor Biasing and Stabilization Circuits. Fixed Bias and Voltage Divider Bias. Transistor as 2-port Network.h-parameter Equivalent Circuit. Analysis of a single-stage CE amplifier using Hybrid Model. Input and Output Impedance. Current, Voltage and Power Gains. Classification of Class A, B & C Amplifiers. **Coupled Amplifier:** Two stage RC-coupled amplifier and its frequency response.
	CC-X: Analog Systems and Applications (Lab)	32221403	Experiments as listed in the syllabus.
	SEC: Computational Physics Skills (Theory)	32223902	Visualization: Introduction to graphical analysis and its limitations. Introduction to Gnuplot.importance of visualization of computational and computational data, basic Gnuplot commands: simple plots, plotting data from a file, saving and exporting, multiple data sets per file, physics with Gnuplot (equations, building functions, user defined variables and functions), Understanding data with Gnuplot.
	SEC: Computational Physics Skills (Lab)	32223902	Experiments as followed in theory and listed in the syllabus.

Semester: IV (Jan 2023 – May 2023)

Month	**Course**	**Paper Code**	**Topics Covered**
Jan			
	DSE: Advanced Mathematical Physics-II (Theory)	32227625	Variable Calculus: Variational Principle, Euler's Equation and its Application to Simple Problems. Geodesics. Calculus of Variations. Concept of Lagrangian: Generalized coordinates.
Feb	DSE: Advanced Mathematical Physics-II (Theory)	32227625	Definition of canonical moment, Euler-Lagrange's Equations of Motion and its Applications to Simple Problems (e.g., Simple Pendulum and One dimensional harmonic oscillator). Definition of Canonical Momenta.
Mar	DSE: Advanced Mathematical Physics-II (Theory)	32227625	Canonical Pair of Variables. Definition of Generalized Force: Definition of Hamiltonian (Legendre Transformation).
April	DSE: Advanced Mathematical Physics-II	32227625	Hamilton's Principle. Poisson Brackets and their properties. Lagrange Brackets and their properties.

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Name of the Faculty: Dr. Surendra Kumar **Department: Physics**

Semester: II (Mar 2023 – July 2023)

Month	Course	Paper Code	Topics Covered
March	GE - 11 : Electricity and Magnetism		Network Analysis: Superposition, Thevenin, Norton theorems and their applications in DC and AC circuits with more than one source, Maximum Power Transfer theorem for AC circuits.
	DSC-5 : Electricity and Magnetism Lab		As listed in the syllabus.
	GE - 11 : Electricity and Magnetism (Lab)		As listed in the syllabus.
April	GE - 11 : Electricity and Magnetism		Mathematical Preliminaries: Concept of scalar and vector fields, Gradient of a scalar field, Divergence and curl of vector fields and their physical interpretation, Conservative forces and Laplace and Poisson equations. Concept of a line integral of a scalar and vector field, surface integral of vector fields and volume integral, Gauss's theorem, Stoke's theorem. Electric Field and Electric Potential for continuous charge distributions: Electric field due to a line charge, surface charge and volume charge distributions.
	DSC-5 : Electricity and Magnetism Lab		As listed in the syllabus.
	GE - 11 : Electricity and Magnetism (Lab)		As listed in the syllabus.

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Semester: IV (Jan 2023 – May 2023)

Month	Course	Paper Code	Topics Covered
Jan			
	CC-IX: Elements of Modern Physics	32221402	As listed in the syllabus.
	GE - 16 : Thermal Physics (Lab)	32225415	As listed in the syllabus.
Feb			
	CC-IX: Elements of Modern Physics	32221402	As listed in the syllabus.
	GE - 16 : Thermal Physics (Lab)	32225415	As listed in the syllabus.
March			
	CC-IX: Elements of Modern Physics	32221402	As listed in the syllabus.
	GE - 16 : Thermal Physics (Lab)	32225415	As listed in the syllabus.
April			
	CC-IX: Elements of Modern Physics	32221402	As listed in the syllabus.
	GE - 16 : Thermal Physics (Lab)	32225415	As listed in the syllabus.

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SEMESTER WISE TEACHING PLAN
Even Semester (2022 – 2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Surendra Kumar Yadav **Department:** Physics

Semester: II **(March 2023 – July 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
March			
	VAC : Digital Empowerment		Digital inclusion and Digital Empowerment (5 Weeks) • Needs and challenges • Vision of Digital India: DigiLocker, E-Hospitals, e-Pathshala,
	DSC 6: Electrical Circuit Analysis (Lab)		As listed in the syllabus.
April			
	VAC : Digital Empowerment		• Vision of Digital India: BHIM, e-Kranti (Electronic Delivery of Services}, e-Health Campaigns. • Public utility portals of Govt. of India such as RTI, Health, Finance, Income Tax filing, Education.
	DSC 6: Electrical Circuit Analysis (Lab)		As listed in the syllabus.

Semester IV **(Jan 2023 – May 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**

Semester VI **(Jan 2023 – May 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
Jan	DSE: Advanced Mathematical Physics-II (Th)	32227625	Group Theory: Review of sets, Mapping and Binary Operations, Relation, Types of Relations. Groups: Elementary properties of groups, uniqueness of solution.
Feb	DSE: Advanced Mathematical Physics-II (Th)	32227625	Subgroup, Centre of a group, Co-sets of a subgroup, cyclic group, Permutation/Transformation.
March	DSE: Advanced Mathematical	32227625	Homomorphism and Isomorphism of group. Normal and conjugate subgroups, Completeness and Kernel.

	Physics-II (Th)		
April	DSE: Advanced Mathematical Physics-II (Th)	32227625	Some special groups : SO(2), SO(3), SU(2), SU(3).

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SEMESTER WISE TEACHING PLAN
Even Semester , 2022 - 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sanjeev Kumar **Department:** Physics

Semester: II **(Mar 2023 – July 2023)**

Month	Course	Paper Code	Topics Covered
March	VAC : Digital Empowerment		Digital inclusion and Digital Empowerment (5 Weeks) • Needs and challenges • Vision of Digital India: DigiLocker, E-Hospitals, e-Pathshala,
	DSC 6: Electrical Circuit Analysis (Theory)		**Circuit Analysis:** Ideal voltage source, real voltage source, current source, Kirchhoff's current law, Kirchhoff's voltage law.
	DSC 6: Electrical Circuit Analysis (Lab)		As listed in the syllabus.
April			
	VAC : Digital Empowerment		• Vision of Digital India: BHIM, e-Kranti (Electronic Delivery of Services}, e-Health Campaigns. • Public utility portals of Govt. of India such as RTI, Health, Finance, Income Tax filing, Education.
	DSC 6: Electrical Circuit Analysis (Theory)		Node analysis, mesh analysis, Star and Delta conversion. **DC Transient Analysis:** Charging and discharging with initial charge in RC circuit, RL circuit with initial current, time constant, RL and RC Circuits with source.
	DSC 6: Electrical Circuit Analysis (Lab)		As listed in the syllabus.

Semester – IV (Jan – May 2023)

Month	Course	Paper Code	Topics Covered

Semester – VI (Jan – May 2023)

Month	Course	Paper Code	Topics Covered
Jan	DSE: Advanced Quantum Mechanics (Th)	32227630	**Variational Method:** Basic idea, application to some simple systems like rigid box problem and one dimensional simple harmonic oscillator.
Feb	DSE: Advanced Quantum Mechanics (Th)	32227630	Estimation of Hydrogen atom ground state energy using variational method.
March	DSE: Advanced	32227630	Helium atom ground state energy.

	Quantum Mechanics (Th)		
April	DSE: Advanced Quantum Mechanics (Th)	32227630	Entangled states, Qubits.

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SEMESTER WISE TEACHING PLAN
Even Semester , 2022 – 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Raghvendra Vemuri **Department:** Physics

Semester: II **(Mar 2023 – July 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
May	DSC – 5 : Electricity and Magnetism (Theory)		Special techniques for the calculation of Potential and Field: The Method of Images is applied to a system of a point charge and finite continuous charge distribution (line charge and surface charge) in the presence of (i) a plane infinite sheet maintained at constant potential, and (ii) a sphere maintained at constant potential. **Electric Field in Matter:** Polarization in matter, Bound charges and their physical interpretation, field inside a dielectric, Displacement vector D, Gauss' law in the presence of dielectrics, Boundary conditions for D, Linear dielectrics, electric susceptibility and dielectric constant, Idea of complex dielectric constant due to varying electric field, Boundary value problems with linear dielectrics.
	DSC – 5 : Electricity and Magnetism (Practical)		As listed in the syllabus.
	DSC – 6 : Electrical Circuit Analysis (Practical)		As listed in the syllabus.
	SEC : IT Skills and Data Analysis - I		How to construct a questionnaire, Concept of frequency distribution: cumulative and relative frequencies, Introduction to spreadsheet. Tabular and graphical presentation of data: data tables, frequency curve, histogram, bar graphs, pie charts (through the use of spreadsheets)
June	DSC – 5 : Electricity and Magnetism (Theory)		**Magnetic Field:** Divergence and curl of magnetic field B, Magnetic field due to arbitrary current distribution using Biot-Savart law, Integral and differential forms of Ampere's law, Vector potential and its ambiguities, Coulomb gauge and possibility of making vector potential divergence less, Vector potential due to line, surface and volume currents using Poisson equations for components of vector potential. **Magnetic Properties of Matter:** Magnetization vector, Bound currents, Magnetic intensity, differential and integral form of Ampere's Law in the presence of magnetised materials, Magnetic susceptibility and

			permeability of diamagnetic, paramagnetic and ferromagnetic materials. **Electrodynamics:** Faraday's law, Lenz's law, Inductance and electromotive force, Ohm's law, Energy stored in a magnetic field, Continuity equation, Displacement current and
	DSC – 5 : Electricity and Magnetism (Practical)		As listed in the syllabus.
	DSC – 6 : Electrical Circuit Analysis (Practical)		As listed in the syllabus.
	SEC : IT Skills and Data Analysis - I		Measures of central tendency: mean, median, mode, Examples of situations where it is appropriate to use the mean, median and mode as a measure of central tendency, Weighted mean, Measures of dispersion: range, variance, standard deviation, Quartiles, deciles and percentiles, Visualize the measures of central tendency and dispersion through frequency curve and histogram, Skewness and kurtosis.
July	DSC – 5 : Electricity and Magnetism (Theory)		Displacement current and displacement current density, Basic introduction to Maxwell's equations in electromagnetism.
	DSC – 5 : Electricity and Magnetism (Practical)		As listed in the syllabus.
	DSC – 6 : Electrical Circuit Analysis (Practical)		As listed in the syllabus.
	SEC : IT Skills and Data Analysis - I		Normal curve and its basic properties : visual representation of population characteristics (height, weight, IQ etc.)

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Semester IV (Jan – May 2023)

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SEMESTER WISE TEACHING PLAN
Even Semester , 2022 – 2023
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Name of the Faculty: Dr. Vivek Panwar **Department:** Physics
Semester: II **(Mar 2023 – July 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
May	DSC – 4 : Mathematical Physics 2 (Theory)		Recap: Even and odd functions and their Fourier expansions (Fourier Cosine Series and Fourier Sine Series), Parseval's Identity. Frobenius Method and series solution of Differential Equations: Singular Points of Second Order Linear Differential Equations and their importance, Frobenius method for finding series solution and its applications.
	DSC – 4 : Mathematical Physics 2 (Practical)		Interpolation: Concept of Interpolation, Lagrange form of interpolating polynomial, Error estimation, optimal points for interpolation. Recommended List of Programs (At least one) (a) Write program to determine the unique polynomial of a degree n that agrees with a given set of (n+1) data points (xi,yi) and use this polynomial to find the value of y at a value of x not included in the data. (b) Generate a tabulated data containing a given number of values (xi, f(xi)) of a function f(x) and use it to interpolate at a value of x not used in table. Numerical Integration: Newton Cotes Integration methods (Trapezoidal and Simpson rules) for definite integrals, derivation of composite formulae for these methods and discussion of error estimation. Recommended List of Programs (At least three) (a) Given acceleration at equidistant time values, calculate position and velocity and plot them. (b) Use integral definition of ln(x) to compute and plot ln(x) in a given range. Use trapezoidal, Simpson and Gauss quadrature methods and compare the results. (c) Verify the rate of convergence of the composite Trapezoidal and Simpson methods by approximating the value of a given definite integral. (d) Verify the Orthogonality of Legendre Polynomials. (e) To evaluate the Fourier coefficients of a given periodic function (e.g. square wave, triangle wave, half wave and full wave rectifier etc.). To plot the function as well the nth partial sum of its series for various values of n on the same graph and visualise the convergence of series. Study of Gibbs phenomenon. (f) Verify the properties of Dirac Delta function using its representation as a sequence of functions.
	DSC – 5 : Electricity		As Listed in the syllabus.

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	and Magnetism (Practical)		
	VAC : Digital empowerment		Communication and Collaboration in the Cyberspace: • Electronic Communication: electronic mail, biogs, social media • Collaborative Digital platforms • Tools/platforms for online learning • Collaboration using file sharing, messaging, video conferencing. Towards Safe and Secure Cyberspace • Online security and privacy
June	DSC – 4 : Mathematical Physics 2 (Theory)		Legendre Differential Equations and its solution. Properties of Legendre Polynomials: Rodrigues Formula, Generating Function, Orthogonality of Legendre Polynomials, Simple recurrence relations, Expansion of function in a series of Legendre Polynomials. **Some Special Integrals:** Beta and Gamma Functions and relation between them.
	DSC – 4 : Mathematical Physics 2 (Practical)		Numerical Integration: Newton Cotes Integration methods (Trapezoidal and Simpson rules) for definite integrals, derivation of composite formulae for these methods and discussion of error estimation. Recommended List of Programs (At least three) (a) Given acceleration at equidistant time values, calculate position and velocity and plot them. (b) Use integral definition of ln(x) to compute and plot ln(x) in a given range. Use trapezoidal, Simpson and Gauss quadrature methods and compare the results. (c) Verify the rate of convergence of the composite Trapezoidal and Simpson methods by approximating the value of a given definite integral. (d) Verify the Orthogonality of Legendre Polynomials. (e) To evaluate the Fourier coefficients of a given periodic function (e.g. square wave, triangle wave, half wave and full wave rectifier etc.). To plot the function as well the nth partial sum of its series for various values of n on the same graph and visualise the convergence of series. Study of Gibbs phenomenon. (f) Verify the properties of Dirac Delta function using its representation as a sequence of functions. Numerical Solutions of Ordinary Differential Equations: Euler, modified Euler, and Runge-Kutta (RK) second and fourth order methods for solving first order initial value problems (IVP) and system of first order differential equations, Recommended List of Programs (At least two) (a) Solve given first order differential equation (Initial value problems) numerically using Euler RK2 and RK4 methods and apply to the following physics problems: i. Radioactive decay ii. Current in RC and LR circuits with

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			DC source iii. Newton's law of cooling (b) Write a code to compare the errors in various numerical methods learnt by solving a first order IVP with known solution. (c) Solve a system of first order IVP numerically using Euler and Runge-Kutta methods. Application to physical problems.
	DSC – 5 : Electricity and Magnetism (Practical)		As Listed in the syllabus.
	VAC : Digital empowerment		• Threats in the digital world: Data breach and Cyber Attacks • Blockchain Technology • Security Initiatives by the Govt of India. **Ethical Issues in Digital World** • Netiquettes • Ethics in digital communication
July	DSC – 4 : Mathematical Physics 2 (Theory)		Expression of Integrals in terms of Gamma and Beta Functions.
	DSC – 4 : Mathematical Physics 2 (Practical)		Numerical Solutions of Ordinary Differential Equations: Euler, modified Euler, and Runge-Kutta (RK) second and fourth order methods for solving first order initial value problems (IVP) and system of first order differential equations, Recommended List of Programs (At least two) (a) Solve given first order differential equation (Initial value problems) numerically using Euler RK2 and RK4 methods and apply to the following physics problems: i. Radioactive decay ii. Current in RC and LR circuits with DC source iii. Newton's law of cooling (b) Write a code to compare the errors in various numerical methods learnt by solving a first order IVP with known solution. (c) Solve a system of first order IVP numerically using Euler and Runge-Kutta methods. Application to physical problems.
	DSC – 5 : Electricity and Magnetism (Practical)		As Listed in the syllabus.
	VAC : Digital empowerment		• Ethics in Cyberspace

Semester – IV (Jan – May 2023)

Month	**Course**	**Paper Code**	**Topics Covered**

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SEMESTER WISE TEACHING PLAN
Even Semester , 2022 – 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. M. Anil Kumar **Department:** Physics

Semester: II (**March 2023 – July 2023)**

Month	**Course**	**Paper Code**	**Topics Covered**
May	GE – 11 : Electricity and Magnetism (Theory)		Electric field vector as negative gradient of scalar potential, Ambiguities of Electric potential, Differential and integral forms of Gauss's Law, Applications of Gauss's Law to various charge distributions with spherical, cylindrical and planar symmetries, Uniqueness theorem. **Electric Field in Matter:** Bound charges due to polarization and their physical interpretation. Average electric field inside a dielectric, Electric Field in spherical and cylindrical cavities of a dielectric, Displacement vector and its boundary conditions, Gauss' Law in the presence of dielectrics, Linear dielectrics: electric susceptibility and dielectric constant, Boundary value problems with linear dielectrics.
	DSC – 4 : Mathematica l Physics 2 (Practical)		As Listed in the syllabus.
	GE – 11 : Electricity and Magnetism (Practical)		As Listed in the syllabus.
	SEC : IT Skills and data Analysis - I		How to construct a questionnaire, Concept of frequency distribution: cumulative and relative frequencies, Introduction to spreadsheet. Tabular and graphical presentation of data: data tables, frequency curve, histogram, bar graphs, pie charts (through the use of spreadsheets).
June	GE – 11 : Electricity and Magnetism (Theory)		**Magnetic Field:** Divergence and curl of magnetic field B, Magnetic field due to arbitrary current distribution using Biot-Savart law, Ampere's law, integral and differential forms of Ampere's Law, Vector potential and its ambiguities. **Magnetic Properties of Matter:** Magnetization vector, Bound Currents, Magnetic Intensity, Differential and integral form of Ampere's Law in the presence of magnetised materials, Magnetic susceptibility and

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			permeability, Ferromagnetism (Hund's rule) Electrodynamics: Faraday's Law, Lenz's Law, inductance, Electromotive force, Ohm's Law, Energy and integral stored forms in a Magnetic Field.
	DSC – 4 : Mathematical Physics 2 (Practical)		As Listed in the syllabus.
	GE – 11 : Electricity and Magnetism (Practical)		As Listed in the syllabus.
	SEC : IT Skills and data Analysis - I		Measures of central tendency: mean, median, mode, Examples of situations where it is appropriate to use the mean, median and mode asa measure of central tendency, Weighted mean, Measures of dispersion: range, variance, standard deviation, Quartiles, deciles and percentiles, Visualize the measures of central tendency and dispersion through frequency curve and histogram, Skewness and kurtosis.
July	GE – 11 : Electricity and Magnetism (Theory)		Charge conservation, Continuity equations, Differential and integral forms of Maxwell's Equations in matter.
	DSC – 4 : Mathematical Physics 2 (Practical)		As Listed in the syllabus.
	GE – 11 : Electricity and Magnetism (Practical)		As Listed in the syllabus.
	SEC : IT Skills and data Analysis - I		Normal curve and its basic properties : visual representation of population characteristics (height, weight, IQ etc.)

Semester: IV (Jan 2023 – May 2023)

Month	**Course**	**Paper Code**	**Topics Covered**

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Even Semester, 2022 – 2023
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Name of the Faculty: Dr. Main Pal **Department: Physics**

Semester : II (Mar 2023 – July 2023)

Month	Course	Paper Code	Topics Covered
May	DSE: ECA (Theory)	DSC-6	AC Circuit Analysis: Sinusoidal voltage and current, Definitions of instantaneous, peak to peak, root mean square and average values, form factor and peak factor (for half-rectified and full-rectified sinusoidal wave, rectangular wave and triangular wave), Voltage-current relationship in resistor, inductor and capacitor, phasor, complex impedance, power in AC circuits.
	DSC: ECA (Lab)	DSC-6	As Listed in Syllabus.
	DSC:E & M (lab)	DSC-5	As Listed in Syllabus.
	GE: E & M (lab)	GE-II	As Listed in Syllabus.
June	DSE: ECA (Theory)	DSC-6	Sinusoidal circuit analysis for RL, RC and RLC Circuits, resonance in series and parallel RLC Circuits (Frequency Response, Bandwidth, Quality Factor), selectivity, application of resonant circuits. Network Theorems: Principal of duality, Superposition theorem, Thevenin theorem, Norton theorem, Their applications in DC and AC circuits with more than one source. Maximum Power Transfer theorem for AC circuits, Reciprocity Theorem, Millman's Theorem, Tellegen's theorem.
	DSC: ECA (Lab)	DSC-6	As Listed in Syllabus.
	DSC: E & M (lab)	DSC-5	As Listed in Syllabus.
	GE: E & M (lab)	GE-II	As Listed in Syllabus.
July	DSC: ECA (Theory)	DSC-6	Two Port Networks: Impedance (Z) Parameters, Admittance (Y) Parameters, Transmission Parameters, Impedance matching.
	DSC: ECA (lab)	DSC-6	As Listed in Syllabus.
	DSC: E&M (Lab)	DSC-5	As Listed in Syllabus.

	GE: E&M (Lab)	GE-II	As Listed in Syllabus.

Semester : IV(Jan 2023 – May 2023)

Semester : VI(Jan 2023 – May 2023)

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Namita Pandey
Department: Political Science

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Semester: B.A. (H) Sem **IV**

Paper Name: - Global Politics

Month		Topics	Course	Paper Code/Name
JANUARY		**Course objective:** This course introduces students to the key debates on the meaning and nature of globalization by addressing its political, economic, social, cultural and technological dimensions. In keeping with the most important debates within the globalization discourse, it imparts an understanding of the working of the world economy, its anchors and resistances offered by global social movements while analyzing the changing nature of relationship between the state and trans-national actors and networks. The course also offers insights into key contemporary global issues such as the proliferation of nuclear weapons, ecological issues, international terrorism, and human security before concluding with a debate on the phenomenon of global governance. **Unit 1** Globalization: Conceptions and Perspectives a. Understanding Globalization and its Alternative Perspectives b. Political Debates on Sovereignty and Territoriality c. Global Economy: Its Significance and Anchors of Global Political Economy: IMF, World Bank, WTO, TNCs d. Cultural and Technological Dimension e. Global Resistances (Global Social Movements and NGOs) • J. Baylis, Smith and Owens 70 (eds.), Globalization of World Politics: An Introduction to International Relations. • Joseph E. Stiglitz (2018), Globalization and Its Discontents	B.A.(H) Sem IV	Global Politics

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		Revisited: Anti- Globalization in the Era of Trump. • G. Ritzer, (2010) Globalization: A Basic Text,. M. Strager, (2009) Globalization: A Very Short Introduction • R. Keohane and J. Nye Jr, (2000) 'Globalization: What's New? What's Not? (And So What?)', in Foreign Policy. • D. Held and A. McGrew (eds.) The Global Trans-Formations Reader • T. Cohn, (2009) Global Political Economy: Theory and Practice • P. Hirst, G. Thompson and S. Bromley, (2009) Globalization in Question		
	Practicals			
	Tutorials			

FEBRUARY		**Unit 2** Contemporary Global Issues a. Ecological Issues: Historical Overview of International Environmental Agreements, Climate Change, Global Commons Debate b. Proliferation of Nuclear Weapons c. International Terrorism: Non-State Actors and State Terrorism; Post 9/11 developments • J. Baylis, Smith and Owens 70 (eds.), Globalization of World Politics: An Introduction to International Relations.	B.A.(H) Sem IV	Global Politics
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		
MARCH	**Theory:**	d. Migration (3 lectures) e. Human Security **Unit 3** Globalization: Power and Resource Governance • J. Baylis, Smith and Owens 70 (eds.), Globalization of World	B.A.(H) Sem IV	Global Politics

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		Politics: An Introduction to International Relations. • D. Held and A. McGrew (eds.), (2002) Global Transformations Reader: Politics, Economics and Culture • J. Rosenau, (1992) 'Governance, Order, and Change in World Politics', in J. Rosenau, and E. Czempiel (eds.) Governance without Government: Order and Change in World Politics		
	Practicals:			
	Tutorials:	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		

APRIL	**Theory:**	**Unit 3** Globalization: Power and Resource Governance • D. Held and A. McGrew (eds.), (2002) Global Transformations Reader: Politics, Economics and Culture • J. Rosenau, (1992) 'Governance, Order, and Change in World Politics', in J. Rosenau, and E. Czempiel (eds.) Governance without Government: Order and Change in World Politics • Discussion - Previous year questions - Individual doubts - Assignments ➢ Revision	B.A.(H) Sem IV	Global Politics
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		

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Semester: B.A.(P) Sem **IV**

Paper Name: - Introduction to International Relations

Month		Topics	Course	Paper Code/Name
JANUARY		• **Course objective:** Course is designed to give students a sense of some important theoretical approaches to understand international relations; a history from 1945 onwards to the present; and an outline of the evolution of Indian foreign policy since independence and its possible future trajectory. **Unit 1** Early Debates in International Relations (a) Idealism vs Realism (b) Liberalism to Neo Liberal Institutionalism • Carr, E.H. (2004) International Relations between the Two World Wars: 1919-1939. • Baylis, J. and Smith, S. (eds.) The Globalization of World Politics. An Introduction to International Relations. • Hobsbawm, E. (1995) Age of Extreme: The Short Twentieth Century, 1914—1991. • R. Jackson and G. Sorensen, (2007) Introduction to International Relations: Theories and Approaches • M. Nicholson, International Relations: A Concise Introduction	B.A.(P) Sem IV	Introduction to International Relations
	Practicals			
	Tutorials			

FEBRUARY		(c) Structural Approaches: World Systems Approach (Immanuel Wallerstein) and Dependency School (Andre Gunder Frank) (d) Feminist Perspective (J. Ann Tickner) • Baylis, J. and Smith, S. (eds.) The Globalization of World Politics. An Introduction to International Relations. • Hobsbawm, E. (1995) Age of Extreme: The Short Twentieth Century, 1914—1991. • R. Jackson and G. Sorensen, (2007) Introduction to International Relations: Theories and Approaches • M. Nicholson, International Relations: A Concise Introduction • Tickner, J. A. (2001) Gendering World Politics: Issues and Approaches in the Post-Cold War Era. Columbia University Press.	B.A.(P) Sem IV	Introduction to International Relations
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		
MARCH	**Theory:**	(c) Post-Cold War Era and Emerging Centers of Power • Baylis, J. and Smith, S. (eds.) The Globalization of World Politics. An Introduction to International Relations. • R. Jackson and G. Sorensen, (2007) Introduction to International Relations: Theories and Approaches • M. Nicholson, International Relations: A Concise Introduction	B.A.(P) Sem IV	Introduction to International Relations
	Practicals:			

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	Tutorials:	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		

APRIL	**Theory:**	• Discussion - Previous year questions - Individual doubts - Assignments ➢ Revision	B.A.(P) Sem IV	Introduction to International Relations
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Arup Singh
Department: Political Science

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Semester: B.A. (H) VI Sem

Paper Name: Indian Political Thought-II (5 classes per week)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Course Objective:** The objective is to study general themes that have been produced by thinkers from varied social and temporal contexts. **Unit 1** Introduction to Modern Indian Political Thought **Unit 2** Rammohan Roy: Rights **Unit 3** Pandita Ramabai: Gender • V. Mehta and T. Pantham (eds.), (2006) 'A Thematic Introduction to Political Ideas in Modern India: Thematic Explorations, History of Science, Philosophy and Culture in Indian civilization' • T. Pantham, (1986) 'The Socio-Religious Thought of Rammohan Roy', in Th. Panthom and K. Deutsch, (eds.) Political Thought in Modern India. • P. Ramabai, (2000) 'Woman's Place in Religion and Society', in M. Kosambi (ed.), Pandita Ramabai Through her Own Words: Selected Works	BA(H), Sem VI	12321602/Indian Political Thought-II
	Practicals			
	Tutorials			
FEBRUARY	**Theory:**	**Unit 4** Vivekananda: Ideal Society **Unit 5** Gandhi: Swaraj **Unit 6** Ambedkar: Social Justice • Sen, (2003) 'Swami Vivekananda on History and Society', in Swami Vivekananda • Parel, (ed.), (2002) 'Introduction', in	BA(H), Sem VI	12321602/ Indian Political Thought-II

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		Gandhi, freedom and Self Rule • P. Chatterjee, (2005) 'Ambedkar and the Troubled times of Citizenship', in V. Mehta and Th. Pantham (eds.), Political ideas in modern India: Thematic Explorations. • Annihilation of Caste, Dr. B. R. Ambedkar		
	Practicals:			
	Tutorials:			

MARCH	**Theory:**	**Unit 7** Tagore: Critique of Nationalism **Unit 8** Iqbal: Community **Unit 9** Savarkar: Hindutva • R. Tagore, (1994) 'The Nation', S. Das (ed.), The English Writings of Rabindranath Tagore • M. Iqbal, (1991) 'Speeches and Statements', in S. Hay (ed.), Sources of Indian Tradition • J. Sharma, (2003) Hindutva: Exploring the Idea of Hindu Nationalism	BA(H), Sem VI	12321602/ Indian Political Thought-II
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		
APRIL	**Theory:**	**Unit 10** Nehru: Secularism **Unit 11** Lohia: Socialism • R. Pillai, (1986) 'Political thought of Jawaharlal Nehru', in Th. Pantham, and K. Deutsch (eds.), Political Thought in Modem India • S. Sinha, (2010) 'Lohia's Socialism: An underdog's perspective'. • Kumar, (2010) 'Understanding Lohia's Political Sociology: Intersectionality of Caste, Class, Gender and Language Issue' • Discussion • Previous year questions	BA(H), Sem VI	12321602/ Indian Political Thought-II

		• Individual doubts • Assignments • Revision		
	Practicals:			
	Tutorials:	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		

Name of the Paper: **Colonialism and Nationalism in India (DSE) VI SEM (5 classes/week Shared with Dr. Haokam Vaiphei)**

Month		Topic	Course	Paper Code/Name
January	**Theory**	Introduction to Communalism	Honours DSE Paper	**12327905**
	Practicals			
	Tutorials			
February	**Theory**	Factors Responsible for Communalism		
	Practicals			
	Tutorials			
	Assignment			
March	**Theory**	Divide and Rule		
	Practicals			
	Tutorials			
	Internal Test			
April	**Theory**	Two-Nation Theory		
	Practicals			
	Tutorials			
May	**Theory**			
	Practicals			
	Tutorials			

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Name of the Faculty: **Dr. Haokam Vaiphei**
Department: **Political Science**
Even Semester: **II/IV/VI**

Name of the Paper**: Policy and Administration in India, IV SEM (5 classes/week)**

Month		Topic	Course	Paper Code/Name
January	**Theory**	Public Policy: Definition, Characteristics and Models Public Policy Process in India	Honours Core Paper	**12321402_OC**
	Practicals			
	Tutorials	Public Policy Issues		
February	**Theory**	Decentralization Meaning, significance and approaches and types Local Self Governance: Rural and Urban		
	Practicals			
	Tutorials	Public Policy Issues		
	Group Project	Write a research paper on any topic related to current public policy issues in Delhi		
March	**Theory**	Budget Concept and Significance of Budget Budget Cycle in India Various Approaches and Types of Budgeting		
	Practicals			
	Tutorials	Budget 2023-24		
	Test	Public Policy Process		
April	**Theory**	Citizen and Administration Interface Public Service Delivery Redressal of Public Grievances: RTI, Lokpal, Citizens' Charter, and E-Governance Social Welfare Administration-Education: Right to Education, Health: National Health Mission, Food: Right to Food Security		
	Practicals			
	Tutorials			
May	**Theory**	Social Welfare Administration Concept and Approaches of Social Welfare Social Welfare Policies: Employment: MNREGA Lokpal		
	Practicals			
	Tutorials			

Name of the Paper: **Colonialism and Nationalism in India (DSE) VI SEM (4 classes/week Shared with Dr. Arup Singh)**

Month		Topic	Course	Paper Code/Name
January	**Theory**	**Colonialism & Nationalism:** a. Main perspectives on colonialism: Liberalism, Marxism, Postcolonialism b. Approaches to the study of nationalism in India: Nationalist, Imperialist, Marxist, and Subaltern interpretations	Honours DSE Paper	**12327905**
	Practicals			
	Tutorials	Subaltern Approach		
February	**Theory**	**Colonial Rule in India and its Impact:** a. Constitutional developments and the colonial state b. **The colonial Ideology of civilizing mission**: Utilitarians and Missionaries c. Impact on agriculture, land relations, industry, and ecology		
	Practicals			
	Tutorials	Civilizing Mission		
	Assignment	Write a Project on any one topic: 1. Your Idea of India 2. Freedom Movements, Fighters, etc of Northeast India. 3. Stories of Freedom Fighters or Movements that are not recorded in mainstream history. Minimum word limit: 1500 Words.		
March	**Theory**	**Reform and Resistance:** a. The 1857 rebellion b. Major social and religious movements c. Education and the Rise of the new middle class		
	Practicals			
	Tutorials	Rise of the Middle Class		
	Internal Test	Approaches to the Study of Nationalism in India		
April	**Theory**	**Nationalist Politics and Expansion of its Social Base** a. Phases of the Nationalist Movement: Liberal constitutionalist, Swadeshi and the Radicals, Formation of the Muslim League b. Gandhi and mass mobilization: Non-cooperation, Civil Disobedience, and Quit India Movements c. Socialist alternatives: Congress socialists, Communists d. Communalism in Indian Politics e. The two-nation theory, negotiations over partition Social Movements a. The Women's Question: participation in the national movement and its impact b. The Caste Question: anti-Brahmanical Politics c. Peasant, Tribals, and Workers movements		
	Practicals			
	Tutorials			
May	**Theory**			

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	Practicals			
	Tutorials			

Name of the Paper: Perspectives on Public Administration **II SEM (3 classes/week & 1 Tutorial)**

Month		Topic	Course	Paper Code/Name
March	**Theory**	Public Administration as a Discipline a. Ancient Roots of Public Administration: Perspectives from India (Kautilya's Arthashastra) b. Modern PA: An overview of the theoretical journey	Honours DSE Paper	**12327905**
	Practicals			
	Tutorials	Public Policy Issues in Delhi		
April	**Theory**	Principles of Public Administration Theorising Public Administration		
	Practicals			
	Tutorials			
	Assignment	Group Project on Public Policy Issues in Delhi		
May	**Theory**	Mainstream/ Traditional Theoretical Perspectives a. Scientific management (F.W.Taylor) b. Ideal-type bureaucracy (Max Weber) c. Human relations theory (Elton Mayo) d. Rational decision-making (Herbert Simon) e. Ecological approach (Fred Riggs)		
	Practicals			
	Tutorials	Relevance of administrative theory		
June	**Theory**	Contemporary Theoretical Perspectives a. New Public Management, New Public Service b. Multiple Perspectives on Governance: Good Governance, Collaborative Governance, Network Governance, Digital Governance		
	Practicals			
	Tutorials	New Public Service		
	Test			
July	**Theory**	Gender and Governance b. Gender sensitivity and participation in the administration		
	Practicals			
	Tutorials	Women empowerment		

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SEMESTER WISE TEACHING PLAN (2022-2023)
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Name of the Faculty: Ashish Kumar Thakur
Department: Political Science

Semester: B.A. (H) Sem **IV**

Paper Name: - Political Processes and Institutions in Comparative Perspective

Month		Topics	Course	Paper Code/Name
JANUARY		**Course objective:** To train students in the application of comparative methods to the study of politics. Course aims to introduce undergraduate students to some of the range of issues, literature, and methods that cover comparative politics. **Unit 1** Forms of Government: a) Unitary and Federal System b) Regime Types: Democratic, Authoritarian, Populism and Totalitarian • Michael G. Roskin, Robert L. Cord, James A. Medeiros and Walter S. Johnes "Regimes". • Hannah Arendt (1951) Origin of Totalitarianism • K. Newton, and J. Deth, (2010 Foundations of Comparative Politics: Democracies of the Modern World.	B.A.(H) Sem IV	Political Processes and Institutions in Comparative Perspective
	Practicals			
	Tutorials			

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FEBRUARY		**Unit 2 Electoral Systems** • K. Newton, and J. Deth, (2010 Foundations of Comparative Politics: Democracies of the Modern World. • A. Heywood, (2002) 'Representation, Electoral and Voting', in Politics. • A. Evans, (2009) 'Elections Systems', in J. Bara and M. Pennington, (eds.) Comparative politics.	B.A.(H) Sem IV	Political Processes and Institutions in Comparative Perspective
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		
MARCH	**Theory:**	**Unit 4 Nation-state** • W. O'Conner, (1994) 'A Nation is a Nation, is a Sate, is a Ethnic Group, is a …', in J. Hutchinson and A. Smith, (eds.) Nationalism. • K. Newton, and J. Deth, (2010) Foundations of Comparative Politics: Democracies of the Modern World. • A. Heywood, (2002), 'The State', in Politics. **Unit 5 Gendering Comparative Politics: Institutions and Processes** • Baldez Lisa (2010). Symposium. The Gender Lacuna in Comparative Politics. • Beckwith Karen (2010). Comparative Politics and the Logics of a Comparative Politics of Gender. • John Rod Martin and Hague Harrop McCormick (2019). "Political Participation".	B.A.(H) Sem IV	Political Processes and Institutions in Comparative Perspective
	Practicals:			

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	Tutorials:	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		

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APRIL	**Theory:**	**Unit 5 Gendering Comparative Politics: Institutions and Processes** • Baldez Lisa (2010). Symposium. The Gender Lacuna in Comparative Politics. • Beckwith Karen (2010). Comparative Politics and the Logics of a Comparative Politics of Gender. • John Rod Martin and Hague Harrop McCormick (2019). "Political Participation". **Unit 3 Parties and Party Systems** • Cole, (2011) 'Comparative Political Parties: Systems and Organizations', in J. Ishiyama, and M. Breuning, (eds) 21st Century Political Science: A Reference Book. • Heywood, (2002) 'Parties and Party System', in Politics. • Geovanni Sartori (1976). Parties and Party Systems: A Framework for Analysis. • Discussion - Previous year questions - Individual doubts - Assignments ➢ Revision	B.A.(H) Sem IV	Political Processes and Institutions in Comparative Perspective
	Practicals:			

	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.

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Semester: B.A. (P) Sem **IV**

Paper Name: - Political Processes and Institutions in Comparative Perspective

Month		Topics	Course	Paper Code/Name
JANUARY		• **Course objective:** Course is designed to give students a sense of some important theoretical approaches to understand international relations; a history from 1945 onwards to the present; and an outline of the evolution of Indian foreign policy since independence and its possible future trajectory. **Unit 2: Post War International Relations and the emergence of Cold War** (a) Second World War & Origins Cold War • Carr, E.H. (2004) International Relations between the Two World Wars: 1919-1939. • Taylor, A.J.P. (1961) The Origins of the Second World War. • Carrtuthers, S.L. (2008) 'International History, 1900-1945' in Baylis, J. and Smith, S. (eds.) The Globalization of World Politics. An Introduction to International Relations. • Hobsbawm, E. (1995) Age of Extreme: The Short Twentieth Century, 1914—1991. • R. Jackson and G. Sorensen, (2007) Introduction to International Relations: Theories and Approaches • M. Nicholson, International Relations: A Concise Introduction	B.A.(P) Sem IV	Introduction to International Relations
	Practical			
	Tutorials			

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FEBRUARY		(b) Phases of Cold World War: First Cold War, Rise and Fall of Détente, Second Cold War • Carr, E.H. (2004) International Relations between the Two World Wars: 1919-1939. • Taylor, A.J.P. (1961) The Origins of the Second World War. • Carrtuthers, S.L. (2008) 'International History, 1900-1945' in Baylis, J. and Smith, S. (eds.) The Globalization of World Politics. An Introduction to International Relations. • Hobsbawm, E. (1995) Age of Extreme: The Short Twentieth Century, 1914—1991. • R. Jackson and G. Sorensen, (2007) Introduction to International Relations: Theories and Approaches • M. Nicholson, International Relations: A Concise Introduction	B.A.(P) Sem IV	Introduction to International Relations
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		
MARCH	**Theory:**	End of Cold War and Collapse of the Soviet Union (c) Post-Cold War Era and Emerging Centers of Power • Carr, E.H. (2004) International Relations between the Two World Wars: 1919-1939. • Taylor, A.J.P. (1961) The Origins of the Second World War. • Carrtuthers, S.L. (2008) 'International History, 1900-1945' in Baylis, J. and Smith, S. (eds.) The Globalization of World Politics. An Introduction to International Relations. • Hobsbawm, E. (1995) Age of Extreme: The Short Twentieth Century, 1914—1991. • R. Jackson and G. Sorensen, (2007) Introduction to International Relations: Theories	B.A.(P) Sem IV	Introduction to International Relations

		and Approaches • M. Nicholson, International Relations: A Concise Introduction		
	Practicals:			
	Tutorials:	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		

APRIL	**Theory:**	• Discussion - Previous year questions - Individual doubts - Assignments ➢ Revision	B.A.(P) Sem IV	Introduction to International Relations
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		

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Name of the Faculty: **Dr. Latika Bishnoi**
Department: **Political Science**
Even Semester: **IV/VI**

Name of the Paper**: Modern Political Philosophy, VI SEM (5 classes/week)**

Month		Topic	Course	Paper Code/Name
January	**Theory**	**Modernity and its discourse** Kant on Modernity, Faith on Reason, Understanding Nature's Man	Honours Core Discipline Paper- 13	**232602**
	Practicals			
	Tutorials			
February	**Theory**	**Romantics** **Jean Jacques Rousseau** Critique of Modernity; State of Nature, Origin of inequality, General Will, direct democracy, self-government **Mary Wollstonecraft** Women and paternalism; critique of Rousseau's idea of education and proposed educational reforms; legal rights and representation		
	Practicals			
	Tutorials			
	Group Project			
March	**Theory**	**Liberal Socialist** **John Stuart Mill** Mill's hedonistic principle of utility; difference with other utilitarian, Liberty, suffrage and change in democracy; rights of minorities; subjection of women		
	Practicals			
	Tutorials			
	Test			
April	**Theory**	**Radicals** **Hegel**- Ethical Life, Civil Society, State. **Marx**- Difference with other kinds of materialism; Concepts of values; critique of Capitalism; inevitability of class struggle; establishment of utopian society	Honours Core Discipline Paper- 13	
	Practicals			
	Tutorials			
May	**Theory**			
	Practicals			
	Tutorials			

Name of the Paper: **Gandhi and the Contemporary World, GE Paper, IV SEM (5 classes/ week)**

Month		Topic	Course	Paper Code/Name
January	**Theory**	**Gandhi on Modern Civilization and Ethics of Development** Conception of Modern Civilisation and Alternative Modernity	Honours GE-4 Paper	**12325904_OC**
	Practicals			
	Tutorials			
February	**Theory**	**Gandhi on Modern Civilization and Ethics of Development** Conception of Modern Civilisation and Alternative Modernity		
	Practicals			
	Tutorials			
	Assignment			
March	**Theory**	**Gandhi on Modern Civilization and Ethics of Development** Critique of Development: Narmada Bachao Andolan		
	Practicals			
	Tutorials			
	Internal Test			
April	**Theory**	**Gandhi and the Contemporary World** **Gandhian Thought: Theory and Action** Theory of Satyagraha Satyagraha in Action Peasant Satyagraha: Kheda and Idea of Trusteeship Temple Entry and Critique of Caste Social Harmony: 1947 and Communal Unity. **Gandhi's Legacy** Tolerance- Anti- Racism Movements (Anti-Aparthied and Martin Luther King) The Pacifist Movement Women's Movements	Honours GE-4 Paper	
	Practicals			
	Tutorials			
May	**Theory**			
	Practicals			
	Tutorials			

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Name of the Faculty: **Dr. Durgesh Kumar**
Department: **Political Science**
Even Semester: **II and VI**

Name of the Paper**: Indian Government and Politics, II SEM (3 classes/week shared with Dr. Ravuru Narasaiah)**

Month		Topic	Course	Paper Code/Name
March	**Theory**	Indian Constitution: Basic Features, Debates on Fundamental Rights, Directive Principles and Federalism	Program Core Paper	**DSC-2A**
	Practicals			
	Tutorials			
April	**Theory**	State Formation and Nation Building: Integration of Princely States, Linguistic Reorganisation of States		
	Practicals			
	Tutorials			
April	**Theory**	Political Institutions at the Centre and State levels: Parliament, Judiciary, Prime Minister, Chief Minister		
	Practicals			
	Tutorials			
May	**Theory**	Social Structure and Political Power: Caste, Class, Gender Religion and Politics: Debates on Secularism and Communalism Political Parties and Party Systems		
	Practicals			
	Tutorials			
June and July	**Theory**	Development Strategies: Planned Economy, Neo-Liberal Restructuring Social Movements: Workers, Farmers, Environmental, and Women's Movements The Nature of State in India: Developmental, Welfare, Regulatory		
	Practicals			
	Tutorials			

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Name of the Paper: **Introduction to the Indian Constitution, (GE-2) II SEM (3 classes/week)**

Month		Topic	Course	Paper Code/Name
March - April	**Theory**	Constitutional Antecedents and the Making of the Constitution of India Basic Features of Indian Constitution	Honours GE Paper	
	Practicals			
	Tutorials			
May	**Theory**	Fundamental Rights		
	Practicals			
	Tutorials	Fundamental Rights		
	Assignment	Write a Project on any one topic given by teacher		
June	**Theory**	Obligations of State and Duties of Citizens Organs of Constitutional governance - Legislature, Executive and Judiciary		
	Practicals			
	Tutorials			
	Internal Test	Introduction to the Indian Constitution		
July	**Theory**	Centre-State Relations and Decentralization		
	Practicals			
	Tutorials			

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: **Dr. Ravuru Narasaiah**
Department: **Political Science**
Even Semester: **II/IV/VI**

Name of the Paper**: Methods and Approaches in Comparative Political Analysis**, **II SEM (3 classes/week & 1 Tutorial)**

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Month		Topic	Course	Paper Code/Name
March	**Theory**	**Understanding Comparative Politics** a. Nature and scope b. Why Compare c. Understanding Comparative Method How to compare countries: large n, small n, single countries studies d. Going beyond Euro-centrism	Honours Core Paper	DSC-5
	Practicals			
	Tutorials	Research Methods in Comparative Politics		
April	**Theory**	**Approaches to Studying Comparative Politics** a. Political System, b. Structural functional analysis **Approaches to Studying Comparative Politics: Traditional and Neo-Institutionalisms** a. Historical Institutionalism b. Rational Choice Theory c. Sociological Institutionalism		
	Practicals			
	Tutorials	Research Methods in Comparative Politics		
	Group Project			
May	**Theory**	**Approaches to Studying Comparative Politics: Political Culture** a. Civic Culture (Sydney Verba) b. Subculture (Dennis Kavanagh) c. Hegemony (Antonio Gramsci) d. Post materialism (Ronald Inglehart) e. Social capital (R. Putnam)		
	Practicals			
	Tutorials	Case Study Method		
	Test			
June	**Theory**	**Approaches to Studying Comparative Politics: Political Economy** a. Underdevelopment, b. Dependency c. Modernisation, d. World Systems Theory		
	Practicals			
	Tutorials	Survey Method		
July	**Theory**	**Gendering Comparative Politics** a. The Gender Lacuna in Comparative Politics b. Political Representation: Women in Government and Politics		
	Practicals			
	Tutorials			

Name of the Paper: **Democracy and Governance (DSE) VI SEM (4 classes/week)**

Month		Topic	Course	Paper Code/Name
January	**Theory**	**Structure and Process of Governance** Indian Model of Democracy, Parliament, Party Politics and Electoral behaviour, Federalism,	B.A. Program DSE Paper	62327602
	Practicals			
	Tutorials			
February	**Theory**	**Structure and Process of Governance** The Supreme Court and Judicial Activism, Units of Local Governance (Grassroots Democracy) Political Communication - Nature, Forms and Importance		
	Practicals			
	Tutorials			
	Assignment			
March	**Theory**	**Ideas, Interests and Institutions in Public Policy** Contextual Orientation of Policy Design b. Institutions of Policy Making		
	Practicals			
	Tutorials			
	Internal Test			
April	**Theory**	**Ideas, Interests and Institutions in Public Policy** c. Regulatory Institutions: SEBI, TRAI, Competition Commission of India, Corporate Affairs d. Lobbying Institutions: Chambers of Commerce and Industries, Trade Unions, Farmers Associations, etc. **Contemporary Political Economy of Development in India** Policy Debates over Models of Development in India, Recent trends of Liberalization of Indian Economy in different sectors, E-governance		
	Practicals			
	Tutorials			
May	**Theory**	**Dynamics of Civil Society** New Social Movements and Various interests, Role of NGO's, Understanding the political significance of Media and Popular Culture		
	Practicals			
	Tutorials			

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Name of the Paper: **Indian Government and Politics- II SEM (1 class/week and 1 Tutorial) (Sharing Paper with Dr. Durgesh Kumar (2 Classes/Week)**

Month		Topic	Course	Paper Code/Name
March	**Theory**		B.A. Program DSE Paper	
	Practicals			
	Tutorials			
April	**Theory**	Political institutions at the Centre and State levels: Parliament, Judiciary, Prime Minister, Chief Minister		
	Practicals			
	Tutorials			
	Assignment			
May	**Theory**	Social movements: workers, farmers, environmental, and women's movements		
	Practicals			
	Tutorials			
June	**Theory**	The nature of state in India: developmental, welfare, regulatory		
	Practicals			
	Tutorials			
	Test			
July	**Theory**			
	Practicals			
	Tutorials			

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Name of the Paper: **Introduction to International Relations- IV SEM (2 classes/week) (Sharing Paper with Dr. Namita Pandey)**

Month		Topic	Course	Paper Code/Name
January	**Theory**		B.A. Program	62324407
	Practicals			
	Tutorials			
February	**Theory**			
	Practicals			
	Tutorials			
	Assignment			
March	**Theory**			
	Practicals			
	Tutorials			
	Internal Test			
April	**Theory**	**India's Foreign Policy** (a) Basic Determinants (Historical, Geo-Political, Economic, Domestic and Strategic) (b) India's Policy of Non-alignment		
	Practicals			
	Tutorials			
May	**Theory**	**India's Foreign Policy** (c) India: An Emerging Power		
	Practicals			
	Tutorials			

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SEMESTER WISE TEACHING PLAN

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2023

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Name of the Faculty: PREETI SINGH **Department: Political Science**

Semester: II/IV/VI

January – May 2023

CITIZENSHIP IN A GLOBALIZED WORLD: BA POL SCIENCE HONRS. (VI SEM)

		Topics	Course	Paper
January	**Theory**	Classical Conception of Citizenship	Citizenship in a Globalized World	
	Tutorials	Classical Conception of Citizenship		
	Assignment		-	-

		Topics	Course	Paper
February	**Theory**	The Evolution of Citizenship and the Modern State	Citizenship in Globalized World	
	Tutorials	The Evolution of Citizenship and the Modern State	-	-
	Assignment	-	-	-

		Topics	Course	Paper
March	**Theory**	Citizenship and Diversity Citizenship beyond the nation state: Globalization and Global Justice	Citizenship in Globalized World	
	Tutorials	Citizenship and Diversity Citizenship beyond the nation state: Globalization and Global Justice	-	-
	Assignment	-	-	-

		Topics	Course	Paper
April	**Theory**	Global Justice The idea of cosmopolitan citizenship	Citizenship in Globalized World	
	Tutorials	The idea of Cosmopolitan citizenship	-	-
	Assignment	-	-	-

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INDIAN FOREIGN POLICY BA PROG. (II SEMESTER)

		Topics	Course	Paper
APRIL	**Theory**	Indian Foreign Policy: Meaning, Determinants and Evolution	Indian Foreign Policy	
	Tutorials	Indian Foreign Policy: Meaning, Determinants and Evolution	-	-
	Assignment	Write up on topics from unit 3 and 4 of the course	-	-
		Topics	Course	Paper
MAY	**Theory**	Changing Relations with the Global Powers from Cold War to Post Cold War era	Indian Foreign Policy	
	Tutorials	Changing Relations with the Global Powers from Cold War to Post Cold War era	-	-
	Assignment	Presentation on India's relations with US, Russia and China	-	-

		Topics	Course	Paper
June	**Theory**	India and the Neighbourhood: Issues and Challenges , India in the contemporary multipolar world	Indian Foreign Policy	
	Tutorials	India and the Neighbourhood: Issues and Challenges, India in the contemporary multipolar world	-	-
	Assignment	Presentation on India and neighbourhood relation	-	-

POLITICAL LEADERSHIP AND COMMUNICATION (SEC COURSE)

		Topics	Course	Paper
APRIL	**Theory**	Explaining Political Communication, Exploring Leadership	Political Leadership and Communication	
	PRACTICAL	Activity on Methods of Communication		

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	Assignment	Write up on one of the famous leaders	-	-
		Topics	Course	Paper
MAY	**Theory**	Expanding Political Communication and Leadership: Research Issues and Challenges	Political Leadership and Communication	
	PRACTICAL	Preparing Manifestoes for elections		
	Assignment		-	-
		Topics	Course	Paper
JUNE	**Theory**	Extending Political Communication and Leadership: Research Issues and Challenges, Executing Political Communication and Leadership: Empirical and	Political Leadership and Communication	

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		Professional Implications		
	PRACTICAL	Examine exit poll and opinion poll of one of the elections to understand the results of Pol communication and Leadership		
	Assignment	Write up on similar topic area	-	-

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

2023

Name of the Faculty: YERUVA LAKSHMIREDDY

Department: Political Science

Semester: II/ March – July 2023

Name of the Paper: Constitutional Values and Duties (VAC-II)

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		Topics	Course	Paper
March	**Theory**	Introduction to the Indian Constitution and its Preamble Objectives and Resolutions of the Drafting committee to prepare Constitution Features of Indian Constitution	VAC- II	
	Tutorials	Preamble to the Constitution of India, 1950	-	-
April	**Theory**	Concepts such as Federal Republic, Rule of Law, Separation of Powers, Sovereignty, Socialism, Democracy, Secularism and Sarva Dharma Sama Bhava	-	
	Tutorials	Philosophical Thoughts of Indian Constitution	-	-
	Assignment1	Features of Indian Constitution in present scenario with suitable examples		

May	**Theory**	Idea of Justice: Social, Political and Economical Liberty: Thought, Expression, Belief, Faith, Worship Equality: Equality before law & equal application of laws Fraternity: Dignity, Unity and Integrity	-	
	Tutorials	The Constitution of India, Articles - 14, 19, 21	-	-
	Test			
June	**Theory**	**Fundamental Duties** Reflecting on the ancient Indian notions of righteousness and duty consciousness Fundamental Duties- Article 51A [(a)-(k)]	-	
	Tutorials	Fundamental Duties [Ar. 51 A (a)- (k)]	-	-
	Practicals	Students are required to conduct a survey (minimum 25 respondents) on assessing the awareness of the constitutional duties amongst the citizens.		
	Assignment2	Students may share their experiences on Fundamental Duties and Values in the form of a Report.	-	-
July	**Theory**	Fundamental Rights and Legal status of Fundamental Duties - Judicial approach	-	
	Tutorials	Fundamental Rights Articles (12-35)	-	-

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Name of the Faculty: YERUVA LAKSHMIREDDY

Department: Political Science

Semester: BA H (SEC Paper) IV SEM

January – May 2023

Name of the Paper: Your Laws and Your Rights

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Month		Topic	Course	Paper Code/Name
January	**Theory**	Rule of Law and the Criminal Justice System in India, Laws Relating to Criminal Justice Administration in India	Honours SEC Paper	**12323901_OC**
	Practicals			
	Tutorials	Criminal Justice, How to file a complaint, First Information Report (FIR) , Detention, arrest and bail		
	Assignment1	Given Four Topics to students. They have to write one topic as assignment. a)Rule of Law and Criminal Justice b) Examine the steps of CrPC 1973 and IPC 1860 c) Discuss the rules and steps of Arrest Versus Warrant d) Examine the nature and conditions of Bail in India		
February	**Theory**	**Gender:** The protection of women against domestic violence, rape and sexual harassment **Caste:** Laws abolishing untouchability and providing protection against atrocities **Class:** laws concerning minimum wages		
	Practicals			
	Tutorials	Domestic Violence and laws related to Gender, Caste and Class		
March	**Theory**	**Disability** and equality of participation and opportunity Empowerment of Access to Information and Rights of the Consumer **Livelihood:** Rural employment guarantee schemes		
	Practicals			
	Tutorials	Issues related to disability and the question of equality, How to file RTI, consumer rights		
	Test	Rule of Law and Importance in a democracy RTI Act 2005(attempt any one question)		

April	**Theory**	Redistribution , recognition of Traditional rights of forest dwellers and the issues of women's property rights Introduction of how to Access the Identification Documents and Social Security Schemes		
	Practicals			
	Tutorials	Explaining the various Identity Cards and Social Security Schemes in India		
May	**Theory**	Procedure of the Identification Cards like Aadhar, PAN, Passport, Driving License, Ration Card etc.		
	Practicals			
	Tutorials	How to apply and procedure of the Identification Cards		
	Assignment2	Write the Procedure of applying any one document of Identification Card in India		

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Name of the Faculty: YERUVA LAKSHMIREDDY
Department: Political Science
Semester: BA Program Political Science (SEC Paper) IV SEM
January – May 2023
Name of the Paper: Public Opinion and Survey Research

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Month		Topic	Course BA Prog Political Science SEC Paper	Paper Code/Name
January	**Theory**	**Introduction to the course** Definition and characteristics of public opinion, conceptions and characteristics, debates about its role in a democratic political system, uses for opinion poll		
	Tutorials	How to measure the Public opinion with illustrations		
February	**Theory**	**Measuring Public Opinion with Surveys: Representation and sampling** a. What is sampling? Why do we need to sample? Sample design. b. Sampling error and non-response c. Types of sampling: Non random sampling (quota, purposive and snowball sampling); random sampling: simple and stratified		
	Tutorials	How to select the samples in practical data sets and methods for sampling		
	Assignment1	Explain the Sampling methods for Political Science		
March	**Theory**	**Survey Research** a. Interviewing: Interview techniques pitfalls, different types of and forms of interview b. Questionnaire: Question wording; fairness and clarity.		

		Quantitative Data Analysis a. Introduction to quantitative data analysis b. Basic concepts: correlational research, causation and prediction, descriptive and inferential Statistics		
	Tutorials	Procedure and Guidelines for Interview and Questionnaire method How to calculate the Standard Deviation		
	Assignment2	Calculate the Mean, Mode, Median, Variance, Co- variance and Standard Deviation for taking any example		
	Test			
April	**Theory**	**Interpreting polls** Prediction in polling research: possibilities and pitfalls Politics of interpreting polling		
	Tutorials	How to predict the elections data		
May	**Theory**	Analyzing and Interpreting the data with suitable examples considering Indian Elections		
	Tutorials	Issues in Interpreting Polls		

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kanwar Singh **Department: Sanskrit**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	UNIT IV: OTHER GENRES (HARIRAM ACHARYA, PUSHPA DIKSHIT)	B.A. 2ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT I: VIBHAKTYARTHA, VOICE AND KRT	B.A. 3RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION
MARCH		UNIT I: MEDICAL SCIENCES AND BOTANY	B.A. 1ST YEAR (H)	DSC-6 CRITICAL SURVEY OF SASTRIC LITERATURE
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
FEBRUARY	**Theory:**	UNIT IV: OTHER GENRES CONTINUED	B.A. 2ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT II: SELECTIONS FROM KRT PRAKARANA	B.A. 3RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION
APRIL		UNIT I CONTINUED UNIT II: MUSIC, DANCE, ICONOGRAPHY AND PAINTING	B.A. 1ST YEAR (H)	DSC-6 CRITICAL SURVEY OF SASTRIC LITERATURE

	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

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	Assignment:	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS.		
MARCH	**Theory:**	UNIT V AND VI: GENERAL SURVEY	B.A. 2ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT III: TRANSLATION AND COMMUNICATION UNIT IV: COMMUNICATIVE SANSKRIT	B.A. 3RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION
MAY		UNIT III: VIMANASATRA, ASVASASTRA, GAJASASTRA AND AYUDHAVVIJANA	B.A. 1ST YEAR (H)	DSC-6 CRITICAL SURVEY OF SASTRIC LITERATURE
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	Test:	TESTS WILL BE TAKEN TIMELY.		
APRIL	**Theory:**	UNIT V AND VI: GENERAL SURVEY CONTINUED	B.A. 2ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT V: ESSAY (TRADITIONAL SUBJECTS) UNIT VI: ESSAY (MODERN SUBJECTS)	B.A. 3RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION
JUNE		UNIT IV: KAUSHSASTRA, CHANDHASASTRA, NIRUKHTASASTRA AND VYAKARANASASTRA	B.A. 1ST YEAR (H)	DSC-6 CRITICAL SURVEY OF SASTRIC LITERATURE

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		UNIT IV CONTINUED	B.A. 1ST YEAR (H)	DSC-6 CRITICAL SURVEY OF SASTRIC LITERATURE
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	Assignment:	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS.		
	Project Work: (B.A. (H) 1st)	PROJECT WORK WILL BE ASSIGNED REGARDING THE TOPICS.		
	Test:	TESTS WILL BE TAKEN TIMELY.		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-June 2023 (EVEN SEMESTER)

Name of the Faculty: Geeta Jayaram Sodhi

Department: Sociology

Semester: IV (January-June 2023)

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Month		Topic(s)	Course	Paper Code/Name
January	**Theory**	1.Debates on social construction of sex and gender 2. Masculinity and Femininity	B A Prog. SEC 02	Gender Sensitisation
	Practical	NA	NA	NA
	Tutorial	NA	B A Prog. SEC 02	
February	**Theory**	1.Sexual preference as a right 2. Gender Rights and Law: Right to Property	B A Prog. SEC 02	Gender Sensitisation
	Practical	NA	NA	NA
	Tutorial	NA	B A Prog. SEC 02	Gender Sensitisation
March	**Theory**	1. Gender Rights and Law: Personal Laws 2. Gender Rights and Law: Sexual Harassment	B A Prog. SEC 02	Gender Sensitisation

	Practical	NA	NA	NA
	Tutorial	NA	B A Prog. SEC 02	Gender Sensitisation
	<u>Assignment (10 marks)</u>	Presentations on Gender Rights and Law	B A Prog. SEC 02	Gender Sensitisation
April	**Theory**	1.Gender Rights and Law: Rape and Domestic Violence 2.Intersections of Gender, caste, class, region, religion and disability	B A Prog. SEC 02	Gender Sensitisation
	Practical	NA	NA	NA
	Tutorial	NA	B A Prog. SEC 02	Gender Sensitisation
	Mid-term Test (10 marks)	Topic: Debates on social construction of sex and gender		
May	**Theory**	1.Intersections of Gender, caste, class, region, religion and disability (cont'd)	B A Prog. SEC 02	Gender Sensitisation
	Practical	NA		
	Tutorial	NA	B A Prog. SEC 02	Gender Sensitisation

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

January-June 2023 (EVEN SEMESTER)

Name of the Faculty: Geeta Jayaram Sodhi
Department: Sociology
Semester: IV (Jan-June, 2023)

PRINCIPAL (Acting)
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Month		Topics	Course	Paper Code/Name
JAN	**Theory**	1.Sociological Research 2. Objectivity in Social sciences	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	What is Sociological Research ?	Core Course 4	Methods of Sociological Enquiry
FEBRUARY	**Theory**	1.Reflexivity 2. Comparative Method	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	Comparative Method	Core Course 4	Methods of Sociological Enquiry

MARCH	**Theory**	1.Ethnographic Method 2. Theory and Research	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	Ethnographic Method	Core Course 4	Methods of Sociological Enquiry
	Assignment	Write an essay on Objectivity in Sociological Research.	Core Course 4	Methods of Sociological Enquiry
APRIL	**Theory**	Constructing the Object of Research	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	Quantitative and Qualitative Methods in Research	Core Course 4	Methods of Sociological Enquiry
	Mid-term Test	Topics: 1.Sociological Research 2.Objectivity		
MAY	**Theory**	Revision		Methods of Sociological Enquiry
	Tutorial	Revision		Methods of Sociological Enquiry
	Practical	NA		

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
January to June 2023 (EVEN SEM)

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Name of the Faculty: Mr. Subas C. Mohapatra
Department: Sociology
Semester: VI

Month		Topic(s)	Course	Paper Code/Name
JANUARY	**Theory**	Social Stratification: Concepts and Approaches	B.A. Prog DSE	Social Stratification
	Practical	NA	NA	NA
	Tutorial	Inequality Hierarchy Difference	B.A. Prog DSE	Social Stratification
FEBRUARY	**Theory**	Forms of Social Stratification: 1) Race and Ethnicity 2) Caste and class	B.A. Prog DSE	Social Stratification
	Practical	NA	NA	NA
	Tutorial	Significance of race, racism and advertising, ethnic groups and boundaries, caste, class and power	B.A. Prog DSE	Social Stratification
MARCH	**Theory**	Forms of Social Stratification: 3) Gendering inequality 4) Poverty and social exclusion	B.A. Prog DSE	Social Stratification

	Practical	NA	NA	NA
	Tutorial	Caste and women, occupational inequality, World development and women, poverty and public policy	B.A. Prog DSE	Social Stratification
	Mid-Term Test (10 Marks)	Explain the relationalities of hierarchy and difference	B.A. Prog DSE	Social Stratification
APRIL	**Theory**	Social Mobility	B.A. Prog DSE	Social Stratification
	Practical	NA	NA	NA
	Tutorial	Mobility and social structure, mobility and equality	B.A. Prog DSE	Social Stratification
	Assignment (10 Marks)	Elaborate on the different forms of social stratification with illustrations.	B.A. Prog DSE	Social Stratification
MAY	**Theory**	-	B.A. Prog DSE	Social Stratification
	Practical	NA	NA	NA
	Tutorial	-	B.A. Prog DSE	Social Stratification

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SEMESTER WISE TEACHING PLAN 2022-23

SRI VENKATESWARA COLLEGE

Name of the Faculty: ABHIJIT KUNDU
Department: SOCIOLOGY

Semester: IV, Hons

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Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1. Introducing Social Stratification - Beteille - Tawney	Hons DSC-10	Social Stratification
	Practicals	NA	do	do
	Tutorials	1. Discuss the concepts of Inequality and Equality	do	do
FEBRUARY	**Theory:**	2. Theories of Stratification - Marx, Weber and Class - Davis and Moore - M. Tumin 3. Identities and Inequalities	do	do
	Practicals:	NA		
	Tutorials:	1. Caste, Ethnicity 2. Race and Inequality	do	do

	Assignment :	Explain the Idea of Natural and Social Inequality		
MARCH	**Theory:**	Gender and Stratification - Mitchell - Joan Acker	do	do
	Practicals:	NA		
	Tutorials:	The interlocking of Caste, Ethnicity in Stratification in India	do	do
	Test	Essay on Gendered Stratification		
APRIL	**Theory:**	Social Mobility - Hierarchy as Reproduced - Mobility in Industrial society	do	do
	Practicals:	NA		
	Tutorials:	Nature of Inequality as reproduced in modern societies		

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SRI VENKATESWARA COLLEGE
Even Semester TEACHING PLAN 2022-2023

Name of the Faculty: ABHIJIT KUNDU
Department: SOCIOLOGY

Semester : VI Honours

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Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1. Talcott Parsons 2. The Social System 3. Pattern Variables	Hons Core Course-13	Sociological Thinkers II
	Practicals	NA		
	Tutorials	1. Integration of Cultural, Personality and Social System	do	do
FEBRUARY	**Theory:**	1. G. H. Mead and Erving Goffman 2. Peter L. Berger and Thomas Luckmann	do	do
	Practicals:	NA		
	Tutorials:	1. Interactional Self 2. Dramaturgy	do	do

	<u>Assignment :</u>	Discuss the analytical scheme Of the Social System		
MARCH	**Theory:**	1. Max Horkheimar, T.W. Adorno 2. H. Marcuse	do	do
	Practicals:	NA		
	Tutorials:	1. Dialectics of Enlightenment 2. Repressive De-sublimation	do	do
	<u>Test</u>	Analyze the salient features of the Critical School		
APRIL	**Theory:**	1. Pierre Bourdieu	do	do
	Practicals:	NA		
	Tutorials:	1. The Concept of Habitus 2. Structure and Habitus		

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SEMESTER-WISE TEACHING PLAN
January-May/July 2023
SRI VENKATESWARA COLLEGE

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Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: BA (Program/MDC), Semester II (March-July, 2023)

Month		Topic(s)	Course	Paper Code/Name
MARCH	**Theory**	Introduction to sociology of religion; meaning and scope	DSC 04	Religion and Society
	Practical	NA	NA	NA
	Tutorial (for CA through class presentations)	Approaching religion through sociological lens; main reading is Andre Beteille.	DSC 04	Religion and Society
APRIL	**Theory**	Sociology of religion's nature and scope contd.; sacred and profane; Emile Durkeheim	DSC 04	Religion and Society
	Practical	NA	NA	NA
	Tutorial (for CA through class presentations)	Approaching religion through sociological lens; main reading is Peter Berger; sacred and profane	DSC 04	Religion and Society
MAY	**Theory**	Religion and rationalization; Max Weber; Religion as a cultural system; Clifford Geertz	DSC 04	Religion and Society

	Practical	NA	NA	NA
	Tutorial (for CA through	Myth, ritual and the body; readings to be discussed are: C.J. Fuller, Robert Hertz and JPS Uberoi	DSC 04	Religion and Society
	Assignment	With reference to Beteille and Berger, discuss the meaning and scope of sociology of religion.	DSC 04	Religion and Society
JUNE	**Theory**	Myth, ritual and the body contd.; readings to be discussed are: Cyrus Pangborn, Akos Ostor and M.N.Srinivas	DSC 04	Religion and Society
	Practical	NA	NA	NA
	Tutorial (for CA through class presentatio	Contemporary issues in religion; main readings are: Jeremy Stolow and T.N. Madan	DSC 04	Religion and Society
	Mid-Sem Test	Topics: sacred and profane & religion and rationalization	DSC 04	Religion and Society
JULY	**Theory**	Contemporary issues in religion contd; main readings are: Jeremy Stolow and T.N. Madan	DSC 04	Religion and Society
	Practical	NA	NA	NA
	Tutorial (for CA through class		DSC 04	Religion and Society

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SEMESTER-WISE TEACHING PLAN
January-May/July 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: BA (Program), Semester VI (January-May, 2023)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introducing economic sociology; economy as an embedded process; substantivist and formalist approaches	Generic Elective 02 (GE 02)	Economy and Society
	Practical		NA	NA
	Tutorial	Discuss Karl Polanyi's contribution to economic sociology	Generic Elective 02 (GE 02)	Economy and Society
FEBRUARY	**Theory**	Functionalist approach in economic sociology; domestic mode of production; introduction to peasant economy	Generic Elective 02 (GE 02)	Economy and Society
	Practical	NA	NA	NA
	Tutorial	With reference to Marshall Sahlins define and discuss the features of domestic mode of production	Generic Elective 02 (GE 02)	Economy and Society

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MARCH	**Theory**	Understanding peasant economy with the help of Eric Wolf's work; socialist economies of eastern Europe; examining capitalism and its mode of production	Generic Elective 02 (GE 02)	Economy and Society
	Practical	NA	NA	NA
	Tutorial	Write an essay on socialist mode of production and the reasons for its failure	Generic Elective 02 (GE 02)	Economy and Society
	Assignment (10 Marks)	Discussion substantivist and formalist approaches to economic anthropology	Generic Elective 02 (GE 02)	Economy and Society
APRIL	**Theory**	Globalization as an economic and cultural process; Mcdonaldization as a process; cross-cultural consumption; theories of economic development	Generic Elective 02 (GE 02)	Economy and Society
	Practical		NA	NA
	Tutorial	Cross-cultural consumption is a reality in the modern word. Elaborate.	Generic Elective 02 (GE 02)	Economy and Society
	Mid-Sem Test (10 Marks)	Define and discuss the domestic mode of production	Generic Elective 02 (GE 02)	Economy and Society

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MAY	**Theory**	Theories of development [contd.]	Generic Elective 02 (GE 02)	Economy and Society
	Practical	NA	NA	NA
	Tutorial	Revision of the entire syllabus depending on student feedback and demand.	Generic Elective 02 (GE 02)	Economy and Society

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
January to June 2023 (EVEN SEM)

Name of the Faculty: Dr. Urmi Bhattacharyya
Department: Sociology
Semester: IV

Month		Topic(s)	Course	Paper Code/Name
JANUARY	**Theory**	Key Approaches in Kinship: Descent theory Alliance theory	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Kinship and the study of descent. Early anthropologists in African societies structuralism and kinship	Core Course 08	Sociology of Kinship
FEBRUARY	**Theory**	Key Approaches in Kinship: Cultural theory	Core Course 08	Sociology of Kinship
	Practical	NA		
	Tutorial	Discussing the cultural reconceptualization of kinship and its meanings	Core Course 08	Sociology of Kinship
MARCH	**Theory**	Concepts of family, household, domestic groups and its relation to kinship The anthropological definition of marriage	Core Course 08	Sociology of Kinship

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	Practical	NA	Core Course 08	
	Tutorial	Discussing family and domestic cycle and the cultural redefinition of kinship Analysing marriage practices among the Nayar, and also as it is recognized by the Sinhalese law	Core Course 08	Sociology of Kinship
	Mid-Term Test (10 Marks)	Elaborate on the notion of segmentation with reference to the Nuer	Core Course 08	Sociology of Kinship
APRIL	**Theory**	Contemporary definitions of marriage Kinship and relatedness Gender and Kinship Reconstructing families – choice vs biology	Core Course 08	Sociology of Kinship
	Practical	NA		
	Tutorial	Decoding Hindu Marriage Law Understanding relatedness among the Malays How do gender and the element of choice redefine kinship?	Core Course 08	Sociology of Kinship
	Assignment (10 Marks)	How do the boundaries between nature and culture define incest prohibition and alliance in society?	Core Course 08	Sociology of Kinship
MAY	**Theory**	Reconstructing families, the effect of technology IVF, surrogacy and biological kinship	Core Course 08	Sociology of Kinship
	Practical	NA		
	Tutorial	How does technology redefine the traditional boundaries of kinship? Or do they reinstate these boundaries?	Core Course 08	Sociology of Kinship

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
January to June 2023 (EVEN SEM)

Name of the Faculty: Dr. Urmi Bhattacharyya
Department: Sociology
Semester: VI

Month		Topic(s)	Course	Paper Code/Name
JANUARY	**Theory**	Introducing visual culture as a subdiscipline; Historically and critically exploring the ways of seeing	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Understanding the myths around visual culture. How to show 'seeing'? Ways of seeing before and after mechanical reproduction.	DSE 07	Visual Culture
FEBRUARY	**Theory**	Spectacle and Mass Media Postcolonialism and visuality; global vs local narrative; Panopticism; power and visuality.	DSE 07	Visual Culture
	Practical	NA		
	Tutorial	Discussing the pitfalls of technical modernity. Why do we need to critique the dominant narrative of the West? What is the relation between power and visuality?	DSE 07	Visual Culture
MARCH	**Theory**	Counter-visuality; Colonial authority and representations; Photography and power; Critical art and resistance; Beauty and ugliness.	DSE 07	Visual Culture

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	Practical	NA		
	Tutorial	Understanding counter-visuality. Photography and truth; Exploring the connections between politics, art and critical art as resistance. Discussing how bodily notions of beauty and ugliness are visually represented and challenged.	DSE 07	Visual Culture
	Mid-Term Test (10 Marks)	What according to Debord lies at the heart of unrealism in contemporary society? Elaborate.	DSE 07	Visual Culture
APRIL	**Theory**	Visual practices and identity formation – class, caste; Visuality and everyday life; Consumption and visuality.	DSE 07	Visual Culture
	Practical	NA		
	Tutorial	Exploring photographic practices and the formation of class identity How is moral consumption mediated through visual representation? Visuality, material consumption and global identity	DSE 07	Visual Culture
	<u>Assignment (10 Marks)</u>	With reference to Foucault's panoticism, write about the relationship between power, discipline and modernity.	DSE 07	Visual Culture
MAY	**Theory**	Syllabus revision	DSE 07	Visual Culture
	Practical	NA		
	Tutorial	Discussing test papers and assignments	DSE 07	Visual Culture

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SEMESTER WISE TEACHING PLAN
January-April 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Niharika Jaiswal*

Department: Sociology

Semester: VI (January- April 2023)

Month		Topic(s)	Course	Paper Code/Name
January	**Theory**	1. Introduction to the sociology of health and medicine 2. Conceptualizing disease sickness and illness	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine
		3. Social and cultural Dimension of Illness and Medicine		
	PRACTICAL	NA		
	Tutorial	Trace the origin and development of modern medicine in arriving at an understanding of sickness, disease and illness.	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine

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*On Maternity Leave till the end of the even semester 2022-23

SEMESTER WISE TEACHING PLAN
January-April 2023
SRI VENKATESWARA COLLEGE

Name of the Faculty: Niharika Jaiswal*

Department: Sociology

Semester: VI (January- April 2023)

Month		Topic(s)	Course	Paper Code/Name
January	**Theory**	1. Doing Social Research 2. The Process of Social Research	Core Course 14	Core course 14/ Research Methods II
		Reading: K.Bailey (1994) '*The Research Process in Methods of Social Research*'		
	Tutorial	Substantiate with examples the various steps of social research process.	Core Course	Core Course 14/Research Methods II

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
January to June 2023 (EVEN SEM)

Name of the Faculty: Mr. Satheesh Perumalla
Department: Sociology
Semester: VI

Month		Topic(s)	Course	Paper Code/Name
JANUARY	**Theory**	G S Ghurye: Caste and Race. D P Mukerji: Tradition and Modernity, Middle Class	BA (H) Sociology	Discipline Specific Elective 06 : Indian Sociological Traditions
	Practical			
	Tutorial			
FEBRUARY	**Theory**	Verrier Elwin: The Ethnographies. Elwin, The Religion of an Indian Tribe. Verrier Elwin and Tribal Development. Veena Das: Introduction	BA (H) Sociology	Discipline Specific Elective 06: Indian Sociological Traditions
	Practical			
	Tutorial			
MARCH	**Theory**	M. N. Srinivas: Indian Anthropologists and the study of Indian Society. Social Change in Modern India, On Living in a Revolution and Other Essays,	BA (H) Sociology	Discipline Specific Elective 06: Indian Sociological Traditions

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	Practical			
	Tutorial			
	Mid-Term Test (10 Marks)	Assessment test on GS Ghurye and D P Mukherjee reading.		
APRIL	**Theory**	Irawati Karve: The Life and Work of Irawati Karve", Kinship Organization in India. Leela Dube: Caste, Class and Power, Anthropological Explorations in Gender: Intersecting Field	BA (H) Sociology	Discipline Specific Elective 06: Indian Sociological Traditions
	Practical			
	Tutorial			
	Assignment (10 Marks)	Presentations and Assignments on Various topics of Indian Sociological traditions		
MAY	**Theory**			
	Practical			
	Tutorial			

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
January to June 2023 (EVEN SEM)

Name of the Faculty: Mr. Satheesh Perumalla
Department: Sociology
Semester: IV

Month		Topic(s)	Course	Paper Code/Name
JANUARY	**Theory**	Formalism and Substantivism, New Economic Sociology	B.A(H)Sociology Semester IV	Core Course 08 ECONOMIC SOCIOLOGY
	Practical	NA		
	Tutorial	Discussions on topics covered.		
FEBRUARY	**Theory**	Reciprocity and Gift, Exchange and Money	B.A(H)Sociology Semester IV	
	Practical	NA		
	Tutorial	Discussions on topics covered.		
MARCH	**Theory**	Hunting and Gathering, Domestic Mode of Production, Peasant Societies	B.A(H)Sociology Semester IV	

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	Practical	NA		
	Tutorial	Discussions on topics covered.		
	Mid-Term Test (10 Marks)	Formalism and Substantivism and New Economic Sociology		
APRIL	**Theory**	Capitalism, Socialism, Development Discourse	B.A(H)Sociology Semester IV	
	Practical	NA		
	Tutorial	Discussions on topics covered.		
	Assignment (10 Marks)	Presentations and Assignments on different topics of the Syllabus		
MAY	**Theory**	Globalisation and Capitalism	B.A(H)Sociology Semester IV	
	Practical	NA		
	Tutorial	Discussions on topics covered.		

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Name of the Faculty: Garima Rath
Department: Sociology
Semester: II

Month		Topic(s)	Course	Paper Code/Name
March	Theory	On the Plurality of Sociological Perspectives	Sociology Honors, 2nd semester	Sociological Perspectives/ DSC 04
	Practical	N/A		
	Tutorial	N/A		
April	Theory	Functionalism 1. Structure of Sociological Theory. 2. The Rules of Sociological Method	Sociology Honors, 2nd semester	Sociological Perspectives/ DSC 04
	Practical	N/A		
	Tutorial	N/A		
May	Theory	Conflict Perspective 1. The Blackwell Encyclopedia of Sociology 2. Selected Works Vol. 1 3. The Manifesto of Communist Party. Interpretive Sociology 1. The Sociology of Max Weber	Sociology Honors, 2nd semester	Sociological Perspectives/ DSC 04

	Practical	N/A		
	Tutorial	N/A		
	Mid-Term Test (10 Marks)	Understanding the functionalism of Emile Durkheim and its differences with Herbert Spencer		
June	Theory	Interpretive Sociology 2. Science as Vocation Interactionism 1. Social Interaction in Everyday Life 2. Gender Advertisements	Sociology Honors, 2nd semester	Sociological Perspectives/ DSC 04
	Practical	N/A		
	Tutorial	N/A		
	Assignment (10 Marks)	Understanding of class and the revolutionary theory provided by Max Weber. Presentations on each of the Units will also be done in this month so that Continuous Assessment can be evaluated.		
July	Theory	Feminist Perspective Gender: A Sociological Reader	Sociology Honors, 2nd semester	Sociological Perspectives/ DSC 04
	Practical	N/A		
	Tutorial	N/A		

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Name of the Faculty: Garima Rath
Department: Sociology
Semester: VI

Month		Topic(s)	Course	Paper Code/Name
JANUARY	Theory	Doing Social Research. 1. The Process of Social Research 2. Concepts and Hypothesis 3. Field (Issues and Contexts)	Sociology Honors, 6th semester	Research Methods II/ Core Course 14
	Practical	N/A		
	Tutorial	N/A		
FEBRUARY	Theory	Methods of Data Collection 1. Sampling 2. Questionnaire Construction 3. Interview Studies	Sociology Honors, 6th semester	Research Methods II/ Core Course 14
	Practical	N/A		
	Tutorial	N/A		
MARCH	Theory	Methods of Data Collection 1. Research Design: Qualitative, Quantitative and Mixed Methods 2. Participant and Non-Participant Observation 3. Street Corner Society	Sociology Honors, 6th semester	Research Methods II/ Core Course 14

	Practical	N/A		
	Tutorial	N/A		
	Mid-Term Test (10 Marks)	Hypothesis plays an important role in empirical verification. Discuss OR Conceptual clarification is an important of research process. Elucidate		
APRIL	Theory	Statistical Methods 1. Overview of Statistics in Sociology. 2. Graphical and Diagrammatic Representation of Data. 3. Measures of Central Tendency. 4. Measures of Dispersion.	Sociology Honors, 6th semester	Research Methods II/ Core Course 14
	Practical	N/A		
	Tutorial	N/A		
	Assignment (10 Marks)	Explain the various stages involved in the process of Research. Give and example to substantiate your arguments. Along with Assignments, students were asked to do presentation on various topics as well.		
MAY	Theory	-		
	Practical			
	Tutorial			

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Name of the Faculty: Garima Rath
Department: Sociology
Semester: II

Month		Topic(s)	Course	Paper Code/Name
MARCH	Theory	Developing Personal and Professional Self 1. Understanding of personal and professional self. 2. Professional Ethics: Responsibility, accountability, loyalty, commitment, cultural sensitivity and competence.	SEC, 2nd Semester	WORKING WITH PEOPLE
	Practical	Group Project Assessing Personal and Professional self.	SEC 2nd Semester	WORKING WITH PEOPLE
	Tutorial	N/A		
APRIL	Theory	Planning for Field Work Practice 1. Thematic learning modules for targeted populations: Children, adolescent, youth and elderly.	SEC 2nd Semester	WORKING WITH PEOPLE
	Practical	Field trip	SEC 2nd Semester	WORKING WITH PEOPLE
	Tutorial	N/A		
MAY	Theory	Documentation in Field Work 1. Case Records 2. Group Work Records	SEC 2nd Semester	WORKING WITH PEOPLE

	Practical	Report writing workshop	SEC2nd Semester	WORKING WITH PEOPLE
	Tutorial	N/A		
	Mid-Term Test (10 Marks)	How to make a field-based research design		
JUNE	Theory	Application of Skills and Techniques 1. Mobilizing Community Support: Networking, Advocacy and Public Relation	SEC 2nd Semester	WORKING WITH PEOPLE
	Practical	Community outreach		
	Tutorial	N/A		
	Assignment (10 Marks)	Significance of ethics in culture		
JULY	Theory	Revision, group discussions	SEC 2nd Semester	WORKING WITH PEOPLE
	Practical	Presentations		
	Tutorial	N/A		

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Name of the Faculty: Daisy Barman
Department: Sociology
Semester: II

Month		Topic(s)	Course	Paper Code/Name
March	Theory	Understanding Social Stratification, caste and class	Sociology Honors, 2nd semester	Social Stratification
	Practical	N/A		
	Tutorial	N/A		
April	Theory	Gender, Notes on Women, Work and Society, Race, Sex & Class		
	Practical	N/A		
	Tutorial	N/A		
May	Theory	Ethnicity, Theories of Race and Racism		

	Practical	N/A		
	Tutorial	N/A		
	Mid-Term Test (10 Marks)	Examining caste as a lived reality		
June	Theory	Social Mobility and Social Reproduction		
	Practical	N/A		
	Tutorial	N/A		
	Assignment (10 Marks)	Intersection of Race and Gender: Exploring the disabilities.		
July	Theory	Social Mobility and Social Reproduction and Revision		
	Practical	N/A		
	Tutorial	N/A		

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Name of the Faculty: Daisy Barman
Department: Sociology
Semester: VI

Month		Topic(s)	Course	Paper Code/Name
JANUARY	Theory	Origins and Development of Health and Medicine, Conceptualizing Disease, Sickness and Illness, Social and Cultural Dimensions of Illness and Medicine.	Sociology Honors, 6th semester	Sociology of Health and Medicine
	Practical	N/A		
	Tutorial	N/A		
FEBRUARY	Theory	Political Economy of Health Systems Approach		
	Practical	N/A		
	Tutorial	N/A		
MARCH	Theory	Health as a Power Discourse, Feminist Approach		

	Practical	N/A		
	Tutorial	N/A		
	Mid-Term Test (10 Marks)	Assessing the socio-cultural dimension of medicine and healing.		
APRIL	Theory	Negotiating Health and Illness, Health behaviors, Medical Pluralism		
	Practical	N/A		
	Tutorial	N/A		
	Assignment (10 Marks)	Understanding Biomedicine from Foucault's framework of power and surveillance.		
MAY	Theory	Health Systems and Health Policies, Privatisation of Health in South Asia Medical Pluralism in India		
	Practical	N/A		
	Tutorial	N/A		

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March to July 2023 (EVEN SEM)

Name of the Faculty: Daisy Barman
Department: Sociology
Semester: II

Month		Topic(s)	Course	Paper Code/Name
MARCH	Theory	Developing Personal and Professional Self, Cultural sensitivity and competence, Goal setting and time management.	SEC, 2nd Semester	WORKING WITH PEOPLE
	Practical	Group Project Assessing Personal and Professional self.	SEC 2nd Semester	WORKING WITH PEOPLE
	Tutorial	N/A		
APRIL	Theory	Planning for Field Work Practice Preparation of Field work learning plans and strategies, Rapport building, initiating dialogues and sustaining communication.	SEC 2nd Semester	WORKING WITH PEOPLE
	Practical	Field trip	SEC 2nd Semester	WORKING WITH PEOPLE
	Tutorial	N/A		
MAY	Theory	Documentation in Field Work, Group work records, Community profile	SEC 2nd Semester	WORKING WITH PEOPLE

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	Practical	Report writing workshop	SEC2nd Semester	WORKING WITH PEOPLE
	Tutorial	N/A		
	Mid-Term Test (10 Marks)	How to make a field-based research design		
JUNE	Theory	Application of Skills and Techniques, Understanding Self: Johari Window, Strength and Weakness- SWOT Analysis	SEC 2nd Semester	WORKING WITH PEOPLE
	Practical	Community outreach		
	Tutorial	N/A		
	Assignment (10 Marks)	Significance of ethics in culture		
JULY	Theory	Revision, group discussions	SEC 2nd Semester	WORKING WITH PEOPLE
	Practical	Presentations		
	Tutorial	N/A		

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
January to June 2023 (EVEN SEM)

Name of the Faculty: Nayanjyoti
Department: SOCIOLOGY
Semester: 4th Semester

Month		Topic(s)	Course	Paper Code/Name
FEBRUARY	**Theory**	Unit 1: Intro to Anthropological Filmmaking (4 compulsory readings)	BA Hons. Sociology	SEC-02: Ethnographic Filmmaking
	Practical			
	Tutorial			
MARCH	**Theory**	Unit 2: Understanding Use of Camera in Anthropology Unit 3: Filmmaker and the filmed relationship and ethics (4 readings)	BA Hons. Sociology	SEC-02: Ethnographic Filmmaking

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	Practical	Use of Camera, Light, Sound + Ethnographic Photographs and Film screening	BA Hons. Sociology	SEC-02: Ethnographic Filmmaking
	Tutorial			
	Mid-Term Test (10 Marks)	Photostory assignment on Use of Camera in Anthropological Research	BA Hons. Sociology	SEC-02: Ethnographic Filmmaking
APRIL	**Theory**	Unit 4: Editing and Construction of Meaning	BA Hons. Sociology	SEC-02: Ethnographic Filmmaking
	Practical	Unit 5: Film editing techniques + Fieldwork/Interviews	BA Hons. Sociology	SEC-02: Ethnographic Filmmaking
	Tutorial			
	Assignment (10 Marks)	Making Documentary Film: Dealing with issues in Ethnographic Filmmaking	BA Hons. Sociology	SEC-02: Ethnographic Filmmaking
MAY	**Theory**	Unit 5 and 6 project based discussions and final readings	BA Hons. Sociology	SEC-02: Ethnographic Filmmaking
	Practical	Unit 6: Discussion and review of Final Film Projects	BA Hons. Sociology	SEC-02: Ethnographic Filmmaking
	Tutorial			

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Name of the Faculty: NAYANJYOTI
Department: SOCIOLOGY
Semester: 2nd Semester

Month		Topic(s)	Course	Paper Code/Name
MARCH	**Theory**	Introduction to Course and Unit 1 (2 readings)	BA Hons. Sociology	DSC-06: Families and Intimacies
	Practical			
	Tutorial			
APRIL	**Theory**	Unit 1: Families and Intimacies (5 readings)	BA Hons. Sociology	DSC-06: Families and Intimacies
	Practical			
	Tutorial			
MAY	**Theory**	Unit 2: Familial Worlds (5 readings)	BA Hons. Sociology	DSC-06: Families and Intimacies

	Practical			
	Tutorial			
	Mid-Term Test (10 Marks)	Test on basis on Unit-1 and Unit-2 readings: Families and Intimacies	BA Hons. Sociology	DSC-06: Families and Intimacies
JUNE	**Theory**	Unit 3: Intimacies and Marriage (4 readings)	BA Hons. Sociology	DSC-06: Families and Intimacies
	Practical			
	Tutorial			
	<u>Assignment (10 Marks)</u>	Unit 3 (Intimacies and Marriage) based Book review and Presentation	BA Hons. Sociology	DSC-06: Families and Intimacies
JULY	**Theory**	Concluding sections of Unit 3: Intimacies and Marriage + 3 suggested readings from list of 9 readings	BA Hons. Sociology	DSC-06: Families and Intimacies
	Practical			
	Tutorial			

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Name of the Faculty: Bhat Khalid Bashir
Department: Sociology
Semester: IV

Month		Topic(s)	Course	Paper Code/Name
MARCH	Theory	Understanding Gender, Family, Community and the State and intersectionality thereof.	SEC	Gender Sensitization
	Practical	N/A		
	Tutorial	Discussion on the interconnectedness of family with other social institutions and the		
	Mid-Term Test (10 Marks)	Does a gendered division of labour in the household deny women equal opportunities?		
APRIL	Theory	Gender Rights and the Law: Right to property, Sexual Harassment, Rape, Domestic Violence, Violence against women,	SEC	Gender Sensitization
	Practical	N/A		
	Tutorial	Discussion on the relevance of these laws given the scale and magnitude of gender-based violence.		
	Assignment (10 Marks)	Critically examine the effectiveness of legislations against violence against women.		
MAY	Theory	Remedial classes, Group Discussions	SEC	Gender Sensitization
	Practical	N/A		
	Tutorial	N/A		

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Name of the Faculty: Bhat Khalid Bashir
Department: Sociology
Semester: II

Month		Topic(s)	Course	Paper Code/Name
March	Theory	Conceptual Frameworks for understanding Gender and Violence—Striving towards a conceptual clarity of Gender, Power, and Violence.	GE (Generic Elective)	Gender, Power and Violence
	Practical	N/A		
	Tutorial	Discussion on Essentialist idea of gender and violence.		
April	Theory	Deconstructing Gender and Gendered Violence; Embodiments of Violence: Multiplicities & Responses	GE (Generic Elective)	Gender, Power and Violence
	Practical	N/A		
	Tutorial	Discussing the Intersectionality discourse on gender and violence.		
May	Theory	Power & Violence: Individuals & Community; Invisibilized Vulnerabilities	GE (Generic Elective)	Gender, Power and Violence

	Practical	N/A		
	Tutorial	Discussion on forms of gender-based violence.		
	Mid-Term Test (10 Marks)	To discuss and compare the Essentialist and Intersectionality discourse vis-à-vis gender, power and violence.		
June	Theory	Legal Discourses on Gender Violence: Local and Global Experiences	GE (Generic Elective)	Gender, Power and Violence
	Practical	N/A		
	Tutorial	Discussion on legal remedies against gender-based violence		
	Assignment (10 Marks)	Assessing legal remedies in view of conceptual understanding of gender-based violence		
July	Theory	Remedial classes, Presentations, and Group Discussions	GE (Generic Elective)	Gender, Power and Violence
	Practical	N/A		
	Tutorial	Holistic engagement with the concepts of gender, power and violence.		

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Name of the Faculty: Bhat Khalid Bashir
Department: Sociology
Semester: II

Month		Topic(s)	Course	Paper Code/Name
MARCH	Theory	Understanding Personal and Professional Self; Professional Ethics (responsibility, accountability, competence); Goal setting and time management.	SEC	WORKING WITH PEOPLE
	Practical	Group Project: Assessing Personal and Professional self.	SEC	WORKING WITH PEOPLE
	Tutorial	N/A		
APRIL	Theory	Strategizing and planning for fieldwork; Rapport building, initiating dialogues and sustaining communication; Thematic learning modules for targeted populations: children, adolescent, youth and elderly	SEC	WORKING WITH PEOPLE
	Practical	Field trip	SEC	WORKING WITH PEOPLE
	Tutorial	N/A		
MAY	Theory	Documentation in Field Work: case records, group work records, and community profile	SEC	WORKING WITH PEOPLE

	Practical	Report writing workshop	SEC	WORKING WITH PEOPLE
	Tutorial	N/A		
	Mid-Term Test (10 Marks)	How to make a field-based research design		
JUNE	Theory	Application of Skills and Techniques: Understanding Self—Johari Window, Strength and Weakness—SWOT Analysis; Mobilizing Community Support: Networking, Advocacy and Public relation	SEC	WORKING WITH PEOPLE
	Practical	Community outreach		
	Tutorial	N/A		
	Assignment (10 Marks)	Significance of ethics in culture		
JULY	Theory	Remedial classes, group discussions	SEC	WORKING WITH PEOPLE
	Practical	Presentations		
	Tutorial	N/A		

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SEMESTER WISE TEACHING PLAN

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EVEN SEMESTER 2022-23

Name of the Faculty: Prof. M.K.Sukla

Department: Statistics

Semester: IV

Paper Code: STAT-C-402 & **Paper Name:** Linear Models

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Month	Theory/ Practical	Topic	Course	Paper Code/ Paper Name
January	Theory	Theory of linear estimation, estimability of linear parametric functions, Method of least squares, Gauss-Markov theorem, estimation of error variance, Distribution of quadratic forms.	B.Sc.(H) Statistics, Semester IV	STAT-C-402: Statistical Inference
	Practical	Estimability when X is a full rank matrix, when X is not a full rank matrix. Distribution of quadratic forms. Simple linear regression.	B.Sc.(H) Statistics, Semester IV	STAT-C-402: Statistical Inference
February	Theory	Simple regression analysis, estimation and hypothesis testing in case of simple and multiple regression analysis, confidence intervals and prediction intervals, concept of model matrix and its use in estimation. Effect of orthogonal columns in the X matrix, Partial F-test and sequential F-test, bias in regression estimates.	B.Sc.(H) Statistics, Semester IV	STAT-C-402: Statistical Inference
	Practical	Multiple regression. Tests for linear hypothesis. Bias in regression estimates. Lack of fit. Stepwise regression procedure.	B.Sc.(H) Statistics, Semester IV	STAT-C-402: Statistical Inference
March	Theory	Definition of fixed, random and mixed effect models, analysis of variance and covariance in one-way classified data for fixed effect models, analysis of variance in two-way classified data with equal number of observations per cell for fixed effect models.	B.Sc.(H) Statistics, Semester IV	STAT-C-402: Statistical Inference
	Practical	Analysis of variance (ANOVA) of a one way classified data. ANOVA of two way	B.Sc.(H) Statistics,	STAT-C-402:

		classified data with one observation per cell. ANOVA of a two way classified data with m (>1) observations per cell.	Semester IV	Statistical Inference
April	**Theory**	Prediction form a fitted model, residuals and outlier, lack of fit and pure error, violation of usual assumptions concerning normality, homoscedasticity and collinearity, diagnostics using quantile-quantile plots. Techniques for variable selection. Polynomial regression and orthogonal polynomial models.	B.Sc.(H) Statistics, Semester IV	STAT-C-402: Statistical Inference
	Practical	Analysis of Covariance of a one way classified data. Residual Analysis. Orthogonal Polynomials.	B.Sc.(H) Statistics, Semester IV	STAT-C-402: Statistical Inference

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Even Semester 2022-2023

Name of Faculty: Prof. Veena Budhraja **Department: Statistics**

Semester: VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Experimental designs: Role, historical perspective, terminology, experimental error, basic principles, uniformity trials, fertility contour maps, choice of size and shape of plots and blocks, Basic Designs: Completely Randomized Design (CRD), Randomized Block Design (RBD), Latin Square Design (LSD)-layout, model, statistical analysis, advantages and their applications, Relative efficiencies of RBD compared to CRD, LSD compared to CRD, LSD compared to RBD taking rows as blocks, LSD compared to RBD taking columns as blocks. Practical work, Missing Plot technique (for both RBD and LSD) for one missing observation only, Variance of the difference between two estimated treatment effects out of which one has the missing observation (for both RBD and LSD)	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Practicals	Analysis of a CRD with equal and unequal replicates, Analysis of RBD, Analysis of LSD, Analysis of RBD with one missing observation, Analysis of LSD with one missing observation.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments

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February				
	Tutorials			
	Theory	Balanced Incomplete Block Design (BIBD): parameters, relationships among its parameters, incidence matrix and its properties, Intra Block analysis, Variance of the difference between two estimated treatment effects, Relative efficiency of BIBD compared to RBD, Definition and Properties of Symmetric BIBD, Resolvable BIBD, Affine Resolvable BIBD, Construction of complimentary BIBD, Residual BIBD, Dual BIBD, Derived BIBD.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Practicals	Intra block analysis of BIBD, Intra block analysis of a symmetric BIBD.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Tutorials			
March	**Theory**	Factorial Experiments: Advantages over simple experiments, notations, concepts of main effects and interaction effects. 2^n Factorial Designs - Standard order for treatment combinations, Main effects and interactions, Yates' Algorithm, Design and analysis, 3^nFactorial Designs - Standard order for treatment combinations, Main effects and interactions, Yates' Algorithm Design and analysis	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments

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		(n=2), Total and Partial confounding-Confounding 2n (n ≤ 5) in two blocks and four blocks, Confounding the 3n (n ≤ 3) in three blocks, identification of the confounded effects for both , 2^n (n ≤ 5) and 3^n (n ≤ 3) factorial designs.		
	Practicals	Analysis of 2^2 and 2^3 factorial in CRD, RBD and LSD, Analysis of a 3^2 factorial in CRD and RBD, Analysis of a completely confounded two level factorial design in 2 blocks, Analysis of a completely confounded two level factorial design in 4 blocks, Analysis of a partially confounded two level factorial design.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Tutorials			
	<u>Assignment</u>	Based on problems of LSD & MSPT	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	<u>Test</u>	Test will be based on syllabus covered before midterm break	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments

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April	**Theory**			
		Analysis of a single replicate, Fractional Factorial Designs: Introduction, Concepts - Word, Defining Relation, Principal and Complementary Fractions, Aliases, Alias Structure, Resolution of a Design, Construction of Resolution III, IV and V Designs, Construction of one half and one-quarter fractions of 2^n (n ≤ 5).	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Practicals	Analysis of a single replicate of a 2^n design, Analysis of one half fraction of 2^n factorial design, Analysis of one quarter fraction of 2^n factorial design.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments

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SEMESTER WISE TEACHING PLAN 2022-23

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Name of the Faculty: Dr. Alok Kumar Singh
Department: Statistics
Semester: IV

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Introduction to quality dimensions of quality, Its concept, application and importance. Process and product control, Seven tools of SPC, Chance and Assignable causes of quality variation. Statistical Control Charts- Statistical basis of 3-σ Control charts, Control charts for variables: $X(\bar{0})$& R-chart, $X(\bar{0})$& s-chart.	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control
	Practicals:	Construction and interpretation of statistical control charts for X bar, R, s	B.Sc. (Hons) Statistics	
	Tutorials:	--		
February	**Theory:**	Rational Sub-grouping, Revised and Modified Control Limits. Control charts for attributes: np-chart, p-chart, c-chart and u-chart. Comparison between control charts for variables and control charts for attributes. Analysis of patterns on control chart, estimation of process capability. Acceptance sampling plan: Principle of acceptance sampling plans. Single and Double sampling plan,	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control
	Practicals:	Construction and interpretation of statistical control charts for n, np , c.	B.Sc. (Hons) Statistics	
	Tutorials:	--		

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March	**Theory:**	OC, AQL, LTPD, AOQ, AOQL, ASN, ATI functions with graphical interpretation, use and interpretation of Dodge and Romig's sampling inspection plan tables. Introduction to Six-Sigma: Overview of Six Sigma, Lean Manufacturing and Total Quality Management (TQM). Organizational Structure and Six Sigma training plans. Index Numbers: Definition, construction of index numbers and problems thereof for weighted and unweighted index numbers including Laspeyre's, Paasche's, Edgeworth-Marshall and Fisher's. Average of Price Relatives,	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control
	Practicals:	Construction of u chart, OC curve	B.Sc. (Hons) Statistics	
	Tutorials:			
	<u>Assignment</u>	Based on Unit 1 to 3.		
April	**Theory**	Chain index numbers, conversion of fixed based to chain based index numbers and vice-versa. Criteria of Good Index Numbers. Consumer price index numbers. Base shifting, splicing and deflating of index numbers	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control
	Practicals:	Construction of Various type of Index Numbers.	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control
	Tutorials:			

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Name of the Faculty: Dr. Alok Kumar Singh
Department: Statistics
Semester: II

Month		Topics	Course	Paper Code/Name
March	**Theory:**	Indian Official Statistics. Present official statistical system in India, Methods of collection of official statistics and their reliability and limitations.	GE-II	Applications in Statistics
	Practicals:	--------	GE-II	Applications in Statistics
April	**Theory:**	Role of Ministry of Statistics & Program Implementation (MoSPI), Central Statistical Office (CSO), National Sample Survey Office (NSSO), and National Statistical Commission. Government of India's Principal publications. Introduction: Demand and Supply and its laws, Price Elasticity of Demand, Income elasticity of demand, Nature of commodities, Partial and Cross Elasticities of Demand,	GE-II	Applications in Statistics
	Practicals:	Fitting of demand curve. Calculate income elasticity of demand from given data. Calculation of price elasticity of demand from the given data.	GE-II	Applications in Statistics
May	**Theory:**	Types of data required for its estimation, computation of demand function from given price elasticity of demand, Engel's law and Engel Curves, Pareto's law of income distribution, Curves of concentration., Introduction: Theory of Utility, Statistical decision making under Utilities.	GE-II	Applications in Statistics
	Practicals:	Estimation of constant demand function. To fit Engel's curve and draw them.	GE-II	Applications in Statistics

	Tutorials:			
	<u>Assignment</u>	Based on Unit 1 to 3.		
June	**Theory**	Utility Curve, Basic axioms of Utility, example of utility function, Indifference curves and their properties, Marginal rate of substitution, Budget line, constrained utility maximization, Construction of Utility Curve. Production function, Marginal productivity, Average productivity,	GE-II	Applications in Statistics
	Practicals:	Comparison of inequality in distribution of expenditure. Fitting of Pareto distribution to given data. Computation and plotting of Lorenz Curve and computation of concentration ratio.	GE-II	Applications in Statistics
	Tutorials:			
July	**Theory**	Isoquants, Isocost curves, Equilibrium of the firm, Marginal rate of technical substitution, Elasticity of substitution, Constant elasticity of substitution.	GE-II	Applications in Statistics
	Practicals:		GE-II	Applications in Statistics

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN (2022-2023)

Teacher Name: Dr Chetan **Department: Statistics**
Semester: Even Semester

Second Year Semester II

Paper Name: DSC IV: Theory of Probability Distributions (NEP)

Month		Topics	Course	Paper Code/Name
Ist Month	**Theory**	Mathematical Expectation: Conditional expectations and its properties. Bivariate transformations with illustrations. Moments, moment generating function and its properties. Cumulants, cumulant generating function and its properties. Characteristic function and its properties. Inversion theorem along with applications.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions
	Practical	Numerical Based on above topics.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions
	Tutorials	--	--	--
	Numerical Assignment	Numerical Based on above topics in the form of Assignment.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions
II^{ed} Month	**Theory**	Some inequalities involving expectation - Cauchy Schwartz Inequality, Jenson's inequality. Two-dimensional random variables: Joint probability mass function/ Joint probability density function, marginal and conditional probability mass function/ probability density function, independence of random variables, examples based on joint/marginal/conditional pmf/pdf. Conditional expectation and variance, Jacobian of transformation, Bivariate transformation of random variables, and Examples based on bivariate transformation.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions
	Practical	Numerical Based on above topics.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions

	Tutorials	--	--	--
	Assignment cum Numerical Assignment	Assignments will be given on different topics related with above topics.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions
III^{ed} Month	**Theory**	Properties of various measures of correlation and regression using expectation, Correlation Ratio, Intra-class correlation, Partial and multiple correlations – definition, Yule's notation, the plane of regression, properties of residuals, multiple and partial correlation coefficients and their properties, the relationship between multiple, partial and total correlations and examples based on them.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions
	Practical	Practical based on regression lines and properties of regression coefficients. Practical based on Correlation ratio. Practical based on Intra-class correlation. Practical based on multiple correlation coefficient. Practical based on partial correlation coefficient. Practical based on planes of regression.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions
	Tutorials	--	--	--
	Assignment cum Numerical Assignment	Numerical Based on above topics in the form of Assignment.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions
IVth Month	**Theory**	Discrete probability distribution – Binomial, Poisson- measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property, fitting of distribution, and examples based on application. Continuous Probability distribution - Normal - measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property fitting of distribution and examples based on application, Uniform distribution – moments, mgf, mean deviation and examples based on bivariate transformations.	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions
	Practical	Problems based on application s of Binomial distribution. Practical based on fitting of Binomial distribution (when parameters are given	B.Sc. (Hons.) Statistics	DSC IV: Theory of Probability Distributions

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		& when parameters are not given). Practical based on calculation of area under the normal curve. Practical based on calculation of ordinates given area under the normal curve. Practical based on fitting of the normal curve when parameters are not given. Practical based on use of normal approximation to the binomial distribution.		
	Tutorials	--	--	--
	Revision/Doubt Classes	Revision/Doubt Classes will be conducted on different topics related with curriculum.		

Paper Name: VAC: Swachh Bharat (NEP)

Month		Topics	Course	Paper Code/Name
Ist Month	**Theory**	Introduction to Swachh Bharat Abhiyan (SBA) Gandhian philosophy of Cleanliness Swachh Bharat Abhiyan {SBA} Hygiene, Sanitation & Sustainable Waste Management Agencies and nodal Ministries for SBA	B.Sc. (Hons.) Statistics	VAC: Swachh Bharat
	Practical	Identify plastic and e-waste in and around the institution and suggest innovative technologies to minimize wastage. Identify events/fests that generate maximum waste and ways to minimize it. Visit canteen/shops and track the lifecycle of wet/dry waste in and around the institution and document the findings in the form of a Project Report.	B.Sc. (Hons.) Statistics	VAC: Swachh Bharat
	Tutorials	--	--	--
II^{ed} Month	**Theory**	Different phases of the SBA and its evaluation Citizens' Responsibilities: Role of Swacchagrahi		VAC: Swachh Bharat
	Practical	Visit canteen/shops and track the lifecycle of wet/dry waste in and around the institution and document the findings in the form of a Project Report. Conduct interviews of stakeholders to understand the level of awareness. Conduct a Clean Audit of the Institution and identify areas for action.		VAC: Swachh Bharat

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	Tutorials	--	--	--
	Assignment	Practical assignments will be given on different topics.	B.Sc. (Hons.) Statistics	VAC: Swachh Bharat
III^{ed} Month	**Theory**	Swachh Bharat: Rural and Urban Facets: Indicators for Swachh Bharat Sanitation coverage across households (2014 vs. 2022), Open Defecation Free (ODF} Villages: Parameters, ODF plus model: Key indicators. Sustainable sanitation, Waste/water and solid waste management, Garbage Free Cities.	B.Sc. (Hons.) Statistics	VAC: Swachh Bharat
	Practical	Conduct cleanliness drives. Organise Swachhata Pakhwada meetings, rallies, and mobilization camps within the identified communities. Students may participate in the Swachh Bharat Internship programme.	B.Sc. (Hons.) Statistics	VAC: Swachh Bharat
	Tutorials	--	--	--
	Assignment	Practical assignments will be given on different topics.	B.Sc. (Hons.) Statistics	VAC: Swachh Bharat
IVth Month	**Theory**	Prospects and Challenges: Prospects and Challenges, Operational and Financial issues, Monitoring & Supervision, Community Mobilization.	B.Sc. (Hons.) Statistics	VAC: Swachh Bharat
	Practical	If required students can share their experiences in the form of a Project Report. Any other Practical/Practice as decided from time to time	B.Sc. (Hons.) Statistics	VAC: Swachh Bharat
	Assignment	Practical assignments will be given on different topics.		
	Tutorials	--	--	--

Second Year Semester IV

Paper Name: STAT-GE IV: Applied Statistics

Month		Topics	Course	Paper Code/Name
Ist Month	**Theory**	Index numbers: Introduction, Construction of price and quantity Index Numbers by Simple and Weighted Aggregate Method. Construction of price and quantity index numbers by Laspeyre's, Paasche's, Marshall-Edgeworth's and Fisher's Formula. Numerical based on above topics.	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics

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	Practical	Construction of price and quantity index numbers by Laspeyre's formula, Paasche's formula, Marshall-Edgeworth's formula, Fisher's Formula. Comparison and interpretation.	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics
	Assignment cum Numerical Problems	Assignment in the form of numerical was given on different topics related to above topics.		
	Tutorials	--	--	--
II^{ed} Month	**Theory**	Criteria for a good index number. Construction of wholesale price index number, fixed base index number and Consumer price index number with interpretation. Uses and limitations of index numbers. Numerical based on above topics.	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics
	Practical	Construction of wholesale price index number, fixed base index number and consumer price index number with interpretation.	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics
	Tutorials	--	--	--
	Assignment cum Numerical Problems	Assignment in the form of numerical was given on different topics related to above topics.	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics
III^{ed} Month	**Theory**	Demographic Methods: Introduction, measurement of population, rates and ratios of vital events. Measurement of mortality: CDR, SDR (w.r.t. Age and sex), IMR, Standardized death rates. Numerical based on above topics.	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics
	Practical	Computation of measures of mortality. Completion of life table	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics
	Tutorials	--	--	--
	Revision/Doubt Classes	Revision/Doubt Classes were conducted on different topics related with curriculum.	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics
IVth Month	**Theory**	Life (mortality) tables: definition of its main functions and uses. Measurement of fertility and reproduction: CBR, GFR, and TFR. Measurement of population growth: GRR, NRR. Numerical based on above topics.	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics
	Practical	Computation of measures of fertility and population growth.	B.Sc. (Hons.) Statistics	STAT-GE IV: Applied Statistics
	Revision/Doubt Classes	Revision/Doubt Classes were conducted on different topics related with curriculum.		
	Tutorials	--	--	--

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Paper Name: STAT-C-401 Statistical Inference

Month		Topics	Course	Paper Code/Name
Ist Month	**Theory**	--	--	--
	Practical	Unbiasednes, efficiency, Maximum likelihood estimation and its standard error.	B.Sc. (Hons.) Statistics	STAT-C-401 Statistical Inference
	Tutorials	--	--	--
II^{ed} Month	**Theory**	--	--	--
	Practical	MLEs for variance and standard deviation, Method of moments, Method of moments and its MLE for a given data.	B.Sc. (Hons.) Statistics	STAT-C-401 Statistical Inference
	Tutorials	--	--	--
III^{ed} Month	**Theory**	--	--	--
	Practical	Confidence intervals of different values 90%, 95%, 99%. Power of the test and critical values.	B.Sc. (Hons.) Statistics	STAT-C-401 Statistical Inference
	Tutorials	--	--	--
IVth Month	**Theory**	--	--	--
	Practical	Critical values of n and c, Power of the test and Power curves.	B.Sc. (Hons.) Statistics	STAT-C-401 Statistical Inference
	Tutorials	--	--	--

Note: In addition to Teaching Plan, Mentor Mentee Contact Classes (MMCC) will also be taken with the allotted students.

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Dr Chetan
Assistant Professor (Statistics)

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Even Semester -2022-23

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Name of the Faculty: Dr. Dipika **Department: Statistics**

Semester: II.IV, VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Survival Analysis: To study various survival functions and interrelationship between them. Introduction to various survival models, Censoring Schemes: Definition of censoring. Study of Type I, Type II and progressive or random censoring with biological examples.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Practicals	Estimation of survival function, Determination of death density function and hazard function, Identification of type of censoring and to estimate survival time for type I censored data.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Tutorials			
February	**Theory**	Non parametric Methods: Actuarial and Kaplan-Meier methods for estimating survival function and variance of the Estimator, Competing Risk Theory: Introduction of various measures of competing risk theory, Estimation of probabilities of death using maximum likelihood principle and modified minimum Chi-square methods.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Practicals	Identification of type of censoring and to estimate survival time for type I censored data, Identification of type of censoring and to estimate survival time for type II censored data, Identification of type of censoring and to estimate survival time for progressively type I censored data, Estimation of mean survival time and variance of the estimator for type II censored Data.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Tutorials			
March	**Theory**	Theory of independent and dependent risks: Bivariate normal dependent risk model, Stochastic Epidemic Models: Definition of epidemic, susceptibles and infective. Simple and general epidemic model. Duration of an epidemic.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis

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		Random variables: Discrete random variable	B.A. Program with Statistics as minor	DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical Methods
	Practicals	Estimation of mean survival time and variance of the estimator for progressively type I censored data, To estimate the survival function and variance of the estimator using Non-parametric methods with Actuarial methods, To estimate the survival function and variance of the estimator using Non-parametric method with Kaplan-Meier method.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Tutorials			
	Assignment	Unsolved problems from theory.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Test	Test will be based on Course Covered before midterm break	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
April	**Theory**	Statistical Genetics: Introduction, concepts-Genotype, Phenotype, Dominance, Recessiveness, Linkage and Recombination, Coupling and Repulsion. Mendelian laws of Heredity, Random mating, Gametic array, relation between genotypic array and gametic array under random mating. Segregation matrix. Estimating probabilities of gametes for future generations, Clinical trials: Phases of clinical drug trial. Blinding.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
		continuous random variables, pmf, pdf and cdf, illustrations of random variables and its properties, expectation of random variable and its properties.	B.A. Program with Statistics as minor	DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical Methods
	Practicals	To estimate Crude probability of death, Net-type I probability of death, Net-type II probability of death, partially crude probability of death, To estimate gene frequencies F.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis

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		Based on topic covered in lectures	B.A. Program with Statistics as minor	DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical Methods
May	**Theory**	Variance, covariance and their properties with illustrations. Moments and cumulants, moment generating function with properties, cumulants generating function and characteristic function. Bivariate probability distributions, marginal and conditional distributions, independence of variates (only general idea to be given). Transformation in univariate and bivariate distributions.	B.A. Program with Statistics as minor	DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical Methods
	Practicals	Based on topic covered in lectures	B.A. Program with Statistics as minor	DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical Methods
June	**Theory**	Discrete probability distributions – Binomial, Poisson- measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property, fitting of distribution and examples. Continuous Probability distribution - Normal - measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property and examples. Exponential distribution – moment generating function and lack of memory.	B.A. Program with Statistics as minor	DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical Methods
	Practicals	Based on topic covered in lectures	B.A. Program with Statistics as minor	DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical Methods
July	**Theory**	Gamma distribution – moment generating function, cumulant generating function and additive property.	B.A. Program with Statistics as minor	DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical Methods
	Practicals	Based on topic covered in lectures	B.A. Program with Statistics as minor	DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical Methods

SEMESTER WISE TEACHING PLAN
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Even –Semester 2022-23

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Name of the Faculty: Dr. Ramesh Kumar

Department: Statistics

Semester: IV, VI

Month		Topics	Course	Paper Code/Name
Jan.	**Theory:**	Bivariate Normal Distribution (BVN): pdf of BVN, properties of BVN, marginal and Conditional pdf of BVN. Multivariate Data: Random Vector: Probability mass/density functions, Distribution Function, Mean vector, Dispersion matrix, Marginal distributions, Conditional distribution	Bachelor of Statistics (Hons.) Semester-V	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
		Economic Time Series: Components of time series, Decomposition of time series- Additive and multiplicative model with their merits and demerits, Illustrations of time	GE-4	STAT-GE-4: Applied Statistics
	Practicals:	Bivariate Normal Distribution and it's properties.. Partial Correlation Coefficient. Multiple Correlation Coefficient. Plane of Regression	Bachelor of Statistics (Hons.) Semester-V	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
		Measurement of trend: Fitting of linear, quadratic trend, exponential curve and plotting of trend values and comparing with given data graphically,		
Feb	**Theory:**	Multivariate Normal distribution and its properties. Sampling distribution for mean vector and variance-covariance matrix. Multiple and partial correlation coefficient and their properties. Introduction to discriminant Analysis, Principal Components Analysis and Factor Analysis.	Bachelor of Statistics (Hons.) Semester-III	
		method of semi-averages and method of least squares (linear, quadratic and exponential).Measurement of seasonal variations by method of ratio to trend.	GE-4	STAT-GE-4: Applied Statistics
	Practicals:	Principal Component Analysis.. Discriminant analysis. Factor Analysis.	Bachelor of Statistics (Hons.) Semester-III	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
		Measurement of seasonal indices by Ratio-to-trend method and plotting of trend values and comparing with given data graphically	GE-4	
March	**Theory:**	Sequential Analysis: Sequential probability ratio test (SPRT) for simple v/s simple Hypotheses. Fundamental relations among α, β, A and B, determination of A and B in Practice. Wald's fundamental identity and the derivation of operating characteristics (OC) and average sample number (ASN) functions, examples based on normal, Poisson, binomial and	Bachelor of Statistics (Hons.)	STAT-C-602: Multivariate Analysis and Non-Parametric Methods

		exponential distributions		
		Statistical Quality Control: Importance of statistical methods in industrial research and practice. Determination of tolerance limits	GE-4	STAT-GE-4: Applied Statistics
	Practicals:	SPRT Procedure and Graphical representation of decision lines, acceptance and rejection regions, ASN function and ASN curve . OC function and OC curve.	Bachelor of Statistics (Hons.)	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
	Tutorials:	Construction and interpretation of ō(0) and R-chart.	GE-4	
	<u>Mid Term Test</u>	Internal examinations : Unit-I and II (Multivariate analysis) Unit-IU (Time series)		
	<u>Assignment</u>	Assignment based on Bivariate	Bachelor of Statistics (Hons.)	
April	**Theory**	Nonparametric Tests: Introduction and Concept, Test for randomness based on total number of runs, Empirical distribution function, Kolmogorov Smirnov test for one sample, Sign tests- one sample and two samples, Wilcoxon-Mann-Whitney test, Kruskal-Wallis test.	Bachelor of Statistics (Hons.)	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
		Causes of variations in quality: Chance and Assignable. General theory of control charts, Process & Product control, Control charts for	GE-4	STAT-GE-4: Applied Statistics
	Practicals:	Test for randomness based on total number of runs.. Kolmogorov Smirnov test for one sample. Sign test: one sample, two sample, large samples. Wilcoxon-Mann-Whitney U – test. Kruskal - Wallis test. Wald- Wolfowitz test. Median Test.	Bachelor of Statistics (Hons.)	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
		Construction and interpretation p-chart (fixed sample size) and c-chart	GE-4	STAT-GE-4: Applied Statistics

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

EVEN SEMESTER 2022-23

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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Kalpana Yadav
Department: Statistics
Semester: II, IV and VI

Month		Topic	Course	Paper Code/ Name
January	**Theory**	Introduction to investments and markets: Cashflows-deterministic and random, Defintion of Arbitrage, Risk Aversion.	B.Sc (H) Statistics, Sem VI	Financial Statistics-DSE-IV
		Introduction to index numbers, Construction of price and quantity index numbers by simple Aggregate Method and Weighted aggregate Method, Comparison and interpretation.	G.E I, Sem IV	GE -IV - Applied Statistics
	Practical	To compute Net present value and IRR for given cashflow streams, and also taking inflate into account	B.Sc (H) Statistics, Sem VI	Financial Statistics-DSE-IV
		Construction of price and quantity index number by Laspeyre's, Paasche's formula, Marshall-Edgeworth's formula Fisher's formula.	G.E I, Sem IV	GE -IV - Applied Statistics
February	**Theory**	Effective Interest rate, Nominal Interest rate, Compounding interest rate, Present Value and Future Values of streams, Bonds and Yields, Term structure of interest of interest rates, Forward rates	B.Sc (H) Statistics, Sem VI	Financial Statistics-DSE-IV
		Criteria of a good index number, Construction of wholesale price index numbers, fixed base index numbers and consumer price index numbers with interpretation. Uses and limitations of index numbers. Introduction to Demographic methods, measurements of population, rates and ratios of vital events	G.E I, Sem IV	GE -IV - Applied Statistics
	Practical	To calculate the yield of the bonds and also to compute Forward rates.	B.Sc (H) Statistics, Sem VI	Financial Statistics-DSE-IV
		Construction of wholesale price index number, fixed base index number and CPI with interpretation.	G.E I, Sem IV	GE -IV - Applied Statistics
March	**Theory**	Mean Variance portfolio Theory, Inclusion of a risk-free asset. Introduction to Stochastic Calculus, Brownian Motion.	B.Sc (H) Statistics, Sem VI	Financial Statistics-DSE-IV
		Measurement of Mortality: CDR, Specific Death Rate(w.r.t Age and sex), Infant Mortality Rate, Standardized death rates.	G.E I, Sem IV	GE -IV - Applied Statistics
		A review of theorems related to matrices, triangular, symmetric and skew symmetric matrices, idempotent matrices, Hermitian and skew Hermitian matrices, orthogonal matrices, singular and non-singular matrices and their properties, Trace of a matrix, unitary, Involutory and nilpotent matrices.	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI
	Practical	Practice questions Based on Wiener Process	B.Sc (H) Statistics, Sem VI	Financial Statistics-DSE-IV
		Computation of measure of mortality.	G.E I, Sem IV	GE -IV - Applied

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				Statistics
		Question based on matrices.Construction of idempotent matrix and study its properties, construction of orthogonal matrix.	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI
April	**Theory**	Stochastic Integration, Stochastic differential equations and their solutions; Ito's Lemma. Black-Scholes differential equation, Black- Scholes formula for European and American options.	B.Sc (H) Statistics, Sem VI	Financial Statistics-DSE-IV
		Life table: Assumptions, Description and Costruction of Life Table, Uses of Life table. Measurement of Fertility and reproduction rate: CBR, GFR and TFR. Measurement of Populaiton growth: GRR, NRR. Comparison and interpretation.	G.E I, Sem IV	GE -IV - Applied Statistics
		Definition, properties and application of determinants for third and higher orders, Evaluation of determinants of order 3 and more using transformations. Symmetric and skew symmetric determinants, Circulant determinants, Jacobi's Theorem, the product of determinants. Use of determinants in solution to the system of linear equations.	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI
	Practical	Practice questions Based on Wiener Process and Black Scholes Differential Equation.	B.Sc (H) Statistics, Sem VI	Financial Statistics-DSE-IV
		Completion of Life Table, Computation of measure of fertility and population growth.	G.E I, Sem IV	GE -IV - Applied Statistics
		Problems based on Determinants,	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI
May	**Theory**	Adjoint and inverse of a matrix and related properties, Partitioning of matrices and simple properties. Row reduction and echelon forms, the matrix equations AX=B, solution sets of linear equations, Applications of linear equations, inverse of a matrix. Vector spaces, subspaces, sum of spaces, span of a set, Linear dependence and independence, dimensions and basis, Gram Schmidt Orthogonal Process.	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI
	Practical	Computation of inverse of matrix by partitioning, Practical on Gram Schmidt Orthogonal Process.	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI
June	**Theory**	Rank of a matrix, row rank, column rank, standard theorems on rank, rank of sum and product of two matrices. Generalized inverse (concept, properties with illustration), Characteristic roots and characteristic vector, Properties of chc. Roots and vector, Cayley Hamilton theorem and application, Spectral decomposition. Quadratic forms, derivatives of linear functions and quadratic forms. Derivatives of linear functions and quadratic forms.	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI
	Practical	Practical on Cayley Hamilton theorem, Quadratic form, Generalized inverse	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI
July	**Theory**	Linear orthogonal transformation and their diagonalization.	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI
	Practical	Problems session	B.Sc (H) Statistics, Sem II	Algebra of Statistics-DSC-VI

	SEMESTER WISE TEACHING PLAN
	SRI VENKATESWARA COLLEGE
	EVEN SEMESTER 2022-23

Name of the Faculty: Dr. Nagendra Kumar Kalaparthi

Department: Statistics

Semester: IV

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Paper Code: STAT-SEC-1 & **Paper Name:** Data Analysis Using Software Packages (SPSS)

Month	Theory/ Practical	Topic	Course	Paper Code/ Paper Name
January	**Theory**	SPSS Basics, plot a graph viz. histograms (equal class intervals and unequal class intervals), box plot, bar graphs, line graphs, stem-leaf, frequency polygon, pie chart, ogives with graphical summaries of data.	B.Sc.(H) Statistics, Semester IV	STAT-SEC-1: Data Analysis Using Software Packages (SPSS)
	Practical	Practical's based on Draw histogram for equal/unequal width class interval, Stem and Leaf plot, Box plot frequency polygon, pie chart, bar graphs, line charts, Ogive. Construct frequency table using recode (having equal and unequal interval) and visual binning. Compute descriptive statistics for raw data and grouped data and interpret by computing coefficient of variation, skewness and kurtosis and count, compute, compute with if and rank feature.	B.Sc.(H) Statistics, Semester IV	STAT-SEC-1: Data Analysis Using Software Packages (SPSS)
February	**Theory**	Generate automated reports giving detailed descriptive statistics, correlation and lines of regression.		
	Practical	Practical's based on correlation coefficient (Karl Pearson), Spearman's rank correlation coefficient, Multiple and Partial correlation coefficient and fitting of two lines of regression and their plot.		

		Generation of random sample from Binomial, Poisson, Negative binomial, Uniform, Exponential, Normal, Gamma chi-square t and F distributions Stem and Leaf plots and Box Plots for these random Samples. CLT for binomial and Poisson distribution. (Generate samples, compute their means and draw histogram along with normal curve; normal probability plot)	B.Sc.(H) Statistics, Semester IV	STAT-SEC-1: Data Analysis Using Software Packages (SPSS)
March	**Theory**	Random number generation using different probability distributions and sampling procedures. Fitting of polynomials and exponential curves. Problems based on fitting of suitable distribution. Normal probability plot.	B.Sc.(H) Statistics, Semester IV	STAT-SEC-1: Data Analysis Using Software Packages (SPSS)
	Practical	Practical's based on draw simple random sample with/without replacement, stratified and systematic sample from a given data set and compute various measures by select cases and (or) complex sampling. Fit linear, quadratic and exponential curve and find which one is best suited from the graph. Obtain sampling distribution of samplemean in sampling from various distributions (sampling distribution can be shown to be normal by normal probability plot) as well as using recoding option and then computing quantiles. Construct bivariate distribution using recode,		
		Simple analysis, create and manage statistical analysis projects, import data, Basics of statistical inference in order to	B.Sc.(H)	STAT-SEC-1:

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April	**Theory**	understand hypothesis testing and compute p-values and confidence intervals. Comparison of several means. Syntax code editing.	Statistics, Semester IV	Data Analysis Using Software Packages (SPSS)
	Practical	t-test for single mean, difference of means and Paired t-test, F-Test, Chi Square test for independence of attributes for raw data (using crosstab feature) and Chi Square test for independence of attributes (given contingency table), chi square test for goodness of fit and comparison of several means (ANOVA), Generate a random sample and fit Binomial, Poisson and Negative Binomial distribution. Comparison of series when (a) with missing observation (b) when missing observation is replaced by a constant (c) when missing observation is replaced by an average (mean, median or mode).	B.Sc.(H) Statistics, Semester IV	STAT-SEC-1: Data Analysis Using Software Packages (SPSS)

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

EVEN SEMESTER 2022-23

Name of the Faculty: Dr. M.S.Ravikumar

Department: Statistics

Semester: IV

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Paper Code: STAT-C-401 & **Paper Name:** Statistical Inference

Month	Theory/ Practical	Topic	Course	Paper Code/ Paper Name
January	Theory	Concepts of estimation, unbiasedness, sufficiency, consistency and efficiency. Fisher-Neyman Criterion (statement and applications), Factorization theorem. Complete statistic, Minimum variance unbiased estimator (MVUE), Rao-Blackwell and Lehmann-Scheffe theorems and their aaplications. Cramer-Rao inequality, MVB estimators and their applications.	B.Sc.(H) Statistics, Semester IV	STAT-C-401: Statistical Inference
	Practical	Unbiasednes, efficiency, Maximum likelihood estimation and its standard error	B.Sc.(H) Statistics, Semester IV	STAT-C-401: Statistical Inference
February	Theory	Method of moments, method of maximum likelihood estimation, method of minimum Chi-square, basic idea of Bayes estimators.	B.Sc.(H) Statistics, Semester IV	STAT-C-401: Statistical Inference
	Practical	MLEs for variance and standard deviation, Method of moments, Method of moments and its MLE for a given data.	B.Sc.(H) Statistics,	STAT-C-401:

			Semester IV	Statistical Inference
March	**Theory**	Null and alternative hypothesis of simple and composite, Type-I and Type-II errors, critical region, level of significance, size and power, best critical region, most powerful test, uniformly most powerful test, uniformly most powerful unbiased critical region (UMPU). Neyman Pearson Lemma and its applications to construct most powerful test.	B.Sc.(H) Statistics, Semester IV	STAT-C-401: Statistical Inference
	Practical	Confidence intervals of different values 90%, 95%, 99%. Power of the test and critical values.	B.Sc.(H) Statistics, Semester IV	STAT-C-401: Statistical Inference
April	**Theory**	Likelihood ratio test, properties of likelihood ratio tests. Confidence interval for the parameters of various distributions, Confidence interval for Binomial proportion, Confidence interval for population correlation coefficient for Bivariate Normal distribution, Pivotal quantity method of constructing confidence interval, Large sample confidence intervals.	B.Sc.(H) Statistics, Semester IV	STAT-C-401: Statistical Inference
	Practical	Critical values of n and c, Power of the test and Power curves.	B.Sc.(H) Statistics, Semester IV	STAT-C-401: Statistical Inference

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

EVEN SEMESTER 2022-23

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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Tanuja Sriwastava

Department: Statistics

Semester: II, IV, VI

Month		Topic	Course	Paper Code/ Name
January	Theory	Introduction to derivatives, Tools Needed for Option Pricing: Forward contracts, spot price, forward price, future price, Call and put options Zero-coupon bonds and discount bonds, Pricing derivatives	B.Sc. (H) Statistics, Semester VI	STAT-DSE-4(A): Financial Statistics
	Practical	Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-4(A): Financial Statistics
		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-3(A): Biostatistics and Survival Analysis
		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester IV	STAT-C-403 Statistical Quality Control
February	Theory	Arbitrage relations and perfect financial markets, Pricing futures, Put-call parity for European and American options Relationship between strike price and option price.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-4(A): Financial Statistics
	Practical	Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-4(A): Financial Statistics
		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-3(A): Biostatistics and Survival Analysis
		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester IV	STAT-C-403 Statistical Quality Control
March	Theory	Discrete Stochastic Processes: Binomial processes, General random walks, Geometric random walks, Binomial models, Trinomial models	B.Sc. (H) Statistics, Semester VI	STAT-DSE-4(A): Financial Statistics
		Introduction, Sources of collecting vital statistics, Errors in census and registration data, Uses of Vital Statistics.	B.Sc. (H) Statistics, Semester II	DSC-5: Applied Statistics
	Practical	Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-4(A): Financial Statistics

		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-3(A): Biostatistics and Survival Analysis
		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester IV	STAT-C-403 Statistical Quality Control
		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester II	DSC-5: Applied Statistics
April	**Theory**	Binomial Model for European options: Cox-Ross-Rubinstein approach to option pricing. Discrete dividends, Trinomial model for American options, Hedging portfolios: Delta, Gamma and Theta hedging.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-4(A): Financial Statistics
		Measurements of mortality: Crude death rate (CDR), Age specific death rate (ASDR), Standardized death rates and Infant mortality rate. Life table: Assumptions, description and construction of Complete life table. Definition of Abridged life table.	B.Sc. (H) Statistics, Semester II	DSC-5: Applied Statistics
	Practical	Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-4(A): Financial Statistics
		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester VI	STAT-DSE-3(A): Biostatistics and Survival Analysis
		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester IV	STAT-C-403 Statistical Quality Control
		Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester II	DSC-5: Applied Statistics
May	**Theory**	Measurements of fertility: Crude birth rate (CBR), General fertility rate (GFR), Age specific fertility rate (ASFR), Total fertility rate (TFR). Measurements of population growth: Crude rate of natural increase, Pearle's vital index, Gross reproduction rate (GRR) and Net reproduction rate (NRR). Introduction, Problems involved in the construction of index numbers	B.Sc. (H) Statistics, Semester II	DSC-5: Applied Statistics
	Practical	Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester II	DSC-5: Applied Statistics
June	**Theory**	Constructions of index numbers of Prices and Quantities. Index numbers based on Average of Price Relatives, Criteria for a good Index number. Errors in the measurement of Price and Quantity Index Numbers, Consumer price index number, Concept of Wholesale price index number with interpretation. Uses and Limitation of Index numbers.	B.Sc. (H) Statistics, Semester II	DSC-5: Applied Statistics

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	Practical	Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester II	DSC-5:Applied Statistics
July	**Theory**	Introduction, Present official statistical system in India, Statistical offices at the Centre, Statistical offices in the States, Methods of collection of official statistics on population, price (retail as well wholesale).	B.Sc. (H) Statistics, Semester II	DSC-5:Applied Statistics
	Practical	Practicals based on topic covered in the classes.	B.Sc. (H) Statistics, Semester II	DSC-5:Applied Statistics

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2022-23 (Even Semester)

Name of the Faculty: Dr. S. SEENIVASAN
Department: Tamil
NEP-UGCF Semester: II
Paper Name: Translation & Interpretation in Tamil-A

Month	Theory/Practical	Topics	Course
March	Theory	History of Tamil Translation & Interpretation, qualities of Translator & Interpreter- Purpose, Problems & Usages of Translation & Interpretation.	AEC Tamil
April	Theory	Target groups: Translation - Readers from different fields-Interpretation - Person/group from different profession	AEC Tamil
May	Theory Assignment	Basic requirements: Knowledge of Source Language (SL) and Target Language (TL)	AEC Tamil
June	Theory Mid-Term Test	Methods of Translation and Interpretation-Types: Literary, Administrative, Legal, Technical, and Knowledge based etc. -Review of sample translations.	AEC Tamil
July	Theory	Practical Translation: Tamil to other languages and vice versa-Interpretation practice: Tamil to other languages and vice versa	AEC Tamil

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2022-23 (Even Semester)

Name of the Faculty: Dr. SURESH.K
Department: Tamil
NEP-UGCF Semester: II
Paper Name: Pre-Intermediate Tamil-B

Month	Theory/Practical	Topics	Course
March	Theory	Compound verbs-Transitive and intransitive verbs	GE Tamil
April	Theory	Making compound sentences in Tamil using conjunction-Making complex sentences in Tamil	GE Tamil
May	Theory Assignment	Reading comprehension	GE Tamil
June	Theory Mid-Term Test	Paragraph and letter Writing-Conversation writing	GE Tamil
July	Theory	Translation from English to Tamil-Translation from Tamil to English	GE Tamil

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2022-23 (Even Semester)

Name of the Faculty: Dr. SURESH.K
Department: Tamil
NEP-UGCF Semester: II
Paper Name: Basic Tamil: Introduction to Tamil -B

Month	Theory/Practical	Topics	Course
March	Theory	Introduction to sounds along with sound –images (Alphabets and Numbers)- Script introduction	AEC Tamil
April	Theory	Introduction of Numerals (up to 100)	AEC Tamil
May	Theory Assignment	Introduction to Noun, Pronoun & Prepositions- Introducing basic simple Tamil sentence formation	AEC Tamil
June	Theory Mid-Term Test	Noun Phrase- Noun Phrase construction (NP – NP structure)	AEC Tamil
July	Theory	Everyday Vocabulary:	AEC Tamil

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2022-23 (Even Semester)

Name of the Faculty: Dr. S. SEENIVASAN
Department: Tamil
NEP-UGCF Semester: II
Paper Name: Introduction to Comparative Studies in Tamil-A

Month	Theory/Practical	Topics	Course
March	Theory	Introduction to Tamil Comparative Studies-	GE Tamil
April	Theory	Definition on Comparative Literature- World View of Literature.	GE Tamil
May	Theory Assignment	Use of Comparative Literature- Literature and Fine Arts- Literature and other Disciplines of Knowledge.	GE Tamil
June	Theory Mid-Term Test	Two major theories of Comparative Literature-Four dimensions of literary views- Influence theory- Parallel theory.	GE Tamil
July	Theory	Themetology in Comparative Literature- Translation and Comparative Literature- Source Language and Target Language.	GE Tamil

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2022-23 (Even Semester)

Name of the Faculty: Dr. SURESH.K
Department: Tamil
NEP-UGCF Semester: II
Paper Name: An Introduction of Tamil Literature (Modern)

Month	Theory/Practical	Topics	Course
March	Theory	Poetry literature: Traditional Poetry	B.A Prog Tamil DSC
April	Theory	New Verses & Hycoo.	B.A Prog Tamil DSC
May	Theory Assignment	Prose & Drama Literatures	B.A Prog Tamil DSC
June	Theory Mid-Term Test	Short story & Novel Literatures	B.A Prog Tamil DSC
July	Theory	Christian & Islamic Literatures	B.A Prog Tamil DSC

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2022-23 (Even Semester)

Name of the Faculty: Dr. SURESH.K
Department: Tamil
CBCS Semester: IV
Paper Name: Study of Important Texts
Paper code: 62084403/ 62081436_OC

Month	Theory/Practical	Topics	Course
January	Theory	Introduction of Sangam literature	B.A Prog Tamil DSC
February	Theory	Introduction of Sangam Literature and Nedunalvaadai	B.A Prog Tamil DSC
March	Theory Assignment	Nedunalvaadai Life style of Forest land (Mullai) Concept of Akam and Puram	B.A Prog Tamil DSC
April	Theory Mid-Term Test	Nedunalvaadai Nedunalvaadai in Sangam Literature	B.A Prog Tamil DSC
May	Theory	Nedunalvaadai Expressions of the Characters and culture, custom of the people	B.A Prog Tamil DSC

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2022-23 (Even Semester)

Name of the Faculty: Dr. S. SEENIVASAN
Department: Tamil
CBCS Semester: IV
Paper Name: Study of Important Texts
Paper code: 62084403/ 62081436_OC

Month	Theory/ Practical	Topics	Course
January	Theory	Kuyilpaattu Introduction of Subramania Bharathi and contemporary Poets	B.A Prog Tamil DSC
February	Theory	Kuyilpaattu in Barathi's Epics	B.A Prog Tamil DSC
March	Theory Assignment	Kuyilpaattu Bharathiyin Kuyilpattu Punaithiran. Creative Style and Techniques of Kuyilpaattu	B.A Prog Tamil DSC
April	Theory Mid-Term Test	Kuyilpaattu Views & Description of Nature in Kuyilpaattu	B.A Prog Tamil DSC
May	Theory	Kuyilpaattu Emotions and Expressions of Characters	B.A Prog Tamil DSC

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2022-23 (Even Semester)

Name of the Faculty: Dr. S. SEENIVASAN
Department: Tamil
CBCS Semester: VI
Paper Name: Selected Texts: Poetry & Play
Paper code: 62087640

Month	Theory/Practical	Topics	Course
January	Theory	Kudumba Vilakku Life history of Bharathi Dasan and contemporary Poets	B.A Prog Tamil DSE
February	Theory	Kudumba Vilakku Study of culture and customs of Tamils	B.A Prog Tamil DSE
March	Theory Assignment	Kudumba Vilakku Kudumba Vilakku in Modern Epic	B.A Prog Tamil DSE
April	Theory Mid-Term Test	Kudumba Vilakku Study of Characters in Kudumba Vilakku	B.A Prog Tamil DSE
May	Theory	Kudumba Vilakku Expressions of the Women Characters	B.A Prog Tamil DSE

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2022-23 (Even Semester)

Name of the Faculty: Dr. SURESH.K
Department: Tamil
CBCS Semester: VI
Paper Name: Selected Texts: Poetry & Play
Paper code: 62087640

Month	Theory/Practical	Topics	Course
January	Theory	Durkkira Avalam Outline of modern street play	B.A Prog Tamil DSE
February	Theory	Durkkira Avalam Durkkira Avalam in Modern Tamil Plays	B.A Prog Tamil DSE
March	Theory Assignment	Durkkira Avalam Study of Characters in Durkkira avalam Character study of Durkkiran	B.A Prog Tamil DSE
April	Theory Mid-Term Test	Durkkira Avalam Study of Social conflicts in Durkkira Avalam	B.A Prog Tamil DSE
May	Theory	Durkkira Avalam Techniques of Tamil Play and Durkkira Avalam	B.A Prog Tamil DSE

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Sri Venkateswara College
Semester Wise Teaching Plan
2022-23 (Even Semester)

Name of the Faculty: Dr. T. SATHEESH
Department: TELUGU
NEP-UGCF Semester II
Paper Name: History of Telugu Language (CORE)

Month	Theory/Practical	Topic	Course
March	Theory	Dravidian Languages and Telugu	B.A. Prog. Telugu DSC
April	Theory	Evolution of Telugu Script, Mentions of Telugu, Tenugu and Andhramu	B.A. Prog. Telugu DSC
May	Theory	Evolution of Telugu Language: BC. 200 to AD. 1100	B.A. Prog. Telugu DSC
June	Theory and Assignment	Evolution of Telugu Language: AD. 1100 to 1900 Semantic changes	B.A. Prog. Telugu DSC
July	Theory and Test	Dialects in Telugu	B.A. Prog. Telugu DSC

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Name of the Faculty: Dr. T. SATHEESH
Department: TELUGU
NEP-UGCF Semester II
Paper Name: Translation and Interpretation in Telugu (Ability Enhancement Course (AEC-A))

Month	Theory/Practical	Topic	Course
March	Theory	Translation and Interpretation: An Introduction	Degree all Prog. AEC (A)
April	Theory	Translation and Interpretation: An Introduction	Degree all Prog. AEC (A)
May	Theory	Translation Theories, Methods and Problems of translation	Degree all Prog. AEC (A)
June	Theory and Assignment	Translation Theories, Methods and Problems of translation	Degree all Prog. AEC (A)
July	Theory and Test	Practical and Machine Translation and Interpretation practice	Degree all Prog. AEC (A)

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Semester Wise Teaching Plan
2022-23 (Even Semester)

Name of the Faculty: Dr. Dattaiah Attem
Department: TELUGU
NEP-UGCF Semester II
Paper Name: An exegetic study of Telugu Novel (CORE)

Month	Theory/Practical	Topic	Course
March	Theory	The Origin and development of Telugu Novel Satyaraja purva desha Yatralu	B.A. Prog. Telugu DSC
April	Theory	Features of Telugu Novel, Chaduvu	B.A. Prog. Telugu DSC
May	Theory	Trends and various approaches in fiction writing Atadu Adavuni Jayinchadu	B.A. Prog. Telugu DSC
June	Theory and Assignment	Chillara Devullu	B.A. Prog. Telugu DSC
July	Theory and Test	Chillara Devullu	B.A. Prog. Telugu DSC

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Name of the Faculty: Dr. Dattaiah Attem
Department: TELUGU
NEP-UGCF Semester II
Paper Name: Basic in Telugu (Ability Enhancement Course (AEC-B))

Month	Theory/Practical	Topic	Course
March	Theory	Introduction to Telugu Vowel and Consonant Sounds and images, Script introduction	Degree all Prog. AEC (A)
April	Theory	Introduction to Numerals, Noun and Pronoun, Telugu qualifiers/adjectives	Degree all Prog. AEC (A)
May	Theory	Telugu Prepositions, Conjunction and their usage, Introduction to Verb/Tense	Degree all Prog. AEC (A)
June	Theory and Assignment	Introduction to Telugu syntax	Degree all Prog. AEC (A)
July	Theory and Test	Making Sentences in Telugu	Degree all Prog. AEC (A)

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January-April, 2023

Name of the Faculty: Dr. Anita Verma **Department: Zoology**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory (2 periods)**	**Unit I: Production of Energy:** Feeding patterns found in different animals; Intracellular and extracellular digestion, digestive enzymes, cellulose digestion in animals.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	Practicals (4+4+4=12)	Syllabus overview, general instructions and maintenance of lab record. Effect of isotonic, hypotonic and hypertonic saline solutions on erythrocytes. Preparation of temporary mounts: nerve cells.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Syllabus overview, general instructions and maintenance of lab record. Estimation of haemoglobin using Sahli's haemoglobinometer. Preparation of haemin and haemochromogen crystals. Enumeration of white blood cells using haemocytometer.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
FEBRUARY	**Theory: (2 periods)**	**Unit II: Gas Exchange In Organisms:** Physiology of aquatic and terrestrial breathing, respiratory organs in aquatic and terrestrial organisms: trachea in insects, gills in fishes, lungs in birds; role of skin in respiration.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	Practicals: (4+4+4=12)	Enumeration of white blood cells using haemocytometer. Preparation of blood smear and Differential Leucocyte Count (D.L.C).	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Enumeration of red blood cells and white blood cells using haemocytometer. Examination of sections of mammalian oesophagus, stomach, duodenum, ileum, rectum liver, trachea, lung, kidney. Interpretation of	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)

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		recording of frog's heart beat (in situ) under normal and experimental conditions.		
MARCH	**Theory: (2 periods)**	**Unit V: Integrative Physiology:** An overview of neuronal structure and function; general principles of sensory physiology- chemoreceptors (gustatory and olfactory).	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	Practicals: (4+4+4=12)	Study of permanent slides of mammalian oesophagus, stomach, ileum, rectum, liver, trachea, lung, kidney, skin.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Study of lung volumes and capacities by Spirometry; Comparison of normal physiological and one pathological condition. Revision.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
		Classification, structure and functions of tissues: epithelial, connective, muscular and nervous tissue. Preparation of temporary mounts: Squamous epithelium.	B.Sc. (H) Zoology Semester II	DSC-6: Human Physiology-Control and Coordination Systems
	Assignment:	Topics for presentation assigned to students related to the syllabus and a new discovery related to the topic	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	<u>Test</u>	**Internal assessment test** (Unit I: Production of Energy, Unit II Gas exchange and Unit III: Bulk Transport).	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
APRIL	**Theory: (2 periods)**	**Unit V: Integrative Physiology:** General principles of sensory physiology- mechanoreceptors (statocyst in invertebrates and lateral line system of fishes);sonar system in bats; General principles of sensory physiology- electroreceptors (electric organs in fishes); thermoreceptors.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	Practicals: (4+4+4=12)	Mounting of septal and pharyngeal nephridia of earthworm.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Recording of blood pressure using a sphygmomanometer. Revision. Evaluation of students on their performance in practical and Record Mock Practical Test. Submission of practical files.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)

		Preparation of temporary mounts: Striated muscle fibres, Nerve cells. Structure, histology, types and function of bones and cartilage.	B.Sc. (H) Zoology Semester II	DSC-6: Human Physiology-Control and Coordination Systems
	Test:	Mock Test (full syllabus	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Final Practical assessment.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
MAY	**Practicals:**	Classification and histological structure of muscle; ultrastructure of striated muscle. Demonstration of the unconditioned reflex action (Deep tendon reflex such as knee jerk reflex). Recording of simple muscle twitch with electrical stimulation (Interpretation/ Virtual). Study of permanent slides of Mammalian Skin, Spinal cord, Hypothalamus, Pineal, Pituitary.	B.Sc. (H) Zoology Semester II	DSC-6: Human Physiology-Control and Coordination Systems
JUNE	**Practicals:**	Study of permanent slides of Thyroid, Parathyroid, Pancreas, Adrenal, Testis and Ovary. Permanent slide preparation from various tissues: Tissue fixation, block preparation, tissue sectioning, H&E staining, microscopy.	B.Sc. (H) Zoology Semester II	DSC-6: Human Physiology-Control and Coordination Systems
JULY	**Practicals**	Revision of Exercises and Final exam	B.Sc. (H) Zoology Semester II	DSC-6: Human Physiology-Control and Coordination Systems

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SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA
COLLEGE

January-April, 2023

Name of the Faculty: Ptof. Om Prakash
Department: Zoology
Semester: Even – IV and VI

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Subjects:

THEORY: B.Sc. (Hons) Sem IV: **GE: Aquatic Biology,**
B.Sc. (Life Scieences), Sem VI **Immunology**

PRACTICAL: B.Sc (Hons.) Zoology, Sem VI**: Animal Biotechnology**
B.Sc. (Hons) Sem IV: **GE: Aquatic Biology,**
B.Sc (P) Life Sciences, Sem VI: **Immunology**

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Unit 3:Antigens 8hrs Antigens and immunogens, antigenicity and immunogenicity, Factors affecting immunogenicity,		**DSE Immunology**
	Practical:	PCR ● Demonstration of Restriction digestion of Plasmid/Lambda DNA. ● Calculation of transformation efficiency from calcium	B.Sc. (H) Zoology Semester VI	**ZH DSE Animal Biotechnology**
		To perform Ouchterlony double immunodiffusion assay. ABO blood group determination.	B.Sc Life Sciences Sem VI(Batch 3)	**DSE /Immunology**
		-Determine the area of lake using graphimetric and gravimetric method. -Identify the important Macrophytes, phytoplanktons and zooplanktons present in a lake ecosystem - Determine the amount of turbidity/ transparency, dissolved oxygen in water collected from a nearby lake/ water body.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**

February	**Theory:**	UNIT 3: Antigenic determinants (B and T cell epitopes), Conceptof antigen recognition by B and T-cells, Adjuvants and haptens.	B.Sc Life Sciences Sem VI(Batch 3)	**DSE /Immunology**
	Practical	Construction of circular and linear restriction map from the data provided. ● DNA fingerprinting	B.Sc. (H) Zoology Semester VI	**ZH DSE: Animal Biotechnology**
		Cell counting and viability of splenocytes. ELISA Immunoelectrophoresis	B.Sc Life Sciences Sem VI(Batch 3)	**DSE / Immunology**
		- Determine the amount of free carbon dioxide, alkalinity (carbonates, bicarbonates)in water collected from a nearby lake/ water body. - Instruments used in limnology (Secchi disc, van darn bottle) and their significance.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
March	**Theory:**	Unit4: Immunoglobulins 10hrs Structure, different classes and function of antibodies, Antigenic determinants on immunoglobulins	B.Sc Life Sciences Sem VI(Batch 3)	**Immunology**
	Practicals	● Construction of circular and linear restriction map from the data provided. ● DNA fingerprinting	B.Sc. (H) Zoology Semester VI	**ZH DSE: Animal Biotechnology**
		Study of lymphoid organs: spleen, thymus, lymph nodes. Preparation of stained blood film.	B.Sc Life Sciences Sem VI(Batch 3)	**Immunology**
		- Instruments used in limnology (conductivity meter, turbidity meter, PONAR grab sampler) and their significance. Visit to a sewage treatment plant/ fisheries institute - A project report on a visit to sewage treatment plant/ fisheries institute	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
	Assignment	Immunology Assignment	B.Sc Life Sciences Sem VI(Batch 3)	**Immunology**

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	Mid Term Test	Immunology Assignment	B.Sc Life Sciences Sem VI(Batch 3)	**Immunology**
April	**Theory**	Revision	B.Sc Life Sciences Sem VI(Batch 3)	**Immunology**
	Practical	Genomic DNA isolation from E.coli, ● Plasmid DNA isolation (pUC 18/19) from E.coli ● Mock Exam	B.Sc. (H) Zoology Semester VI	**ZH DSE: Animal Biotechnology**
		Evaluation of Practical File Practice and repetition of practical Conduct of Mock examination.	B.Sc Life Sciences Sem VI (Batch 3)	**DSE / Immunology**
		Evaluation of Practical File and Report Practice and Repetition of all experiments Conduct of Mock examination	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Planner: Even Semester 2023 (Jan-April)

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Name of the Faculty: Dr. P.Jayaraj
Department: Zoology
Semester: VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	DEVELOPMENTAL BIOLOGY Unit 1: Introduction 4 Historical perspective and basic concepts: Phases of development, Cell-Cell interaction, Pattern formation, Differentiation and growth, Differential gene expression, Cytoplasmic determinants and asymmetric cell division	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
	Practicals	IMMUNOLOGY Unit6: Complement System: Components, alternate and classical pathway, biological consequences of complement activation	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
		DEVELOPMENTAL BIOLOGY Study of whole mounts and sections of developmental stages of frog through permanent slides: Cleavage stages, blastula, gastrula, neurula, tail-bud stage, tadpole (external and internal gill stages)	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		1. Study of types of fossils (e.g. Body fossils, trails, casts, moulds and others) and Index fossils of Palaeozoic era *2. Connecting links/transitional forms - Eg. Euglena, Neopilina, Balanoglossus, Chimaera,Tiktaalik, Archaeopteryx, Ornithorhynchus* 3. Living fossils - Eg. *Limulus, Peripatus,Latimeria, Sphaenodon*	B.Sc. (HONOURS) BIOLOGICAL SCIENCE Semester VI III year	CORE COURSE Evolutionary Biology (BS C-14)
		IMMUNOLOGY 1. Demonstration of lymphoid organs. 2. Histological study of spleen, thymus and lymph nodes through slides/photographs	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
February	**Theory**	DEVELOPMENTAL BIOLOGY Unit 2: Early Embryonic Development Fate maps (including Techniques), Early development of frog and chick up to gastrulation; Embryonic induction and organizers	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		IMMUNOLOGY Unit7: Cytokines :Basic properties and functions of cytokines		

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	Practicals:	DEVELOPMENTAL BIOLOGY Study of whole mounts of developmental stages of chick through permanent slides: Primitive streak (13 and 18 hours), 21, 24, 28, 33, 36, 48, 72, and 96 hours of incubation (Hamilton and Hamburger stages)	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		4. Vestigial, Analogous and Homologous organs using photographs, models or specimen **5. Selection Exemplifying Adaptive strategies (**Colouration, Mimetic form, Coevolution; Adaptations to aquatic, fossorial and arboreal modes of life**)** using Specimens	B.Sc. (HONOURS) BIOLOGICAL SCIENCE Semester VI III year	CORE COURSE Evolutionary Biology (BS C-14)
		IMMUNOLOGY 3. Preparation of stained blood film to study various types of blood cells. 4. Oüchterlony's double immuno-diffusion method.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
March	**Theory**	DEVELOPMENTAL BIOLOGY Unit 3: Late Embryonic Development 8 Fate of Germ Layers; Extra-embryonic membranes in birds.Implantation of embryo in humans, Placenta (Structure, types and functions of placenta)	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		IMMUNOLOGY Unit8: Immune System in Health and Diseases Hypersensitivity:Gell and Coombs' classification; Briefly discuss the concepts of Autoimmunity.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology

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	Practical	DEVELOPMENTAL BIOLOGY Study of the developmental stages and life cycle of Drosophila from stock culture	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		6. Simulation experiments using coloured beads/playing cards to understand the effects of Natural selection on allele frequencies 7. Simulation experiments using coloured beads/playing cards to understand the role of Bottleneck effect and Founder effect on allele frequencies 8. Digit reduction in horse phylogeny (study from chart)	B.Sc. (HONOURS) BIOLOGICAL SCIENCE Semester VI III year	CORE COURSE Evolutionary Biology (BS C-14)
		IMMUNOLOGY 5. ABO blood group determination. 7. Demonstration of ELISA and Immunoelectrophoresis.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	Assignment	DEVELOPMENTAL BIOLOGY To Solve and submit questionnaire for the topics covered before mid semester break	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		To Solve and submit questionnaire for the topics covered before mid semester break	B.Sc. Life sciences sem II (FLS)	
	Mid Term Test	Topics covered before mid semester break and from assingnment		

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APRIL	**Theory:**	DEVELOPMENTAL BIOLOGY Unit 4: Post Embryonic Development Metamorphosis: Changes, hormonal regulations in amphibians and insects; Regeneration: Modes of regeneration, epimorphosis, morphallaxis and compensatory regeneration (with one example each); Ageing: Concepts and Theories Unit 5: Implications of Developmental Biology Teratogenesis: Teratogenic agents and their effects on embryonic development; In vitro fertilization, Stem cell (ESC), Amniocentesis	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		IMMUNOLOGY Immune dysfunctions and Immunodeficiency	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	Practical:	**DEVELOPMENTAL BIOLOGY** **Study of different sections of placenta (photomicropgraph/ slides)** **Submission of project report on Drosophila culture/chick embryo development** ● Revision/ mock exam	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		9. Study of horse skull to illustrate key features in equine evolution 10. Study of monkey and human skull - A comparison to illustrate common primate and unique Hominin features 11. Construction of Phylogenetic tree using morphological characters **12. Educational visit:** Visit to Geology/ Anthropology museums, Delhi University	B.Sc. (HONOURS) BIOLOGICAL SCIENCE Semester VI III year	CORE COURSE Evolutionary Biology (BS C-14)
		Immunology Revision/mock exam	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
		● Revision/ mock exam		

SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA
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January -May 2023, (Session 2022-23)

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Name of the Faculty: Dr. Rajendra Phartyal

Department: Zoology

Semester: IV, VI: Theory: B.Sc. H . Biological Science Sem VI(Evolutionary Biology), B.Sc. (H) Zoology Sem VI (Evolutionary Biology), BSc (H) Zoology Semester IV (Physiology: Life Sustaining Systems)
Practicals: B.Sc. H . Biological Science Sem VI(Evolutionary Biology), B.Sc. (H) Zoology Sem VI (Evolutionary Biology), BSc (H) Zoology Semester IV (Physiology: Life Sustaining Systems)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	**Evolutionary Biology** Paleobiological: Concept of Stratigraphy and geological timescale; fossil study (types,formation and dating methods). Anatomical: Vestigial organs; Homologous and Analogousorgans (concept of parallelism and convergence in evolution). Taxonomic: Transitionalforms/evolutionary intermediates; living fossils	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology Speciation: Micro-evolutionary changes (inter-population variations, clines, Ring species, races), Species concept, Isolating mechanisms, Modes of speciation, Adaptive radiation/macroevolution, Phyletic gradualism and punctuated equilibrium	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology: Life Sustaining Systems **Physiology of Digestion** Structural organization and functions of gastrointestinal tract and associated glands; Mechanical and chemical digestion of food;	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

	Practicals:	**Evolutionary Biology** ● Living fossils - Eg. *Limulus, Peripatus,Latimeria, Sphaenodon* ● Study of types of fossils (e.g. Body fossils, trails, casts and moulds and others) and Index fossils of Palaeozoic era ● Vestigial, Analogous and Homologous organs using photographs, models or specimen ● Connecting links/transitional forms - Eg. *Euglena, Neopilina, Balanoglossus, Chimaera,Tiktaalik, Archaeopteryx, Ornithorhynchus*	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology ● Study of fossils fromModels/ Pictures. ● Study of homology and analogy from suitable specimens.	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems Syllabus overview, general instructions and maintenance of lab record. Estimation of haemoglobin using Sahli's haemoglobinometer Preparation of haemin and haemochromogen crystals Enumeration of white blood cells using haemocytometer	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
FEBRUARY	**Theory:**	**Evolutionary Biology** Mass-scale extinctions: causes, significance and events. Cretaceous: Tertiary Mass Extinction in detail. . Phylogenetic: a) Fossil based: Phylogenyof horse as a model.	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology Mass extinctions (events, causes and effects), Detailed explanation of K-T extinction Palaeontological: Fossils (formation, types and dating); Geological time scale; Study of horse phylogeny	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems ● Absorptions of carbohydrates, lipids, proteins, water, minerals and vitamins; Hormonal control of secretion of enzymes in Gastrointestinal tract.	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

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	Practicals:	**Evolutionary Biology** ● Simulation experiments using coloured beads/playing cards to understand the effects of Natural selection on allele frequencies ● **Selection Exemplifying Adaptive strategies (**Colouration, Mimetic form, Co-adaptation and co-evolution; Adaptations to aquatic, fossorial and arboreal modes of life**)** using Specimens	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology ● Study and verification of Hardy-Weinberg Law by chi square analysis. ● Construction of cladograms based on morphological characters.	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems ● Enumeration of red blood cells and white blood cells using haemocytometer ● Examination of sections of mammalian oesophagus, stomach, duodenum, ileum, ● rectum liver, trachea, lung, kidney ● Interpretation of recording of frog's heart beat (in situ) under normal and experimental conditions.	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
MARCH	**Theory:**	**Evolutionary Biology** Primate characteristics and unique Hominin characteristics. Advantages and adaptations to bipedalism.Primate phylogeny leading to Homininline.	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology Unique hominin characteristics contrasted with primate characteristics	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems Histology of respiratory tract; Mechanism of respiration, Pulmonary ventilation; Respiratory volumes and capacities; Transport of oxygen and carbon dioxide in blood;	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

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	Practicals:	**Evolutionary Biology** ● Simulation experiments using coloured beads/playing cards to understand the effects of Bottleneck effect and Founder effect ● Digit reduction in horse phylogeny (study from chart), ● Study of horse skull to illustrate key features in equine evolution ● Construction of Phylogenetic tree using morphological characters.	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology ● Construction of phylogenetic tree with the help of bioinformatics tools (Clustal X, Phylip, MLK) and its interpretation. ● Study of variations in a sample human population: (a) Continuous variation: Height/Weight in relation to age and sex (b) Discontinuous variation: Ability/Inability to taste Phenyl thiocarbamide (PTC).	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems ● Study of lung volumes and capacities by spirometry Comparison of normal physiological and one pathological condition. ● Revision	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
	<u>Assignment</u>	**Evolutionary Biology**	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
	<u>TESTS</u>	**Evolutionary Biology**	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
APRIL	**Theory**	**Evolutionary Biology** Australopithecines, Homo habilis, Homo erectus, Neanderthal man . Archaic and modern Homo sapiens. Human migration. Theories. Brief reference to molecular analysis of human origin – Mitochondrial DNA and Y-chromosome studies.	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)

		Evolutionary Biology Variations: Heritable variations and their role in evolution. Primate phylogeny from Dryopithecus leading to Homo sapiens, molecular evidences in human evolution.	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology: Life Sustaining Systems Dissociation curves and the factors influencing it; Carbon monoxide poisoning; Control of respiration.	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
	Practicals:	**Evolutionary Biology** ● Study of monkey and human skull - A comparison to illustrate common primate and unique Hominin features ● Revision and mock practical test ● Extension activity if time permits : Teaching Bioinformatic tools and introduction to databases Alignment using clustal X and construction of phylogenetic tree ● Visit to Geology/ Anthropology museums, Delhi University if permission is obtained	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology ● Demonstration of role of natural selection and genetic drift in changing allelic frequencies using simulation studies. ● Mock	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems ● Recording of blood pressure using a sphygmomanometer ● Revision ● Evaluation of students on their performance in practical and Record ● Mock Practical Test ● Submission of practical files	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

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SEMESTER WISE TEACHING PLAN (2022-2023)
SRI VENKATESWARA COLLEGE
January-April, 2023

PRINCIPAL (Acting)
Sri Venkateswara College
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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Richa Misra

Department: Zoology

Semester: IV, VI (Even)

Month		Topics	Course	Paper Code/Name
January	**Theory: (2+2+1)**	Unit IV: Osmoregulation: Regulation of Water and solutes in aquatic and terrestrial animals, Osmoregulatory Organs in various terrestrial and aquatic animals	B. Sc. (H) Biological Sciences 2nd year Sem IV	BS-C8: Systems Physiology
		Introduction to Research Methodology, Foundations of Research, Importance of proposals and surveys, Overview of research paper	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		Introduction to Evolutionary Biology, Introduction to Population Genetics (Hardy-Weinberg equilibrium), derivation of equation, Natural Selection, types	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals: (4+4+4=12)	Theory and Usage of various search engines such as Pubmed, Google scholar, Scopus, Web of Science, Importance of Referencing and Understanding of Plagiarism and Tools, Types of Reference Styles,	B. Sc. (H) Zoology 2nd year Sem IV	SEC/ Research Methodology
		Identification and study of five mammalian, avian and herpeto fauna through direct and indirect evidences Familiarization and study of animal evidences in the field: Identification of animals through pug marks, hoof marks, scats, pellet groups, nest and antlers.	B. Sc. (H) Biological Sciences 3rd year Sem VI	DSE: Wildlife biology and Conservation
		Familiarization and study of animal evidences in the field: Identification of animals through pug marks, hoof marks, scats, pellet groups, nest and antlers. Identification and study of five mammalian, avian and herpeto fauna through direct and indirect evidences	B. Sc. (H) Zoology 3nd year Sem VI	DSE: Wildlife Conservation and Management
February	**Theory:**	Unit IV: Regulatory Physiology: Thermoregulation chapter	B. Sc. (H) Biological Sciences 2nd year Sem IV	BS-C8: Systems Physiology
		Discussion of various current areas of Research, Motivation for Research, Research Design, Finalizing Survey Topics, Data collection	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		derivation of equations for change in allelic frequencies in a population by evolutionary forces upsetting H-W equilibrium, kin selection, sexual selection, adaptive resemblances	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals: (4+4+4=12)	Exercises related to Plagiarism, Learning usage of Endnote and other similar softwares, Hypothesis building, Role of statistics, Types of graphs and its importance in Data presentation	B. Sc. (H) Zoology 2nd year Sem IV	SEC/ Research Methodology
		Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders, Global Positioning System, Various types of Cameras and lenses) Identification and study of five mammalian, avian and herpeto fauna through direct and indirect evidences	B. Sc. (H) Biological Sciences 3rd year Sem VI	DSE: Wildlife biology and Conservation
		Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders, Global	B. Sc. (H) Zoology 3nd year Sem VI	DSE: Wildlife Conservation and Management

		Positioning System, Various types of Cameras and lenses) Identification and study of five mammalian, avian and herpeto fauna through direct and indirect evidences		
March	**Theory:**	Unit IV: Regulatory Physiology: Excretion in animals and excretory organs	B. Sc. (H) Bio Sciences Sem IV	BS-C8: Systems Physiology
		Ethical Issues, Discussion about Survey progress and Proposal topics with students, Report writing	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		Genetic drift, Role of migration and mutation in changing allele frequencies, frequency-dependent selection	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals (4+4+4=12)	Troubleshooting related to analysis of survey and proposal, Title and abstract writing for a given research paper, Writing a report	B. Sc. (H) Zoology 2nd year Sem IV	SEC/ Research Methodology
		Demonstration of different field techniques for flora and fauna: PCQM, Quadrat method for diversity: Circular, Square & rectangular plots. Trail / transect monitoring for abundance and diversity estimation of mammals and bird	B. Sc. (H) Biological Sciences 3rd year Sem VI	DSE: Wildlife biology and Conservation
		Demonstration of different field techniques for flora and fauna: PCQM, Quadrat method for diversity: Circular, Square & rectangular plots. Trail / transect monitoring for abundance and diversity estimation of mammals and bird	B. Sc. (H) Zoology 3nd year Sem VI	DSE: Wildlife Conservation and Management
	Assignment	Topics for presentation assigned to students related to the syllabus and a new discovery related to the topic Assignment related to various topics from syllabus Research Proposal writing	B. Sc. (H) Biological Sciences 2nd year Sem IV B. Sc. (H) Zoology 3nd year Sem VI B. Sc. (H) Zoology 2nd year Sem IV	BS-C8: Systems Physiology CC-XIV/Evolutionary Biology SEC/Research Methodology
April	**Mid Term Test**	University pattern Test questions of covered topics	B. Sc. (H) Zoology 2nd year Sem IV	BS-C8: Systems Physiology
		University pattern Test questions of covered topics	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
April	**Theory:**	Unit III: Bulk Transport (Circulation, Cardiac Output) Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B. Sc. (H) Zoology 2nd year Sem IV	BS-C8: Systems Physiology
		Progress Updates of Research Proposal and Survey Reports	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		Discussion of Mid-term Test paper and previous year question papers, Doubts	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals:	Survey and Proposal submission, viva for practical exams	B. Sc. (H) Zoology 2nd year Sem IV	SEC: Research Methodology
		Identification of Big Cats (Lion, Tiger, Panther, Cheetah, Leopard and Jaguar); Birds of Prey (Eagle, Kite, Vulture, Falcon, Hawk and Owl) and Poisonous snakes (Cobra, Krait, Viper). Revision exercises and test, viva for practical exams, report submission	B. Sc. (H) Biological Sciences 3rd year Sem VI	DSE: Wildlife biology and Conservation
		Identification of Big Cats (Lion, Tiger, Panther, Cheetah, Leopard and Jaguar) Revision exercises and test, viva for practical exams, report submission	B. Sc. (H) Zoology 3nd year Sem VI	DSE: Wildlife Conservation and Management

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SEMESTER WISE TEACHING PLAN (2022-23)
SRI VENKATESWARA COLLEGE

Name of The Faculty: Dr. Namita Nayyar **Department: Zoology**

Semester : IV/VI

Papers: Theory: 1. SZH Comparative Anatomy of Vertebrates: 2 Theory
2. SLS Genetics and Evolutionary Biology : 2 Theory (1 per Section)
3. TLS Animal Biotechnology: 1 Theory

Month		Topics	Course	Paper Code/Name
January	Theory	**Unit 5: Circulatory System** General plan of circulation, Evolution of heart and aortic arches	B.Sc. (H) Zoology Semester IV	CCVIII: Comparative anatomy of Vertebrates
		Unit 4: Genetically Modified Organisms Production of cloned and transgenic animals: Nuclear Transplantation	B.Sc (H) Zoology Semester VI	DSE: Animal Biotechnology
		Unit 5: History of Life and Introduction to Evolutionary Theories Major events in history of life, Lamarckism, Darwinism, Neo-Darwinism	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
	Practicals	1. Study of fossils from Models/ Pictures. 2. Study of homology and analogy from suitable specimens.	B.Sc. (H) Zoology Semester VI	CC XIV: Evolutionary Biology
		1. Study of placoid, cycloid and ctenoid scales of fish through permanent slides/photographs. 2. Study of different types of feathers of birds.	B.Sc. (H) Zoology Semester IV	CC VIII: Comparative Anatomy of Vertebrates
		• Familiarization and study of animal evidences in the field: Identification of	B.Sc (H) Biological Science	DSE: Wildlife Biology and Conservation

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		animals through pug marks, hoof marks, scats, pellet groups, nest and antlers. • Identification and Study of five mammalian, avian and herpeto fauna through direct and indirect evidences		
February	Theory	**Unit 6: Urinogenital System** Succession of kidney, Evolution of urinogenital ducts, Types of mammalian uteri.	B.Sc. (H) Zoology Semester IV	CCVIII: Comparative anatomy of Vertebrates
		Retroviral Method, DNA microinjection; Applications of transgenic animals	B.Sc (H) Zoology Semester VI	DSE: Animal Biotechnology
		Unit 7: Population Genetics and Processes of Evolutionary Change Hardy-Weinberg law (statement, derivation and applications), evolutionary forces upsetting H-W equilibrium (concepts only)	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
	Practicals	1. Study and verification of Hardy-Weinberg Law by *chi* square analysis. **2.** Construction of cladograms based on morphological characters.	B.Sc. (H) Zoology Semester VI	CC XIV: Evolutionary Biology
		Disarticulated skeleton of Frog, *Varanus*, Fowl, Rabbit (Skull, Limb bones, Vertebral Column, Sternum, Girdles, Ribs).	B.Sc. (H) Zoology Semester IV	CCVIII: Comparative anatomy of Vertebrates
		1. Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders, Global Positioning System, Various types of	B.Sc (H) Biological Science	DSE: Wildlife Biology and Conservation

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		Cameras and lenses) 2. Identification and Study of five mammalian, avian and herpeto fauna through direct and indirect evidences seen on a field trip to a wildlife conservation site.		
Assignment		Pervious Years Question Paper	B.Sc. (H) Zoology	Comparative Anatomy
		Pervious Years Question Paper	B.Sc. Life Sciences	Genetics and Evolutionary Biology
		Any topic from Syllabus	B.Sc (H) Zoology	Animal Biotechnology
March	**Thoery**	**Unit 4** **Unit 4: Respiratory System** Skin, gills, lungs and air sacs	B.Sc. (H) Zoology Semester IV	CCVIII: Comparative anatomy of Vertebrates
		Production of pharmaceuticals, production of donor organs, knock out mice.Production of transgenic plants: Agrobacterium mediated transformation.	B.Sc. (H) Zoology Semester VI	DSE: Animal Biotechnology
		Unit 7: Population Genetics and Processes of Evolutionary Change Hardy-Weinberg law (statement, derivation and applications), evolutionary forces upsetting H-W equilibrium (concepts only), organic variations, isolating mechanisms, natural selection and its types, artificial selection	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
	Practicals	1. Construction of phylogenetic tree with the help of bioinformatics tools (Clustal X, Phylip, MLK) and its interpretation. 2. Study of variations in a sample human population: (a) Continuous variation:	B.Sc. (H) Zoology	CC XIV: Evolutionary Biology

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		Height/Weight in relation to age and sex (b) Discontinuous variation: Ability/Inability to taste Phenyl thiocarbamide (PTC).		
		Disarticulated skeleton of Frog, *Varanus*, Fowl, Rabbit (Skull, Limb bones, Vertebral Column, Sternum, Girdles, Ribs).	B.Sc. (H) Zoology Semester IV	CCVIII: Comparative anatomy of Vertebrates
		1. Demonstration of different field techniques for flora and fauna: PCQ, Quadrat method for diversity: Circular, Square & rectangular plots. 2. Trail / transect monitoring for abundance and diversity estimation of mammals and bird	B.Sc (H) Biological Science	DSE: Wildlife Biology and Conservation
April	**Theory**	**Respiratory System:** Accessory Respiratory Organs Revision	B.Sc. (H) Zoology Semester IV	CCVIII: Comparative anatomy of Vertebrates
		Applications of transgenic plants: insect and herbicide resistant plants.	B.Sc. (H) Zoology Semester VI	CC XIV: Evolutionary Biology
		Speciation Revision	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
	Practicals	Demonstration of role of natural selection and genetic drift in changing allelic frequencies using simulation studies. **Mock**	B.Sc. (H) Zoology Semester VI	Evolutionary Biology
		Mock and Revision	B.Sc (H) Zoology Semester IV	Comparative Anatomy of Vertebrates
		(Direct and indirect evidences): Identification of Big Cats (Lion, Tiger, Panther,	B.Sc. (H) Biological Science	DSE: Wildlife Biology and Conservation

		Cheetah, Leopard and Jaguar); Birds of Prey (Eagle, Kite, Vulture, Falcon, Hawk and Owl) and Poisonous snakes (Cobra, Krait, Viper). Mock		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-April, 2023

PRINCIPAL (Acting)
Sri Venkateswara College
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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Preeti Khandelwal
Department: Zoology
Semester: Even – II, IV and VI

Subjects:
THEORY: B.Sc. (Hons) Semester IV: GE: **Aquatic Biology,**
B.Sc. (Hons) Zoology, Sem II **Biochemistry of Metabolic Processes**

PRACTICAL: B.Sc (P) Life Sciences, Sem IV:SEC: **Aquarium Fish Keeping**
B.Sc. (Hons) Sem IV: GE: **Aquatic Biology,**
B.Sc (P) Life Sciences, Sem VI: **Immunology**

Month		Topics	Course	Paper Code/Name
January	**Theory:**	**Unit 4: Protein Metabolism** Catabolism of amino acids; Transamination, deamination, Urea cycle; Fate of C-skeleton of Glucogenic and Ketogenic amino acids	B.Sc (Hons.) Zoology (Semester IV, 2nd year)	**CCX /Biochemistry of Metabolic Processes**
		Unit 2: Aquatic Resources Important fish and shellfish resources of inland (major carps, catfish and prawns), brackish water (Hilsa) , Marine (demersal and pelagic), ornamental and sport fishes	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 1: Introduction to aquarium fish keeping The potential scope of aquarium fish keeping as a cottage industry, exotic and endemic species of aquarium fishes. **Unit2: Biology of Aquarium fishes:** Common characteristics and sexual dimorphism of fresh water and marine aquarium fishes such as guppy, molly	B.Sc Life Sciences Semester VI (Batch 2)	**SEC: Aquarium Fish Keeping**

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	Practical:	-Study of different species of aquarium fishes and biology of endemic and exotic fishes (breeding, feeding, economic importance etc.) -Study of sexual dimorphism of Freshwater and marine fishes (guppy, Molly, sword tail, gold fish, angel fish, blue morph, anemone fish, butterfly fish). -Guidelines of aquarium -Cleaning of aquarium, siphoning	B.Sc Life Sciences Semester IV (Batch 2)	**SEC/ Aquarium fish keeping**
		-Determine the area of lake using graphimetric and gravimetric method. -Identify the important Macrophytes, phytoplanktons and zooplanktons present in a lake ecosystem - Determine the amount of turbidity/ transparency, dissolved oxygen in water collected from a nearby lake/ water body.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		To perform Ouchterlony double immunodiffusion assay. ABO blood group determination.	B.Sc Life Sciences Semester VI (Batch 3)	**DSE /Immunology**
February	**Theory:**	**Unit 4: Marine Biology** Salinity and Density of sea water, continental shelf, Adaptations of deep sea organisms, coral reefs, sea weeds.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 3: Lipid Metabolism B-oxidation and ω-oxidation of saturated fatty acids with even and odd number of carbon atoms; ketogenesis	B.Sc (Hons.) Zoology (Semester IV)	**CCX /Biochemistry of Metabolic Processes**
		Unit 2: Biology of Aquarium fishes: Common characteristics and sexual dimorphism of fresh water and marine aquarium fishes such as sword tail, gold fish, angel fish, blue morph, anemone fish and butterfly fish **Unit 4: Fish Transportation:** live fish transport, Fish handling, packaging &	B.Sc Life Sciences Semester IV (Batch 2)	**SEC/ Aquarium fish keeping**
	Practical	-forwarding techniques.Types , composition and formulation of fish feed (using Pearson square methods) - Preparation of fish feed in the lab -Setting up of an aquarium in the lab/ Construction and maintenance of glass aquarium and filter system using indigenous locally available materials. -Techniques for fish handling and packaging	B.Sc Life Sciences Semester IV (Batch 2)	**SEC/ Aquarium fish keeping**

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		- Determine the amount of free carbon dioxide, alkalinity (carbonates, bicarbonates)in water collected from a nearby lake/ water body. - Instruments used in limnology (Secchi disc, van darn bottle) and their significance.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		-Preparation of stained blood film. -ELISA -ABO Blood group	B.Sc Life Sciences Semester VI (Batch 3)	**DSE /Immunology**
March	**Theory:**	**Unit 5: Management of Aquatic Resources** Causes of pollution: Agricultural, Industrial, sewage, thermal and oil spills, eutrophication, Management and conservation (legislation), sewage treatment, water quality assessment: BOD and COD	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 3: Lipid Metabolism Biosynthesis of Palmitic acid. **Unit 1: Overview of Metabolism**	B.Sc (Hons.) Zoology (Semester IV)	**CCX /Biochemistry of Metabolic Processes**
		Catabolism vs Metabolism, shuttle systems and membrane transporters;		
		Unit 3: Food and Feeding of aquarium fishes: Use of live fish feed organisms, preparation and composition of formulated fish feeds, Types of formulated fish feeds **Unit 5: Maintenance of aquarium** General aquarium maintenance- budget for setting up an aquarium fish farm as a cottage industry	B.Sc Life Sciences Semester IV (Batch 2)	**SEC: Aquarium Fish Keeping**
	Practicals	-Monitoring of aquarium water quality (temperature, pH, Dissolved oxygen, carbon dioxide, ammonia light N load) through titrimetry methods. -Potential of aquarium fish farm as cottage industry -Field trip to aquarium shop/ fish farm	B.Sc Life Sciences Semester IV(Batch 2)	**SEC/ Aquarium fish keeping**
		- Instruments used in limnology (conductivity meter, turbidity meter, PONAR grab sampler) and their significance. Visit to a sewage treatment plant/ fisheries institute - A project report on a visit to sewage treatment plant/ fisheries institute	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		-Immunoelectrophoresis	B.Sc Life Sciences	**DSE /Immunology**

		-Study of lymphoid organs: spleen, thymus, lymph nodes.	Semester VI (Batch 3)	
	Assignment	Coral Reefs, Sea weeds, Eutrophication, Sewage treatment, thermal and oil spill.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Set up a small bottle aquarium and rear small fish	B.Sc Life Sciences Sem IV(Batch 2)	**SEC/ Aquarium fish keeping**
	Mid Term Test	Unit: 4: Management of Aquatic resources	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 3: Lipid Metabolism Unit 4: Protein Metabolism	B.Sc (Hons.) Zoology (Semester IV)	**CCX /Biochemistry of Metabolic Processes**
April	**Theory**	**Revision**	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Revision	B.Sc (Hons.) Zoology Semester IV	**CCX /Biochemistry of Metabolic**
		Unit 3: Food and Feeding of aquarium fishes: formulation and preparation of fish feed, advantages and disadvantages of formulated feed. **Revision**	B.Sc Life year) Sciences Sem IV(Batch 2)	**SEC/ Aquarium Processes fish keeping**
	Practical	- Write a project proposal for setting up small aquarium fish keeping as a cottage industry to a funding agency for self- employment of youths or for helping poor farmers; after visiting any farm/ enterprise. -Evaluation of Practical File and Report Practice and repetition of practical Conduct of Mock examination.	B.Sc Life Sciences Semester IV(Batch 2)	**SEC/ Aquarium fish keeping**
		Evaluation of Practical File and Report Practice and Repetition of all experiments Conduct of Mock examination	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Evaluation of Practical File Practice and repetition of practical Conduct of Mock examination.	B.Sc Life Sciences Semester VI (Batch 3)	**DSE /Immunology**

Submitted by:

Dr. Preeti Khandelwal
Assistant Professor
Department of Zoology
Sri Venkateswara Collection

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SEMESTER WISE TEACHING PLAN (2022-23)
January 2023-July 2023,SRI VENKATESWARA COLLEGE

PRINCIPAL (Acting)
Sri Venkateswara College
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Dhaula Kuan, New Delhi-110021

Name of the Faculty: Dr. Amarjeet Singh **Department:** Zoology

Semester: Even (II/IV/VI)

Month		Topics	Course	Paper Code/Name
January, 2023	Theory:	**Unit V: Management of excess population and translocation:** Common disease of wild animals: Tuberculosis**,** Foot and Mouth Disease (FMD)	B.Sc. (H) Biological Sciences Semester VI	BS-DSE 2 Wildlife Biology and Conservation
	Practical:	• Study of Mendelian inheritance and gene interactions (non-mendelian inheritance) using suitable examples (chi-square analysis.)	B.Sc. (P) Life Science Semester IV	LS Core IV: Genetics and Evolutionary Biology
February, 2023	Theory:	**Unit V: Management of excess population and translocation:** Zoonosis (Ebola and Salmonellosis, Rabies, Biotelemetry	B.Sc. (H) Biological Sciences Semester VI	BS-DSE 2 Wildlife Biology and Conservation
	Practical:	• To study human karyotypes (normal and abnormal). • To study linkage, recombination, gene mapping using data. • Pedigree analysis of some human inherited traits	B.Sc. (P) Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
March, 2023	Theory:	**Unit IV: Modern concepts and strategies of Wildlife Management:** Preservation of general genetic diversity-In-situ and Ex-situ conservation strategies, National Parks, sancuataries, Biosphere reserves, Conservation and community reserves, Important features of protected areas in India. Wild life legislation-Wildlife Protection Act (1972) its amendments and implementation. IUCN Red data book and red list categories (only names)	B.Sc. (H) Biological Sciences Semester VI	BS-DSE 2 Wildlife Biology and Conservation

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	Theory	**Unit II: Scope and History of Developmental Biology:** Historical perspective including contributions by eminent scientists and landmark experiments in the field of Developmental Biology	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals
	Practical:	• Study and verification of Hardy-Weinberg Law by Chi-square analysis. • Study of homology and analogy from suitable pictures.	B.Sc. (P) Life Science Semester IV	LS Core IV: Genetics and Evolutionary Biology
		• To study various stages of meiosis through permanent slides	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals
		Mid Term Exam of DSE 2 Wildlife Biology and Conservation (B.Sc. Hons Biological Sciences Sem VI)		
April, 2023	Theory:	**Unit IV: Modern concepts and strategies of Wildlife Management: Project Tiger:** Tiger conservation-Tiger reserves in India, Management challenges in Tiger reserve, Objectives and activities of Project Elephant and Project Crocodile **Unit III: Population Estimation:** Mortality, Natality, Population size, age pyramids, Ecological and crude density **Unit V: Management of excess population and Translocation:** Quarantine, population viability analysis, rescue, rehabiliation and reintroduction	B.Sc. (H) Biological Sciences Semester VI	BS-DSE 2 Wildlife Biology and Conservation
		Unit II: Scope and History of Developmental Biology: Concepts of Epigenesis, Preformation and Von Baer Laws	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals
		Unit II: Muscle Physiology: Types of muscles and structure of Skeletal Muscles, Neuromuscular Junction	B.Sc. (H) Zoology Semester II	DSC-06: Human Physiology Control and Coordination Systems
	Practical:	• Visit to natural history museum and submission of report • **Revision and Mock Test**	B.Sc. (P) Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology

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		• To study the developmental stages of frog through permanent slides • To study different types of placenta along with its function through permanent slides	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals
May, 2023	Theory:	**Unit III: Early Embryonic Development:** Gametogenesis: Spermatogenesis and oogenesis in mammals, Types of Eggs and egg membranes, Fertilization: External (amphibians) and Internal (mammals)	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals
		Unit II: Muscle Physiology: Mechanism of Muscle Contraction	B.Sc. (H) Zoology Semester II	DSC-06: Human Physiology Control and Coordination Systems
	Practical	• To study various developmental stages in the life cycle of Drosophila using stock culture/permanent slides/photomicrograph • Visit to IVF Centre	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals
		Mid-Term Exam and assignment for Cell and Developmental Biology of Animals (B.Sc. Prog. Life Sciences) and for Hunan Physiology: Control and Co-ordination		
June, 2023	Theory:	**Unit III: Early Embryonic Development:** Fast and slow blocks to polyspermy; Types and patterns of cleavage, Types of morphogenic movements; Early development of frog and chick upto gastrulation	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals
		Unit II: Muscle Physiology: Characteristics of muscle twitch, Motor unit, summation and tetanus	B.Sc. (H) Zoology Semester II	DSC-06: Human Physiology Control and Coordination Systems
	Practical:	• Study of whole mounts of developmental stages of Chick through permanent slides (HH stages)- 13 hrs, 18 hrs, 24 hrs, 28 hrs, 33 hrs, 36 hrs, 48 hrs, 72 hrs, 96 hrs	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals
July, 2023	Theory	**Unit III: Early Embryonic Development:** Fate Maps	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals

\		**Unit III: Endrocrine System:** Mode of hormone action, Signal Transduction pathways for peptide and steroid hormones	B.Sc. (H) Zoology Semester II	DSC-06: Human Physiology Control and Coordination Systems
	Practical	• Project report on IVF Centre	B.Sc. (P) Life Sciences Semester II	Zoo-LS-DSC-06 Cell and Developmental Biology of Animals

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SEMESTER WISE TEACHING PLAN
January -May, 2023

Name of the Faculty: C.Sreenivasa Reddy **Department: Zoology**

Semester: Even (II/IV/VI)

Month		Topics	Course	Paper Code/Name
February, 2023	**Theory:**	**Unit:7** Protected Areas ,National parks and sanctuaries; Biosphere reserves; Conservation and Community reserve;	B.Sc. (H) Zoology Semester- VI	DSE 4- Wildlife conservation and management
	Practical	UNIT 1- Annelida General characteristics and classification	B.Sc. (H) Zoology Semester- II	DSC 1 –Non-Chordates Protists to Pseudocoelomates
March, 2023	**Theory:**	Unit:7 Important features of protected areas in India; Tiger conservation - Tiger reserves in India and Management challenges in Tiger reserve	B.Sc. (H) Zoology Semester- VI	DSE 4- Wildlife conservation and management
	Theory:	Unit 3: Digestive System Alimentary canal and associated glands, dentition	B.Sc. (H) Zoology Semester IV CCVIII: Comparative anatomy of Vertebrates	B.Sc. (H) Zoology Semester IV CCVIII: Comparative anatomy of Vertebrates
	Theory:	Unit 5:Management of aquatic resources	B.Sc (Hons.) Semester IV GE IV/ Aquatic Biology	B.Sc (Hons.) Semester IV GE IV/ Aquatic Biology
	Theory: Batch 1&2	Study of Mendelian inheritance and gene interactions (non Mendelian inheritance) using suitable examples (chi square analysis).	B.Sc. Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology

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April, 2023	**Theory**	**Unit6: Management of Excess Population** Care of injured and diseased animal; Quarantine; Common diseases of wild animals: Zoonosis (Ebola and Salmonellosis), Rabies, Foot and Mouth Disease, Mycobacterium TB, Bovine and Avian Flu	B.Sc.(H) Zoology Semester- VI	DSE 4- Wildlife conservation and management
	Theory	**Unit 8: Sense Organs** ,Classification of receptors; Brief account of visual and auditory receptors in man	B.Sc. (H) Zoology Semester IV CCVIII: Comparative anatomy of Vertebrates	B.Sc. (H) Zoology Semester IV CCVIII: Comparative anatomy of Vertebrates
	Theory	**Unit 1** :**Aquatic biomes** Brief introduction of the aquatic biomes,fresh water aquatic ecosystems,(lakes,wet lands ,streams and rivers)Eusturies,inter tidal zone,oceanic pelagic zone,marine benthic zone and coral reefs.	B.Sc (Hons.) Semester IV GE IV/ Aquatic Biology	B.Sc (Hons.) Semester IV GE IV/ Aquatic Biology
	Practicals **Batch 1&2**	Study of linkage, recombination, and gene mapping using data 6. Study and verification of Hardy-Weinberg Law by Chi-square analysis. 7. Visit to natural history museum and submission of report. **Revision and Moc Test**	B.Sc. Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
	Practical	1. Study of the various stages of meiosis through permanent slides. 2. Frog - Study of developmental stages - whole mounts and sections through permanent slides- cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gillstages.	B.Sc. (H) Life Sciences Semester II	Zoo-LS-DSC-06: Cell and Developmental Biology of Animals
May, 2023	**Theory**	Unit 7: Nervous System Comparative account of brain; Autonomic nervous system, Spinal cord, Cranial nerves in mammals	B.Sc. (H) Zoology Semester IV CCVIII: Comparative anatomy of Vertebrates	B.Sc. (H) Zoology Semester IV CCVIII: Comparative anatomy of Vertebrates
	Practical	3. Frog - Study of developmental stages - whole mounts and sections through permanent slides	B.Sc. (H) Life Sciences Semester II	Zoo-LS-DSC-06: Cell and Developmental Biology of Animals

June 2023	**Practical**	cleavage Stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal	B.Sc. (H) Life Sciences Semester II	Zoo-LS-DSC-06: Cell and Developmental Biology of Animals
July, 2023	**Practical**	**Project Work** **Revision and Moc Test**	B.Sc. (H) Life Sciences Semester II	Zoo-LS-DSC-06: Cell and Developmental Biology of Animals

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Planner: Even Semester 2023 (Feb-July)

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Name of the Faculty: Dr. Sukrat Sinha
Department: Zoology
Semester: II, VI

Month		Topics	Course	Paper Code/Name
February, 2023	**Theory:**	Unit 1: Over view of immune system Historical perspective, early theories of immunology, clonal selection theory, innate immunity, defensive barriers of innate immunity, cell types and molecules involved in innate immunity, humoral and cellular mediated immunity, active and passive immunity, primary and secondary cellular response, cells and molecules involved in adaptive immunity	BSc. Life Science Semester VI	TLSDSE III-Immunology
		Unit 1: Introduction to Public health and hygiene Significance of public and hygiene, nutrition and health, classification of foods, major nutritional deficiency disease-protein energy malnutrition(kwashirokar and marasmus), vitamin deficiency disorders, iron deficiency disorders, iron deficiency disorders	BSc. Life Science Semester VI	LS SEC 4: Public health and hygiene
	Practical:	• Estimation of blood glucose level • Study of house hold pests following with reference to public health	BSc. Life Science Semester VI	LS SEC 4: Public health and hygiene
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March, 2023	**Theory:**	Unit 2: Cells and organs of immune system Haematopoesis , Cells of immune system , primary and secondary lymphoid organs • **Assignment**	BSc. Life Science Semester VI	TLSDSE III-Immunology
		Unit 2: Environmental degradation , environmental pollution-air water soil and noise, associated health hazards	BSc. Life Science Semester VI	LS SEC 4: Public health and hygiene
	Practicals	• Calculate the BMI of students and analyse the results with suitable statistical tools. • Measure the blood pressure using sphygmomanometer • Study of household pests following with reference to public health	BSc. Life Science Semester VI	LS SEC 4: Public health and hygiene
April, 2023	**Theory:**	Unit 5: Major Histocompatibility Complex (MHCI and MHC II) Structure and function of MHC **Revision and clearing of doubts**	BSc. Life Science Semester VI	TLSDSE III-Immunology
		Unit 9: Vaccines General introduction and types of vaccines	BSc. Life Science	TLSDSE III-Immunology

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			Semester VI	
		Unit 3: Communicable diseases Different types of communicable diseases and their control measures – Tuberculosis , measles, leprosy , dengue **Revision and clearing of doubts**	BSc. Life Science Semester VI	LS SEC 4: Public health and hygiene
	Practical:	• To determine content of different pollutants in soil /water samples • Data collection , case studies or interviews of the individuals suffering from diseases and submission of report • **Revision and clearing of doubts**	BSc. Life Science Semester VI	LS SEC 4: Public health and hygiene
		• Evaluation of Blood glucose (GOD/POD) by kit • Calculation of BMI, Waist to HIP ration, skin fold test •	GE Zoology Semester II	Generic Electives(GE-4) Life style disorders
		• Understanding the structures of biomolecules through ball and stick models • To understand the roles of two important biological buffer systems :phosphate and bicarbonate: Preparation of buffers and determination of Ph • Identification of functional groups by qualitative tests: Carbohydrates, lipids and proteins	BSc First Year Hons	DSC-5 Fundamentals of Biomolecules
May 2023	Practical	• Imaging techniques for cancer diagnosis CT Scan, MRI, PET –CT Scan and confirmatory biopsy	GE Zoology Semester II	Generic Electives(GE-4) Life style disorders
		• Separation of amino acids by paper chromatography • Study the action of salivary amylase under optimum conditions	BSc First Year Hons	DSC-5 Fundamentals of Biomolecules

June 2023	Practical	• Project work based on case studies related to risk factors of any one life style disorder studied	GE Zoology Semester II	Generic Electives(GE-4) Life style disorders
		• Study the effect of pH, temperature and inhibitors on the action of salivary amylase	BSc First Year Hons	DSC-5 Fundamentals of Biomolecules
July 2023	Practical	• Revision and doubt resolution • Report collection	GE Zoology Semester II	Generic Electives(GE-4) Life style disorders
		• Revision and doubt resolution	BSc First Year Hons	DSC-5 Fundamentals of Biomolecules

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SEMESTER WISE TEACHING PLAN
January -May, 2023

Name of the Faculty: Dr. OBAIAH JAMAKALA

Department: Zoology

Semester: Even (II/IV/VI)

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Month		Topics	Course	Paper Code/Name
February, 2023	**Theory:**	**Unit 9: Macro-evolution** Macroevolution, Mechanism of Macroevolution, Features of Macroevolution, Examples of macroevolution: 1. Evolution of Darwin's Finches 2. Evolution of modern horse	B.Sc. Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
	Practical:	1. Study of Mendelian inheritance and gene interactions (non-Mendelian inheritance) using suitable examples (chi-square analysis). 2. Study of linkage, recombination, gene mapping using data.	B.Sc. Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
	Theory:	**Unit V: Product of Evolution: Speciation** Speciation, Mechanisms of speciation, Allopatric, Peripatric, Parapatric and sympatric speciation	B.Sc. (H) Biological Science Semester VI	BS C-14: Evolutionary Biology
March, 2023	**Theory:**	**Unit 9: Macro-evolution** Macro-evolutionary principles (Example: Darwin's Finches). **Unit 10: Extinction** Extinction, Causes extinction, Types of extinction	B.Sc. Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
	Practical:	3. Study of human karyotypes (normal and abnormal). 4. Study of homology and analogy from suitable specimens/pictures.	B.Sc. Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
	Theory:	**Unit V: Product of Evolution: Speciation** 1. Concept of species as a real entity-species concept 2. Basis of speciation: Isolating mechanisms **Internal Assessment Test**	B.Sc. (H) Biological Science Semester VI	BS C-14: Evolutionary Biology

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	Theory:	**UNIT – I: Introduction to Lifestyle** Traditional Indian lifestyle vs modern Indian lifestyle	B.Sc. (H) Zoology Semester II	Generic Electives (GE-4): Lifestyle Disorders
April, 2023	**Theory**	**Unit 10: Extinction** Mass extinction (causes, names of five major extinctions, K-T extinction in detail), Role of extinction in evolution	B.Sc. Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
	Practicals	5. Pedigree analysis of some human inherited traits. 6. Study and verification of Hardy-Weinberg Law by Chi-square analysis. 7. Visit to natural history museum and submission of report. **Revision and Moc Test**	B.Sc. Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
	Theory:	**Unit V: Product of Evolution: Speciation** Patterns of speciation. Anagenesis and Cladogenesis; Phyletic Gradualism and Punctuated Equilibrium (Quantum Evolution). **Student Assignments**	B.Sc. (H) Biological Science Semester VI	BS C-14: Evolutionary Biology
	Theory	**Unit 1: Introduction to Lifestyle** Lifestyle diseases – definition, risk factors-erratic sleep patterns, wrong food choices, smoking, alcohol abuse, stress, lack of optimum physical activity, illicit drug use, Obesity, respiratory diseases, diet and exercise. **UNIT – II: Diabetes and Obesity** Diabetes: symptoms, Types of Diabetes mellitus, Complications of Diabetes mellitus, Treatments, Lifestyle Changes for Diabetes	B.Sc. (H) Zoology Semester II	Generic Electives (GE-4): Lifestyle Disorders
	Practical	1. Study of the various stages of meiosis through permanent slides. 2. Frog - Study of developmental stages - whole mounts and sections through permanent slides- cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages.	B.Sc. (H) Life Sciences Semester II	Zoo-LS-DSC-06: Cell and Developmental Biology of Animals

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May, 2023	**Theory**	**U NIT– II: Diabetes and Obesity** Blood glucose regulation; Complications of diabetes-paediatric and adolescent obesity-weight control and BMI (Body Mass Index), Prediabetes, PCOS/PCOD **UNIT – III Cardiovascular Diseases** Coronary atherosclerosis-Coronary artery disease, Causes-Fat and lipid, Alcohol Abuse-Diagnosis, Electrocardiograph, Echocardiograph, Treatment, Exercise and Cardiac rehabilitation. **Internal Assessment Test**	B.Sc. (H) Zoology Semester II	Generic Electives (GE-4): Lifestyle Disorders
	Practical	3. Chick – Study of Whole Mounts of developmental stages of Chick through permanent slides (HH stages) - 13 hrs, 18hrs, 24hrs, 28hrs, 33hrs, 36hrs, 48hrs, 72hrs and 96hrs. 4. Study of the different types of placenta along with its function- through permanent slides /photomicrograph.	B.Sc. (H) Life Sciences Semester II	Zoo-LS-DSC-06: Cell and Developmental Biology of Animals
June, 2023	**Theory**	**UNIT – IV Cancer** Introduction to Cancer and general diagnostic methods to detect cancer; Lung Cancer, Mouth Cancer: associated lifestyle choices, symptoms and treatment. **UNIT – V Hypertension** Risk factors, complications (brain, heart, eye and kidney) and management of hypertension. **UNIT – VI WHO Global action plan and Monitoring** WHO Global action plan and Monitoring framework for prevention and control of non-communicable diseases, NPHCE (National Programme for the Health Care of Elderly), Fit India movement (Yoga and meditation). **Student Assessments**	B.Sc. (H) Zoology Semester II	Generic Electives (GE-4): Lifestyle Disorders
	Practical	5. Study of various developmental stages in the life Cycle of Drosophila using stock culture/permanent slides/ photomicrograph. 6. Visit to IVF centre/ Poultry Farm. 7. Project report on IVF Centre/ Poultry farm/ Drosophila culture/ Zebra fish culture.	B.Sc. (H) Life Sciences Semester II	Zoo-LS-DSC-06: Cell and Developmental Biology of Animals

July, 2023	**Theory**	**Student assessments**	B.Sc. (H) Zoology Semester II	Generic Electives (GE-4): Lifestyle Disorders
	Practical	**Project Work** **Revision and Moc Test**	B.Sc. (H) Life Sciences Semester II	Zoo-LS-DSC-06: Cell and Developmental Biology of Animals

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Planner: Even Semester 2023 (Jan-April)

Name of the Faculty: Dr. Anandha Rao Ravula **Department: Zoology**
Semester: II/ IV/ VI

Month		Topics	Course	Paper Code/Name
January 2023	Theory:	**Unit 3:** Advance Tools and Techniques: Southern blotting, Northern blotting, and SDS PAGE, Western blotting and their applications.	B.Sc. (H) Zoology Semester VI	ZH DSE III: Animal Bio-Technology
		Unit IV: Forces of Evolution: Concept of micro- and macro-evolution: A brief comparison Natural selection as a guiding force: Its attributes and action Basic characteristics of natural selection.	B.Sc. (H) Biological Sciences Semester VI	BS-C14: Evolutionary Biology
		Unit 3: Mutations: Gene mutations (types and classification): Classification: Physical (X-rays, UV-rays, γ- rays and chemical mutagens Nitrous oxide, Base analogs, mustard gas, alkylating agents (MES, EES), Acridine dyes and intercalating agents (EDTA).	B.Sc. (H) Life Sciences Semester IV	LS CC-IV: Genetics and Evolutionary Biology
	Practical:	Study of human karyotypes (normal and abnormal). Study of homology and analogy from suitable specimens/pictures.	B.Sc. (H) Life Sciences Semester IV	LS CC-IV: Genetics and Evolutionary Biology
		Oüchterlony's double immuno-diffusion method. Demonstration of ELISA and Immunoelectrophorosis.	B.Sc. (H) Life Sciences Semester VI	LS DSE-II: Immunology
		1. Osteology: a) Disarticulated skeleton of fowl and rabbit b) Carapace and plastron of turtle/tortoise c) Mammalian skulls: one herbivorous and one carnivorous animal.	B.Sc. (H) Life Sciences Semester II	LS DSC-VI
February, 2023	Theory:	**Unit 3:** Advance Tools and Techniques: DNA sequencing: Sanger method, Next generation sequencing (Illumina), and Polymerase Chain Reaction (PCR) and its types with applications.	B.Sc. (H) Zoology Semester VI	ZH DSE III: Animal Bio-Technology

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		Unit IV: Forces of Evolution: Coloration, camouflage, and mimicry, Co-adaptation and co-evolution, Man-made causes of change: Industrial melanism; antibiotic resistance.	B.Sc. (H) Biological Sciences Semester VI	BS-C14: Evolutionary Biology
		Unit 3: Mutations: Gene mutations: Types: Frameshift mutations, silent mutations, nonsense mutations, missense mutations, substitution mutations (Transitions, and transversions) with connecting to genetic code and suitable examples.	B.Sc. (H) Life Sciences Semester IV	LS CC-IV: Genetics and Evolutionary Biology
	Practical:	Study of Mendelian inheritance and gene interactions (non-Mendelian inheritance) using suitable examples (chi-square analysis). Study of linkage, recombination, and gene mapping using data. Pedigree analysis of some human inherited traits.	B.Sc. (H) Life Sciences Semester IV	LS CC-IV: Genetics and Evolutionary Biology
		Demonstration of lymphoid organs. Histological study of the spleen, thymus, and lymph nodes through slides/photographs.	B.Sc. (H) Life Sciences Semester VI	LS DSE-II: Immunology
		Study of the different types of placenta- histological sections through permanent slides or photomicrograph.	B.Sc. (H) Life Sciences Semester II	LS DSC-VI
March, 2023	**Theory:**	**Unit 3:** Advance Tools and Technique: DNA Finger Printing and DNA microarray, Gene Editing Tools: Zinc finger nucleases (ZFNs), transcription activator-like effector-based nucleases (TALEN), and the clustered regularly interspaced short palindromic repeats (CRISPR/Cas9) and their applications.	B.Sc. (H) Zoology Semester VI	ZH DSE III: Animal Bio-Technology
		Unit IV: Forces of Evolution Modes of selection, artificial selection, Polymorphism, and its types with suitable examples. Concept of Heterosis. Balanced lethal systems. Hardy-Weinberg‟s Law of Genetic Equilibrium. Genetic Drift (Sewall Wright effect) as a stochastic/random force: Its attributes and action. Basic characteristics of drift. selection vs. drift, Bottleneck effect, Founder principle.	B.Sc. (H) Biological Sciences Semester VI	BS-C14: Evolutionary Biology

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		Unit 3: Mutations: Chromosomal mutations (Types and Classification): 1. Structural Aberrations: Types of Deletions, Duplications, and Inversions with suitable examples, and their suitable detection methods. 2. Numerical Aberrations: Euploidy (Monoploidy, diploidy, polyploidy- Auto and Allo, and Aneuploidy (hypo and hyper ploidy) with suitable examples.	B.Sc. (H) Life Sciences Semester IV	LS CC-IV: Genetics and Evolutionary Biology
	Practical	1. Pedigree analysis of some human inherited traits. 2. Study and verification of Hardy-Weinberg Law by Chi-square analysis	B.Sc. (H) Life Sciences Semester IV	LS CC-IV: Genetics and Evolutionary Biology
		1. Preparation of stained blood film to study various types of blood cells. 2. ABO blood group determination.	B.Sc. (H) Life Sciences Semester VI	LS DSE-II: Immunology
		Study of the different types of placenta- histological sections through permanent slides or photomicrograph.	B.Sc. (H) Life Sciences Semester II	LS DSC-VI
April, 2023	**Theory:**	**Unit 5:** Applications of Genetic Engineering: Molecular diagnosis of genetic diseases (Cystic fibrosis, Sickle cell anemia), Recombinant DNA in medicines: Recombinant insulin and human growth hormone. Assignment and Test	B.Sc. (H) Zoology Semester VI	ZH DSE III: Animal Bio-Technology
		Unit IV: Forces of Evolution Alterations in the gene frequencies (When selection operates). **Unit VI:** Human Ancestry and Phylogeny: Human origin- *Homo habilis, Homo erectus, Neanderthal man, Archaic and modern Homo sapiens*.	B.Sc. (H) Biological Sciences Semester VI	BS-C14: Evolutionary Biology
		Unit 4: Sex Determination: 1. Chromosomal mechanisms, 2. Inactivation of X- chromosome in different specious (Dosage compensation) 3. Assignment, and Internal Test	B.Sc. (H) Life Sciences Semester IV	LS CC-IV: Genetics and Evolutionary Biology
		1. Visit to natural history (Geology) Museum in Delhi, and submission of its report. 2. Mock Test	B.Sc. (H) Life Sciences Semester IV	LS CC-IV: Genetics and Evolutionary Biology

	Practical:	ABO blood group determination Preparation of stained blood film to study various types of blood cells Mock Test	B.Sc. (H) Life Sciences Semester VI	LS DSE-II: Immunology
		Frog - Study of developmental stages - whole mounts and sections through permanent slides- cleavage stages, blastula, gastrula, neurula, tailbud stage, tadpole external and internal gill stages.	B.Sc. (H) Life Sciences Semester II	LS DSC-VI

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SEMESTER WISE TEACHING PLAN

January -May, 2023

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Name of the Faculty: **Dr. Sumit Raj** **Department: Zoology**

Semester: Even (II/IV/VI)

Month		**Topics**	**Course**	**Paper Code/Name**
February, 2023	**Theory:**	**Unit 1: Mendelian Genetics and its Extension** Principles of inheritance, Incomplete dominance and co-dominance, Multiple alleles, Lethal alleles, penetrance and expressivity,	B.Sc. (P) Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
		Unit 2: Early Embryonic Development Gametogenesis, Spermatogenesis, Mitosis and Meiosis	BB.Sc. (H) Zoology Semester VI	ZH CC XIII: Developmental Biology
	Practical:	• Estimation of total protein in given solutions by Lowry's method. • To perform the Acid and Alkaline phosphatase assay from serum/ tissue.	B.Sc. (H) Zoology Semester IV	CC X: Biochemistry of Metabolic Processes
March, 2023	**Theory:**	**Unit 3: Proteins** Amino acids: Structure, Classification and General properties of -amino acids; Physiological importance of essential and non-essential -amino acids;	B.Sc. (H) Zoology Semester II	DSC-5 : Fundamentals of Biomolecules
		Unit I: Fundamentals of Emotional Intelligence	B.A. & B.Sc.	VAC: Emotional Intelligence
		Unit 2: Early Embryonic Development Gametogenesis, Spermatogenesis, Growth factors	BB.Sc. (H) Zoology Semester VI	ZH CC XIII: Developmental Biology

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		Unit 1: Mendelian Genetics and its Extension Lethal alleles, penetrance and expressivity, Epistasis, Pleiotropy, Sex-linked, sex-influenced and sex-limited characters inheritance and concept of gene. **Unit 2: Linkage, Crossing Over and Chromosomal Mapping** Linkage and crossing over, Cytological basis of crossing over, Recombination frequency as a measure of linkage intensity	B.Sc. (P) Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
	Practical	• To study the enzymatic activity of Trypsin and Lipase. • To estimate the bilirubin by clinical method and to know the physiological significance of the bilirubin	B.Sc. (H) Zoology Semester IV	CC X: Biochemistry of
		1. Understanding the structures of Biomolecules through Ball and Stick Models	B.Sc. (H) Zoology Semester II	DSC-5 : Fundamentals of Biomolecules
April , 2023	Theory	**Unit 2: Linkage, Crossing Over and Chromosomal Mapping** Recombination frequency as a measure of linkage intensity, Two factor and three factor crosses, Linkage map, coefficient of coincidence and Interference, Gene mapping by Somatic cell hybridization.	B.Sc. (P) Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
		Unit 2: Early Embryonic Development Spermatogenesis, Oogenesis; Types of eggs,	BB.Sc. (H) Zoology Semester VI	ZH CC XIII: Developmental Biology
		Unit 2: Personal Competence	B.A. & B.Sc.	VAC: Emotional Intelligence
		Unit 1: Carbohydrates 8 hrs Structure and Biological importance: with emphasis on aldose, ketose, chiral centre, polarised light and Fischer nomenclature, Cyclization reaction of glucose, anomers, pyranose, furanose, glycosidic linkage;Reducing and non-reducing sugars: monosaccharides, disaccharides, polysaccharides and Glycoconjugates	B.Sc. (H) Zoology Semester II	DSC-5 : Fundamentals of Biomolecules

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	Practicals	• Study of biological oxidation (SDH) [goat liver] • Detection of SGOT and SGPT or GST and GSH in serum/ tissue • Mock Exam	B.Sc. (H) Zoology Semester IV	CC X: Biochemistry of Metabolic
		2. To understand the preparation and roles of biological buffer systems: phosphate buffer 3. Qualitative tests of functional groups in carbohydrates. 4. Qualitative tests of functional groups in lipids.	B.Sc. (H) Zoology Semester II	DSC-5 : Fundamentals of Biomolecules
		Mindfulness Conditioned Relax Response	B.A. & B.Sc.	VAC: Emotional Intelligence
May, 2023	**Theory:**	**Unit 2: Lipids** Structure and Significance: Physiologically important saturated and unsaturated fatty acids, Tri-acylglycerols, Phospholipids, Glycolipids, Steroids **Unit 3: Proteins** : Bonds stabilizing protein structure; Levels of organization in protein motifs, folds and domains; Denaturation; Introduction to simple and conjugate proteins. Immunoglobulins: Basic Structure,	B.Sc. (H) Zoology Semester II	DSC-5 : Fundamentals of Biomolecules
		Unit 3: Social Competence	B.A. & B.Sc.	VAC: Emotional Intelligence
	Practicals	3. Qualitative tests of functional groups in proteins and lipids. 4. Paper chromatography of amino acids.	B.Sc. (H) Zoology Semester II	DSC-5 : Fundamentals of Biomolecules
		Boundary Stettings Display of Empathy	B.A. & B.Sc.	VAC: Emotional Intelligence
June, 2023	**Theory**	**Unit 4: Nucleic Acids** Structure: Purines and pyrimidines, Nucleosides, Nucleotides, Nucleic acids; Cot Curves: Base pairing, Denaturation and Renaturation of DNA; Types of DNA and RNA, Complementarity of DNA, Hypo-Hyperchromicity of DNA **Unit 5: Enzymes** Nomenclature and classification; Cofactors; Specificity of enzyme action;Isozymes; Mechanism of enzyme action;	B.Sc. (H) Zoology Semester II	DSC-5 : Fundamentals of Biomolecules

		Enzyme kinetics; Factors affectingrate of enzyme-catalyzed reactions; Derivation of Michaelis-Menten equation,Concept of Km and Vmax, LineweaverBurk plot; Multi-substrate reactions;Enzyme inhibition; Allosteric enzymes and their kinetics; Regulation of enzyme reaction		
		Unit 4: Emotional Intelligence : Measurement and Development	B.A. & B.Sc.	VAC: Emotional Intelligence
	Practicals	5. Action of salivary amylase under optimum conditions. 6. Effect of pH, temperature and inhibitors on the action of salivary amylase.	B.Sc. (H) Zoology Semester II	DSC-5 : Fundamentals of Biomolecules
		Effective Communication Team Work	B.A. & B.Sc.	VAC: Emotional Intelligence
July, 2023	**Theory**	**Unit 5: Enzymes** Derivation of Michaelis-Menten equation,Concept of Km and Vmax, LineweaverBurk plot; Multi-substrate reactions;Enzyme inhibition; Allosteric enzymes and their kinetics; Regulation of enzyme reaction	B.Sc. (H) Zoology Semester II	DSC-5 : Fundamentals of Biomolecules
		Conflict Resolution	B.A. & B.Sc.	VAC: Emotional Intelligence

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SEMESTER WISE TEACHING PLAN

January -May, 2023

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Name of the Faculty: **Dr. Mohita Bhagat** **Department: Zoology**

Semester: Even (II/IV/VI)

Month		**Topics**	**Course**	**Paper Code/Name**
February, 2023	**Theory:**	**Unit 1 Overview of Metabolism** Catabolism *vs.* Anabolism, Stages of catabolism Compartmentalization of metabolic Pathway **Unit 2: Carbohydrate Metabolism** Sequence of reactions and regulation of glycolysis, Gluconeogenesis	B.Sc. (H) Zoology Semester IV	CC X: Biochemistry of Metabolic Processes
		Unit 2: Basic Tools for Gene Manipulation Cloning vectors: Plasmids, Co smids, Phagemids, Lambda Bacteriophage, M13, BAC, YAC, MAC and Expression vectors (characteristics). Restriction enzymes: Nomenclature, detailed study of Type II	B.Sc. (H) Zoology Semester VI	ZH DSE: Animal Biotechnology
	Practical:	• Estimation of total protein in given solutions by Lowry's method. • To perform the Acid and Alkaline phosphatase assay from serum/ tissue.	B.Sc. (H) Zoology Semester IV	CC X: Biochemistry of Metabolic Processes
		• PCR • Demonstration of Restriction digestion of Plasmid/Lambda DNA. • Calculation of transformation efficiency from calcium chloride method.	B.Sc. (H) Zoology Semester VI	ZH DSE: Animal Biotechnology

		• Preparation of stained blood film to study various types of blood cells. • Oüchterlony's double immuno-diffusion method.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
March, 2023	**Theory:**	**Internal Assessment** **Unit 2: Carbohydrate Metabolism** Glycogenolysis and Glycogenesis, Phosphate pentose pathway, Citric Acid Cycle	B.Sc. (H) Zoology Semester IV	CC X: Biochemistry of Metabolic Processes
		Unit 2: Basic Tools for Gene Manipulation DNA modifying enzymes. Transformation techniques: Calcium chloride method, electroporation and biolistic method.	B.Sc. (H) Zoology Semester VI	ZH DSE: Animal Biotechnology
		Unit 1: Cell Division and Differentiation Types of animal cells and tissues, Mitosis, Meiosis	B.Sc. (Life Sciences.) II Semester (FLS)	LS DSC: Cell and Developmental Biology of Animals
	Practical	• To study the enzymatic activity of Trypsin and Lipase. • To estimate the bilirubin by clinical method and to know the physiological significance of the bilirubin	B.Sc. (H) Zoology Semester IV	CC X: Biochemistry of Metabolic Processes
		• Construction of circular and linear restriction map from the data provided. • DNA fingerprinting	B.Sc. (H) Zoology Semester VI	ZH DSE: Animal Biotechnology
		• ABO blood group determination. • Demonstration of ELISA and Immunoelectrophoresis	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology

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April , 2023	**Theory:**	**Unit 5: Oxidative Phosphorylation** Redox systems, Review of mitochondrial respiratory chain, Electron carriers, sites of ATP, production, inhibitors and un-couplers of Electron Transport System, Oxidative phosphorylation: structure of ATPase complex, Chemiosmotic hypothesis, mitochondrial shuttle system and membrane transporters.	B.Sc. (H) Zoology Semester IV	CC X: Biochemistry of Metabolic Processes
		Unit 2: Basic Tools for Gene Manipulation Construction of genomic and cDNA libraries and screening by colony and plaque hybridization **Unit 5: Applications of Genetic Engineering** Gene Therapy	B.Sc. (H) Zoology Semester VI	ZH DSE: Animal Biotechnology
		Unit 1: Cell Division and Differentiation Cell Cycle Regulation , Stem cells, Differential gene expression	B.Sc. (Life Sciences.) II Semester (FLS)	LS DSC: Cell and Developmental Biology of Animals
	Practicals	• Study of biological oxidation (SDH) [goat liver] • Detection of SGOT and SGPT or GST and GSH in serum/ tissue • Mock Exam	B.Sc. (H) Zoology Semester IV	CC X: Biochemistry of Metabolic Processes
		• Genomic DNA isolation from E.coli, • Plasmid DNA isolation (pUC 18/19) from E.coli • Mock Exam	B.Sc. (H) Zoology Semester VI	ZH DSE: Animal Biotechnology
		• .Demonstration of lymphoid organs. • Histological study of spleen, thymus and lymph nodes through slides/photographs	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology

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May, 2023	**Theory:**	**Unit 4: Late Embryonic Development** Fate of Germ Layers, Formation of neural tube, Extra embryonic membranes in bird	B.Sc. (Life Sciences.) II Semester (FLS)	LS DSC: Cell and Developmental Biology of Animals
June, 2023	**Theory**	**Unit VI Post Embryonic Development** Metamorphic events and its hormonal regulation in amphibians, Prokaryotic and Eukaryotic cells, Various models of Plasma membrane structures, Transport across memtanes, active and passive transport, facilitated transport	B.Sc. (Life Sciences.) II Semester (FLS)	LS DSC: Cell and Developmental Biology of Animals
July, 2023	**Theory**	**Unit VI Post Embryonic Development** Cell-cell junctions, structures, and functions, Tight junctions, adherens junctions, gap junctions Internal Assessment	B.Sc. (Life Sciences.) II Semester (FLS)	LS DSC: Cell and Developmental Biology of Animals

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Name of the Faculty: Dr. Priya Singh epartment: ZOOLOGY

Semester: Even (II/IV/VI)

Month		Topics	Course	Paper Code/Name
February, 2023	Theory:	Unit 1: Introduction to Wildlife Values of wildlife : positive and negative; World Conservation Strategies; WCS, CBD, Agenda 21	B.Sc. (H) Zoology Semester-VI	DSE 4 - Wildlife conservation and management
		Unit 2: Evaluation and management of wild life habitat Physical parameters: Topography, geology and water Biological parameters : Food , cover	B.Sc. (H) Biosciences Semester-VI	DSE 4 – Wildlife Biology and Conservation
March, 2023	Theory:	UNIT 1- Annelida General characteristics and classification	B.Sc. (H) Zoology Semester- II	DSC 1 – Non-Chordates Protists to Pseudocoelomates
		Unit 2: Evaluation and management of wild life habitat Physical parameters: Topography, geology, Soil and water Biological parameters : Food , cover, forage, browse and cover estimation Standard evaluation Procedures : RS and GIS	B.Sc. (H) Zoology Semester-VI	DSE 4- Wildlife conservation and management
		Unit 3 : Population Estimation Geographical Information System, Global Positioning System, Remote Sensing	B.Sc. (H) Biosciences Semester-VI	DSE 4 – Wildlife Biology and Conservation
	Practical:	Study of Aphrodite, Nereis, Heteronereis, Sabella, Serpula,	B.Sc. (H) Zoology Semester II	DSC 1 – Non-Chordates Protists to Pseudocoelomates
		Study of the different types of placenta along with its function- through permanent slides / photomicrograph.	B.Sc (P) Life Sciences Semester II	DSC 6 – Cell and Developmental biology of animals

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		Study of following specimens: Balanoglossus, Amphioxus, Petromyzon, Pristis, Hippocampus, Labeo,	B.Sc. (H) Biosciences Semester II	DSC 5 -Diversity of Life Forms-II
April, 2023	Theory:	UNIT 1- Annelida Excretion in Annelida; Evolution of coelom and metamerism	B.Sc. (H) Zoology Semester-II	DSC 1 – Non-Chordates Protists to Pseudocoelomates
		Unit 5 : Management Planing of Wildlife in Protected Areas Estimation of carrying capacity, Human-wildlife conflict, Ecotourism; Climax communities: Char. And theories, ecology of perturbance	B.Sc. (H) Zoology Semester-VI	DSE 4- Wildlife conservation and management
		Unit 6: Challenges in wildlife management Poaching, Illegal trading, conflict management and shifting from extraxtion to preservation, effect of extinction of a species on ecosystem, Human animal conflict, Ecotourism	B.Sc. (H) Biosciences Semester-VI	DSE 4 – Wildlife Biology and Conservation
	Practical:	Study of Chaetopterus, Pheretima, Hirudinaria, Trochophore larva Study of T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm.	B.Sc. (H) Zoology Semester II	DSC 1 – Non-Chordates Protists to Pseudocoelomates
		Frog - Study of developmental stages - whole mounts and sections through permanent slides cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages.	B.Sc. (P) Life Sciences Semester II	DSC 6 – Cell and Developmental biology of animals
		Study of Icthyophis/Uraeotyphlus, Salamander, Draco, Naja, any two common birds.	B.Sc. (H) Bioscience Semester II	DSC 5 -Diversity of Life Forms-II
May, 2023	Theory:	Unit 2 : Arthopoda and onycophora General characteristics and classification (Special reference to Insecta up to orders); Vision and Respiration in Arthropoda; Metamorphosis in insects; Social life of bees and termite, Evolutionary significance of Onychopora	B.Sc. (H) Zoology Semester II	DSC 1 – Non-Chordates Protists to Pseudocoelomates
	Practical:	Study of Limulus, Palamnaeus, Palaemon, Daphnia, Balanus, Sacculina, Cancer, Eupagurus, Scolopendra, Julus, Bombyx, Periplaneta, termite, Apis, Musca. Study of Peripatus	B.Sc. (H) Zoology Semester II	DSC 1 – Non-Chordates Protists to Pseudocoelomates

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		Chick – Study of Whole Mounts of developmental stages of Chick through permanent slides (HH stages)- 13 hrs, 18hrs, 24hrs, 28hrs, 33hrs, 36hrs, 48hrs, 72hrs and 96hrs.	B.Sc. (P) Life Sciences Semester II	DSC 6 – Cell and Developmental biology of animals
		Slide/ Virtual demonstration of Placoid, Ctenoid and Cycloid scales	B.Sc. (H) Bioscience Semester II	DSC 5 -Diversity of Life Forms-II
June, 2023	Theory:	Unit 3 : Mollusca General characteristics and classification; Respiration in Mollusca; Torsion and Detorsion in Gastropoda; Pearl formation in bivalves.	B.Sc. (P) Life Sciences Semester II	DSC 1 – Non-Chordates Protists to Pseudocoelomates
	Practicals	Study of Chiton, Dentalium, Pila, Doris, Helix, Unio, Patella, Ostrea, Pinctada, Sepia, Octopus, Nautilus. Study of Pentaceros/Asterias, Ophiura, Clypeaster, Echinus, Cucumaria, Antedon; Any two larval forms.	B.Sc. (H) Zoology Semester-II	DSC 1 – Non-Chordates Protists to Pseudocoelomates
		Study of the different types of placenta along with its function- through permanent slides / photomicrograph. Study of various developmental stages in the life Cycle of Drosophila using stock culture/ permanent slides/ photomicrograph.	B.Sc. (P) Life Sciences Semester II	DSC 5 -Diversity of Life Forms-II
		Identification and classification of one endangered amphibian, reptile, bird and mammalof any one zoogeographical region in Indian	B.Sc. (H) Bioscience Semester II	DSC 6 – Cell and Developmental biology of animals
July, 2023	Theory:	Unit 4: Echinodermata General characteristics and classification; Water-vascular System in Asteroidea.	B.Sc. (H) Zoology Semester-II	DSC 1 – Non-Chordates Protists to Pseudocoelomates
	Practical:	Study of mouth parts, digestive system and nervous system of Periplaneta. Study of the digestive system of Pheretima. * Revision/ mock exam	B.Sc. (H) Zoology Semester-II	DSC 1 – Non-Chordates Protists to Pseudocoelomates

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		Report on: Biodiversity Park/reserve/ NBPGR Revision/ mock exam	B.Sc. (P) Life Sciences Semester II	DSC 5 -Diversity of Life Forms-II
		Study of the various stages of meiosis thro ugh permanent slides. Revision/ mock exam	B.Sc. (H) Bioscience Semester II	DSC 6 – Cell and Developmental biology of animals

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SEMESTER WISE TEACHING PLAN

January -May, 2023

Name of the Faculty: Dr. Anjali S. Nawani

Department: **Zoology**

Semester: Even (II/IV/VI)

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Month		Topics	Course	Paper Code/Name
February, 2023	**Theory:**	**Unit 4: Life Style Related Non-Communicable Diseases** Different types of Life style related non-communicable diseases - Hypertension, Coronary Heart diseases, Stroke, Diabetes mellitus, Obesity and Mental ill-health - their causes and prevention through dietary and lifestyle modifications	B.Sc. Life Sciences Semester IV	LS SEC 4: Public Health and Hygiene
	Practical:	1. Calculate the BMI of students and analyse the results with suitable statistical tools. 2. Measure the blood pressure using sphygmomanometer.	B.Sc. Life Sciences Semester IV	LS SEC 4: Public Health and Hygiene
	Theory:	**Unit 4: Blood:** 1. Components of blood and their functions; 2. Structure and functions of haemoglobin; 3. Haemostasis: 4. Blood clotting system, 5. Kininogen Kinin system, Fibrinolytic system.	B.Sc. (H) Zoology Semester IV	CC IX: Physiology: Life Sustaining Systems

March, 2023	**Theory:**	**Unit 5:** Social Health Problems 5hrs Smoking, alcoholism, drug dependence and Acquired Immuno-Deficiency Syndrome (AIDS) - their causes, treatment and prevention.	B.Sc. Life Sciences Semester IV	LS SEC 4: Public Health and Hygiene
	Practical:	1. Estimation of blood glucose level 2. Study of household pests following with reference to public health.	B.Sc. Life Sciences Semester IV	LS SEC 4: Public Health and Hygiene
	Theory:	**Unit 5: Physiology of Heart** 1. Structure and working of conducting myocardial fibers. 2. Origin and conduction of cardiac impulses; 3. Cardiac cycle; 4. Cardiac output and its regulation, 5. Frank-Starling Law of the heart, 6. Nervous and chemical regulation of heart rate. 7. Electrocardiogram, **Internal Assessment Test**	B.Sc. (H) Zoology Semester IV	CC IX: Physiology: Life Sustaining Systems
	Theory:	**UNIT – I Nervous System and Sense Organs** 1. Structure of neuron, 2. resting membrane potential, 3. origin and conduction of action potential across the myelinated and unmyelinated nerve fibers;	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**
	Practical:	1. Classification, structure and functions of tissues: epithelial, connective, muscular and nervous tissue. 2. Preparation of temporary mounts: Squamous epithelium.	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**

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April, 2023	**Theory**	**REVISION AND DOUBT SOLVING CLASSESS**	B.Sc. Life Sciences Semester IV	LS SEC 4: Public Health and Hygiene
	Practicals	1. Testing potability of water for human consumption by MPN method 2. To determine the content of different pollutants in soil/water samples. 3. Moc test/ Exam Guidelines discussion	B.Sc. Life Sciences Semester IV	LS SEC 4: Public Health and Hygiene
	Theory:	**Unit 5: Physiology of Heart** 1. Blood pressure and its regulation. 2. Structure of mammalian heart; 3. Coronary circulation; **Unit 3: Renal Physiology** 1. Structure of kidney and its functional Unit; 2. Mechanism of urine formation; 3. Regulation of water balance: 4. Regulation of acid-base balance. **Student Assignment: Powerpoint presentation assessment**	B.Sc. (H) Zoology Semester IV	CC IX: Physiology: Life Sustaining Systems
	Theory	**Unit 1:** 1. Types of synapses, synaptic transmission, 2. Neuromuscular junction. **UNIT – 4: Reproductive System** Physiology of male and female reproduction– 1. spermatogenesis, 2. oogenesis,	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**

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		3. follicular development,		
	Practical	1. Preparation of temporary mounts: Striated muscle fibres, Nerve cells. 2. Structure, histology, types and function of bones and cartilage.	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**
	Practical	1. Estimation of blood glucose (GOD/POD) by kit. 2. Calculation of BMI, waist to hip ratio, skin fold test.	GE ZOOLOGY SEMESTER II	**GENERIC ELECTIVES (GE-4): Lifestyle Disorders**
May 2023	**Theory**	**UNIT – 4: Reproductive System** 1. steroidogenesis, 2. implantation, **Internal Assessment Test**	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**
	Practical	1. Classification and histological structure of muscle; ultrastructure of striated muscle. 2. Demonstration of the unconditioned reflex action (Deep tendon reflex such as knee jerk reflex). 3. Recording of simple muscle twitch with electrical stimulation (Interpretation/ Virtual). 4. Study of permanent slides of Mammalian Skin, Spinal cord, Hypothalamus, Pineal, Pituitary.	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**
	Practical	1. Imaging techniques for cancer diagnosis. CT Scan, MRI, PET-CT scan. Confirmatory Biopsy. 2. Blood pressure measurement using a sphygmomanometer.	GE ZOOLOGY SEMESTER II	**GENERIC ELECTIVES (GE-4): Lifestyle Disorders**

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June 2023	**Theory**	1. pregnancy, and 2. mammary gland development **Student assessment through powerpoint presentation**	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**
	Practical	1. Study of permanent slides of Thyroid, Parathyroid, Pancreas, Adrenal, Testis and Ovary. 2. Permanent slide preparation from various tissues: Tissue fixation, block preparation, tissue sectioning, H&E staining, microscopy.	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**
	Practical	1. Study of cardiac rehabilitation- thrombolytic agents and balloon angioplasty. 2. Imaging techniques for cancer diagnosis. PET-CT scan. Confirmatory Biopsy.	GE ZOOLOGY SEMESTER II	**GENERIC ELECTIVES (GE-4): Lifestyle Disorders**
July 2023	**Theory**	**Student assessment through powerpoint presentations**	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**
	Practical	**Revision and Moc Test**	B.Sc. (H) Zoology Semester II	**DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems**
	Practical	**Project Work** **Student assessment** **Revision and Moc Test**	GE ZOOLOGY SEMESTER II	**GENERIC ELECTIVES (GE-4): Lifestyle Disorders**