



SRI VENKATESWARA COLLEGE

**ODD SEMESTER
2021-2022**

TEACHING PLANS



SEMESTER WISE TEACHING PLAN-2021-22
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	Ammonium sulphate fractionation, dialysis. Ion exchange chromatography, molecular sieve chromatography, affinity chromatography.	B.Sc(H) Biological sciences - Sem III	BS-C5 Proteins and Enzymes
		HPLC and FPLC. Gel electrophoresis, SDS-PAGE, IEF and 2-D electrophoresis.		
		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
	Practicals	• Introduction to Bioinformatics • J mol/Pymol and Java	B.Sc(H) Biological sciences - Sem III	SEC: Bioinformatics
		Determination of absorption maxima (λ_{max}) of small molecules and macromolecules. 2. Verification of Beer's Law	B.Sc(H) Biochemistry - Sem III	SEC- Biochemical Techniques
SEPTEMBER	Theory:	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
		Sequence Alignment & its applications in study of phylogeny.		
		BLAST and Multiple Sequence Alignment. Phylogenetic Analysis, Rooted & Unrooted Trees	B.Sc(H) Biological sciences - Sem III	BS SEC Bioinformatics

	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	B.Sc(H) Biochemistry - Sem III	SEC- Biochemical Techniques
	Tutorials:	Class Tests / assignments		
OCTOBER	Theory:	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 K_m , V_{max} , K_{cat} . Week 9: Enzyme inhibition, irreversible and reversible (competitive, uncompetitive, noncompetitive, mixed). Mechanism based inhibitors. Genomics & its application. Genome Annotation. Gene prediction methods	B.Sc(H) Biological sciences - Sem III B.Sc(H) Biological sciences - Sem III	BS-C5 Proteins and Enzymes BS SEC - Bioinformatics
	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.	B.Sc(H) Biochemistry - Sem III	SEC- Biochemical Techniques
	Tutorials	Assignments / Tests		

NOVEMBER	Theory:	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. Applications of Bioinformatics in Drug Discovery. CADD. Microbial Genomics. Applications of	B.Sc(H) Biological sciences - Sem III B.Sc(H) Biological sciences - Sem III	BS-C5 Proteins and Enzymes BS SEC - Bioinformatics
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	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
	Tutorials:			
	<u>Test</u>	MID TERM Exams		
DECEMBER	Theory:	Tools of Cell Biology	B.Sc(H) Biochemistry - Sem I	BCH C-2 CELL BIOLOGY
	Practicals:	- Cytochemical staining of RNA by Methyl Green Pyronin - Cytochemical staining of polysaccharides by PAS - To study the effect of isotonic, hypotonic and hypertonic solution on cells	B.Sc(H) Biochemistry - Sem I	BCH C-2 CELL BIOLOGY
	Tutorials:			
		Cell Wall Extra Cellular Matrix	B.Sc(H) Biochemistry - Sem I	BCH C-2 CELL BIOLOGY
	Practicals:	To study different stages of mitosis by temporary preparation in onion root tip.	B.Sc(H) Biochemistry - Sem I	BCH C-2 CELL BIOLOGY

JANUARY	Tutorials:			
		Cell Junctions Cytoskeleton	B.Sc(H) Biochemistry - Sem I	BCH C-2 CELL BIOLOGY
FEBRUARY	Practicals:	Observation of human cheek cells under microscope using methylene blue stain.	B.Sc(H) Biochemistry - Sem I	BCH C-2 CELL BIOLOGY
	Tutorials:			
		Cytoskeleton (continuation...)	B.Sc(H) Biochemistry - Sem I	BCH C-2 CELL BIOLOGY
MARCH	Practicals:	To study different stages of meiosis by temporary preparation in onion flower buds	B.Sc(H) Biochemistry - Sem I	BCH C-2 CELL BIOLOGY
	Practicals:	Mock practical and Final Examinations		
	Tutorials:	Assignments / Tests		

DR. KAMESHWAR SHARMA YVR
Assistant professor
Department of biochemistry



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sarika Yadav

Department: Biochemistry

Semester: III/V (2021-2022)

MONTHS		TOPICS	COURSE	PAPER CODE/ NAME	PLATFORM USED FOR TEACHING
JULY-2021	THEORY	Structure of nucleus; Transport of proteins across nuclear envelope	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY	Google meet, Google classroom and emails
	PRACTICALS	Orientation for Practicals in Nutritional Biochemistry. Introduction to Methods of Nutritional Assessment.	B.Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-1: Nutritional Biochemistry	Google meet, Google classroom and emails
AUGUST-2021	THEORY	Historical background and various membrane models. Overview of membrane functions. Composition of membranes: Lipids- Phospholipids, Glycolipids, sterols; Comparison of the composition of various cellular and subcellular membranes; 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.	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-6: Membrane Biology and Bioenergetics	Google meet, Google classroom and emails

		Regulation of nuclear protein import and export. Overview of the endomembrane system; Targeting, modification and sorting of proteins from and into Endoplasmic Reticulum; Quality control and UPR in Endoplasmic Reticulum;	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY	Google meet, Google classroom and emails
	PRACTICALS	Orientation for Practicals, Estimation of blood glucose in serum using ortho-toluidine method	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS	Google meet, Google classroom and emails
		Understanding Anthropometric measurements. Anthropometric assessment of young adults Anthropometric identifications for Kwashiorkor, Marasmus and Obesity in children	B.Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-1: Nutritional Biochemistry	Google meet, Google classroom and emails
SEPTEMBER- 2021	THEORY	Proteins - Peripheral Proteins, Integral Membrane Proteins and Lipid-Anchored proteins, and carbohydrates. Lateral and transverse asymmetry in membranes. Role of Flippase, Floppase and Scramblase. Membrane fluidity: lateral, transverse and rotational motion of lipids and proteins. Factors affecting membrane fluidity- composition, barriers (tight junctions), cytoskeleton interactions, microdomains – rafts, caveolae. Fence and gate model.	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-6: Membrane Biology and Bioenergetics	Google meet, Google classroom and emails
		Export of protein from ER, Golgi and lysosomal proteins. Unit 4: Overview of the cell cycle; Eukaryotic cell cycle; Events of Mitotic Phase; Cytokinesis; Regulation of Cell Division	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY	Google meet, Google classroom and emails

	PRACTICALS	Estimation of blood glucose using enzymatic methods. Assay of salivary amylase. Estimation of Cholesterol. Evaluation	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS	Google meet, Google classroom and emails
		Calculation of BMR and correlating 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. Evaluation-1	B.Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-1: Nutritional Biochemistry	Google meet, Google classroom and emails
OCTOBER- 2021	THEORY	- Study of RBC membrane architecture. Homeoviscous Adaptation. Techniques to study membrane dynamics: FRAP, TNBS, SPT. 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. - Evaluation and Assessment	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-6: Membrane Biology and Bioenergetics	Google meet, Google classroom and emails
		Meiosis And Fertilization; Cell Growth; Development and causes of Cancer. Genetic basis of cancer; Oncogenes, Tumor Viruses	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY	Google meet, Google classroom and emails

		• Evaluation and Assessment			
	PRACTICALS	Isolation of lipids from egg yolk and estimation of phosphate and Choline; Separation by TLC. Evaluation	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS	Google meet, Google classroom and emails
		Biochemical assessment. Nutritional status, Vitamin E Clinical assessment of Nutritional status, Case studies. Evaluation-2	B.Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-1: Nutritional Biochemistry	Google meet, Google classroom and emails
NOVEMBER- 2021	THEORY	ABC family of transporters – MDR and CFTR. Group translocation and bacteriorhodopsin. Ion channels: voltage-gated ion channels (Na ⁺ /K ⁺ voltage-gated channel) and ligand-gated ion channels (acetyl choline receptor), and aquaporins. Ionophores: valinomycin, gramicidin.	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-6: Membrane Biology and Bioenergetics	Google meet, Google classroom and emails
		Molecular approach to cancer treatment. Fluorescence Microscopy- FACS, FRET, Confocal Microscopy, Electron Microscopy	B. Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-2: ADVANCED CELL BIOLOGY	Google meet, Google classroom and emails
	PRACTICALS	Sugar fermentation by microorganisms. Revision of Practicals	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS	Google meet, Google classroom and emails
		Clinical assessment of Nutritional status, Case studies Revision exercises; Evaluation-3 and VIVA. End semester Practical Examinations	B.Sc. (H) Biochemistry III Yr, Sem V	BCH DSE-1: Nutritional Biochemistry	Google meet, Google classroom and emails

DECEMBER-2021	THEORY	Relationship of membrane transport and diseases.	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-6: Membrane Biology and Bioenergetics	Google meet, Google classroom and emails
	PRACTICALS	End semester Practical Examinations	B.Sc. (H) Biochemistry II Yr, Sem III	BCH C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS	Google meet, Google classroom and emails

Name of the Faculty : Dr. PILLI RAJESWARI
Department :BIOCHEMISTRY
Teaching Mode : ONLINE

Semester-V
2021

Month		Topics	Course	Paper Code Name
July	Theory	Unit-1 : Advanced Methods in Cell Biology: No of hours:3 Principle and application of Ultracentrifugation	B.SC (Hons) Biochemistry Final year Semester-V	Advanced Cell Biology (BCH DSE-2)
	Practical	1. Screening for an auxotrophic mutation in E.coli.	B.SC (Hons) Biological Science Final year Semester-V	B.SC (Hons) Biological Science -Final year -Genetics (BS C-12)
August	Theory	UNIT III: Cytoskeleton and Cell Motility : No of hours:10 Function and origin of The Cytoskeleton; Organization and Assembly of Actin Filaments and Myosin Assembly and organization of Intermediate Filaments and microtubules	B.SC (Hons) Biochemistry Final year Semester-V	Advanced Cell Biology (BCH DSE-2)
	Practical	Study of abnormal human karyotype	B.SC (Hons) Biological Science Final year Semester-V	B.SC (Hons) Biological Science -Final year -Genetics (BS C-12)
September	Theory	UNIT V: Cell Death and its regulation: No. of hours:8 Apoptosis and Necrosis, Application of stem cells in health and disease. Hematopoiesis, Embryonic Stem Cells and Therapeutic Cloning	B.SC (Hons) Biochemistry Final year Semester-V	Advanced Cell Biology (BCH DSE-2)

October	Practical	Squash preparation of salivary glands of Dipteran larva to observe polytene chromosomes Smear technique to demonstrate sex chromatin in buccal epithelial cells	B.SC (Hons) Biological Science Final year Semester-V	B.SC (Hons) Biological Science -Final year -Genetics (BS C-12)
	Theory	UNIT II: Protein Sorting and Secretory Pathway: No of hours:8 Synthesis And Targeting Mitochondrial Protein; Chloroplast Proteins A\and Peroxisomal Proteins; Mechanism Of Vesicular Transport; Coat Proteins And Vesicle Budding; Vesicle Fusion; Targeting Of Proteins T	B.SC (Hons) Biochemistry Final year Semester-V	Advanced Cell Biology (BCH DSE-2)
	Practical	Study of Phlox/ Allium karyotype (normal and abnormal)	B.SC (Hons) Biological Science Final year Semester-V	B.SC (Hons) Biological Science -Final year -Genetics (BS C-12)
	Theory	No of hours:2 Revision of I , III and V units	B.SC (Hons) Biochemistry Final year Semester-V	Advanced Cell Biology (BCH DSE-2)
November				



SEMESTER WISE TEACHING PLAN 2020-21

SRI VENKATESWARA COLLEGE

Odd Semester : I/III/V

Name of the Faculty: Dr.Ravindra Varma Polisetty

Department: Biochemistry

Month		Topics	Course	Teaching Mode	Paper Code/Name
JULY	Theory:	1. Introduction to the basic principles of heredity.	TBS	Online (Microsoft Teams)	BS C12-Genetics
	Practicals:				
	Tutorials:				
AUGUST	Theory:	1. Model organisms: Escherichia coli, Saccharomyces cerevisiae, Drosophila melanogaster, Caenorhabditis elegans, Danio rerio and Arabidopsis thaliana.	TBS	Online (Microsoft Teams)	BS C12-Genetics
	Practicals:	1. Monohybrid crosses in Drosophila for studying autosomal and sex linked inheritance.	TCBH	Online (Microsoft Teams)	BCH C-11
	Tutorials:				
SEPTEMBER	Theory:	1. Pleiotropy Penetrance and expressivity, norm of reaction and phenocopy. 2. Human pedigree analysis: Pedigree conventions, characteristics of dominant and recessive inheritance; sex linked, sex influenced and sex limited traits, applications of pedigree analysis. 3. Linkage and Crossing over, cytological basis of crossing over 4. Molecular mechanism of crossing over. 5. Recombination frequency as a measure of linkage intensity 6. two factor and three factor crosses 7. Interference and Coincidence	TBS	Online (Microsoft Teams)	BS C12-Genetics
	Practicals:	1. Squash preparation of salivary glands of Dipteran larva to observe polytene chromosomes. 2. Induction of polyploidy in onion roots.	TCBH	Online (Microsoft Teams)	BCH C-11
	Tutorials:				
	Assignments	Assignment-1		Online (Microsoft Teams)	

				Teams)	
OCTOBER	Theory:	1. Genomes of bacteria, Drosophila and Humans 1. Human genome project 2. Introduction to Bioinformatics, Gene and Protein databases, sequence similarity and alignment, Gene feature identification. Gene Annotation and analysis of transcription and translation 3. Post- translational analysis-Protein interaction 4. Sex determination: Genetic basis of sex determination in Humans, Drosophila melanogaster and C.elegans.	TBS	Online (Microsoft Teams)	BS C12- Genetics
	Practicals:	1. Smear technique to demonstrate sex chromatin in buccal epithelial cells. 2. PTC testing in a population and calculation of allelic and genotype frequencies.	TCBH	Online (Microsoft Teams)	BCH C-11
	Tutorials:				
	Test	Mid-term Test			
NOVEMBER	Theory:	1. Inheritance of complex traits: Inheritance of complex trait, 2. analysis of quantitative traits, narrow and broad sense heritability, 3. quantitative trait loci (QTL) and their identification 4. hybrid vigor.	TBS	Online (Microsoft Teams)	BS C12- Genetics
	Practicals:	1. Study of abnormal human karyotype and pedigrees (dry lab)	TBCH	Online (Microsoft Teams)	BCH C-11
	Tutorials:				



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Meeta Bhardwaj

Department: Biochemistry

Semester : I/III/V (21-22)

Month		Topics	Course	Paper Code/Name
JULY	Theory			
	Practicals	Introduction Differential Centrifugation of cell and validation of separated organelles by enzyme markers.	B.SC. (H) BIOCHEMISTRY Sem V	BCH – DSE 2
AUGUST	Theory:	Unit I: Introduction to structures of protein No. of Hours: 8 Amino acids and their properties. Biologically important peptides - hormones, antibiotics and growth factors. Conjugated proteins, multimeric proteins and metalloproteins. Diversity of proteins. Organization of protein structure- primary, secondary, tertiary and quaternary structures.	B.SC (H) BIOLOGICAL SCIENCES Sem III	BS – C 5
	Practicals	Calculating viability of bacterial cells after exposure of the bacterial culture to UV rays. Study of Pinocytosis by paramecium under microscopy Demonstration of phagocytosis Biuret Method Lowry method	B.SC. (H) BIOCHEMISTRY Sem V B.SC (H) BIOLOGICAL SCIENCES Sem III	BCH – DSE 2 BS – C5

SEPTEMBER	Theory	Protein sequencing- Edman degradation.Solid phase peptide synthesis.Nature of stabilizing bonds- covalent and non covalent.Peptide bond- dihedral angles. Ramachandran map, Secondary structureHelices, sheets and turns.	B.SC (H) BIOLOGICAL SCIENCES Sem III	BS – C 5
	Practicals	Animal Tissue culture BSL- 3 Laboratories Plant Tissue Culture Offline Practicals Isoelectric point determination Ammonium sulphate fractionation Acid phosphatase enzyme assay	B.SC. (H) BIOCHEMSITRY Sem V B.SC (H) BIOLOGICAL SCIENCES Sem III	BCH – DSE 2 BS – C5
OCTOBER	Theory	Unit II: Tertiary structures and Protein Folding No. of Hours: 8 Tertiary and quaternary structures.Motifs and domains.Structures of myoglobin and haemoglobin. Oxygen binding curves, influence of 2,3-BPG, CO ₂ . Concerted and sequential models for allosteric proteins.Haemoglobin disorders.Denaturation and renaturation of proteins.Introduction to thermodynamics of folding Role	B.SC (H) BIOLOGICAL SCIENCES Sem III	BS – C 5
	Practicals	Offline Practicals Study of cell-cell agglutination by lectin Preparing temporary mount of nerve cell from mammalian spinal cord Acid Phosphatase progress curve Effect of pH on AP activity	B.SC. (H) BIOCHEMSITRY Sem V B.SC (H) BIOLOGICAL SCIENCES Sem III	BCH – DSE 2 BS – C5

NOVEMBER	Theory	Unit V: Mechanisms of enzyme action and regulation No. of Hours: 8 Acid-base and covalent catalysis (chymotrypsin, lysozyme). Metal activated enzymes and metalloenzymes, Allosteric regulation and feedback inhibition (ATCase), reversible covalent modification (glycogen phosphorylase). Proteolytic cleavagezymogen.Multienzyme complex.Coenzymes.	B.SC (H) BIOLOGICAL SCIENCES Sem III	BS – C 5
	Practicals	Determination of Km and Vmax Evaluation and mock examination	B.SC (H) BIOLOGICAL SCIENCES Sem III	BS – C 5



SEMESTER WISE TEACHING PLAN

**SRI
VENKATESWARA COLLEGE**

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	Google meet and Google class room
	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	Google meet and Google class room
August	Theory	Extentions 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	Google meet and Google class room
		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. Hormone therapy. General introduction to Endocrine methodology.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester III	BCH C 7: Hormone Biochemistry and Function.	Google meet and Google class room
			IIYear, Semester III	GE-III C-6	Google meet and Google class room
	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	Google meet and Google class room
		Introduction to Forensic Science Crime Scene investigation	GE-III IIYear, Semester III	GE--6	Google meet and Google class room

September	Theory	Gene interactions: additive gene effect, recessive and dominant epistasis, duplicate dominant and recessive epistasis, suppressor and modifier gene. Pedigree Analysis. Sex determination: heteromorphous chromosomes, genetic sex determination, temperature 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	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	I BCH C-11: Concepts In Genetics	Google meet and Google class room
		Hormone receptors - extracellular and intracellular. Receptor - hormone binding, Scatchard analysis. G protein coupled receptors, G proteins, second messengers - cAMP, cGMP, IP3, DAG, Ca ²⁺ , Effector systems - adenylyl cyclase, guanylyl cyclase, PDE, PLC. Protein kinases (PKA, PKB, PKC, PKG). Receptor tyrosine kinases - EGF, insulin and Ras - MAP kinase cascade. Non receptor tyrosine kinase-erythropoietin receptor JAK - STAT pathway. Steroid hormone Receptor. Receptor regulation and cross talk.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	BCH C7 : Hormone Biochemistry and function.	Google meet and Google class room
		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 IYear, Semester III	GE-6	Google meet and Google class room
	Practicals	Evaluation 1 Calculation of BMR and correlating 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	Google meet and Google class room And OFF Line if permitted
		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 IYear, Semester III	GE-6	Google meet and Google class room And OFF Line if permitted
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	Google meet and Google class room

	Hypothalamic - Pituitary axis: anatomy, histology, vasculature and secretions. Physiological and biochemical actions of hypothalamic hormones and anterior pituitary hormones; Hormone feed- back regulatory cascade. Posterior pituitary hormones –structure, physiology and biochemical actions of AVP and Oxytocin; Diabetes insipidus.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	BCH C 7: Hormone Biochemistry and function	Google meet and Google class room
	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 IYear, Semester III	GE-6	Google meet and Google class room
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	Google meet and Google class room And OFF Line if permitted
	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 IYear, Semester III	GE -6..	Google meet and Google class room And OFF Line if permitted
Test	Test on Extension to Mendelian 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	Google meet and Google class room
	Test on Cellular signaling and Hypothalamic and pituitary system	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	BCH C7: Hormone Biochemistry and function.	Google meet and Google class room
	Test on Unit II and III of GE-6	GE-III IYear, Semester III	GE-6	Google meet and Google class room

November	Theory:	Linkage and crossing over, genetic mapping in eukaryotes, centromere mapping with ordered tetrads, cytogenetic mapping with deletions and duplications in <i>Drosophila</i> , detection of linked loci by pedigree analysis in humans and somatic cell hybridization for positioning genes on	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics	Google meet and Google class room
		Cells involved in the release of gastrointestinal hormones; the gastrin family of hormones and CCK: the secretin family of hormones; Incretins; Ghrelin; Summary of hormone metabolite control of GI function. Hormones of the Pancreas: Structure, synthesis, physiology and biochemical actions of insulin and glucagon. Adipocyte hormones: Adiponectin and leptin; Appetite and satiety control. Pathophysiology - Type I and type II Diabetes mellitus.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	BCH C7: Hormone Biochemistry and Function	Google meet and Google class room
		<i>Narco analysis</i> : theory, forensic significance, future prospect; <i>Brain mapping</i> : introduction, EEG, P-3000 wave, forensic applications, limitation of technique; <i>Polygraph</i> : Principle and technique, polygraph as forensic investigative tool, use of psychoactive drugs in forensic analysis. NHRC guidelines for polygraph test; <i>Facial reconstruction</i> : Method and technique, facial reconstruction in forensic identification	GE-III IYear, Semester III	GE-6	Google meet and Google class room
	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	Google meet and Google class room And OFF Line if permitted
		Virtual trip to a forensic laboratory DNA fingerprinting Case studies Evaluation 3 and VIVA.	GE-III IYear, Semester III	GE-6	Google meet and Google class room And OFF Line if permitted



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

Name of the Faculty: Dr. Vandana Malhotra

Department: BIOCHEMISTRY

Semester: III/V

(Online Teaching MS Teams/ Google Classroom)

Month		Topics	Course	Paper Code /Name
JULY SEM V (20.07.2021) onwards	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
	Practicals	• Estimation of RNA by Orcinol Method	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester V	BCH C-12 Gene Expression and Regulation
AUGUST SEM III (16.08.2021) onwards	Theory	Unit I. Biosynthesis of RNA in Prokaryotes Contd.	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		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
		• Effect of Temperature on Membrane Permeability (value added)	B.Sc. BIOCHEMISTRY (Hons) II Year, Semester III	BCH C-6 Membrane Biology and Bioenergetics
		• 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
	Practicals	• Extraction of Total RNA from Plant tissue • Growth Curve for <i>E. coli</i> • Diauxic Curve for <i>E. coli</i>	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		• Effect of Detergents on RBC membrane permeability • RBC ghost cell preparation and separation of proteins by SDS PAGE • Effect of lipid composition on the permeability of a lipid monolayer • Determination of CMC of detergent	B.Sc (Hons) Biochemistry, II Year, Semester III	BCH C-6 Membrane Biology and Bioenergetics
		• 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.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-12 Gene Expression and Regulation

		UNIT VI: Regulation of Gene Expression in Eukaryotes		
		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
	Practicals	• Protein Synthesis Inhibitors	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		• Separation of photosynthetic pigments by TLC • Study the photosynthetic O₂ evolution in hydrilla plant • Isolation of chloroplast and determination of photosynthetic activity • Study the Hill reaction by using artificial electron acceptor.	B.Sc (Hons) Biochemistry, II Year, Semester III	BCH C-6 Membrane Biology and Bioenergetics
		• 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		
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
	Practicals	Revision Exercises	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-12 Gene Expression and Regulation
		Isolation of mitochondria from liver and assay of marker enzyme SDH Revision Exercises	B.Sc (Hons) Biochemistry, II Year, Semester III	BCH C-6 Membrane Biology and Bioenergetics
		• 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	Collection 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	B.Sc (Hons) Biochemistry, II Year, Semester III	BCH C-6 Membrane Biology and Bioenergetics
		Revision Exercises	B.Sc. BIOLOGICAL SC. (Hons) II Year, Semester III	BS SEC-3 Bioinformatics
	Assignments and Tests	Collection of all assignments Internal Assessment		



**SEMESTER WISE TEACHING
PLAN (July to November, 2021-2022)
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. Organelle heredity: chloroplast mutation in four O'clock plant, Chlamydomonas, mitochondrial mutations in yeast, Neurospora, maternal effect, kappa particles. Chromosomal aberrations.	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	Unit 4. Genetics of bacteria and viruses: Complementation test, cis-trans test, rII locus, conjugation, transformation, transduction, gene mapping in bacteria. Transposable genetic elements, Epigenetics	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	Population genetics: Hardy Weinberg Law, predicting allelic and genotypic frequencies, exceptions to HW law.	B.Sc.(H) Biological Sciences Semester V	BS C12 Genetics
		Epigenetic mechanisms of transcriptional regulation, genomic imprinting. 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.		
November	Theory	Molecular evolution: analysis of nucleotide and amino acid sequences, molecular phylogenies, homologous sequences, sequence similarity, and alignment, phenotypic evolution and speciation.	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
	Practical	Repetition of practicals, as required and mock exam	B.Sc.(H) Biochemistry Semester V	BCH C12 Gene Expression and Regulation



SEMESTER WISE TEACHING PLAN 2021-22
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. NIMISHA SINHA
Department: BIOCHEMISTRY
Teaching Mode: ONLINE

Semester: I/III/V

Month		Top ics	Course	Paper Code/Name
JULY wef 20 th July, 2021	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
	Practical	Introduction to Drosophila for studying sex linked inheritance	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C11 Concepts of Genetics
		Differential centrifugation of cell and validation of separated organelles by enzyme markers	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS DSE Advanced Cell Biology
August Semester III wef from 16 th August, 2021	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 IV 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 IV Lipid digestion, absorption and transport. Fatty acid oxidation: transport to mitochondria, activation of fatty acids, β oxidation of saturated.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: Metabolism Of Carbohydrates And Lipids
		UNIT I: Introduction to forensic sciences No. of hours: 10 Basic Principles and Significance; History and Development of Forensic Science; Defining the scene of investigation; Collection, Packaging, Labelling and Forwarding of biological exhibits to forensic laboratories;	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	GE 6: Biochemical Applications In Forensic Science
	Practical	1. Introduction to Drosophila for studying sex linked inheritance. 2. Studying Polytene chromosomes in Chironomus larva	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C11 Concepts of Genetics
		1. Estimation of Glucose using GOD_PO D 2. Glucose tolerance test. 3. Case studies	B.Sc. (Hons) BIOCHEMISTRY II Year, Semester III	CBCS C7: Hormone Biochemistry

		Study of pinocytosis by paramecium under microscopy	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS DSE Advanced Cell Biology
SEPTEMBER	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.	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester V	CBCS DSE 1 Nutritional Biochemistry
		Unit 1 contd: 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
		Preservation of biological evidence; Importance of Health and Safety Protocols in sample collection and analysis.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	GE 6: Biochemical Applications In Forensic Science
		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. Estimation of serum T4, T3 and TSH 2. Estimation of serum electrolytes	B.Sc. (Hons) BIOCHEMISTRY II Year, Semester III	CBCS C7: Hormone Biochemistry
		1. Techniques of Plant /Animal Tissue Culture 2. Calculating viability of bacterial cells after exposure of the bacterial culture to UV rays 3. Demonstration of phagocytosis/apoptosis	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS DSE Advanced Cell Biology
OCTOBER		Unit 5 contd. Role of Vitamin E as an antioxidant. Extra-skeletal role of Vitamin D and its effect on bone physiology. Hypervitaminosis. 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	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester V	CBCS DSE 1 Nutritional Biochemistry

		UNIT V: Synthesis of lipids No of hours: 10 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. Synthesis of glycerophospholipids and sphingolipids. Cholesterol metabolism, diseases associated with abnormal lipid metabolism.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: Metabolism Of Carbohydrates And Lipids
		DNA Finger Printing; DNA-Introduction, source of DNA in Forensic case work, Extraction of DNA, Techniques of DNA fingerprinting-RFLP, STR, PCR	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	GE 6: Biochemical Applications In Forensic Science
	Practical	Squash preparation of salivary glands of Dipteran larva to observe polytene chromosomes. Smear technique to demonstrate sex chromatin in buccal epithelial cells. Study of abnormal human karyotype and pedigrees (dry lab)	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C11 Concepts of Genetics
		HCG based pregnancy detection test. Case studies on hormone disorders.	B.Sc. (Hons) BIOCHEMISTRY II Year, Semester III	CBCS C7: Hormone Biochemistry
		Preparing temporary mount of nerve cell from mammalian spinal cord Study of cell- cell agglutination by lectin and calculation of haem-agglutination titre.	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS DSE Advanced Cell Biology
NOVEMBER		UNIT VI: Food-drug interactions and Nutraceuticals No. of hours : 6 Nutrient interactions affecting ADME of drugs. Drug induced nutrient deficiency: Alcohol, Antibiotics, Anti-malarial drugs. Food as medicine: turmeric, garlic, ginger, cumin, asafoetida	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester V	CBCS DSE 1 Nutritional Biochemistry
		UNIT VI: Regulation of metabolism No of hours: 06 Well-fed state, early fasting state, fasting state, early re-fed state, energy requirements, reserves	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: Metabolism of Carbohydrates And Lipids
		DNA analysis, anthropology – skeletal remains, Odontology; Time of death - rigor mortis, liver mortis, algor mortis, forensic entomology. Biochemical basis for determination of cause of death, case studies	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	GE 6: Biochemical Applications In Forensic Science
	Practical	1. PTC testing in a population and calculation of allele and genotype frequencies. 2. Continuous evaluation	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS C11 Concepts of Genetics

		3. Revision of practical		
		1. Continuous evaluation	B.Sc. (Hons) BIOCHEMISTRY II Year, Semester III	CBCS C7: Hormone Biochemistry
		1. Continuous evaluation 2. Revision of practical	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V	CBCS DSE Advanced Cell Biology
DECEMBER Till 7 th december	Theory	caloric homeostasis.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: Metabolism Of Carbohydrates And Lipids
		DNA fingerprinting in paternity disputes, mass disaster and other forensic case work, case studies.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	GE 6: Biochemical Applications In Forensic Science
	Practical	1. Continuous evaluation 2. Revision of practical	B.Sc. (Hons) BIOCHEMISTRY II Year, Semester III	CBCS C7: Hormone Biochemistry

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Anju Kaicker

Department: Biochemistry

Semester : I/III/V Session 2020-2021 FOR TBCH

Month		Topics	Course	Paper Code/Name
August	Theory	Carbohydrates : Dietary sources, Digestion, Absorption, GI, GL, Blood glucose levels Lipids : Dietary sources, Digestion, Absorption, HDL, LDL, VLDL, Chylomicrons, Trans fats Introduction to hormone biochemistry, clinical conditions related to hormone imbalance, role of hormones in homeostasis Anatomy of thyroid gland	TBCH SBCH	DSE 1, Nutritional Biochemistry C-7, Hormone biochemistry
	Practicals	Estimation of glucose	SBCH	C-7, Hormone biochemistry
	Tutorials			
September	Theory:	Lipids : Atherosclerosis, Omega 6 & 3 FA, PUFA, Cancer, obesity and other diseases Synthesis of thyroid hormones, goitrogens, hypo and hyperthyroidism, functions of thyroid hormones, PTH, Calcitonin and Vitamin D	TBCH SBCH	DSE 1, Nutritional Biochemistry C-7, Hormone Biochemistry
	Practicals :	Glucose Tolerance Test Estimation of Calcium	SBCH	C-7, Hormone Biochemistry
	Tutorials:			

	<u>Assignment</u> :	Class assignments given		
October	Theory:	Minerals : Calcium, Phosphorous, Iron, Zinc & Magnesium : Their food sources, absorption, functions, deficiency Regulation of calcium homeostasis, pathophysiology, rickets, osteomalacia Growth hormones and somatomedians, EGF, PDGF, erythropoietin, gigantism and other growth disorders	TBCH SBCH	DSE 1, Nutritional Biochemistry C-7, Hormone Biochemistry
	Practicals:	Estimation of T4 by ELISA Pregnancy test, HCG based	SBCH	C-7, Hormone Biochemistry
	Tutorials:			
	<u>Test</u>	Mid term test will be taken		
November	Theory:	Trace Elements : Selenium, iodine, fluoride, chromium : Functions & deficiency Assessment of ROS and folate, GTT & acetylated hemoglobin Hormones of the adrenal glands, Cortisol and epinephrine, RAS, POMC, CRH, Stress, Addison's and	TBCH SBCH	DSE 1, Nutritional Biochemistry C-7, Hormone Biochemistry
	Practicals:	Estimation of serum electrolytes Case studies on hormone disorders	SBCH	C-7, Hormone Biochemistry
December		Reproductive hormones, menstrual cycle, placental hormones, HRT, contraception	SBCH	C-7, Hormone Biochemistry

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: III/V
(July-Nov 2021)

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,	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
	Practical	Exercise1: Determination of absorption maxima of small molecules and macromolecules	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
		Exercise1: Estimation of proteins by Biuret and Lowry's method	B Sc (H) Biological Science II Year Semester III	BS C-5 Proteins and Enzymes

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: 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, universal, etc.	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 Unit II: Introduction to chromatography	B Sc (H) Biochemistry II Year Semester III	SEC-1 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: Determination of isoelectric pH of casein. Exercise 3: Ammonium sulphate fractionation of crude homogenate from germinated mung beans	B Sc (H) Biological Science II Year Semester III	BS C-5 Proteins and Enzymes

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 and Proton motive force. FoF1 ATP synthase, structure and mechanism of ATP synthesis. Regulation of oxidative phosphorylation. ROS production and antioxidant mechanisms. Thermogenesis	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit II: Principle and applications of Paper Chromatography, TLC, Ion-Exchange Chromatography, Gel filtration and Affinity Chromatography	B Sc (H) Biochemistry II Year Semester III	SEC-1 Biochemical Techniques
	Practical	Exercise4: 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: Assay for acid phosphatase activity and specific activity Exercise 5: Progress curve of enzyme	B Sc (H) Biological Science II Year Semester III	BS C-5 Proteins and Enzymes

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: III/V

Name of the Faculty: Dr Meenakshi Kuhar

Department: Biochemistry

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: III/V

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.	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	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit III: Principle of electrophoresis, Polyacrylamide gel electrophoresis (native and denaturing) for proteins and nucleic acids. Agarose gel electrophoresis, Isoelectric focusing of proteins. Detection and identification of	B Sc (H) Biochemistry II Year Semester III	SEC-1 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: Effect of pH on enzyme activity Exercise7: Determination of Km and Vmax using Lineweaver-Burk plot	B Sc (H) Biological Science II Year Semester III	BS C-5 Proteins and Enzymes

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester: 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 IV: Principle of centrifugation, sedimentation coefficient. Various types of centrifuges, types of rotors. Application of centrifugation, differential centrifugation, density gradient centrifugation	B Sc (H) Biochemistry II Year Semester III	SEC-1 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) Biological Science II Year Semester III	BS C-5 Proteins and Enzymes



SEMESTER WISE TEACHING PLAN
(July-Dec 2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Amit Vashishtha

Department: BOTANY

Semester : I/III/V

Month		Topics	Course	Paper
JULY and AUGUST	Theory:	General account about the microbes used as biofertilizer – Rhizobium – isolation, identification, mass multiplication, carrier based inoculants, Actinorrhizal symbiosis.	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1
		Nucleus:- Nuclear Envelope- structure of nuclear pore complex; chromatin; molecular organization, DNA packaging in eukaryotes, euchromatin and heterochromatin, nucleolus and ribosome structure (brief)	B.Sc.(P) Life Sciences Sem V	Cell and Molecular Biology LSDS2
		History of cell biology, cell theory, overview of prokaryotic and eukaryotic cells, plant and animal cells, phages, virioids, mycoplasmas, prions. Cell wall, distribution, chemical composition, functions and variations in prokaryotic and eukaryotic cells (primary and secondary wall). Structure and functions of membrane, models of membrane structure,	B.Sc (Hon.) Biological Science Sem III	Cell Biology BS C-6
		Allele frequencies, genotype frequencies, Hardy-Weinberg law,	B.Sc. (Hons.) Botany Sem. III	Genetics BHCC7
	Practicals	- Study of Rhizobium from root nodules of leguminous plants by Gram staining method - Spots, Specimen /photographs of earthworm, Azolla, arbuscules . vesicles - Projects on any topic mentioned in the syllabus, with Rhizobium technology, , AMF technology, Organic farming, vermicomposting,, biocompost , Azolla culture	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1

		- To study Prokaryotic cells : Bacteria(<i>E.coli</i>), Viruses (TMV, T2)-Light and Electron Micrographs - To study Eukaryotic cells: Plant and Animal - Light and Electron Micrographs - Study of Cell Organelles- Nucleus, Mitochondria, Chloroplasts, Golgi - Demonstration of dialysis of starch and simple sugar	B.Sc.(P) Life Sciences Sem V	Cell and Molecular Biology LSDS2
		- Estimation of cell size by micrometry. - To study plasmolysis and deplasmolysis in cell.	B.Sc (Hons.) Biological Science Sem III	Cell Biology BS C-6
SEPTEMBER	Theory:	Azospirillum: isolation and mass multiplication – carrier based inoculant, associative effect of different microorganisms.	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1
		DNA: Miescher to Watson and Crick- historical 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	B.Sc.(P) Life Sciences Sem V	Cell and Molecular Biology LSDS2
		transport across membranes (with examples): simple diffusion, facilitated diffusion, active transport (Na^+/K^+ pumps, sodium/glucose symport, proton pumps) and passive transport. Phagocytosis, pinocytosis, exocytosis. Structural organization and function of mitochondria, chloroplast and nucleus, (electron transport chain and oxidative phosphorylation), marker enzymes,	B.Sc (Hons.) Biological Science Sem III	Cell Biology BS C-6
		Linkage and crossing over- Cytological basis of crossing over (eg. Maize); Recombination frequency: two factor and three factor crosses;	B.Sc. (Hons.) Botany Sem. III	Genetics BHCC7
	Practicals	- Isolation of <i>Anabaena</i> from <i>Azolla</i> leaf - Observation of mycorrhizae from roots - Isolation of arbuscular mycorrhizal spores from rhizospheric soil	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1

		- Study of Cell Organelles- Golgi Complex, Endoplasmic Reticulum, Lysosomes - Photomicrographs - To study the structure of plant cells (<i>Allium/Rhoeo/Crinum</i>) through temporary mounts - To study the structure of animal cells (squamous epithelial cells through photograph - Study the effects of temperature, organic solvents on semi permeable membrane - Study of plasmolysis and deplasmolysis on <i>Rhoeo</i> leaf	B.Sc.(P) Life Sciences Sem V	Cell and Molecular Biology LSDS2
		- To identify Gram positive and Gram negative bacteria by Gram staining. - Preparation of temporary slides of the following (any two): - Cytochemical staining of polysaccharides by PAS - Cytochemical staining of proteins by Bromophenol blue - Cytochemical staining of mitochondria by Janus Green B.	B.Sc (Hons.) Biological Science Sem III	Cell Biology BS C-6
	Tutorials:			
	Theory:	Azotobacter: classification, characteristics – crop response to Azotobacter inoculum, maintenance and mass multiplication. Cyanobacteria (blue green algae), Azolla and Anabaena azollae association,	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1
OCTOBER		DNA replication: RNA priming, θ mode of replication, replication of linear, ds-DNA, replicating the 5 end of linear chromosome including replication enzymes. Regulation of gene expression in Prokaryotes: Lac operon and Tryptophan operon.	B.Sc.(P) Life Sciences Sem V	Cell and Molecular Biology LSDS2
		biogenesis of mitochondria and chloroplasts, transport in mitochondria and chloroplasts (Tim/Tom; Tic/Toc) and semi-autonomous nature of mitochondria and chloroplast. Nuclear envelope, structure of nuclear pore complex, nuclear lamina, transport across nuclear membrane. Glyoxysomes function. Structure and organization of microfilaments, intermediate filaments, microtubules, their functions, role of motor proteins (Kinesin, Dynein, myosin) in cellular movement, cilia and flagella.	B.Sc (Hons.) Biological Science Sem III	Cell Biology BS C-6

		interference and coincidence; Numericals based on gene mapping; Sex linkage (Drosophilla).	B.Sc. (Hons.) Botany Sem. III	Genetics BHCC7
	Practicals	- Biocontrol photographs -pheromons trap, Trichoderma,, Pseudomonas, , Neem etc, , Identification and application - Photographs of biocompost methods, - Test for pH, NO₂, SO₄, Cl and organic matter of different composts	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1
		- To study the structure of animal cells (Nerve cells) through photograph - To study striated muscle fiber through photograph - To prepare temporary stained preparation of mitochondria from cheek epithelial cells using vital stain Janus Green - Measure the cell size (either length or breadth/diameter) by micrometry in <i>Allium</i> - Study the structure of nuclear pore complex by photograph (from Gerald Karp). Study of special chromosomes (Polytene and Lampbrush) by photographs - Study of DNA packaging by micrographs	B.Sc.(P) Life Sciences Sem V	Cell and Molecular Biology LSDS2
		Study of ultrastructure of cell (Plasma membrane, Nucleus, Nuclear Pore Complex, Chloroplast, Mitochondrion, Golgi bodies, Lysosomes)	B.Sc (Hons.) Biological Science Sem III	Cell Biology BS C-6
	Tutorials:			
NOVEMBER	Theory:	nitrogen fixation, factors affecting growth, blue green algae and Azolla in rice cultivation.	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1
		Regulation of gene expression in Eukaryotes.	B.Sc.(P) Life Sciences Sem V	Cell and Molecular Biology LSDS2
		Extracellular matrix: composition and function (collagens, elastins, adhesive glycoproteins, fibronectins, integrins). Glycocalyx, cell-cell junctions, adhesive junctions, gap junctions and tight junctions.	B.Sc (Hons.) Biological Science Sem III	Cell Biology BS C-6

		QTL mapping and its significance	B.Sc. (Hons.) Botany Sem. III	Genetics BHCC7
	Practicals:	• Mock practical/Revision • Projects	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1
		• Preparation of Karyotype and Idiogram from the given photograph of somatic metaphase chromosome • To study mitosis and meiosis	B.Sc.(P) Life Sciences Sem V	Cell and Molecular Biology LSDS2
		• Study of different stages of mitosis by temporary preparation/ permanent slides of onion root tips. • Study of different stages of meiosis by temporary preparation /permanent slides.	B.Sc (Hons.) Biological Science Sem III	Cell Biology BS C-6
	Tutorials:			



SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kalyani Krishna

Department: Botany

Semester : Odd Sem. (III / V Sem.)

Month		Topics	Course	Paper Code/Name
JULY	Theory:	Introduction to paper and discussion about the paper Unit 2: Nitrogen cycle	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
		To determine osmotic potential of plant cell sap by plasmolytic method.	B.Sc(H) Botany Sem-V	BHCC12 / Plant Physiology
AUGUST	Theory:	Unit 2: Cereals-wheat and rice: general account.	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		Unit 2: Biological Nitrogen fixation by free living organisms and in symbiotic association (nodulation, signals between symbionts- nod and nif genes, structure and function of enzyme Nitrogenase.	B.Sc(H) Biological Science Sem-V	BS DSE-1/ Plant Physiology
	Practicals:	• Fruits • Spices	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		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 Science Sem-V	BS DSE-1/ Plant Physiology

SEPTEMBER		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 Sem-V	BHCC12 / Plant Physiology
	Tutorials			
	Theory:	Unit 2: Cereals: origin, evolution, morphology, post-harvest processing, uses, green revolution, millets and pseudocereals. Unit 3: Legumes: general account, importance to man and ecosystem.	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		Unit 2: 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.	B.Sc(H) Biological Science Sem-V	BS DSE-1/ Plant Physiology
	Practicals:	- Spices - Beverages - Sugar and starches - Oils and fats - Legumes	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		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 Science Sem-V	BS DSE-1/ Plant Physiology
		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 Sem-V	BHCC12 / Plant Physiology
	Tutorials:			

OCTOBER	Theory:	Unit 7: Beverages: tea, coffee, morphology, processing, uses. Unit 9: Essential Oils: General account, extraction methods, comparison with fatty oils and their uses. Unit 10: Natural Rubber: Para-rubber: tapping, processing and uses.	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		Unit 6: Effect of increase in CO ₂ on photosynthesis and nutritional status of plant and soil, CO ₂ 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.	B.Sc(H) Biological Science Sem-V	BS DSE-1/ Plant Physiology
	Practicals:	- Tobacco - Cereals - The drawings of Essential oil-yielding plants and Rubber (through google classroom)	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		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 Science Sem-V	BS DSE-1/ Plant Physiology
		To demonstrate effect of auxins on rooting. To demonstrate suction due to transpiration. To demonstrate fruit ripening.	B.Sc(H) Botany Sem-V	BHCC12 / Plant Physiology
				
NOVEMBER	Theory:	Unit 11: Drug-yielding plants: Therapeutic and habit-forming drugs with special reference to <i>Cinchona</i> , <i>Digitalis</i> , <i>Papaver</i> and <i>Cannabis</i> . Unit 12: Tobacco (Morphology, processing, uses and health hazards).	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		Revision and test	B.Sc(H) Biological Science Sem-V	BS DSE-1/ Plant Physiology
	Practicals:	- Fiber-yielding plants - The drawings of Drug-yielding plants (through google classroom)	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		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(H) Botany Sem-V	BHCC12 / Plant Physiology
				
	Tutorials:			

DECEMBER	Theory:	Revision and test	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
	Practicals:	Revision and test	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
	Tutorials:			



SEMESTER WISE TEACHING PLAN (2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Satish Kumar

Department: Botany

Semester: III & V

Month	Theory/ Practical	Units/ Topics	Course & Semester	Paper Code/Name
August, 2021	Theory:	Unit 3: Soil as a nutrient reservoir, transport of ions across cell membrane-passive absorption: simple (Fick's law) and facilitated diffusion (carrier and channel proteins), active absorption, proton ATPase pump.	B.Sc. (H.) Botany & V Sem.	CC-XII: Plant Physiology
		Unit 6: Development and composition of periderm, rhytidome and lenticels.	B. Sc. (H.) Botany & III Sem.	CC-V: Anatomy of Angiosperm
		Unit 2: The Cell Theory, Prokaryotic and eukaryotic, Cell size and shape, Eukaryotic Cell components.	B. Sc. (P.) Life Science & V Sem. (Sec-A)	LSDS2: Cell and Molecular Biology
		Unit 2: The Cell Theory, Prokaryotic and eukaryotic, Cell size and shape, Eukaryotic Cell components. Unit 4: The functions of membranes, Models of membrane structure.	B. Sc. (P.) Life Science & V Sem. (Sec-B)	LSDS2: Cell and Molecular Biology
	Practical:	Study of Polymerase chain reaction (PCR) through photographs, microscopic methods and modifications, study of DNA Fingerprinting technique through photographs, Study of PAGE profiling for proteins. Apical meristem of root, shoot and vascular cambium. Distribution and types of parenchyma, collenchyma and sclerenchyma.	B.Sc. (H.) Botany, V Sem. B. Sc. (H.) Botany & III Sem.	CC-XII: Analytical Techniques in Plant Sciences CC-V: Anatomy of Angiosperm
	Tutorials:			

September, 2021	Theory:	Unit 3: Electrochemical gradient, ion flux, uniport, co-transport (symport, antiport), role of mycorrhizae. Unit 2: Essential and beneficial elements, macro and micronutrients, methods of study and use of nutrients solutions (ash analysis, hydroponics, aeroponics), criteria for essentiality, mineral deficiency symptoms.	B.Sc. (H.) Botany, V Sem.	CC-XII: Plant Physiology
		Unit 5: Types of rays and axial parenchyma, cyclic aspects and reaction wood, Sapwood and heartwood, Ring and diffuse porous wood.	B. Sc. (H.) Botany & III Sem.	CC-V: Anatomy of Angiosperm
		Unit 4: 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.	B. Sc. (P.) Life Science & V Sem. (Sec-A)	LSDS2: Cell and Molecular Biology
		Unit 4: The fluidity of membranes, Membrane proteins and their functions, Carbohydrates in the membrane. Faces of the membranes, Selective permeability of the membranes.	B. Sc. (P.) Life Science & V Sem. (Sec-B)	LSDS2: Cell and Molecular Biology
	Practical:	To separate nitrogenous based by paper chromatography, Isolation of chloroplast by differential centrifugation, FISH and fluorescence microscopy, to study ELISA through photographs. Xylem: Tracheary elements-tracheids, vessel elements; thickenings; perforation plates; xylem fibres. Phloem: Sieve tubes-sieve plates; companion cells; phloem fibres. Epidermal system: cell types, stomata types; trichomes: non-glandular and glandular. Root: monocot, dicot, secondary growth + Wood: ring porous; diffuse porous; tyloses; heart- and sapwood.	B.Sc. (H.) Botany, V Sem. B. Sc. (H.) Botany & III Sem.	CC-XII: Analytical Techniques in Plant Sciences CC-V: Anatomy of Angiosperm
	Tutorials:			
	Assignment:	Assignment topics will be distributed according to the syllabi.		

October, 2021	Theory:	Unit 2: Role of essential elements, chelating agents (including phytosiderophores). Unit 4: Experimental evidence in support of phloem as the site of sugar translocation, Pressure Flow Model; Phloem loading and unloading, Source-sink relationship.	B.Sc. (H.) Botany, V Sem.	CC-XII: Plant Physiology
		Unit 5: Early and late wood, tylose, Dendrochronology. Unit 8: Hydathodes, cavities.	B. Sc. (H.) Botany & III Sem.	CC-V: Anatomy of Angiosperm
		Unit 4: Selective permeability of the membranes. Cell wall. Unit 5: Overview of Cell cycle.	B. Sc. (P.) Life Science & V Sem. (Sec-A)	LSDS2: Cell and Molecular Biology
		Unit 4: Cell wall. Unit 5: Overview of Cell cycle, Mitosis.	B. Sc. (P.) Life Science & V Sem. (Sec-B)	LSDS2: Cell and Molecular Biology
	Practical:	Estimation of proteins by Lowry's method, and to understand the principle and working of DNA sequencing and blotting technique, Mock test and file evaluation.	B.Sc. (H.) Botany, V Sem.	CC-XII: Analytical Techniques in Plant Sciences
		Stem: monocot, dicot - primary and secondary growth; phloem wedges in <i>Bignonia</i> , included phloem in <i>Leptadenia/ Salvadora</i> ; periderm; lenticels. Leaf: isobilateral, dorsiventral, C4 leaves (Kranz anatomy). Adaptive Anatomy: xerophytes, hydrophytes.	B. Sc. (H.) Botany & III Sem.	CC-V: Anatomy of Angiosperm
	Tutorials:			

November, 2021	Theory:	Unit 7: Discovery, Chemical nature, role of phytochrome in photomorphogenesis, low energy responses (LER) and high irradiance responses (HIR), mode of action; Class test.	B.Sc. (H.) Botany, V Sem.	CC-XII: Plant Physiology
		Unit 8: Lithocysts and laticifers, Unit 9: Applications in systematics, forensics and pharmacognosy; Class test.	B. Sc. (H.) Botany & III Sem.	CC-V: Anatomy of Angiosperm
		Unit 5: Mitosis and Meiosis, Molecular controls; Class test.	B. Sc. (P.) Life Science & V Sem. (Sec-A)	LSDS2: Cell and Molecular Biology
		Unit 5: Meiosis, Molecular controls; Class test.	B. Sc. (P.) Life Science & V Sem. (Sec-B)	LSDS2: Cell and Molecular Biology
	Practical:	Differential centrifugation, Thin layer chromatography for the separation of sugars, Double staining procedure for mounting and preparation of permanent slides.	B.Sc. (H.) Botany, V Sem.	CC-XII: Analytical Techniques in Plant Sciences
		Secretory tissues: cavities, lithocysts and laticifers. Mock test and file evaluation.	B. Sc. (H.) Botany & III Sem.	CC-V: Anatomy of Angiosperm
	Practical Test:	Practical test will be conducted and evaluated as per the date sheet.		



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

Name of the Faculty: Ms. Kavita Meena

Department: Botany

Semester: I/III/V

Month		Topics	Course	Paper Code/
AUGUST	Theory	UNIT-9: Seed structure and Importance.	B.Sc.(H) BOTANY SEM- V	REPRODUCTIV E BIOLOGY OF ANGIOSPERMS
		UNIT-1: Mendelism- History and Principles of Inheritance.	B.Sc.(H) BOTANY SEM- III	GENETICS
		UNIT:4- Mycorrhizal association, types of mycorrhizal association, taxonomy and distribution.	B.Sc.(P) LIFE SCIENCE-SEC SEM-III	BIOFERTILIZE RS
	Practical s	• ANTHER: Wall and its ontogeny; Tapetum (amoeboid and glandular); MMC, Spore tetrads, uninucleate, bicelled and dehiscent anther stages through slides/ micrographs. • To understand the genetic interaction involved using the seed mixture given. Genetic ratio to calculated using Chi square analysis (9:7, 15:1)	B.Sc.(H) BOTANY SEM- V	REPRODUCTIV E BIOLOGY OF ANGIOSPERMS
			B.Sc.(H) BOTANY Sem- III	GENETICS
	Tutorials			
SEPTEMBER	Theory:	UNIT-9: Dispersal Mechanisms (Adaptation- Autochory, Anemochory, Hydrochory, Zoochory with 2 examples each). UNIT-10- Introduction of Polyembryony and apomixes UNIT-1: Chromosome theory of Inheritance; Sex determination (briefly with reference to Humans and Drosophila); Probability and pedigree analysis. UNIT 4- Phosphorous nutrition, growth and yield- colonization of VAM-isolation and inoculum production of VAM	B.Sc.(H) BOTANY SEM- V B.Sc.(H) BOTANY SEM- III B.Sc.(P) LIFE SCIENCE-SEC SEM-III	REPRODUCTIV E BIOLOGY OF ANGIOSPERMS GENETICS BIOFERTILIZE RS

	<u>Assignment</u> :			
OCTOBER	Theory:	UNIT-10: Polyembryony and apomixis- classification (given by Bhojwani and Bhatnagar), causes and applications. UNIT-11: Germline transformation Introduction. UNIT-1: Incomplete dominance and co-dominance; Multiple allelism; lethal alleles; Epistasis; Pleiotropy; Penetrance and Expressivity. UNIT 4: VAM influence on growth and yield of crops plants. UNIT5: Organic farming- Green maring and organic fertilizers	B.Sc.(H) BOTANY SEM- V B.Sc.(H) BOTANY SEM- III B.Sc.(P) LIFE SCIENCE-SEC SEM-III	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS GENETICS BIOFERTILIZERS
	Practicals:	- Ovules: Types- anatropous, orthotropous, amphitropous/ campylotropous, circinotropous, unitegmic, bitegmic. - Tenuinucellate and Crassinucellate - Special structure: Endothelium, Obturator, Hypostase, Caruncle and Aril (permanent slides/ specimens/photographs). - Female Gametophyte through permanent slides/ photographs: Types. - Ultrastructure of mature egg apparatus. - To study the syndromes (Down, Klinefelter/ Turner/Patau/Edwards). - To study colour blindness/ haemophilia - Chromosomal aberration: Complex translocation ring, quadrivalents, lagging chromosomes, dicentric/inversion bridge. - To study/list human dominant and recessive traits and to observe the listed physical traits among the students present in the class. Data thus generated may be used for calculating allelic and genotypic frequencies using Hardy-Weinberg's law.	B.Sc.(H) BOTANY SEM- V B.Sc.(H) BOTANY Sem- III	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS GENETICS

	Tutorials:			
	<u>Test</u>			
NOVEMBER	Theory:	UNIT-11: Germline transformation: Pollen grain and ovules through pollen tube pathway method. Revision and doubt classes.	B.Sc.(H) BOTANY SEM- V	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS
		UNIT-1: Polygenic Inheritance; numericals. Basics concept of epigenetics, DNA Methylation and epigenetic code	B.Sc.(H) BOTANY SEM- III	GENETICS
		UNIT 5: Recycling of biodegradable municipal, agricultural and industrial wastes-biocompost making methods, types	B.Sc.(P) LIFE SCIENCE-SEC SEM-III	BIOFERTILIZERS
	Practicals:	- Intra-Ovarian pollination; Test tube pollination through photographs. - Endosperm: Dissection of developing seeds for endosperm with free nuclear haustoria. - Embryogenesis: Study of development of dicot embryo through permanent slide; dissection of developing seeds for embryo at various developmental stages; study of suspensor through Electron micrographs. - Seed dispersal mechanisms (adaptation through photographs/specimens) - MOCK TEST AND FINAL ASSESSMENT	B.Sc.(H) BOTANY SEM- V	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS
		- To do problems based on Hardy – Weinberg's law. - Xeroderma/ Pigmentatosum/Sickle cell anemia - MOCK TEST AND FINAL ASSESSMENT	B.Sc.(H) BOTANY Sem- III	GENETICS

	Tutorials:			
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DECEMBER	Theory:			
	Practicals:			
	Tutorials:			



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Neeti Mehla

Department: Botany

Academic year- 2021-2022

Semester : III/V

Month		Topics	Course	Paper Code/Name
July and August	Theory	- Principles of microscopy. - Confocal microscopy - Phase contrast microscopy - Fluorescence microscopy. - SEM - TEM - STEM - Sample preparation for Light and Electron Microscopy - X-ray diffraction analysis.	❖ BSc.Life Sciences (V Sem)	❖ Cell and molecular Biology
		❖ Importance of water, water potential and its components, pathway of water movement, Ascent of sap,	Generic Elective paper	❖ Plant physiology and Metabolism (GE)
		❖ Cytoplasmic Inheritance-Chloroplast variegation in Chloroplast , Kappa particles in paramecium and shell coiling in snails.	❖ BSc. Botany (H) (III Sem)	❖ Genetics
	Practicals	- To study Prokaryotic cells : Bacteria(<i>E.coli</i>), Viruses (TMV, T2)-Light and Electron Micrographs - To study Eukaryotic cells: Plant and Animal Light and Electron Micrographs - Study of Cell Organelles- Nucleus, Mitochondria, Chloroplasts, Golgi - Demonstration of dialysis of starch and simple sugar	BSc.Life Sciences (V Sem)	Cell and molecular Biology
		- Introduction to Mendel's monohybrid and Dihybrid ratio. - Study of Gene interactions ratios 9:7,15:1	Bsc .Botany (H) III Semester	Concepts of Genetics

	Tutorials			
September	Theory:	❖ Transcription in prokaryotes and Eukaryotes and their differences. Different types of Polymerases. ❖ Transpiration and its significance, factors affecting transpiration, root pressure and guttation, stomatal movements – only ion theory. ❖ Essential elements, macro- and micronutrients, criteria of essentiality of elements, methods of studying mineral requirement (Hydroponics, Aeroponics), role of essential elements, transport of ions across membrane, active and passive transport, carriers, channels and pumps ❖ Mitochondrial mutations in Neurospora • Types of mutations- somatic, germinal, spontaneous, induced auxotrophic, biochemical and lethal mutations. • Types of mutations- back, suppressor, substitution and frameshift mutations. • Effect of physical mutagens- ionizing and non-ionizing radiations. • Effect of chemical mutagens- base analogs, 5 Bromo uracil, nitrous acid, acridines and alkylating agents. Detection of mutations- CLB method of mutation. Transposons, • DNA repair mechanisms ❖ Structural changes in chromosomes- Deletion-definition, causes, mechanism, genetic effects examples and significance. ❖ Duplication, inversion and translocation- definition, causes, mechanism, genetic effects, examples and significance	❖ BSc.Life Sciences (V Sem) ❖ Generic Elective paper ❖ BSc. Botany (H) (III Sem)	❖ Cell and Molecular Biology ❖ Plant physioplogy ❖ Concepts of Genetics

October	Theory:	• Different types of RNA (mRNA, tRNA rRNA and other types) • Translation in Prokaryotes and Eukaryotes . • Translocation in the phloem- Pressure flow model for translocation of photo assimilates from source to sink cells. • Plant growth regulators- Discovery, physiological roles of auxins, gibberellins, cytokinins and ethylene. Plant response to light and temperature • Photoperiodism - discovery (SDP, LDP, day neutral plants) • Numerical changes in chromosomes. • Numerical changes in chromosomes- euploidy, polyploidy- auto and allo polyploidy, mechanism, non-disjunction of chromosomes and examples- <i>Triticale</i> <i>Gossipium</i> <i>Raphanobrassica</i> ,wheat and modern bread wheat.	❖ BSc.Life Sciences (V Sem) ❖ GE III Sem ❖ BSc. Botany (H) (III Sem)	❖ Cell and molecular biology ❖ Plant Physiology and Metabolism ❖ Concepts of Genetics
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Practicals:	- To study the structure of animal cells (Nerve cells) through photograph - To study striated muscle fiber through photograph - To prepare temporary stained preparation of mitochondria from cheek epithelial cells using vital stain Janus Green - Measure the cell size (either length or breadth/diameter) by micrometry in <i>Allium</i> - Study the structure of nuclear pore complex by photograph (from Gerald Karp). Study of special chromosomes (Polytene and Lampbrush) by photographs - Study of DNA packaging by micrographs - To study/list human dominant and recessive traits and to observe the listed physical traits among the students present in the class. Data thus generated may be used for calculating allelic and genotypic frequencies using Hardy-Weinberg's principle. - To study the syndromes (Downs, Klinefelter/Turner/Patau/Edwards) - To study colour blindness/ hemophilia (Ishihara cards may be used to study colour blindness) - Chromosomal aberrations: Complex translocation ring, quadrivalents, lagging chromosomes, dicentric/inversion bridge	BSc.Life Sciences (V Sem)	Cell and Molecular Biology
Tutorials:		BSc. Botany (H) (III Sem)	Concepts of Genetics
<u>Assignment :</u>		Bsc. Botany (H) IIISem	Concepts of Genetics

November	Theory:	- Genetic Code and differences between Prokaryotic and Eukaryotic Translation.Revision - Phytochrome (discovery and structure), red and far-red light response on photomorphogenesis (general account), florigen (brief account).Revision - Aneuploidy- causes and mechanism, examples <i>Datura</i> spp.,Down syndrome, Turner syndrome and klinefelter syndrome. Classical versus molecular concept of gene, complementation test for functional allelism .Revision	❖ BSc.Life Sciences (V Sem) ❖ Botany GE ❖ BSc. Botany (H) (III Sem)	❖ Cell and Molecular Biology ❖ Plant physiology and Metabolism ❖ Concept of genetics
	Practicals:	- Preparation of Karyotype and Idiogram from the given photograph of somatic metaphase chromosome - To study mitosis and meiosis - To do problems based on Hardy-Weinberg`s law. - Xeroderma Pigmentosum/ Sickle cell anemia - Mock Test and Final Assessment Revision and Test for all courses	BSc.Life Sciences (V Sem) BSc. Botany (H) (III Sem)	Cell and Molecular Biology Concepts of Genetics
	Tutorials:			

	<u>Test</u>		❖ BSc.Botany (H)III sem	Concept of Genetics
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SEMESTER WISE TEACHING PLAN (2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pamil Tayal

Department: Botany

Semester : III/V

Month		Topics	Course	Paper Code/Name
July	Theory	Principle and working of Microscopy (light Microscopy), Numerical Aperture	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
		Biopiracy and case studies	B.Sc. Life Science (V)	SEC-Ethnobotany
	Practical	Study of Agarose Gel Electrophoresis (AGE)	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
	Tutorials			
August	Theory:	Brightfield and Dark field Microscopy, Working and applications of Transmission and Scanning Electron Microscopy, Methods of sample preparation and comparison between light and electron microscopy	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
		Biopiracy and case studies, Traditional Knowledge	B.Sc. (H) Botany (III)	SEC-Ethnobotany
		Traditional Knowledge, TRIPS and Intellectual Property Rights (IPR)	B.Sc. Life Science (V)	SEC-Ethnobotany

	Practical:	Study of Polymerase chain reaction (PCR) through photographs, microscopic methods and modifications, study of DNA Fingerprinting technique through photographs, Study of PAGE profiling for proteins	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
		Identification of Medicinal plants with their ethnobotanical uses and Preparation of Herbaria	B.Sc. (H) Botany (III)	SEC-Ethnobotany
	Tutorials:			

September	Theory:	Shadow casting, freeze fracture, etching), characterization of nucleic acids and proteins, fluorochromes and fluorescence microscopy and phase contrast microscopy	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
		TRIPS and Intellectual Property Rights (IPR), Introduction to ethnobotany, aims and objectives, ethnobotanical tribes of India	B.Sc. (H) Botany (III)	SEC-Ethnobotany
		Introduction to ethnobotany, aims and objectives, ethnobotanical tribes of India, ethnobotany – ancient literature, temples and preparation of herbarium	B.Sc. Life Science (V)	SEC-Ethnobotany
	Practical:	To separate nitrogenous based by paper chromatography, Isolation of chloroplast by differential centrifugation, FISH and fluorescence microscopy, to study ELISA through photographs	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
		To extract active principle components or secondary metabolites from commonly available medicinal plants, understanding the morphology and identification and usage of common ethnobotanical plants	B.Sc. (H) Botany (III)	SEC-Ethnobotany
	Tutorials:			

	Assignment:	Assignment topics will be distributed according to the syllabi		
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October	Theory:	X-Ray Crystallography and diffraction patterns, Flow Cytometry, Confocal Microscopy	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
		Ethnobotany – ancient literature, temples and preparation of herbarium. Role of Ethnobotany in modern medicine : Medico Ethnobotanical sources in India, significance of Ethnobotanical practices(along with their habitat and morphology	B.Sc. (H) Botany (III)	SEC-Ethnobotany
		Role of Ethnobotany in modern medicine : Medico Ethnobotanical sources in India, significance of Ethnobotanical practices(along with their habitat and morphology	B.Sc. Life Science (V)	SEC-Ethnobotany
	Practical:	Estimation of proteins by Lowry's method, and to understand the principle and working of DNA sequencing and blotting technique, Mock test and file evaluation	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
		Field Survey and collection of information on Ethnobotanical uses from traditional healers, To develop scientific knowledge of plants used for treatment of various purposes in ancient literature.	B.Sc. (H) Botany (III)	SEC-Ethnobotany
	Tutorials:			

November	Theory:	Comparison between phase contrast and bright field microscopy, characterization of proteins - blotting techniques and chromatographic separations	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
		Ethnoecology of India, folk medicine and sacred groves of India	B.Sc. (H) Botany (III)	SEC-Ethnobotany

		Ethnoecology of India, folk medicine and sacred groves of India	B.Sc. Life Science (V)	SEC-Ethnobotany
	Practical:	Differential centrifugation, Thin layer chromatography for the separation of sugars, Double staining procedure for mounting and preparation of permanent slides	B.Sc. (H) Botany (V)	Analytical Techniques in Plant Sciences
		Estimation of secondary metabolites in ethnobotanically important plants	B.Sc. (H) Botany (III)	SEC-Ethnobotany
	Practical Test:	Practical test will be conducted and evaluated as per the date sheet		



SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sachin Kumar

Department: Botany

Semester : Odd Sem. (III / V Sem.)

Month		Topics	Course	Paper Code/Name
AUGUST	Theory:	Unit 1: Concept of Centres of Origin, their importance with reference to Vavilov's work.	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		Unit 5: Spatial and temporal aspects of signal transduction, signal perception at plasma membrane (characteristic features of membrane receptors, receptor kinases).	B.Sc(H) Biological Science Sem-V	BS DSE-1/ Plant Physiology
	Practicals:	- Fruits - Spices	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
	Tutorials			
SEPTEMBER	Theory:	Unit 1: Examples of major plant introductions; Crop domestication and loss of genetic diversity (Only conventional plant breeding methods); Importance of germplasm diversity.	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		Unit 5: Signal transduction and amplification via second messengers (calcium, lipid signaling molecules, mitogen-activated protein (MAP) kinase cascade, cyclic nucleotides), Plant responses to abiotic stress through signaling pathways.	B.Sc(H) Biological Science Sem-V	BS DSE-1/ Plant Physiology
	Practicals:	- Spices - Beverages - Sugar and starches - Oils and fats - Legumes	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
	Tutorials:			
OCTOBER	Theory:	Unit 5: Morphology, ratooning of sugarcane, evolution (nobilization) and processing of sugarcane, products and by-products of sugarcane industry; Potato – morphology, tuber anatomy, propagation (conventional and TPS) and uses.	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany

		Unit 5: Developmental and physiological mechanisms that protect plants against environmental extremes; biotic stress (plant defense mechanisms, PAMP/MAMP triggered immunity (PTI), effector-triggered responses, SAR, pathogenesis-related proteins).	B.Sc(H) Biological Science Sem-V	BS DSE-1/ Plant Physiology
	Practicals:	- Tobacco - Cereals - The drawings of Essential oil-yielding plants and Rubber (through google classroom)	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
	Tutorials:			
NOVEMBER	Theory:	Unit 6: Listing of important spices, their family and part used, economic importance with special reference to fennel, saffron. Revision and test	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
		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. Revision and test	B.Sc(H) Biological Science Sem-V	BS DSE-1/ Plant Physiology
	Practicals:	- Fiber-yielding plants - The drawings of Drug-yielding plants (through google classroom)	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
	Tutorials:			
	Theory:	Unit 6: Economic importance with special reference to clove and black pepper.	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
DECEMBER	Practicals:	Revision and test	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
	Tutorials:			



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

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

Department: Botany

Month		Topics	Course	Paper Code/Name
JULY	Theory	Introduction 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	Biostatistic: Definition, Principle, application Statistical Methods	B.Sc. (H)Botany (Sem: V)	BHDS2. Biostatistics
		Primary tissue : Simple tissue Parenchyma Collenchyma Sclerenchyma	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology
	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:	Variables Measurement Functions Limitation Uses of statistics	B.Sc. (H)Botany (Sem: V)	BHDS2, Biostatistics
		Complex tissues: Xylem and Phelom Apical meristem: Root apical meristem Shoot apical meristem	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology
	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: <i>Zea mays</i> ; Dicot: <i>Helianthus</i> . 3. T.S. Root: Monocot: <i>Zea mays</i> ; Dicot: <i>Helianthus</i> . 4. Leaf: Dicot and Monocot (only	B.Sc.(P) Life Science (Sem: III) B-I&II	LSCL-4/Plant Anatomy & Embryology
	Tutorials:			
	<u>Assignment:</u>	From the entire syllabus of Biostatistics	B.Sc. (H)Botany (Sem: V)	DHDS2, Biostatistics
OCTOBER	Theory:	Collection of Data: Primary Data Secondary data Types, Methods of data Collection Procedures-merits and demerits	B.Sc. (H)Botany (Sem: V)	BHDS2, Biostatistics
		Structure of organ Structure of dicot stem Structure of monocot stem	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology
	Practicals:	1. Calculation of coefficient of variance from given data. 2. Calculation of correlation coefficient value by Spearman'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 (<i>Nerium</i> leaf); Hydrophyte (<i>Hydrilla</i> 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:	Classification of Data Tabulation and Presentation of data	B.Sc. (H)Botany (Sem: V)	DSE-II, Biostatistics
		Structure of dicot root Structure of monocot root Types of vascular bundle	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology

	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.	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:	Sampling methods.	B.Sc. (H)Botany (Sem: V)	DSE-II, Biostatistics
		Structure of dicot leaf Structure of monocot leaf Kranz anatomy	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology
	Practicals:	Test.	B.Sc. (H)Botany (Sem: V)	DSE-II, Biostatistics
		1. Pollination types 2.Seed dispersal mechanisms (including appendages, aril,caruncle) 3.Practical file uploading and Test.	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology
	Tutorials:			

B.Sc. (Hons.) Botany II yr.

Semester III

Paper Economic Botany (BHCC6)

Teaching Plan (2021-2022)

Dr. Sunila Khurana

Month	Units (Theory)	Contents
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August &

September

Unit 8 (Oils & Fats)

General Description

Classification, extraction

their uses and health

implications; groundnut,

Coconut, linseed,

mustard (Botanical name

family & uses).

October &

November 15

Unit 13 (Fibres)

Classification

based on the

origin of fibres;

Cotton (origin of

tetraploid cotton, morphology

extraction & uses) and Jute

(morphology, extraction & uses).

¹⁵ Nov. onwards

November &

December

Unit 4 (Fruits)

Mango &

Citrus

(Origin, Morphology, anatomy & Uses)



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sunita Yadav

Department: Botany

Semester : I/III/V 2021-22

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
		Introduction to paper Unit 6: Structure and properties of enzymes	GE-III	Plant physiology and metabolism
		Introduction to paper Unit-1 Water potential and its components Intercellular water transport, short-distance transport, aquaporins, pathway of water movement	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
		Unit 6: Mechanism of enzyme catalysis and inhibition Unit 7: Biological nitrogen fixation, nitrate and ammonium assimilation, dinitrogenase, NR, NiR, transamination Unit-5: Glycolysis, anaerobic respiration, TCA cycle	GE-III	Plant physiology and metabolism
		Unit-1: water 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, transport of ions across membrane	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 5: Oxidative phosphorylation, glyoxylate cycle, RQ Unit 9: Phytochrome, red and far red responses on photomorphogenesis, florigen	GE-III	Plant physiology and metabolism
		Unit-1: Source-sink relationship, aphid technique, features of phloem cells with reference to photoassimilate translocation, pressure flow model, phloem loading and unloading	B.Sc. (H) Biological Sciences	Plant Physiology

	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:	-----		
	Assignment :	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 4: Historical contributions of von Sachs, Blackman, Emerson, Engelmann, Hill, Arnon, photosynthetic pigments, PSI, PS II, electron transport, ATP synthesis,	GE-III	Plant physiology and metabolism
		Unit-3: Discovery, basic structure, precursor, bioassay, physiological roles and commercial applications of auxins, gibberellins, cytokinins, abscisic acid, ethylene, mode of action of hormones, secondary metabolites, allelopathy	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:	-----		
	Test	Conducted for all papers		

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 4: C3, C4, CAM plants, photorespiration Revision and test	GE-III	Plant physiology and metabolism
		Unit-4: Photoperiodism, SDPs, LDPs, DNPs, PICs, phytochrome, RL and FRL responses on photomorphogenesis, fluence responses, vernalization	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
		• Repetitions of experiments which students feel • Revision and test	GE-III	Plant physiology and metabolism
		• Repetitions of experiments which students feel • Revision and test	B.Sc. (H) Biological Sciences	Plant Physiology
	Tutorials:	-----		



SEMESTER WISE TEACHING PLAN (2021)

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) <i>Azadirachta indica</i>	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. 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) B.Sc. Life Science B.Sc. Botany (Hons)	SEC – Ethnobotany SEC - Ethnobotany CC – III /Plant Anatomy and Embryology
	Tutorials			

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)<i>Ocimum sanctum</i>, c)<i>Vitex negundo</i>, d)<i>Gloriosa superba</i> e) <i>Tribulus terrestris</i>, f) <i>Pongamia pinnata</i>,	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: <i>Zea mays</i> , Dicot : <i>Helianthus</i> 3.Root : Monocot: <i>Zea mays</i> , Dicot : <i>Helianthus</i> 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:			

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 4.Significance of following plants g) <i>Cassia auriculata</i>, h) <i>Indigofera tinctoria</i> 5.Role of Ethnobotany in modern medicine with special example – <i>Rauwolfia serpentina</i>, <i>Trichopus zeylanicus</i>, <i>Artemesia</i>, <i>Withania</i>	B.Sc. Botany (Hons.) B.Sc. Botany (Hons.) B.Sc. Life Science	CC – V / Anatomy of Angiosperms SEC : Ethnobotany SEC : Ethnobotany
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	Practicals:	1.Stem: monocot, dicot - primary and secondary growth; phloem wedges in <i>Bignonia</i>, included phloem in <i>Leptadenia</i> / <i>Salvadora</i>; periderm; lenticels. 2.Leaf: isobilateral, dorsiventral, C4 leaves (Kranz anatomy). 3. Adaptive Anatomy: xerophytes, hydrophytes. 4. Project work documentation, literature survey, and collection of information on ethnobotanically useful plants from traditional healers 5.Types of ovules : anatropous, orthotropous, circinotropous, amphitropous, campylotropous 6.Female gametophyte: Polygonum nonosporic) type of Embryo sac (permanent slides/ photographs) 7.Pollination types and seed dispersal mechanism (including appendages, aril, funicle) photographs/ specimens	B.Sc. Botany (Hons.) B.Sc. Life Science B.Sc. Botany(Hon) B.Sc. Life Science	CC – V / Anatomy of Angiosperms SEC Ethnobotany SEC Ethnobotany CC – III /Plant Anatomy and Embryology
	Tutorials:			
	<u>Assignment :</u>	Entire syllabus		
NOVEMBER	Theory:	1.Vascular Cambium – Structure (axially and radially oriented elements), Function and Seasonal Activity of Cambium, Secondary growth in root and Stem. Anomalies 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) B.Sc. Life Science	SEC : Ethnobotany 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 B.Sc. Life Science	CC – V / Anatomy of Angiosperms SEC : Ethnobotany SEC : Ethnobotany CC – III /Plant Anatomy and Embryology
	Tutorials:			
	<u>Test</u>	Entire syllabus		



**SEMESTER WISE
TEACHING PLAN (2021-22)
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. Upasana Sharma

Department: Botany

Semester: V

Month	Theory/Practical	Topics	Class	Subject/Paper
August	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) and scope of reproduction biology. Unit 2: Anther wall: structure and functions	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
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; Embryo development in <i>Paeonia</i>	B.Sc. (H) Botany Sem V	Reproductive Biology of Angiosperms
November	Test (Theory)	Unit 1, 2, 7 and 8	B.Sc. (H) Botany Sem V	Reproductive Biology of Angiosperms



SEMESTER WISE TEACHING PLAN (2021-2022)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Yogendra Kumar Gautam
Semester: I/III/V

Department: Botany

Month		Topics	Course	Paper Code/Name
JULY	Theory	Introduction of Biostatistics. Measures of central tendency.	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	Measures of central tendency - mean, median, mode, merits & demerits of harmonic and geometric mean.	B.Sc. (H)Botany (Sem: V)	BHDS2. Biostatistics
		Secondary Growth: Vascular cambium: structure and function.	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology
	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:	Measures of dispersion - range, standard deviation, mean deviation, standard error, skewness and kurtosis, quartile deviation – merits and demerits; Co- efficient of variations.	B.Sc. (H)Botany (Sem: V)	BHDS2, Biostatistics
		Secondary growth in root and stem, Wood (heartwood and sapwood; Ring and diffuse porous wood; Early and late wood). Seasonal activity of vascular cambium.	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology
	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: <i>Zea mays</i> ; Dicot: <i>Helianthus</i> . 3. T.S. Root: Monocot: <i>Zea mays</i> ; Dicot: <i>Helianthus</i> . 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)	DHDS2, Biostatistics
		From the entire syllabus of Plant anatomy and embryology.	B.Sc.(P) Life Science Sem.III	LSCL-4/Plant Anatomy & Embryology
OCTOBER	Theory:	Regression, simple regression equation, Fitting prediction, similarities and dissimilarities of correlation and regression. Correlation - types and methods of correlation, similarities and dissimilarities of correlation with regression.	B.Sc. (H) Botany (Sem: V)	BHDS2, Biostatistics
		Adaptive and protective systems: Epidermis (trichomes and hair), cuticle, stomata: structure and type (Metcalf and Chalk Classification). General account of adaptations in xerophytes and hydrophytes (Examples may be cited from Nerium, Opuntia, Hydrilla and Nymphaea).	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology
	Practicals:	1. Calculation of coefficient of variance from given data. 2. Calculation of correlation coefficient value by Spearman'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 (<i>Nerium</i> leaf); Hydrophyte (<i>Hydrilla</i> 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:			
	Test			
NOVEMBER	Theory:	Statistical inference - hypothesis - simple hypothesis - student 't' test - chi square test, F-test. Basic concept of probability, Introduction to binomial, poisson and Normal distribution; Uses of advance softwares (MS-excel, SPSS, Sigmaplot and R) in modern biostatistics.	B.Sc. (H) Botany (Sem: V)	DSE-II, Biostatistics
		Pollination types and adaptations; Double fertilization and triple fusion; Seed: Structure (Dicot and Monocot, No developmental stages) appendages and dispersal mechanisms (Autochory, Anemochory, Hydrochory, Zoochory with 1 example each) Adaptations (aril, caruncle).	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology
	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.	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:	Test.	B.Sc. (H)Botany (Sem: V)	DSE-II, Biostatistics
		Embryo and endosperm:Endosperm types (one example of each type), structure and functions; Dicot and Monocot embryo (Brief account of dicot embryo development); Embryo endosperm relationship (General account).	B.Sc.(P) Life Science (Sem: III)	LSCL-4/Plant Anatomy & Embryology
	Practicals:	Test.	B.Sc. (H)Botany (Sem: V)	DSE-II, Biostatistics
		1. Pollination types 2. Seed dispersal mechanisms (including appendages, aril, caruncle) 3. Practical file uploading and Test.	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology
	Tutorials:			



**SEMESTER WISE
TEACHING PLAN
(July-Dec 2021)
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. Aditi Kothari-Chhajer

Department: BOTANY

Semester : I/III/V

Month		Topics	Course	Paper
JULY and AUGUST	Theory:	Organization of flower; Structure: Anther and development of Pollen grains	B.Sc.(P) Life Sciences Sem III	Plant Anatomy and Embryology
		Principle; Paper chromatography; Column chromatography, TLC, GLC, HPLC, Ion exchange chromatography; Molecular sieve chromatography; Affinity chromatography.	B.Sc. (H) Botany Sem V	Analytical techniques in Plant Sciences
		Mitochondria:- Structure, marker enzymes, composition; Semiautonomous nature; Symbiont hypothesis; mitochondrial DNA. Chloroplast-Structure, marker enzymes, composition; semiautonomous nature, chloroplast DNA	B.Sc.(P) Life Sciences Sem V	Cell and Mol Bio
	Practicals:	- Study of meristems through permanent slides and photographs - Tissues (parenchyma, collenchyma and sclerenchyma), Macerated xylary elements, Phloem (permanent slides, photographs)	B.Sc.(P) Life Sciences Sem III	Plant Anatomy and Embryology
		- To study Prokaryotic cells : Bacteria(<i>E.coli</i>), Viruses (TMV, T2)-Light and Electron Micrographs - To study Eukaryotic cells: Plant and Animal - Light and Electron Micrographs - Study of Cell Organelles- Nucleus, Mitochondria, Chloroplasts, Golgi - Demonstration of dialysis of starch and simple sugar	B.Sc.(P) Life Sciences Sem V	Cell and Mol Bio
SEPTEMBER	Theory:	Ovules: Structure and types Embryac and its types	B.Sc.(P) Life Sciences Sem III	Plant Anatomy and Embryology
		Radioisotopes: Use in biological research, auto-radiography, pulse chase experiment.	B.Sc. (H) Botany Sem V	Analytical techniques in Plant Sciences

		ER, Golgi body & Lysosomes:-Structures and roles.	B.Sc.(P) Life Sciences Sem V	Cell and Mol Bio
	Practicals:	- Root : Monocot: <i>Zea mays</i> , Dicot : <i>Helianthus</i> - Leaf : Dicot and Monocot (only permanent slides) - Adaptive anatomy : Xerophyte (Nerium leaf), Hydrophyte (Hydrilla stem) - Structure of anther (young and mature) - Stem : Monocot: <i>Zea mays</i> , Dicot : <i>Helianthus</i>	B.Sc.(P) Life Sciences Sem III	Plant Anatomy and Embryology
		- Study of Cell Organelles- Golgi Complex, Endoplasmic Reticulum, Lysosomes - Photomicrographs - To study the structure of plant cells (<i>Allium/Rhoeo/Crinum</i>) through temporary mounts - To study the structure of animal cells (squamous epithelial cells through photograph - Study the effects of temperature, organic solvents on semi permeable membrane - Study of plasmolysis and	B.Sc.(P) Life Sciences Sem V	Cell and Mol Bio
	Tutorials:			
OCTOBER	Theory:	<i>Polygonum</i> type embryo sac. Modes of reproduction in plants Significance of sexual reproduction History of Embryology	B.Sc.(P) Life Sciences Sem III	Plant Anatomy and Embryology
		Centrifugation: Differential and density gradient centrifugation, sucrose density gradient, CaCl ₂ gradient, analytical centrifugation, ultracentrifugation, marker enzymes.	B.Sc. (H) Botany Sem V	Analytical techniques in Plant Sciences
		Peroxisomes and Glyoxisomes: Structures, composition, functions in animals and plants and biogenesis.	B.Sc.(P) Life Sciences Sem V	Cell and Mol Bio
	Practicals:	- Types of ovules : anatropous, orthotropous, circinotropous, amphitropous, campylotropous - Female gametophyte: <i>Polygonum</i> (monosporic) type of Embryo sac (permanent slides/ photographs) - Pollination types and seed dispersal mechanism (including appendages, aril, caruncle) photographs/ specimens	B.Sc.(P) Life Sciences Sem III	Plant Anatomy and Embryology

		- To study the structure of animal cells (Nerve cells) through photograph - To study striated muscle fiber through photograph - To prepare temporary stained preparation of mitochondria from cheek epithelial cells using vital stain Janus Green - Measure the cell size (either length or breadth/diameter) by micrometry in <i>Allium</i> - Study the structure of nuclear pore complex by photograph (from Gerald Karp). Study of special chromosomes (Polytene and Lampbrush) by photographs - Study of DNA packaging by	B.Sc.(P) Life Sciences Sem V	Cell and Mol Bio
	Tutorials:			
NOVEMBER	Theory:	Contributions of Amici, Hofmeister, Strasburger, Nawaschin, Maheshwari, Johri, Jensen, Heslop-Harrison. Significance of Reproductive bio studies	B.Sc.(P) Life Sciences Sem III	Plant Anatomy and Embryology
		Spectrophotometry Principle and its application in biological research	B.Sc. (H) Botany Sem V	Analytical Techniques in Plant Sciences
		All organelles revision	B.Sc.(P) Life Sciences	Cell and Mol Bio
	Practicals:	- Dissection of embryo/ endosperm from developing seeds - Calculation of percentage of germinated pollen in a given medium - Mock Practical, Revision	B.Sc.(P) Life Sciences Sem III	Plant Anatomy and Embryology
		- Preparation of Karyotype and Idiogram from the given photograph of somatic metaphase chromosome - To study mitosis and meiosis	B.Sc.(P) Life Sciences Sem V	Cell and Mol Bio
	Tutorials:			



SEMESTER WISE TEACHING PLAN
(Odd Sem 2021-22)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pooja Gokhale Sinha

Department: Botany

Course: B. Sc. (H) Botany, Semester: V

Paper Titles: Reproductive Biology of Angiosperms (BHCC-XI)

MONTH		Topics	Course	Paper Code/Name
JULY	Theory	• Structure of flower • Structure and function of Anther and its wall layers	B.Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms
	Practicals	• Observe variation in structure and organization of floral parts of different flowers. • Observe stage-wise variation in anatomy and ultrastructure of anther and tapetum through permanent slides and electron micrographs	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms
AUGUST	Theory:	• Pollen Biology: Microsporogenesis, MGU • Pollen morphology and NPC system • Pollen viability, germination and abnormality • Structure of ovule • Female gametophyte and megasporogenesis • Organization of embryo sac and FGU	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms
	Practicals:	• Observe Pollen grains of various plants • Pollen germination by using different medium of germination • Structure of female gametophyte by permanent slides and electron micrographs	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms
SEPTEMBER	Theory:	• Types and pollination and associated adaptations • Pollen-pistil interaction and process of fertilization • Self incompatibility: types and genetic mechanisms • Methods to overcome incompatibility with examples	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms

	Practicals	- Observe intra-ovarian pollination, test tube fertilization through photographs/ videos - Observe different pollination mechanisms through photographs/ videos and field visits	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms
OCTOBER	Theory:	- Endosperm: types - Embryo: Types of embryogeny and associated structures - Seed: structure, dispersal mechanism - Polyembryony and apomixis	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms
	Practicals	- Dissection of embryo at various stages of development from <i>Cucumis</i> and <i>Calliandra</i> - Study of seed dispersal	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms
NOVEMBER	Theory:	- Germline transformation: Techniques - Applications in biotechnology	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms
	Practicals	Dissection of endosperm	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Pooja Gokhale

Department: Botany

Course: B.Sc. (H) Biological Sciences, Semester: III

Paper: Ecology (C-7)

MONTH		Topics	Course	Paper Code/Name
JULY	Theory	Introduction to Ecology History and overview of school of thoughts	B.Sc. (H) Bio. Sci.	C-7/Functional Ecology
	Practicals	Introduction to community Analysis and plotting of survivorship curves	B.Sc. (H) Bio. Sci.	C7/Functional Ecology
AUGUST	Theory:	Levels of organization Community: Characteristics, structure	B.Sc. (H) Bio. Sci.	C7/Functional Ecology
	Practicals:	- Plotting of Species- area curve by minimal quadrat size - Frequency, density and abundance of herbaceous vegetation of SVC campus	B.Sc. (H) Bio. Sci.	C7/Functional Ecology
SEPTEMBER	Theory	Raunkiers life forms Community function	B.Sc. (H) Bio. Sci.	C7/Functional Ecology

OCTOBER	Practical	Soil analysis by rapid field tests Analysis of physical characteristics of soil Principle and function of field instruments	B.Sc. (H) Bio. Sci.	C7/Functional Ecology
	Theory	Succession: types and principles Hydrosere, xerosere and mesosere	B.Sc. (H) Bio. Sci.	C7/Functional Ecology
NOVEMBER	Practical	Analysis of water samples to determine DO and BOD	B.Sc. (H) Bio. Sci.	C7/Functional Ecology
	Theory	Introduction to ecosystem: Structure and function Nutrient cycling and energy flow	B.Sc. (H) Bio. Sci.	C7/Functional Ecology
	Practical	Study of ecological adaptations: Morphological and anatomical	B.Sc. (H) Bio. Sci.	C7/Functional Ecology

Name of the Faculty: Dr. Pooja Gokhale Sinha

Department: Botany

Course: B. Sc. (H) Biological Sciences, Semester: V

Paper Titles: Growth and Reproduction

MONTH		Topics	Course	Paper Code/Name
JULY	Theory	• Structure of flower • Structure and function of Anther and its wall layers	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
	Practicals	• Observe variation in structure and organization of floral parts of different flowers. • Observe stage-wise variation in anatomy and ultrastructure of anther and tapetum through permanent slides and electron micrographs	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
AUGUST	Theory:	• Pollen Biology: Microsporogenesis, MGU • Pollen morphology and NPC system • Pollen viability, germination and abnormality • Structure of ovule • Female gametophyte and megasporogenesis • Organization of embryo sac and FGU	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
	Practicals:	• Observe Pollen grains of various plants • Pollen germination by using different medium of germination • Structure of female gametophyte by permanent slides and electron micrographs	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
SEPTEMBER	Theory:	• Types and pollination and associated adaptations • Pollen-pistil interaction and process of fertilization • Self incompatibility: types and genetic mechanisms • Methods to overcome incompatibility with examples	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
	Practicals	• Observe intra-ovarian pollination, test tube fertilization through photographs/ videos • Observe different pollination mechanisms through photographs/ videos and field visits	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction

OCTO BER	Theory:	• Endosperm: types • Embryo: Types of embryogeny and associated structures • Seed: structure, dispersal mechanism • Polyembryony and apomixis	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
	Practicals	• Dissection of embryo at various stages of development from <i>Cucumis</i> and <i>Calliandra</i> • Study of seed dispersal	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
NOVE MBER	Theory:	• Genetic regulation of flowering • Genetic regulation of embryogenesis	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
	Practicals	• Dissection of endosperm	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction

**CHEMISTRY TEACHING
PLAN**

ALL TEACHERS

2021-22 ODD SEMESTER



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Year: 2021-2022

Name of the Faculty: Mr. H.C. Tandon

Department: Chemistry

Semester: I/III/V

Month		Topic	Course	Paper
July	Theory:	Postulates of quantum mechanics, Wave-particle duality	B.Sc. (P) Life Sci. Semester V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
	Practical	Colorimetry: 1. Verify Lambert-Beer's law and determine the concentration of KMnO ₄ in a solution of unknown concentration.	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY-V Course Title: Quantum Chemistry & Spectroscopy
	Practical	Estimation of Zn ²⁺ by complexometric titrations using EDTA.	B.Sc. (P) Life Science III year, Sem V	Chemistry of d-block elements, quantum chemistry & spectroscopy
August	Theory:	Thermodynamics of ideal solutions: Ideal solutions and Raoult's law, deviations from Raoult's law – non-ideal solutions.	B.Sc. (P) Life Sciences II year, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		quantum mechanical operators, Free particle. Particle in a 1-D box (complete solution), quantization, normalization of wavefunctions, 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 <i>Rotational Motion:</i> 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.	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Colorimetry: 2. Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration. 3. Determine the concentrations of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ in a mixture.	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY-V Course Title: Quantum Chemistry & Spectroscopy
		Estimation of Mg^{2+} by complexometric titrations using EDTA. Estimation of total hardness of a given water by complexometric titrations using EDTA.	B.Sc. (P) Life Science III year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials:	NA	NA	NA
September	Theory:	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. (P) Life Sciences II year, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		<i>Vibrational Motion:</i> 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:	Incorporating tables and graphs	B. Sc. (H)	SEC: IT SKILLS FOR

		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	Chemistry II year, Semester III	CHEMISTS
		4. Study the kinetics of iodination of propanone in acidic medium. Determine the amount of iron present in a sample using 1, 10-phenanthroline. 5. Determine the dissociation constant of an indicator (phenolphthalein). 6. Study the kinetics of interaction of crystal violet/phenolphthalein with sodium hydroxide.	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY–V Course Title: Quantum Chemistry & Spectroscopy
		Estimation of the amount of nickel present in a given solution as bis(dimethylglyoximate) nickel(II) or in a given solution gravimetrically Study the 200-500 nm absorbance spectra of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ (in 0.1 M H_2SO_4) and determine the λ_{max} values. Calculate the energies of the two transitions in different	B.Sc. (P) Life Science III year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials:	NA	NA	NA
October	Theory:	Phases, components and degrees of freedom of a system, criteria of 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)	B.Sc. (P) Life Sciences II year, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		<i>Electronic Spectroscopy:</i> Electronic excited states. Free Electron model and its application to electronic spectra of polyenes.	B.Sc. (P) Life Sci. Sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY &

		Colour and constitution, chromophores, auxochromes, bathochromic and hypsochromic shifts.		SPECTROSCOPY
	Practicals:	Numerical curve fitting, linear regression numerical differentiation integration	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Spectrophotometry: 1. Study the 200-500 nm absorbance spectra of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ (in 0.1 M H_2SO_4) and determine the λ_{max} values. Calculate the energies of the two transitions in different units (kJ molecule^{-1} , kJ mol^{-1} , cm^{-1} , eV). 2. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of $\text{K}_2\text{Cr}_2\text{O}_7$.	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY–V Course Title: Quantum Chemistry & Spectroscopy
		Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration Determination of the composition of the Fe^{3+} -salicylic acid complex in solution by Job's method.	B.Sc. (P) Life Science III year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials:	NA	NA	NA
November	Theory:	Phase diagram two component systems involving eutectics, congruent (lead-silver, $\text{FeCl}_3\text{-H}_2\text{O}$). Phase diagram- incongruent melting points.	B.Sc. (P) Life Sciences II year, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		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
	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 F test.	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		3. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde, 2-propanol,	B. Sc. (H) Chemistry III year,	CXII: PHYSICAL CHEMISTRY–V Course Title: Quantum

		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)	Semester V	Chemistry & Spectroscopy
		Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K ₂ Cr ₂ O ₇ .	B.Sc. (P) Life Science III year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials:	NA	NA	NA
	Assignment	Assignment-1	B. Sc. (P) Life Sciences year II, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
December	Theory:	Revision	B.Sc. (P) Life Sciences II year, 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
	Tutorials:	NA	NA	NA



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

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 II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	Practicals	Inorganic preparations (i) Cuprous Chloride, Cu_2Cl_2	B.Sc. (Hons.) Chemistry II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		Synthesis of silver nanoparticles using different reagents	B.Sc. (Hons.) Chemistry III 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 II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	Practicals	Preparations: (ii) Aluminium potassium sulphate $\text{KAl}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ (Potash alum) Estimation of Zn^{2+} Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -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 <i>p</i> -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 anomalous behaviour of first member of each group.	B.Sc. (H) Chemistry II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -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 II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -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
	Tutorials:			
	Assignment :	Chemistry of <i>s</i> and <i>p</i> block elements	B.Sc. (H) Chemistry II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -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 (EH ₃ where E = N, P, As, Sb, Bi), Group 16 and Group 17. • Oxides: oxides of phosphorus, sulphur and chlorine	B.Sc. (H) Chemistry II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -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
	Tutorials:			
	Test	Chemistry of <i>s</i> and <i>p</i> block elements	B.Sc. (Hons.) Chemistry II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
DECEMBER	Theory:	• Oxoacids: oxoacids of phosphorus and chlorine; peroxyacids of sulphur • Halides: halides of silicon and phosphorus	B.Sc. (H) Chemistry II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	Practicals	Estimation of antimony in tartar-emetic iodimetrically	B.Sc. (Hons.) Chemistry II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		Synthesis of pure ZnO and Cu doped ZnO nanoparticles	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
	Tutorials:			



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Vibha Saxena

Department: Chemistry

Semester: I/III/ V

Month		Topics	Course	Paper Code/Name
JULY	Theory	<i>Section A: Inorganic Chemistry-3</i> (30 Lectures) Transition Elements (3d series) General group trends with special reference to	B.Sc.(P) Life Science III year	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
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	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
	Tutorials	NA	NA	NA
AUGUST	Theory:	variable valency, colour, magnetic and catalytic properties, ability to form complexes and stability of various oxidation states (<i>Latimer diagrams</i>)	B.Sc.(P) Life Science III year	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
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	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
	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
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 Fe(II) and oxalic acid using standardized KMnO ₄ solution	B.Sc. (H) Chemistry I Year SEMESTER I	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
	Tutorials:	NA	NA	NA
	<u>Assignment:</u>	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 energy (CFSE), Crystal field effects for weak and strong fields. Tetrahedral symmetry.	B.Sc.(P) Life Science III year	DSE CHEMISTRY 11 CHEMISTRY OF d-BLOC KELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
OCTOBER				
FEBRUARY	Practicals:	Synthesis of inorganic pigments (PbCrO ₄ , ZnCrO ₄ , Prussian Blue, Malachite). Synthesis of pure ZnO and	B.Sc. (Hons.) Chemistry III Year SEMESTER V	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS

		(ii) Estimation of oxalic acid and sodium oxalate in a given mixture. (iii) Estimation of Fe(II) with K ₂ Cr ₂ O ₇ using	B.Sc. (H) Chemistry I Year SEMESTER I	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical
	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 <i>Oh</i> and <i>Td</i> 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



SEMESTER WISE TEACHING PLAN
Academic year 2021-2022 (odd Semester)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sanjay Kumar

Department: CHEMISTRY

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
AUGUST	Theory	FCH session to start in November.		
	Practical	Determination of the Critical Solution temperature and composition of the phenol water system. Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1) B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY – C VII; PHYSICAL CHEMISTRY III CHEMISTRY -C XII: PHYSICAL CHEMISTRY V
SEPTEMBER	Theory	FCH session to start in November.		
	Practical	Construction of the phase diagram using cooling curves method for simple eutectic systems. (Different systems) Determine the concentrations of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ in a mixture. Determine the amount of iron present in a sample using 1, 10-phenanthroline. Determine the dissociation constant of an indicator (phenolphthalein). Study the kinetics of interaction of crystal violet/ phenolphthalein	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1) B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY – C VII; PHYSICAL CHEMISTRY III CHEMISTRY -C XII: PHYSICAL CHEMISTRY V
OCTOBER	Theory	FCH session to start in November.		
	Practical	Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it Construction of the phase diagram using cooling curves method for congruently melting systems. Verify the Freundlich and Langmuir isotherms for adsorption of acetic acid on activated charcoal. Analysis of the given vibration-rotation spectrum of HCl(g) Study the kinetics of iodination of propanone in acidic medium.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1) B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY – C VII; PHYSICAL CHEMISTRY III CHEMISTRY -C XII: PHYSICAL CHEMISTRY V
NOVEMBER	Theory	Ionic equilibria: Strong, moderate and weak electrolytes, degree	B.Sc.(H) CHEMISTRY	C II: PHYSICAL CHEMISTRY I

		of ionization, factors affecting degree of ionization, ionization constant and ionic product of water. Ionization of weak acids and bases, pH scale, common ion effect Ionic equilibria: Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, ionization constant and ionic product of water. Ionization of weak acids and bases, pH scale, common ion effect;	Semester I (Sec: A) + B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C II: PHYSICAL CHEMISTRY I
	Practical	Revision Exercises along with Viva Revision Exercises along with Viva	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1) B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY – C VII; PHYSICAL CHEMISTRY III CHEMISTRY -C XII: PHYSICAL CHEMISTRY V
DECEMBER	Theory	Ionic Equilibria: dissociation constants of mono and diprotic acids. Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions; derivation of Henderson equation and its applications. Solubility and solubility product of sparingly soluble salts Ionic Equilibria: dissociation constants of mono and diprotic acids. Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions; derivation of Henderson equation and its applications. Solubility and solubility product of sparingly soluble salts	B.Sc.(H) CHEMISTRY Semester I (Sec: A) B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C II: PHYSICAL CHEMISTRY I C II: PHYSICAL CHEMISTRY I
	Practical	Determination of integral enthalpy (endothermic and exothermic) solution of salts Determination of melting and boiling points of organic compounds	B.Sc. Biological science, I Year, Semester I	CHEMISTRY LAB
JANUARY	Theory	Ionic Equilibria: Applications of solubility product principle. Qualitative treatment of acid – base titration curves (calculation of pH at various stages). Theory of acid–base indicators; selection of indicators and their limitations. Ionic Equilibria: Applications of solubility product principle. Qualitative treatment of acid – base titration curves (calculation of pH at various stages). Theory of acid–base indicators; selection of indicators and their limitations.	B.Sc.(H) CHEMISTRY Semester I (Sec: A) B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C II: PHYSICAL CHEMISTRY I C II: PHYSICAL CHEMISTRY I
	Practical	Mechano-Chemical solvent free synthesis of azomethine Acetylation of amines using green approach Qualitative functional group tests for alcohols, aldehydes, ketones, carboxylic acids, esters, amines and amides	B.Sc. Biological science, I Year, Semester I	CHEMISTRY LAB
FEBRUARY	Theory	Liquid state: Qualitative treatment of the structure of the	B.Sc.(H) CHEMISTRY	C II: PHYSICAL CHEMISTRY I

		liquid state; physical properties of liquids; vapour pressure, surface tension and coefficient of viscosity, and their determination. Effect of addition of various solutes on surface tension and viscosity. Explanation of cleansing action of detergents. Temperature variation of viscosity of liquids and comparison with that of gases. Liquid state: Qualitative treatment of the structure of the liquid state; physical properties of liquids; vapour pressure, surface tension and coefficient of viscosity, and their determination. Effect of addition of various solutes on surface tension and viscosity. Explanation of cleansing action of detergents. Temperature variation of viscosity of liquids and comparison with that of gases. ASSIGNMENT TO BOTH CLASSES	Semester I (Sec: A) B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C II: PHYSICAL CHEMISTRY I
	Practical	Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture Estimation of Mohr's salt by titrating it with KMnO_4. Synthesis and characterization of silver nanoparticles using UV-Visible spectrophotometer	B.Sc. Biological science, I Year, Semester I	CHEMISTRY LAB
MARCH	Theory	Revisionary Exercises and solving previous years question papers. Revisionary Exercises and solving previous years question papers.	B.Sc.(H) CHEMISTRY Semester I (Sec: A) B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C II: PHYSICAL CHEMISTRY I C II: PHYSICAL CHEMISTRY I
	Practical	Revision exercises	B.Sc. Biological science, I Year, Semester I	CHEMISTRY LAB



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. 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.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Preparation and characterization of biodiesel from vegetable oil/ waste cooking oil.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY PRACTICAL – DSE II LAB: GREEN CHEMISTRY
		Organic preparations: i. Acetylation of one of the following compounds: amines (aniline, o-, m-, p-toluidines and o-, m-, p-anisidine) and phenols (β -naphthol, vanillin, salicylic acid) by any one method: a. Using conventional method. b. Using green approach	B.Sc. CHEMISTRY (Hons.) IIInd Year, Semester III	CHEMISTRY -CVI: Organic Chemistry II
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

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.) III Year, Semester V	CHEMISTRY PRACTICAL – DSE II LAB: GREEN CHEMISTRY
	Functional group tests: for Alcohols, phenols, Carbonyl and carboxylic acid group ii. Benzoylation 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. iii)Hydrolysis of esters and amides iv). Oxidation of ethanol/ isopropanol (Iodoform reaction).	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CHEMISTRY -CVI: Organic Chemistry II

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
		iv. Selective reduction of meta dinitrobenzene to m-nitroaniline. v. Semicarbazone of any one of the following compounds: acetone, ethyl methyl ketone, cyclohexanone, benzaldehyde.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CHEMISTRY - C VI: ORGANIC CHEMISTRY III

		Any pending Work From previous Month. vi) S-Benzylisothiuronium salt of one each of water soluble and water insoluble acids (benzoic acid, oxalic acid, phenyl acetic acid and phthalic acid).		
	<u>Assignment :</u>			
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
	Practicals:	Determination of Iodine number of an oil/ fat. Any pending work 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). viii. Aldol condensation using	B.Sc. CHEMISTRY (Hons.) III Year, Semester V B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY

		either conventional or green method Any pending Work from previous Month	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CHEMISTRY - C VI: ORGANIC CHEMISTRY III
	<u>Test</u>			
NOVEMBER	Theory:	Outline of catabolic pathways of carbohydrate- glycolysis, fermentation, Krebs cycle. Caloric value of food, standard caloric content of food types.(2 lectures) Lipids:(5 lectures) Introduction to oils and fats; common fatty acids present in oils and fats, Hydrogenation of fats and oils, Saponification value, acid value, iodine number. Reversion and rancidity. 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
		Mock Practicals	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CHEMISTRY - C VI: ORGANIC CHEMISTRY III



SEMESTER WISE TEACHING PLAN 2021-22 (2021, 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	Theory	Introduction to Green Chemistry.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	Practicals	(i) Introductory class (ii) Biodiesel synthesis from waste cooking oil 1. Introductory class 2. Estimation of protein by Lowry's Method	B.Sc.(H) Chemistry Sem-V B.Sc.(H) Chemistry Sem-V	CHEMISTRY-DSE: GREEN CHEMISTRY CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
AUGUST	Theory:	Principles of Green Chemistry (Designing a Green Synthesis, concept of atom economy, green solvents, Selection of starting materials, use of catalytic reagents)	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	Practicals:	(iii) Preparation of gold nanoparticles (iv) Azomethine synthesis (v) 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 and green method. 3. Saponification value of the given oil or fat. 4. Isolation and estimation of DNA using cauliflower/onion. 5. 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:	Design for degradation Prevention of chemical accidents Strengthening/ development of analytical techniques Examples of Green Synthesis/ Reactions Real world case studies based on the Presidential green chemistry awards of EPA	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY

	Practicals:	(vi) Extraction of D-limonene from orange peel using liquid CO ₂ prepared form dry ice. (vii) Photoreduction of benzophenone to benzopinacol in the presence of sunlight. iii) Hydrolysis of amide/Esters iv) Assessment class (v) Iodoform reaction. (vi) Semicarbazone synthesis 5. MCQ Assessment 1 6. MCQ Assessment 2 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. CHEMISTRY (Hons.) III Year, Semester V B.Sc. (Hons) Chemistry II Year, Semester III B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY C VI: ORGANIC CHEMISTRY II CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	<u>Assignment :</u>	Assignment-1	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	Theory:	Future Trends in Green Chemistry	B.Sc. CHEM (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
OCTOBER	Practicals:	(viii) Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II). (ix) Designing and conducting an experiment by utilizing the products and by products vii. Selective Reduction viii. Assessment Class 9.Study of the titration curve of glycine. 10. Determination of Iodine number of the given oil	B.Sc. CHEMISTRY (Hons.) III Year, Semester V B.Sc. CHEM (Hons.) II Year, Semester V B.Sc. (Hons.) CHEM III Year, Sem V	CHEMISTRY-DSE: GREEN CHEMISTRY C VI: ORGANIC CHEMISTRY II CHEMISTRY - C XI: ORGANIC CHEM IV
	<u>Test</u>	Principles of Green Chemistry Atom economy, green solvents	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	Theory:	Green chemistry in sustainable development	B.Sc. CHEMISTRY (Hons.) III Year,	CHEMISTRY-DSE: GREEN CHEMISTRY
NOVEMBER	Theory:	Green chemistry in sustainable development	B.Sc. CHEMISTRY (Hons.) III Year,	CHEMISTRY-DSE: GREEN CHEMISTRY

Practicals:	X). Assessment Class xi). Discussion and doubt solving Class xii) Final Assessment	B.Sc. CHEM (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	(ix).SBT preparation. (x).Aldol Condensation (xi). qualitative tests of oxygen containing functional Groups (xii) Revision and Doubts (xiii). Final Assessment of Sem III	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C VI: ORGANIC CHEMISTRY II
	11. Assessment Class 12. Practice exercise and Discussion Class	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV



SEMESTER WISE TEACHING PLAN (2021-22)
SRI VENKATESWARA COLLEGE

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

Department: CHEMISTRY

Month		Topics	Course	Paper Code/Name
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 solid-liquid, liquid-vapour and solid-vapour equilibria, phase diagram for one component systems (H ₂ O and S), with applications. A comparison between the phase diagram of CO ₂ and H ₂ O.	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
		Perform the following potentiometric titrations: i. Strong acid vs. strong base	B. Sc. Life Sciences II year, Semester III	CHEMISTRY LAB: CHEMISTRY –Core Paper-3 Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
September	Theory:	Phase diagrams for systems of solid-liquid equilibria involving eutectic, congruent and incongruent melting points. Binary solutions: Gibbs-Duhem-	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
		Determination of CST of phenol-water system. Effect of impurities on CST of phenol-water system. Potentiometric titrations	B. Sc. Life Sciences II year, Semester III	CHEMISTRY LAB: CHEMISTRY –Core Paper-3 Solutions, Phase Equilibrium, Conductance, Electrochemistry and
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 of electrolysis in metallurgy and industry. Chemical cells, reversible and irreversible cells with examples. Electromotive force of a cell and its measurement, Nernst equation; Standard electrode (reduction) potential and its application to different kinds of half-cells	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
		Conductometric titrations of strong acid vs strong base,	B. Sc. Life Sciences II year, Semester III	CHEMISTRY LAB: CHEMISTRY –Core Paper-3 Solutions, Phase Equilibrium, Conductance,
	<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/Sb ₂ O ₃ 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
		Functional group analysis	B. Sc. Life Sciences II year, Semester III	CHEMISTRY LAB: CHEMISTRY –Core Paper-3 Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	<u>Test</u>			
December	Theory:			

	Practicals:	2. Determine the surface tension of aqueous solutions by (ii) drop weight method. 3. Study the variation of surface tension with different concentration of detergent solutions. Determine CMC. 4. Determination of co-efficient of viscosity of an unknown aqueous solution. 5. Study the variation of co-efficient of viscosity with different concentration of Poly Vinyl Alcohol (PVA) and determine molar mass of PVA.	B. Sc. (H) Chemistry I year, Semester I	Practical Course Code: CHEMISTRY - C II: PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium
January	Practicals:	6. Study the variation of viscosity with different concentration of sugar solutions. 7. Study the effect of addition of HCl/NaOH on pH to the solutions of acetic acid, sodium acetate and their mixtures 8. Preparation of buffer solutions of different pH values (a) Sodium acetate-acetic acid 9. (b) Ammonium chloride-ammonium hydroxide	B. Sc. (H) Chemistry I year, Semester I	Practical Course Code: CHEMISTRY - C II: PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium
February	Practicals:	10. pH metric titration of (i) strong acid with strong base, 11. (ii) weak acid with strong base and 12. determination of dissociation constant of a weak acid. 13. Determination of molecular weight of a volatile compound using Victor Meyer's method.	B. Sc. (H) Chemistry I year, Semester I	Practical Course Code: CHEMISTRY - C II: PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium

March	Practicals:	14. Indexing of a given powder diffraction pattern of a cubic crystalline system.	B. Sc. (H) Chemistry I year, Semester I	Practical Course Code: CHEMISTRY - C II: PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium
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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mr Harshvardhan Meena

Department: Chemistry

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
JULY	Theory	NA	NA	NA
	Practicals	1.Estimation of Nickel in a given solution, (Gravimetrically)	B.Sc (P) Life science V	Chemistry of D block elements ,Quantum chemistry and Spectroscopy
	Tutorials	NA	NA	NA
AUGUST	Practicals:	1. Determination of pH of soil samples. 2. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration	BSc. (P) Life Science III Year	Skill Enhancement Course BASIC ANALYTICAL CHEMISTRY
	Practicals:	2.Estimation of Mg (II) by complexometric titration. 3.Estimation of Zn (II) by complexometric titration.	B.Sc (P) Life science V	Chemistry of D block elements ,Quantum chemistry and Spectroscopy
	Tutorials:	NA	NA	NA
SEPTEMBER	Theory:	(i) Ionic bond: General characteristics, types of ions, size effects, radius ratio rule and its limitations.	BSc. (H) SEM I SEC A and B	C 1 INORGANIC CHEMISTRY I

	Practicals:	Estimation of Fe (II) ions by titrating it with $K_2Cr_2O_7$ using internal indicator. Estimation of Cu (II) ions iodometrically using $Na_2S_2O_3$. 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
	Tutorials:	NA	NA	NA
	<u>Assignment :</u>	Basic Analytical Chemistry	BSc. (P) Life Science III Year	Skill Enhancement Course BASIC ANALYTICAL CHEMISTRY
OCTOBER	Theory:	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	BSc. (H) CHEMISTRY SEM I (SEC A and B)	C 1 INORGANIC CHEMISTRY

	Practicals:	Detection of extra elements (N, S, Cl, Br, I) in organic compounds 4. Separation of mixtures by Chromatography: Measure the R _f value in each case (combination of two compounds to be given) (a) Identify and separate the components of a given mixture of 2 amino acids (glycine, aspartic acid, glutamic acid, tyrosine or any other amino acid) by paper chromatography	B.Sc. (P) Life Science I year	Practical CC – I Lab
	PRACTICALS	4. Estimation of total hardness of water by complexometric titration.	B.Sc (P) Life science V	Chemistry of D block elements ,Quantum chemistry and Spectroscopy
		3. Determination of pH, acidity and alkalinity of a water sample. 4. Determination of dissolved oxygen (DO) of a water sample	BSc. (P) Life Science III Year	Skill Enhancement Course BASIC ANALYTICAL CHEMISTRY

NOVEMBER	Theory:	Resonance and resonance energy, Molecular orbital theory. Molecular orbital diagrams of diatomic and simple polyatomic molecules N_2, O_2, C_2, B_2, F_2, 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 containing lone pairs and bond pairs of electrons: H_2O, NH_3, PCl_3, PCl_5, SF_6, ClF_3, I_3^-, BrF_2^+, PCl_6^-, ICl_2^-, ICl_4^- and SO_4^{2-}. Multiple bonding (σ and π bond approach) and bond lengths. Covalent character in ionic compounds, polarizing power and polarizability. Fajan's rules and consequences of polarization. Ionic character in covalent compounds	BSc. (H) CHEMISTRY SEM I (SEC A and B)	C 1 INORGANIC CHEMISTRY
DECEMBER		iii) Metallic Bond: Qualitative idea of valence bond and band theories. Semiconductors and insulators, defects in solids. (iv) Weak Chemical Forces: van der Waals forces, ion-dipole forces, dipole-dipole interactions, induced dipole interaction. Hydrogen bonding (theories of hydrogen bonding, valence bond treatment). Effects of weak chemical forces, melting and boiling points, solubility, energetics of dissolution process.		

	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
		5.Job's method	B.Sc (P) Life science V	Chemistry of D block elements ,Quantum chemistry and Spectroscopy
	Tutorials:	NA	NA	NA



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

Theory	quantum mechanical operators, Free particle. Particle in a 1-D box (complete solution), quantization, normalization of wavefunctions, 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 <i>Rotational Motion:</i> 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

	Practicals	b)Determination of the critical solution temperature and composition of the phenol water system	BSc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANICCHEMISTRX-H
	Practicals	Determination of critical solution temperature and composition at CST of the phenolwater system	B.Sc. (Hons.) Chemistry sem 3	CHEMISTRY - C VII: PHYSICAL CHEMISTRY III

Month		Topics	Course	Paper Code/Name
September	Theory	Vibrational spectroscopy	B.Sc. (Hons.) Chemistry sem V	Physical chemistry-V
	Theory	<i>Vibrational Motion:</i> 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
	Practicals	study of the effect of impurities on cst. c)Study of the variation of mutual solubility temperature with concentration Cor the phenol water system and determination of the critical solubility temperature I. Determination of cell constant, equivalent conductance, degree of dissociation and dissociation constant or a weak acid. II. Perform the following conductometric titrations: i. Strong acid vs. strong base	BSc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANICCHEMISTRX-H
	Practicals	1. to study the effect of impurities of sodium chloride and succinic acid on cst 2. Perform the following potentiometric titrations: i. Strong acid vs. strong base	B.Sc. (Hons.) Chemistry sem 3	CHEMISTRY - C VII: PHYSICAL CHEMISTRY III

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	<i>Electronic Spectroscopy:</i> Electronic excited states. Free Electron model and its application to electronic spectra of polyenes. Colour and constitution, chromophores, 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	ii. Weak acid vs. strong base conductometry Potentiometry Perform the following potentiometric titrations: i. Strong acid vs. strong base Weak acid vs. strong base I Systematic Qualitative Organic Analysis of Organic Compounds Possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons) and preparation of one derivative.	BSc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY - H
	Practicals	Perform the following potentiometric titrations: i. weak acid vs. strong base ii. Dibasic acid vs. strong base iv. Potassium dichromate vs. Mohr's salt	B.Sc. (Hons.) Chemistry sem 3	CHEMISTRY - C VII: PHYSICAL CHEMISTRY III

Month		Topics	Course	Paper Code/Name
November	Theory	NMR, ESR 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

	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	I Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons) and preparation of one derivative. II 1. Determination of the concentration of glycine solution by formylation method 2. Action of salivary amylase on starch	BSc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY
	Practicals	Phase equilibria: Construction of the phase diagram using cooling curves or ignition tube method: a. simple eutectic and b. congruently melting systems.	B.Sc. (Hons.) Chemistry sem 3	CHEMISTRY - C VII: PHYSICAL CHEMISTRY III
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
	Practicals	Differentiation between a reducing and nonreducing sugar	BSc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANICCHEMISTRX-H

Practicals	Phase equilibria: Construction of the phase diagram using cooling curves or ignition tube method: a. simple eutectic and b. congruently melting systems.	B.Sc. (Hons.) Chemistry sem 3	CHEMISTRY - C VII: <i>PHYSICAL CHEMISTRY</i> <i>III</i>
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SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shikha Gulati

Department: Chemistry

Semester: I/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 $K_2Cr_2O_7$ 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	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
	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
SEPTEMBER	Practicals	Complexometric titrations using disodium salt of EDTA (i) Estimation of Mg^{2+} , Zn^{2+} (ii) Estimation of Ca^{2+} 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

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	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
	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

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
	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	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
JANUARY	Tutorials:	NA	NA	NA
	<u>Assignment :</u>	NOVEL INORGANIC SOLIDS	B.Sc. (Hons.) Chemistry III Year SEMESTER V	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS

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 polypyrrole,	B.Sc. (Hons.) Chemistry III Year SEMESTER V	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
OCTOBER	Practicals:	Synthesis of inorganic pigments (PbCrO ₄ , ZnCrO ₄ , 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, Cu ₂ Cl ₂ (ii) Aluminium potassium sulphate KAl(SO ₄) 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 K ₂ Cr ₂ O ₇ using	B.Sc. (H) Chemistry I Year SEMESTER I	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical
	Tutorials:	NA	NA	NA
	Test	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

			B.Sc. (H) Chemistry I Year SEMESTER I	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
	Tutorials:	NA	NA	NA



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE-2021-22 (Odd)

Name of the Faculty: Dr. POOJA

Department: CHEMISTRY

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
JULY	Practicals	Estimation of glucose by Fehling's solution.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
AUGUST	Theory:	Carboxylic acids and their derivatives (aliphatic and aromatic) 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, Claisen condensation.	B.Sc. Life Sciences (Prog.) II Year, Semester III	Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	Practicals:	Saponification value of the given oil. Isolation and characterization of DNA from onion/ cauliflower/peas. MCQ-I	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV

SEPTEMBER	Theory:	Carboxylic acid derivatives (aliphatic): Reactions: Relative reactivities of acid derivatives towards nucleophiles, Reformatsky reaction, Perkin condensation. 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 HNO_2, Schotten-Baumann reaction. Electrophilic substitution (case aniline): nitration, bromination, sulphonation, basicity of amines Diazonium salt Preparation: from aromatic amines Reactions: conversion to benzene,	B.Sc. Life Sciences (Prog.) II Year, Semester III	Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
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	Practicals:	Determination of Iodine number of the given oil. Study of the titration curve of glycine. MCQ-II	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	<u>Assignment:</u>	Carboxylic acids and Amine (Unit I and Unit II)	B.Sc. Life Sciences (Prog.) II Year, Semester III	Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
OCTOBER	Theory:	Amino Acids, Peptides and Proteins Zwitterion, isoelectric point and electrophoresis, Preparation of amino acids: Strecker synthesis and using Gabriel's phthalimide synthesis. Reactions of amino acids: ester of –COOH group, acetylation of –NH ₂ group, complexation with Cu ²⁺ 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 Sciences (Prog.) II Year, Semester III	Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	Practicals:	Estimation of proteins by Lowry's method. Study of the action of salivary amylase on starch under optimum conditions. Effect of temperature on the action of salivary amylase. MCQ-III	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV

	<u>Test</u>	Amino acids and Proteins	B.Sc. Life Sciences (Prog.) II Year, Semester III	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) and polysaccharides (starch and cellulose) excluding their structure elucidation. Unit 3: Fundamentals of Organic Chemistry: Hybridization in organic compounds, Chemistry: cleavage of covalent bond, homolysis and heterolysis, Electronic effects: Electronic effects and their applications – inductive, resonance and hyperconjugation effects,	B.Sc. Life Sciences (Prog.) II Year, Semester III B.Sc. Biological Sciences, I Year, Semester I	Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II BS-C1: CHEMISTRY ORGANIC CHEMISTRY
	Practicals:	Any pending work File submission Practice Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide 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.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V B.Sc. Biological Sciences, I Year, Semester I	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV CHEMISTRY LAB

DECEMBER

Theory:	Unit 3: Fundamentals of Organic Structure and relative stability of reactive carbon species – carbocations, carbanions, free radicals and carbenes, Molecular Forces: types of intermolecular and intra-molecular forces and their characteristics: dipole-dipole, dipoleinduced dipole and dispersion (London) forces, Hydrogen bond (both intramolecular and intermolecular), Effect of inter/intramolecular forces on physical properties such as solubility, vapour pressure, melting and boiling points of different compounds.	B.Sc. Biological sciences, I Year, Semester I	BS-C1: CHEMISTRY ORGANIC CHEMISTRY
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Practicals:	Determination of integral enthalpy (endothermic and exothermic) solution of salts Determination of melting and boiling points of organic compounds	B.Sc. Biological science, I Year, Semester I	CHEMISTRY LAB
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JANUARY

Theory:	Unit 3: Fundamentals of Organic Chemistry: Aromaticity. Unit 4: Stereochemistry: Stereochemistry and its importance. Geometrical isomerism, cis-trans and E/Z nomenclature Optical isomerism – optical activity, plane polarized light, enantiomerism, chirality, specific molar rotation.	B.Sc. Biological sciences, I Year, Semester I	BS-C1: CHEMISTRY ORGANIC CHEMISTRY
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Practicals:	Mechano-Chemical solvent free synthesis of azomethine Acetylation of amines using green approach Qualitative functional group tests for alcohols, aldehydes, ketones, carboxylic acids, esters, amines and amides	B.Sc. Biological science, I Year, Semester I	CHEMISTRY LAB
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<u>Assignment :</u>	Unit 3: Fundamentals of Organic Chemistry: Aromaticity	B.Sc. Biological sciences, I Year, Semester I	BS-C1: CHEMISTRY ORGANIC CHEMISTRY
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FEBRUARY	Theory:	Stereoisomerism with two chiral centers: Diastereomers, mesoisomers, Resolution of racemic modification. Unit 4: Stereochemistry: Projection diagrams of stereoisomers: Fischer, Newman and Sawhorse projections. Relative Configuration: D/L designation. Absolute Configuration: R/S designation of chiral centres.	B.Sc. Biological sciences, I Year, Semester I	BS-C1: CHEMISTRY ORGANIC CHEMISTRY
	Practicals:	Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture Estimation of Mohr's salt by titrating it with KMnO_4 . Synthesis and characterization of silver nanoparticles using UV-Visible spectrophotometer	B.Sc. Biological science, I Year, Semester I	CHEMISTRY LAB
	<u>Test</u>	Stereoisomerism with two chiral centers: Diastereomers, mesoisomers, Resolution of racemic modification. Unit 4: Stereochemistry: Projection diagrams of stereoisomers: Fischer, Newman and Sawhorse projections.	B.Sc. Biological sciences, I Year, Semester I	BS-C1: CHEMISTRY ORGANIC CHEMISTRY
MARCH	Theory:	Conformational isomerism – ethane, butane and cyclohexane, diagrams and relative stability of conformers.	B.Sc. Biological sciences, I Year, Semester I	BS-C1: CHEMISTRY ORGANIC CHEMISTRY
	Practicals:	Practice Exercise	B.Sc. Biological science, I Year, Semester I	CHEMISTRY LAB



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
August	Theory	Alkyl Halides: Preparation, properties, nucleophilic substitution reactions – SN1, SN2 and SNi mechanisms.	B.Sc Chemistry Semester-III	(H)Organic Chemistry-II
	Practicals	1. Preparation and characterization of nanoparticles of gold using tea leaves. 2. Preparation of biodiesel from waste cooking oil and characterization. 3. Mechanochemical solvent free, solid–solid synthesis of azomethine. 4. Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide.	B.Sc Chemistry Semester-V	(H)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
		1. Determination of dissolved oxygen (DO) of a water sample. 2. To analyze arson accelerants. 3. To carry out analysis of gasoline.	B.Sc Life Science Semester-III (SEC)	Basic Analytical Chemistry
	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 LiAlH ₄ .	B.Sc Chemistry Semester-III	(H)Organic Chemistry-II

	Practicals:	1. Photoreduction of benzophenone to benzopinacol in the presence of sunlight. 2. Extraction of D-limonene from orange peel using liquid CO₂ prepared from dry ice. 3. Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper(II). Discussed –COOH and Carbonyl functional group including derivative preparation 1. Determination of pH of soil samples. 2. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration. 3. Determination of pH, acidity and alkalinity of a water sample. 4. Paper chromatographic separation of mixture of metal ion (Ni²⁺ and Co²⁺).	B.Sc Chemistry Semester-V B.Sc Life Science Semester-III B.Sc Life Science Semester-III (SEC)	(H)DSE: Green Chemistry Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II Basic Analytical Chemistry
	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 Chemistry Semester-III (H)	Organic Chemistry-II

	Practicals:	1.Benzoin converted into Benzil and Benzil into Benzilic acid by a green method 2.Rearrangement reaction from Benzopinacol to Benzopinacolone 3.Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide. Systematic qualitative analysis alcohols and Phenols including derivative preparation). 1. To analyze arson accelerants. 2. To carry out analysis of gasoline. 3. Estimation of macro-nutrients: 4.Potassium, calcium and magnesium in soil samples by flame photometry.	B.Sc (H) Chemistry Semester-V B.Sc Life Science Semester-III B.Sc Life Science Semester-III (SEC)	DSE: Green Chemistry Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II Basic Analytical Chemistry
	Tutorials:	NA	NA	NA
	<u>Assignment :</u>	Alkyl halides, alcohols, phenols and ether. Carbonyl Compounds covered	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
	Theory:	Carboxylic Acid and derivatives completed.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
November	Practicals:	MOCK TESTS Practices monofunctional organic compounds through assessments. 1.To study the use of phenolphthalein in trap cases. 2.Estimation of macro-nutrients: Potassium, calcium and magnesium in soil samples by flame photometry. 3.Spectrophotometric determination of Iron in vitamin / dietary tablets.	B.Sc (H) Chemistry Semester-V B.Sc Life Science Semester-III B.Sc Life Science Semester-III (SEC)	DSE: Green Chemistry Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II Basic Analytical Chemistry
	Tutorials:	NA	NA	NA
	<u>Test</u>	Carbonyl Compounds complete and Carboxylic acid and derivatives	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
	Theory:	Revision	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
December	Theory:	Revision	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II

	Practicals:	Online Practical Exam	B.Sc (H) Chemistry Semester-V	DSE: Green Chemistry
		Online Practical Exam	B.Sc Life Science Semester-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		Determination of ion exchange capacity of anion / cation exchange resin Online Practical Exam	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
	Tutorials:	NA	NA	NA



SEMESTER WISE TEACHING PLAN
Academic year 2021-2022 (odd Semester)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Laishram Saya Devi

Department: CHEMISTRY

Semester: III/V

Month		Topics	Course	Paper Code/Name
AUGUST	Theory	<u>Conductance:</u> Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes, Kohlrausch Law of independent migration of ions, transference number	B.Sc. LIFE SCIENCES (Prog.) II Year, Semester III (Section A)	C-3: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY AND FUNCTIONAL GROUP ORGANIC CHEMISTRY-II
	Practical	Determination of the Critical Solution temperature and composition of the phenol water system. Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it Determination of the Critical Solution temperature and composition of the phenol water system. Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1) B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 2)	CHEMISTRY – C VII; PHYSICAL CHEMISTRY III CHEMISTRY – C VII; PHYSICAL CHEMISTRY III
SEPTEMBER	Theory	<u>Conductance:</u> Experimental determination of transference number 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	B.Sc. LIFE SCIENCES (Prog.) II Year, Semester III (Section A)	C-3: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY AND FUNCTIONAL GROUP ORGANIC CHEMISTRY-II
	Practical	Construction of the phase diagram using cooling curves method for simple eutectic systems. (Different systems) Construction of the phase diagram using cooling curves method for simple eutectic systems. (Different systems)	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1) B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 2)	CHEMISTRY – C VII; PHYSICAL CHEMISTRY III CHEMISTRY – C VII; PHYSICAL CHEMISTRY III
OCTOBER	Theory	<u>Conductance:</u> ionic product of water, hydrolysis constant of a salt. Conductometric titrations (only acid-base). <u>Electrochemistry:</u> 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	B.Sc. LIFE SCIENCES (Prog.) II Year, Semester III (Section A)	C-3: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY AND FUNCTIONAL GROUP ORGANIC CHEMISTRY-II

	Practical	Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it Construction of the phase diagram using cooling curves method for congruently melting systems. Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it Construction of the phase diagram using cooling curves method for congruently melting systems.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1) B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 2)	CHEMISTRY – C VII; PHYSICAL CHEMISTRY III CHEMISTRY – C VII; PHYSICAL CHEMISTRY III
NOVEMBER	Theory	<u>Electrochemistry:</u> 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). GASEOUS STATE: Kinetic molecular model of a gas: postulates and derivation of the kinetic gas Equation. GASEOUS STATE: Kinetic molecular model of a gas: postulates and derivation of the kinetic gas Equation.	B.Sc. LIFE SCIENCES (Prog.) II Year, Semester III (Section A) B.Sc.(H) CHEMISTRY Semester I (Sec: A) B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C-3: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY AND FUNCTIONAL GROUP ORGANIC CHEMISTRY-II C II: PHYSICAL CHEMISTRY I C II: PHYSICAL CHEMISTRY I
	Practical	Revision Exercises along with Viva Revision Exercises along with Viva Determine the surface tension of aqueous solutions by (i) drop number (ii) drop weight method.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1) B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 2) B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1)	CHEMISTRY – C VII; PHYSICAL CHEMISTRY III CHEMISTRY – C VII; PHYSICAL CHEMISTRY III C II: PHYSICAL CHEMISTRY I LAB
DECEMBER	Theory	GASEOUS STATE: Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor, Z, and its variation with pressure and Temperature for different gases. Causes of deviation from ideal behaviour. van der Waals equation of state, its derivation and application in explaining real gas behaviour, calculation of Boyle temperature. GASEOUS STATE: Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor, Z, and its variation with pressure and Temperature for different gases. Causes of deviation from ideal behaviour. van der Waals equation of state, its derivation and application in explaining real gas behaviour, calculation of	B.Sc.(H) CHEMISTRY Semester I (Sec: A) B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C II: PHYSICAL CHEMISTRY I C II: PHYSICAL CHEMISTRY I

		Boyle temperature		
	Practical	1. Surface tension measurements using Stalagmometer: Study the variation of surface tension with different concentration of detergent solutions. Determine CMC. Viscosity measurement using Ostwald's viscometer: (i) Determination of co-efficient of viscosity of an unknown aqueous solution. (different unknown solutions)	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1)	C II: PHYSICAL CHEMISTRY I LAB
JANUARY	Theory	GASEOUS STATE: Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states. GASEOUS STATE: Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states.	B.Sc.(H) CHEMISTRY Semester I (Sec: A) B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C II: PHYSICAL CHEMISTRY I C II: PHYSICAL CHEMISTRY I
	Practical	Study the variation of co-efficient of viscosity with different concentration of Poly Vinyl Alcohol (PVA) and determine molar mass of PVA. Study the variation of viscosity with different concentration of sugar solutions.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1)	C II: PHYSICAL CHEMISTRY I LAB
February	Theory	SOLID STATE: Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations. qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law. SOLID STATE: Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations. qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law. ASSIGNMENT TO BOTH CLASSES	B.Sc.(H) CHEMISTRY Semester I (Sec: A) B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C II: PHYSICAL CHEMISTRY I C II: PHYSICAL CHEMISTRY I
	Practical	Preparation of buffer solutions of different pH values: (a) Sodium acetate-acetic acid (b) Ammonium chloride-ammonium hydroxide Study the effect of addition of HCl/NaOH on pH to the solutions of acetic acid, sodium acetate and their mixtures.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1)	C II: PHYSICAL CHEMISTRY I LAB
March	Theory	SOLID STATE: A simple account of rotating crystal method and powder pattern method. Analysis of powder diffraction patterns of NaCl, CsCl and	B.Sc.(H) CHEMISTRY Semester I (Sec: A)	C II: PHYSICAL CHEMISTRY I

		KCl. SOLID STATE: A simple account of rotating crystal method and powder pattern method. Analysis of powder diffraction patterns of NaCl, CsCl and KCl.	B.Sc.(H) CHEMISTRY Semester I (Sec: B)	C II: PHYSICAL CHEMISTRY I
	Practical	Revision exercises along with viva	B.Sc. CHEMISTRY (Hons.) II Year, Semester III (Batch 1)	C II: PHYSICAL CHEMISTRY I LAB



SEMESTER WISE TEACHING PLAN

(2021-2022) Odd semester

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr Devendra Kumar Verma

Department: Chemistry

Semester: I/III/V

Month		Topic	Course	Paper
July	Theory:			
	Practicals:	1. introductory class	B. Sc. (Life Science) Vth Semester, 3rd year	Chemistry of d-block elements, Quantum chemistry and spectroscopy
		1. Introductory class 2. Colorimetry: I. Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration.	B. Sc. (H)chemistry, Vth Semester 3rd year	CHEMISTRY - C XII: PHYSICAL CHEMISTRY V
	Tutorials:	NA	NA	NA
August	Theory:	Concept of phases, component and degree of freedom, derivation of Gibbs phase rule for non reactive and reactive system. Clausius clapeyron equation and its application to solid-liquid, liquid vapour and solid-vapour equilibria. Phase diagram for one component system.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVII: Physical Chemistry III
	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)
		2. Colorimetry: I. Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration. 3. UV/Visible spectroscopy: Study the 200-500 nm absorbance spectra of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ (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) 4. Estimation of Mg^{2+} or Zn^{2+} by	B. Sc. (Life Science) Vth Semester, 3rd year	Chemistry of d-block elements, Quantum chemistry and spectroscopy

		complexometric titration using EDTA.		
		1. Determine the concentrations of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ in a mixture. 2. Study the kinetics of iodination of propanone in acidic medium 3. Determine the amount of iron present in a sample using 1, 10-phenanthroline.	B. Sc. (H)chemistry 3rd year	CHEMISTRY - C XII: PHYSICAL CHEMISTRY V
	Tutorials:	NA	NA	NA
	Theory:	Phase diagram for H_2O 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-acetic 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 - CVII:Physical Chemistry III
September		Qualitative idea of thermodynamics. First law of thermodynamics: calculations of work, internal energy, enthalpy, heat for expansion or compression of ideal gas under isothermal and adiabatic conditions for both reversible and irreversible processes.	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2-chemical thermodynamics
	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)
		Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of $\text{K}_2\text{Cr}_2\text{O}_7$.	B. Sc. (Life Science) Vth Semester, 3rd	Chemistry of d-block elements, Quantum chemistry and

		Estimation of total hardness of a given sample of water by complexometric titration.	year	spectroscopy
		4. Determine the dissociation constant of an indicator (phenolphthalein). 5. Study the kinetics of interaction of crystal violet/phenolphthalein with sodium hydroxide. 6. . Verify the Freundlich and Langmuir isotherms for adsorption of acetic acid on activated charcoal.	B. Sc. (H)chemistry Vth Semester,3rd year	CHEMISTRY - C XII: PHYSICAL CHEMISTRY V
	Tutorials:			
	Assignment			
October	Theory:	Electrochemical cells: rules of oxidation/reduction of ions based on half- cell potential, applications of electrolysis in metallurgy and industry. Chemical cell potential. Reversible and irreversible cells with examples. Electromotive force of a cell and its measurement, Nernst equation; standard electrode 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, quinone-hydroquinone, glass and SbO/Sb ₂ O ₃ electrodes.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVII:Physical Chemistry III
		Calculation of w , q , ΔE , ΔH for process involving change in physical states. Important principles and definition of thermochemistry. Concept of standard state and standard enthalpies of formation, integral and differential enthalpies of solution and dilutions. Calculation of bond energy, bond dissociation energy, and resonance energy from thermodynamically data.	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2- chemical thermodynamics
	Practicals:	11. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde, 2-propanol, acetic acid) in water. Comment on the effect of	B. Sc. (Life Science) Vth Semester, 3rd year	Chemistry of d-block elements,Quantum chemistry and spectroscopy

		structure on the UV spectra of organic compounds.		
		7. UV/Visible spectroscopy:. Study the 200-500 nm absorbance spectra of KMnO ₄ and K ₂ Cr ₂ O ₇ (in 0.1 M H ₂ SO 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) 8. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K ₂ Cr ₂ O ₇ .	B. Sc. (H)chemistry 3rd year	CHEMISTRY - C XII: PHYSICAL CHEMISTRY V
		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)
	Tutorials:	NA	NA	NA
	Test			
November	Theory:	Concentration cells with and without transference, liquid junction potential; determination of activity coefficient and transference numbers. Qualitative discussion of potentiometric titrations (acid base redox, precipitation). Surface chemistry: physical adsorption, chemisorptions, adsorption isotherm	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVII:Physical Chemistry III
		Variation of enthalpy of a reaction with temperature kirchhoff's equation. Second law of thermodynamics, concept of entropy gibbs free energy, and helm holt free energy, calculation of entropy change and free energy change for reversible and irreversible process under isothermal and adiabatic conditions, criteria of spontaneity, Gibbs Helmholtz equation. Maxwell's relations. Statements of third law of thermodynamics.	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2- chemical thermodynamics
	Practicals:	11. 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	B. Sc. (H)chemistry 3rd year	B. Sc. (H)chemistry 3rd year

		organic compounds.		
		Determination of composition of Fe^{3+} - salicylic acid complex/ Fe^{2+} -phenanthroline complex in solution by Jobs method.	B. Sc. (Life Science) Vth Semester, 3rd year	Chemistry of d-block elements, Quantum chemistry and spectroscopy
		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)
	Tutorials:	NA	NA	NA
December	Theory	Surface chemistry: Nature of adsorbed state. Qualitative discussion of BET.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVII:Physical Chemistry III
		Calculations of absolute entropy of substances. Discussion on problems. Problems from last year questions	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2- chemical thermodynamics



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Year: 2021-2022

Name of the Faculty: Dr. Rekha Yadav

Department: Chemistry

Semester: I/III/V

Month		Topic	Course	Paper
July	Practical	Colorimetry: 1. Verify Lambert-Beer's law in aqueous and acidic medium and determine the concentration of KMnO_4 in a solution of unknown concentration.	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY-V Course Title: Quantum Chemistry & Spectroscopy
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
		Conductance Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes, Kohlrausch Law of independent migration of ions	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: 2. Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration. 3. Determine the concentrations of KMnO_4	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY-V Course Title: Quantum Chemistry & Spectroscopy

		and $K_2Cr_2O_7$ in a mixture.		
	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
		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	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
		4. Study the kinetics of iodination of propanone in acidic medium. 5. Determine the amount of iron present in a sample using 1, 10-phenanthroline. 6. Determine the dissociation constant of an indicator (phenolphthalein). 7. Study the kinetics of	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY–V Course Title: Quantum Chemistry & Spectroscopy

		interaction of crystal violet/ phenolphthalein with sodium hydroxide.		
	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, Semester III	SEC: IT SKILLS FOR CHEMISTS
		solubility and solubility products of sparingly soluble salts, ionic product of water, hydrolysis constant of a salt. Conductometric titrations (only acid-base). Electrochemistry Reversible and irreversible cells, concept of EMF of a cell, measurement of EMF of a cell, Nernst equation and its importance	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
		Spectrophotometry: 1. Study the 200-500 nm absorbance spectra of KMnO ₄ and K ₂ Cr ₂ O ₇ (in 0.1 M H ₂ SO ₄) and determine the λ_{max} values. Calculate the energies of the two transitions in different units (kJ molecule ⁻¹ , kJ mol ⁻¹ , cm ⁻¹ , eV). 2. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K ₂ Cr ₂ O ₇ .	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY–V Course Title: Quantum Chemistry & Spectroscopy
	Tutorials:	NA	NA	NA
November	Theory:	Differential calculus: The tangent line and the derivative of a function, numerical differentiation. Numerical integration (Trapezoidal and	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS

		Simpson's rule).		
		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	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 sets. Descriptive statistics using Excel. Statistical significance testing: The t test. The Ftest.	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		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)	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY-V Course Title: Quantum Chemistry & 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
		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
January	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
February	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
March	Practical	Practice exercise	B. Sc. (H)	Practical CC II:

			Chemistry I year, Semester I	PHYSICAL CHEMISTRY - I Course Title: States of Matter & Ionic Equilibrium
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SEMESTER WISE TEACHING PLAN
2021-2022 ODD SEMESTER
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Rangarajan T. M.

Department: Chemistry

Semester: I /III/V

Month		Topic	Course	Paper
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	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practicals:	Introduction Estimation of glucose by Fehling's solution Saponification value of the given oil. Determination of Iodine number of the given oil.	B.Sc. (H) Chemistry, III Year (TCH), Semester – V	CHEMISTRY – C XI: ORGANIC CHEMISTRY-IV Lab
	Practicals:	Introduction- Green Chemistry experiments need to be designed with the help of the three magic R's- Reduce, Reuse and Recycle. While designing and practicing green chemistry experiments, special emphasis should be made on utilizing the maximum tenets (principles) of Green Chemistry. Synthesis of biodiesel from waste cooking oil	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment-Lab
	Practicals:	Perform the following potentiometric titrations: i.Strong acid vs. strong base	B. Sc. (P) Life Sciences, II Year (SLS), Semester-III	Solutions, Phase Equilibrium, Conductance, Electrochemistry & Functional Group
	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
	Practicals:	Study of the titration curve of glycine. Estimation of proteins by Lowry's method.	B.Sc. (H) Chemistry, III Year (TCH), Semester – V	CHEMISTRY – C XI: ORGANIC CHEMISTRY-IV Lab
	Practicals:	Making green plastics from corn starch. Greener approach to the synthesis of Gold/Silver Nanoparticles:	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment-Lab

	Practicals:	Green synthesis of gold/silver nanoparticles		
		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 monofunctional groups (Alcohols, Phenols).	B. Sc. (P) Life Sciences, II Year (SLS), Semester-III	Solutions, Phase Equilibrium, Conductance, Electrochemistry & Functional Group
	Tutorials:	NA	NA	NA
October	Theory:	Green Solvents Problems associated with traditional solvents Water as a green solvent Ionic Liquids Bio-based Solvents Supercritical CO ₂ .	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practicals:	Study of the action of salivary amylase on starch under optimum conditions. Effect of temperature on the action of salivary amylase.	B.Sc. (H) Chemistry, III Year (TCH), Semester – V	CHEMISTRY – C XI: ORGANIC CHEMISTRY-IV Lab
	Practicals:	Catalytic degradation of dyes using nanoparticles (can be any)	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment-Lab
	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
	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
	Practicals:	Isolation and estimation of DNA using cauliflower/onion.	B.Sc. (H) Chemistry, III Year (TCH), Semester – V	CHEMISTRY – C XI: ORGANIC CHEMISTRY-IV Lab
		Green Synthesis Microwave assisted synthesis of copper phthalocyanine complex Preparation of Fe(III)AcAc Complex using a greener	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment-Lab

		approach		
		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:	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
	Practicals:	Revision- Practice experiment and Mock test	B.Sc. (H) Chemistry, III Year (TCH), Semester – V	CHEMISTRY – C XI: ORGANIC CHEMISTRY-IV Lab
		Revision- Practice experiment and Mock test	B.Sc (H) Generic Elective-II Year Semester-III	Green Chemistry: Designing Chemistry for Human Health and Environment-Lab
		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:	Electronic displacements: Inductive effect, electromeric effect, resonance, hyperconjugation. Cleavage of bonds: homolysis and heterolysis. Reaction intermediates: carbocations, carbanions and free radicals. Electrophiles and nucleophiles, Aromaticity: benzenoids and Hückel's rule.	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	Atomic Structure, Bonding, General Organic Chemistry (Section B: Organic Chemistry -1)
	Practicals:	Introductory class	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	CHEMISTRY PRACTICALS: Atomic Structure, Bonding, General Organic Chemistry
	Practicals:			
	Tutorials:	NA	NA	NA

December	Theory:	Conformations with respect to ethane, butane and cyclohexane, inter-conversion of Wedge Formula, Newmann, Sawhorse and Fischer representations, concept of chirality (upto two carbon atoms). configuration: geometrical and optical isomerism; enantiomerism, diastereomerism.	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	Atomic Structure, Bonding, General Organic Chemistry (Section B: Organic Chemistry -1)
	Practicals:	Determination of melting and boiling points of organic compounds Purification of organic compounds by crystallization	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	CHEMISTRY PRACTICALS: Atomic Structure, Bonding, General Organic Chemistry
	Tutorials:	NA	NA	NA
January	Theory:	Meso compounds). Threo and erythro; D and L; cis - trans nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and E / Z nomenclature (for upto two C=C systems). Preparation: catalytic hydrogenation, Wurtz reaction, Kolbe's synthesis, Grignard reagent. Reactions: Free radical substitution: Halogenation	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	Atomic Structure, Bonding, General Organic Chemistry (Section B: Organic Chemistry -1)
	Practicals:	Titrimetric estimation of oxalic acid against KMnO ₄ . Titrimetric estimation of Mohr's salt against KMnO ₄ .	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	CHEMISTRY PRACTICALS: Atomic Structure, Bonding, General Organic Chemistry
	Tutorials:	NA	NA	NA
	Assignment	Assignment-I	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	Atomic Structure, Bonding, General Organic Chemistry (Section B: Organic Chemistry -1)
February	Theory:	Alkenes: Preparation: Elimination reactions: Dehydration of alcohols and dehydro-halogenation of alkyl halides (Saytzeff's rule); cis alkenes (Partial catalytic hydrogenation) and trans alkenes (Birch reduction). Reactions: cis-addition (alk. KMnO ₄) and trans-addition (bromine), addition of HX (Markownikoff's and anti-Markownikoff's addition), Hydration, Ozonolysis, oxymercuration-	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	Atomic Structure, Bonding, General Organic Chemistry (Section B: Organic Chemistry -1)

		demercuration, Hydroborationoxidation.		
	Practicals:	Titrimetric estimation of ferrous ions against $K_2Cr_2O_7$, Paper chromatographic separation of mixture of amino acids	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	CHEMISTRY PRACTICALS: Atomic Structure, Bonding, General Organic Chemistry
	Tutorials:	NA	NA	NA
	Test	Test - I	B. Sc. Life Science-I year And B.Sc (H) Generic Elective Semester-I	Atomic Structure, Bonding, General Organic Chemistry (Section B: Organic Chemistry -1)
March	Theory:	Alkynes: Preparation: Acetylene from CaC_2 and conversion into higher alkynes; by dehalogenation of tetrahalides and dehydrohalogenation of vicinal-dihalides. Reactions: formation of metal acetylides and acidity of alkynes, addition of bromine and alkaline $KMnO_4$, ozonolysis and oxidation with hot alk. $KMnO_4$. Hydration to form carbonyl compounds	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	Atomic Structure, Bonding, General Organic Chemistry (Section B: Organic Chemistry -1)
	Practicals:	Paper chromatographic separation of mixture of Sugars Practice exercises	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	CHEMISTRY PRACTICALS: Atomic Structure, Bonding, General Organic Chemistry
	Tutorials:	NA	NA	NA



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Akanksha Gupta

Department: Chemistry

Semester : I/III/V

Month		Topics	Course	Paper Code/Name
JULY	Practicals	Synthesis of silver nanoparticles by Chemical method. Synthesis of silver nanoparticles by green method.	B.Sc. (Hons.) Chemistry III rd Year Sem V	DSE LAB: NOVEL INORGANIC SOLIDS
		Estimation of Zn^{2+} by complexometric titrations using EDTA.	B.Sc. (P) Life Science III rd year, Sem V	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials			
AUGUST				
	Theory:	Chemistry of <i>s</i> -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 II nd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	Practicals:	Preparations: (ii) Cuprous Chloride (iii) Aluminium potassium sulphate $KAl(SO_4)_2 \cdot 12H_2O$ (Potash alum)	B.Sc. (Hons.) Chemistry II nd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		Preparation of polyaniline Intercalation of hydrogen in tungsten trioxide Preparation of Inorganic Pigments	B.Sc. (Hons.) Chemistry III Year, Sem V	DSE : NOVEL INORGANIC SOLIDS
		Estimation of Mg^{2+} by complexometric titrations using EDTA. Estimation of total hardness of a given water by complexometric titrations using EDTA.	B.Sc. (P) Life Science III year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials:			
	Assignment	Chemistry of <i>s</i> and <i>p</i> block elements	B.Sc. (Hons.) Chemistry II nd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements

SEPTEMBER	Theory:	Complex formation tendency of <i>s</i>-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 nd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
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	Practicals:	Estimation of Zn^{2+} Complexometric titrations using disodium salt of EDTA 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 II nd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		Preparation of zeolite	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
		Estimation of the amount of nickel present in a given solution as bis(dimethylglyoximate) nickel(II) or in a given solution gravimetrically Study the 200-500 nm absorbance spectra of KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ (in 0.1 M H_2SO_4) and determine the λ_{max} values. Calculate the energies of the two transitions in different	B.Sc. (P) Life Science III year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials:			
OCTOBER	Theory:	Preparation, properties, structure and uses of the following compounds: • Borazine • Silicates, silicones, • Phosphonitrilic halides $\{(\text{PNCl}_2)_n \text{ where } n = 3 \text{ and } 4\}$	B.Sc. (H) Chemistry II nd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	Practicals:	Estimation of Cu(II) and $\text{K}_2\text{Cr}_2\text{O}_7$ using sodium thiosulphate solution (Iodometrically)	B.Sc. (H) Chemistry II nd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		Preparation of zeolite A and removal of Mg and Ca ions from water samples quantitatively using zeolite.	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
		Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration Determination of the composition of the Fe^{3+}-salicylic acid complex in solution by Job's method	B.Sc. (P) Life Science I year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials:			

	Test	Chemistry of <i>s</i> and <i>p</i> block elements	B.Sc. (Hons.) Chemistry II nd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
November	Theory:	- Interhalogen and pseudohalogen compounds - Clathrate compounds of noble gases, xenon fluorides (MO treatment of XeF₂)	B.Sc. (H) Chemistry II nd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		Atomic Structure: Review of Bohr's theory and its limitations	B.Sc. (P) Life Science I year Sem I	Atomic Structure and Chemical Bonding
	Practicals:	Estimation of antimony in tartar-emetic iodimetrically	B.Sc. (Hons.) Chemistry II nd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		Synthesis of pure ZnO and Cu doped ZnO nanoparticles.	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
		Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K ₂ Cr ₂ O ₇ .	B.Sc. (P) Life Science III year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials:			
December	Theory:	Heisenberg Uncertainty principle. Dual behaviour of matter and radiation, de-Broglie's relation. Hydrogen atom spectra. Need of a new approach to Atomic structure. What is Quantum mechanics? Time independent Schrodinger equation and meaning of various terms in it. Significance of ψ and ψ^2 , .	B.Sc. (P) Life Science I year Sem I	Atomic Structure, Bonding and General Organic Chemistry
January	Theory:	Schrodinger equation for hydrogen atom. Radial and angular parts of the hydrogenic wavefunctions (atomic orbitals) and their variations for 1s, 2s, 2p, 3s, 3p and 3d orbitals (Only graphical representation) Radial and angular nodes and their significance.	B.Sc. (P) Life Science I year Sem I	Atomic Structure, Bonding and General Organic Chemistry
	Assignment	Atomic Structure	B.Sc. (P) Life Science I year Sem I	Atomic Structure, Bonding and General Organic Chemistry

February	Theory:	Radial distribution functions and the concept of the most probable distance with special reference to 1s and 2s atomic orbitals. Significance of quantum numbers, orbital angular momentum and quantum numbers m_l and m_s , Shapes of s, p atomic orbitals, nodal planes.	B.Sc. (P) Life Science I year Sem I	Atomic Structure, Bonding and General Organic Chemistry
March	Theory:	Discovery of spin, spin quantum number (s) and magnetic spin quantum number (m_s). Rules for filling electrons in various orbitals, Electronic configurations of the atoms. Stability of half-filled and completely filled orbitals, concept of exchange energy. Relative energies of atomic orbitals, Anomalous electronic	B.Sc. (P) Life Science I year Sem I	Atomic Structure, Bonding and General Organic Chemistry



SEMESTER WISE TEACHING PLAN (2021-22)
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	1. Estimation of proteins by Lowry's method.	B.Sc. (H) Chemistry 3 rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Practicals			
	Tutorials			
August	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.	B.Sc. (H) Chemistry 2 nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Practicals:	2. Saponification value of the given oil or fat. 3. Isolation and estimation of DNA using cauliflower/onion. 4. Estimation of glucose by Fehling's solution.	B.Sc. (H) Chemistry 3 rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Practicals:	1. Benzoylation of aniline and phenol 2. Acetylation of aniline and phenol by Conventional and Green Approaches	B.Sc. (H) Chemistry 2 nd Year, Semester-III – Batch I	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Tutorials:			

September	Theory:	Aryl halides: Preparation (including preparation from diazonium salts) and properties, nucleophilic aromatic substitution; S _N Ar, 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, Pinacol-Pinacolone rearrangement. Revision Class Phenols: Preparation and properties; Acidity and affecting factors, Ring substitution reactions.	B.Sc. (H) Chemistry 2 nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Practicals:	5. MCQ Assessment 1 6. MCQ Assessment 2 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 3 rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Practicals:	3. Hydrolysis of amide/Esters 4. Assessment Class 5. Iodoform reaction 6. Semicarbazone	B.Sc. (H) Chemistry 2 nd Year, Semester-III – Batch I	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Assignment:	Alkyl halides, aryl halides and Alcohols	B.Sc. (H) Chemistry 2 nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups

October	Theory:	Ethers and Epoxides: Preparation and reactions with acids. Reactions of epoxides with alcohols, ammonia and LiAlH ₄ . Carbonyl Compounds Structure, reactivity, preparation and properties; Nucleophilic additions, Nucleophilic addition-elimination reactions with ammonia derivatives with mechanism. 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, LiAlH ₄ , NaBH ₄ , MPV, PDC)	B.Sc. (H) Chemistry 2 nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Practicals:	9. Study of the titration curve of glycine. 10. Determination of Iodine number of the given oil.	B.Sc. (H) Chemistry 3 rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Practicals:	7. Selective Reduction 8. Assessment Class	B.Sc. (H) Chemistry 2 nd Year, Semester-III – Batch I	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Assignment:	Ethers and Epoxides & Carbonyl Compounds	B.Sc. (H) Chemistry 2 nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups

November	Theory:	Carbonyl Compounds 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, 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	B.Sc. (H) Chemistry 2 nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Practicals:	11. Assessment Class 12. Discussion Class	B.Sc. (H) Chemistry 3 rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Practicals:	9.SBT preparation. 10.Aldol Condensation 11. Functional group Identification 12. Revision and Doubts 13. Final Assessment of Sem III	B.Sc. (H) Chemistry 2 nd Year, Semester-III – Batch I	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Tutorials:			



SEMESTER WISE TEACHING PLAN
Academic year 2021-2022 (Odd Semester)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Balendra

Department: Chemistry

Semester: I/III/V

Month		Topic	Course	Paper Code/Name
July	Practicals	(i) Introductory class (ii) Biodiesel synthesis from waste cooking oil	B.Sc.(H) Chemistry Sem-V	DSE-8 Green Chemistry
August	Theory	Introductory class Water Pollution and root causes	GE-III	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practicals	(iii) Preparation of gold nanoparticles (iv) Azomethine synthesis (v) Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide. (i) Benzoylation of amines and phenols (ii) Preparation of Acetanilide by conventional and green method	B.Sc.(H) Chemistry Sem-V B.Sc.(H) Chemistry Sem-III	DSE-8 Green Chemistry CHEMISTRY-CVI: Halogenated Hydrocarbons and Oxygen Containing Functional Groups
September	Theory:	Catalytic Degradation of organic water pollutants	GE-III	Green Chemistry: Designing Chemistry for Human Health and Environment
	Practical	(vi) Extraction of D-limonene from orange peel using liquid CO ₂ prepared from dry ice. (vii) Photoreduction of benzophenone to benzopinacol in the presence of sunlight. (iii) Hydrolysis of amide/Esters (iv) Iodoform reaction. (v) Semicarbazone synthesis	B.Sc.(H) Chemistry Sem-V B.Sc.(H) Chemistry Sem-III	DSE-8 Green Chemistry CHEMISTRY-CVI: Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Tutorial:	Assessment-1	B.Sc.(H) Chemistry Sem-III	CHEMISTRY-CVI: Halogenated Hydrocarbons and Oxygen Containing Functional Groups
		Assessment-1	B.Sc.(H) Chemistry Sem-V	DSE-8 Green Chemistry
October	Theory:	Photo-oxidation technologies Removal of heavy metals (inorganic pollutants) via new adsorption	GE-III	Green Chemistry: Designing Chemistry for Human Health

		technology		and Environment
	Practicals	(viii) Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II). (ix) Designing and conducting an experiment by utilizing the products and by products (vi) Selective Reduction of m-dinitrobenzene	B.Sc.(H) Chemistry Sem-V B.Sc.(H) Chemistry Sem-III	DSE-8 Green Chemistry CHEMISTRY - CVI: Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Tutorials:	NA	NA	NA
	Assessment	Assessment-1	GE-III	Green chemistry
	Assessment	Assessment-2	B.Sc.(H) Chemistry Sem-III	CHEMISTRY - CVI: Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	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 bio-based economy and waste Valorization, Creating an Effective Regulatory System Electronic displacements: Inductive effect, Electromeric effect, resonance, hyperconjugation. Cleavage of bonds: homolysis and heterolysis. Reaction intermediates: carbocations, carbanions and free radicals. Electronic displacements: Inductive effect, Electromeric effect, resonance, hyperconjugation. Cleavage of bonds: homolysis and heterolysis. Reaction intermediates: carbocations, carbanions and free radicals.	GE-III GE-1 B.Sc (P) Life Sciences Sem-I (B-II)	Green Chemistry: Designing Chemistry for Human Health and Environment Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Practicals:	Revision and doubts (vii) SBT derivative preparation of acid (viii) Aldol Condensation (ix) qualitative tests of oxygen containing functional Groups	B.Sc.(H) Chemistry Sem-V B.Sc.(H) Chemistry Sem-III	CHEMISTRY–DSE-8 Green Chemistry CHEMISTRY - CVI: Halogenated Hydrocarbons and Oxygen Containing Functional Groups

		(i) Introductory class (ii) Purification of organic compounds by crystallization	B.Sc (P) Life Sciences Sem-I (B-II)	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Tutorials:	Test-1	GE-III	Green Chemistry:
December	Theory:	New Technological Developments: New Avenues for the Green Economy and Sustainable Future of Science and Technology Revision and doubts Electrophiles and nucleophiles, Aromaticity: benzenoids and Hückel's rule. Stereochemistry Conformations with respect to ethane, butane and cyclohexane. Electrophiles and nucleophiles, Aromaticity: benzenoids and Hückel's rule. Stereochemistry Conformations with respect to ethane, butane and cyclohexane	GE-III	Green Chemistry: Designing Chemistry for Human Health and Environment
			GE-1	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
			B.Sc (P) Life Sciences Sem-I (B-II)	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Practicals	(iii) Melting point determination of organic compound (iv) Boiling point determination of given organic compounds	B.Sc (P) Life Sciences Sem-I (B-II)	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Tutorials:	NA	NA	NA
January	Theory	Enantiomerism, diastereomerism and mesocompounds). Threo and erythro; D and L; cis - trans nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and E / Z nomenclature (for upto two C=C systems).	GE-1	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Practicals	(v) Separation of Two Amino Acids Mixture by Paper Chromatography (vi) Copper sulphate determination by iodometrically (vii) Estimation of oxalic acid by titrating it with KMnO ₄ . (viii) Estimation of Mohr's salt by titrating it with KMnO ₄	B.Sc (P) Life Sciences Sem-I (B-II)	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Tutorials:	NA	NA	NA
	Assessment	Assessment-1	GE-1	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Assessment	Assessment-1	B.Sc (P) Life Sciences	Atomic Structure, Bonding, General Organic Chemistry &

			Sem-I (B-II)	Aliphatic Hydrocarbons
February	Theory	Functional group approach for the following reactions: Wurtz reaction, Kolbe's synthesis, Grignard reagent. Reactions: Free radical substitution: Halogenation. Preparation: Elimination reactions: Dehydration of alcohols and dehydrohalogenation of alkyl halides (Saytzeff's rule); cis alkenes (Partial catalytic hydrogenation) and trans alkenes (Birch reduction). Reactions: formation of metal acetylides and acidity of alkynes, addition of bromine and alkaline KMnO ₄ , ozonolysis and oxidation with hot alk. KMnO ₄ .	GE-1 B.Sc (P) Life Sciences Sem-I (B-II)	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Practicals:	(ix) Estimation of Fe (II) ions by titrating it with K ₂ Cr ₂ O ₇ using internal indicator (x) Identify and separate the sugars present in the given mixture by radial/ascending paper chromatography.	B.Sc (P) Life Sciences Sem-I (B-II)	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
March	Theory	Hydration to form carbonyl compounds. Revision and doubts class Hydration to form carbonyl compounds. Revision and doubts class	GE-1 B.Sc (P) Life Sciences Sem-I (B-II)	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons



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

Name of the Faculty: Dr. Chandra Sekhar Tekuri

Department: Chemistry

Semester: III/V

Month		Topics	Course	Paper Code/Name
July	Theory	Introduction to analytical chemistry and its interdisciplinary nature	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
	Practicals	3. Introductory class 4. Determination of pH of soil samples. 5. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
August	Theory	Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Significant figures. Presentation of experimental data and results.	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		Introduction to analytical chemistry and its interdisciplinary nature	B.Sc. Life Science, II Year, III Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		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
	Practicals	1. Determination of pH, acidity and alkalinity of a water sample. 2. Determination of dissolved oxygen (DO) of a water sample. 3. Paper chromatographic separation of mixture of metal ion (Ni^{2+} and Co^{2+})	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry

		measurement, complexometric titrations, chelation, chelating agents, use of indicators.	Science, III Year, V Semester	SEC-2 Basic Analytical Chemistry
		1. Determination of critical solution temperature and composition of phenol water system and study the effect of impurities on it. 2. Construction of phase diagram of a binary system (simple eutectic) using cooling curves.	B. Sc. (Life Science) III Semester 2nd year, Batch-I	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
		Perform the following potentiometric titrations: i.Strong acid vs. strong base	B. Sc. Life Sciences II year, Semester III, Batch-II	CHEMISTRY LAB: CHEMISTRY – Core Paper-3 Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
September	Theory	Analysis of soil Composition of soil, concept of pH and its	B.Sc. Life	CHEMISTRY –
		Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Significant figures. Presentation of experimental data and results.	B.Sc. Life Science, II Year, III Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		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 HNO ₂ , Schotten-Baumann reaction. Electrophilic substitution (case aniline): nitration,	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

		bromination, sulphonation, basicity of amines. Diazonium salt Preparation: from aromatic amines Reactions: conversion to benzene, phenol and dyes.		
	Practicals	- To study the use of phenolphthalein in trap cases. - To analyze arson accelerants. - To carry out analysis of gasoline. - Estimation of macro-nutrients: Potassium, calcium and magnesium in soil samples by flame photometry.	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		- Determination of equivalent conductant, degree of dissociation and dissociation constant of a weak acid . Perform the following conductometric titrations: - strong acid Vs strong base	B. Sc. (Life Science) III Semester 2nd year, Batch-I	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
		Determination of CST of phenol-water system. Effect of impurities on CST of phenol-water system. Potentiometric titrations Weak acid vs. strong base Systematic qualitative analysis of organic compounds possessing monofunctional groups (Alcohols, Phenols).	B. Sc. Life Sciences II year, Semester III, Batch-II	CHEMISTRY LAB: CHEMISTRY – Core Paper-3 Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
October	Theory	. Analysis of water: Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods. Chromatography Definition and general introduction on principles of chromatography. Paper chromatography,	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry

		Analysis of soil Composition of soil, concept of pH and its measurement, complexometric titrations, chelation, chelating agents, use of indicators.	B.Sc. Life Science, II Year, III Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		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
	Practicals	1. Spectrophotometric determination of Iron in vitamin / dietary tablets. 2. Spectrophotometric identification and determination of caffeine and benzoic acid in soft drink.	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		Perform the following conductometric titrations: 1. weak acid Vs strong base 2. Functional group analysis	B. Sc. (Life Science) III Semester 2nd year, Batch-I	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
		Conductometric titrations of strong acid vs strong base, Functional group analysis Cooling curves	B. Sc. Life Sciences II year, Semester III, Batch-II	CHEMISTRY LAB: CHEMISTRY – Core Paper-3 Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II

November	Theory	Chromatography thin layer chromatography, Column chromatography and ion-exchange chromatography	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		Analysis of water: Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods. Chromatography Definition and general introduction on principles of chromatography. Paper chromatography, thin layer chromatography.	B.Sc. Life Science, II Year, III Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		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
	Practicals	1. Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible).	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		Systematic qualitative analysis of organic compounds possessing monofunctional groups (Alcohols, Phenols, Carbonyl, -COOH).	B. Sc. (Life Science) III Semester 2nd year, Batch-I	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
		Systematic qualitative analysis of organic compounds possessing monofunctional groups (Carbonyl, -COOH).	B. Sc. (Life Science) III Semester 2nd year, Batch-II	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
	ASSIGNMENT AND TEST		B.Sc. Life Science, II Year, III Semester	1. Basic Analytical Chemistry 2. CHEMISTRY – Core Paper-3

December	Theory	Chromatography Column chromatography and ion-exchange chromatography	B.Sc. Life Science, II Year, III Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
		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
	Practicals	Systematic qualitative analysis of organic compounds possessing monofunctional groups Derivative Preparations	B. Sc. (Life Science) III Semester 2nd year	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)



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

Name of the Faculty: Dr. Manoj Trivedi

Department: Chemistry

Semester: V/I

Month		Topics	Course	Paper Code/Name
July	Practicals	Introductory class Determination of pH of soil samples. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
August	Practicals	Determination of pH, acidity and alkalinity of a water sample. Determination of dissolved oxygen (DO) of a water sample. Paper chromatographic separation of mixture of metal ion (Ni^{2+} and Co^{2+})	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
September	Practicals	To study the use of phenolphthalein in trap cases. To analyze arson accelerants. To carry out analysis of gasoline. Estimation of macro-nutrients: Potassium, calcium and magnesium in soil samples by flame photometry.	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry
October	Theory	Basic introduction of atomic structure Bohr's theory and its limitations, Heisenberg uncertainty principle, Dual behaviour of matter and radiation, De-Broglie's relation, Hydrogen atom spectra, need of a new approach to atomic structure. What is Quantum mechanics? Time independent Schrodinger equation and meaning of various terms in it. Significance of ψ and ψ^2 , Schrödinger equation for hydrogen atom, radial and angular parts of the hydrogenic wave functions (atomic orbitals) and their variations for 1s, 2s, 2p, 3s, 3p and 3d orbitals (Only graphical representation), radial and angular nodes and their significance, radial distribution functions and the concept of the most probable distance with special reference to 1s and 2s atomic orbitals. Significance of quantum numbers, orbital angular momentum and quantum numbers ml	B.Sc. Life Science, I Year, I Semester (Batch 1 and 2) B.Sc. H, I Year, I Semester (Batch 1 and 2)	Chemistry-Core Paper-1 CHEMISTRY – C I

		and ms. Shapes of s, p and d atomic orbitals, nodal planes, discovery of spin, spin quantum number (s) and magnetic spin quantum number (ms). Rules for filling electrons in various orbitals, electronic configurations of the atoms, stability of half-filled and completely filled orbitals, concept of exchange energy, relative energies of atomic orbitals, anomalous electronic configurations.		
October	Practicals	Spectrophotometric determination of Iron in vitamin / dietary tablets. Spectrophotometric identification and determination of caffeine and benzoic acid in soft drink. Basics of Volumetric Analysis, Estimation of oxalic acid by titrating it with KMnO_4, Estimation of Mohr's salt by titrating it with KMnO_4, Purification of organic compound by crystallisation (from water and alcohol) and distillation. Titrimetric Analysis: (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality.	B.Sc. Life Science, III Year, V Semester B.Sc. Life Science, I Year, I Semester (Batch 2) B.Sc. H, I Year, I Semester (Batch 1)	CHEMISTRY – SEC-2 Basic Analytical Chemistry Chemistry-Core Paper-1 CHEMISTRY – C I
November	Theory	Ionic Bonding: General characteristics of ionic bonding, energy considerations in ionic bonding, lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds, statement of Born-Landé equation for calculation of lattice energy (no derivation), Born-Haber cycle and its applications, covalent character in ionic compounds, polarizing power and polarizability, Fajan's rules. Ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character. Covalent bonding: VB Approach: Shapes of some inorganic molecules and ions on the basis of VSEPR (H_2O, NH_3, PCl_5, SF_6, ClF_3, SF_4) and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements. Concept of resonance and resonating structures in various inorganic and organic compounds.	B.Sc. Life Science, I Year, I Semester (Batch 1 and 2) B.Sc. H, I Year, I Semester (Batch 1 and 2)	Chemistry-Core Paper-1 CHEMISTRY – C I

	Practicals	Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible). Estimation of Cu(II) ions iodometrically using $\text{Na}_2\text{S}_2\text{O}_3$, Separation of mixtures by chromatography: Measure the R_f value in each case (combination of two compounds to be given). Identify and separate the components of a given mixture of 2 amino acids (glycine, aspartic acid, glutamic acid, tyrosine or any other amino acid) by radial/ascending paper chromatography. 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.	B.Sc. Life Science, III Year, V Semester \ B.Sc. Life Science, I Year, I Semester (Batch 2) B.Sc. H, I Year, I Semester (Batch 1 and 2)	CHEMISTRY – SEC-2 Basic Analytical Chemistry Chemistry-Core Paper-1 CHEMISTRY – C I
	ASSIGNMENT AND TEST		B.Sc. Life Science, III Year, V Semester B.Sc. H, I Year, I Semester (Batch 1 and 2) B.Sc. Life Science, I Year, I Semester (Batch 2)	CHEMISTRY – SEC-2 CHEMISTRY – C I Chemistry-Core Paper-1
December	Theory	MO Approach: Rules for the LCAO method, bonding and antibonding MOs and their characteristics for s-s, s-p and p-p combinations of atomic orbitals, nonbonding combination of 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^+. Periodicity of Elements: Brief discussion of the following properties of the elements, with reference to s- & p-block and the trends shown: (a) Effective nuclear charge, shielding or screening effect, Slater rules, variation of effective nuclear charge in periodic table. (b) Atomic and ionic radii (c) Ionization enthalpy, Successive ionization enthalpies and factors affecting ionization enthalpy and trends in groups and periods. (d) Electron gain enthalpy and trends in groups and periods. (e) Electronegativity, Pauling's/ Allred Rochow's scales. Variation of electronegativity with bond order, partial charge, hybridization, group electronegativity.	B.Sc. Life Science, I Year, I Semester (Batch 1 and 2) B.Sc. H, I Year, I Semester (Batch 1 and 2)	Chemistry-Core Paper-1 CHEMISTRY – C I

	Practicals	Identify and separate the sugars present in the given mixture by radial/ascending paper chromatography. Estimation of free alkali present in different soaps/detergents	B.Sc. Life Science, I Year, I Semester(Batch 2) B.Sc. H, I Year, I Semester (Batch 1)	Chemistry-Core Paper-1 CHEMISTRY – C I
January	Theory	Revision 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 interactions, induced dipole interaction, Hydrogen bonding (theories of hydrogen bonding, valence bond treatment). Effects of weak chemical forces, melting and boiling points, solubility, energetics of dissolution process.	B.Sc. Life Science, I Year, I Semester(Batch 1 and 2) B.Sc. H, I Year, I Semester (Batch 1 and 2)	Chemistry-Core Paper-1 CHEMISTRY – C I
	Practicals	Oxidation-Reduction Titrimetry: Principles of oxidation-reduction titrations (electrode potentials) to be discussed. (i) Estimation of Fe(II) and oxalic acid using standardized KMnO_4 solution (ii) Estimation of oxalic acid and sodium oxalate in a given mixture. (iii) Estimation of Fe(II) with $\text{K}_2\text{Cr}_2\text{O}_7$ using internal indicator (diphenylamine, N-phenylanthranilic acid) and discussion of external indicator.	B.Sc. H, I Year, I Semester (Batch 1)	CHEMISTRY – C I
	ASSIGNMENT AND TEST		B.Sc. H, I Year, I Semester (Batch 1) B.Sc. H, I Year, I Semester (Batch 1 and 2) B.Sc. Life Science, I Year, I Semester(Batch 1 and 2)	CHEMISTRY – C I CHEMISTRY – C I Chemistry-Core Paper-1



SEMESTER WISE TEACHING PLAN (2021-2022)
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, Failure of classical mechanics, Black body radiation, Photoelectric effect, Recapitulation of Bohr's theory, its limitations and atomic spectrum of hydrogen atom. Numericals	B.Sc. Chem (H)-Sem V	CXII: PHYSICAL CHEMISTRY-V: Quantum Chemistry & Spectroscopy
AUGUST	Theory:	Postulates of quantum mechanics, quantum mechanical operators and commutation rules, Numericals, Schrödinger equation and its application to free particle and particle in a box (rigorous treatment), quantization of energy levels, zero-point energy and Heisenberg Uncertainty principle.	B.Sc. Chem (H)-Sem V	CXII: PHYSICAL CHEMISTRY-V: Quantum Chemistry & Spectroscopy

SEPTEMBER	Theory:	Wave functions, probability distribution functions, nodal properties, Extension to two and three dimensional boxes, separation of variables, degeneracy. Qualitative treatment of simple harmonic oscillator model of vibrational motion: Setting up of Schrödinger equation and discussion of solution and wave functions. Vibrational energy of diatomic molecules and zero-point energy.	B.Sc. Chem (H)-Sem V	CXII: PHYSICAL CHEMISTRY–V: Quantum Chemistry & Spectroscopy
	<u>Assignment</u>	Operators, Schrodinger wave equation, Particle in a box, SHO	B.Sc. Chem (H)-Sem V	CXII: PHYSICAL CHEMISTRY–V: Quantum Chemistry & Spectroscopy
OCTOBER	Theory:	Angular momentum. Rigid rotator model of rotation of diatomic molecule. Schrödinger equation in Cartesian and spherical polar coordinates (derivation not required). Separation of variables. Spherical harmonics. Discussion of solution (Qualitative). Qualitative treatment of hydrogen atom and hydrogen-like ions: setting up of Schrödinger equation in spherical polar coordinates, radial part and quantization of energy (only final energy expression).	B.Sc. Chem (H)-Sem V	CXII: PHYSICAL CHEMISTRY–V: Quantum Chemistry & Spectroscopy

NOVEMBER	Theory:	Average and most probable distances of electron from nucleus. Setting up of Schrödinger equation for manyelectron atoms (He, Li). Need for approximation methods. Statement of variation theorem and application to simple systems (particle-in-a-box, harmonic oscillator, hydrogen atom).	B.Sc. Chem (H)-Sem V	CXII: PHYSICAL CHEMISTRY–V: Quantum Chemistry & Spectroscopy
		Practise questions, previous year question papers,	GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
		Introduction, Recapitulation of Bohr's theory, its limitations and atomic spectrum of hydrogen atom. De-Broglie's relation, Hydrogen atom spectra, need of a new approach to atomic structure. What is Quantum mechanics? Time independent Schrodinger equation and meaning of various terms in it. Significance of ψ and ψ^2	B.Sc. Life Sciences-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
		Introduction, Recapitulation of Bohr's theory, its limitations and atomic spectrum of hydrogen atom. De-Broglie's relation, Hydrogen atom spectra, need of a new approach to atomic structure.	B.Sc. Biological Sciences-I	Chemistry BS C-1
		Qualitative idea of thermodynamics, First Law of Thermodynamics: Calculation of work (w), heat (q), changes in internal energy (ΔE) and enthalpy (ΔH) for expansion or compression of ideal gases under isothermal and adiabatic conditions for both reversible and irreversible processes.	B.Sc. Chem (H)-Sem I	C II- Physical Chemsitry Practicals
	Practicals:	1)General instructions and Introduction 2) Determine the surface tension of aqueous solutions by drop number method. 3) Determine the surface	B.Sc. Biological Sciences-I	Chemistry BS C-1 Practicals

DECEMBER	Theory:	Schrödinger equation for hydrogen atom, radial and angular parts of the hydrogenic wave functions (atomic orbitals) and their variations for 1s, 2s, 2p, 3s, 3p and 3d orbitals (Only graphical representation), radial and angular nodes and their significance, radial distribution functions and the concept of the most probable distance with special reference to 1s and 2s atomic orbitals. Significance of quantum numbers, orbital angular momentum and quantum numbers m_l and m_s. Shapes of s, p and d atomic orbitals, nodal planes, discovery of spin, spin quantum number (s) and magnetic spin quantum number (m_s). What is Quantum mechanics? Time independent Schrodinger equation and meaning of various terms in it. Significance of ψ and ψ^2, Schrödinger equation for hydrogen atom. Compression of ideal gases under isothermal and adiabatic conditions for both reversible and irreversible processes. Calculation of w, q, ΔE, and ΔH for processes involving changes in physical states. Important principles and definitions of thermochemistry involving changes in physical states. Important principles and definitions of thermochemistry.	GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
			B.Sc. Life Sciences-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Practicals:		B.Sc. Biological Sciences-I	Chemistry BS C-1
			B.Sc. Chem (H)-Sem I	C II- Physical Chemistry Practicals

JANUARY				
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FEBRUARY	Theory:	Rules for filling electrons in various orbitals, electronic configurations of the atoms, stability of half-filled and completely filled orbitals, concept of exchange energy, relative energies of atomic orbitals, anomalous electronic configurations. Ionic Bonding: General characteristics of ionic bonding, energy considerations in ionic bonding, lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds, statement of Born-Landé equation for calculation of lattice energy (no derivation)	GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Practicals:		B.Sc. Life Sciences-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
		Radial and angular parts of the hydrogenic wave functions (atomic orbitals) and their variations for 1s, 2s, 2p, 3s, 3p and 3d orbitals (Only graphical representation), radial and angular nodes and their significance, radial distribution functions and the concept of the most probable distance with special reference to 1s and 2s atomic orbitals.	B.Sc. Biological Sciences-I	Chemistry BS C-1
		Concept of standard state and standard enthalpies of formation, integral and differential enthalpies of solution and dilution, calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data.	B.Sc. Chem (H)-Sem I	C II- Physical Chemistry Practicals
		1) Study the variation of co-efficient of viscosity with different concentration of Poly Vinyl Alcohol (PVA) and determine molar mass of PVA. 2) Determination of molecular weight of a volatile compound using Victor Meyer's method 3) Indexing of a given powder diffraction pattern of a cubic crystalline system. 4) Quiz	B.Sc. Biological Sciences-I	Chemistry BS C-1 Practicals
			GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Practicals
		1) Determination of integral enthalpy (endothermic and exothermic) solution of salts 2) Determination of basicity of a diprotic acid by the thermochemical method in	B.Sc. Life Sciences-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Practicals

	Theory:	Covalent bonding: VB Approach: Shapes of some inorganic molecules and ions on the basis of VSEPR (H ₂ O, NH ₃ , PCl ₅ , SF ₆ , ClF ₃ , SF ₄) and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements. Concept of resonance and resonating structures in various inorganic and organic compounds.	GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
		Significance of quantum numbers, orbital angular momentum and quantum numbers ml and ms. Shapes of s, p and d atomic orbitals, nodal planes, discovery of spin, spin quantum number (s) and magnetic spin quantum number (ms).	B.Sc. Life Sciences-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
		Variation of enthalpy of a reaction with temperature Kirchhoff's equation, Second law of thermodynamics, concept of entropy, Gibbs free energy and Helmholtz free energy, Calculations of entropy change and free energy change for reversible and irreversible processes under isothermal and adiabatic conditions	B.Sc. Biological Sciences-I	Chemistry BS C-1
	Practicals:	1) Study the effect of addition of HCl/NaOH on pH to the solutions of acetic acid, sodium acetate and their mixtures. 2) Preparation of buffer solutions of different pH values (a) Sodium acetate-acetic acid (b) Ammonium chloride-ammonium hydroxide 3) Quiz	B.Sc. Chem (H)-Sem I	C II- Physical Chemistry Practicals
		1) Determination of melting and boiling points of organic compounds 2) Mechano-Chemical solvent free synthesis of azomethine 9. Acetylation of amines using green approach 3) Qualitative functional group tests for alcohols	B.Sc. Biological Sciences-I	Chemistry BS C-1 Practicals
			GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Practicals

MARCH

Theory:	MO Approach: Rules for the LCAO method, bonding and antibonding MOs and their characteristics for ss, s-p and p-p combinations of atomic orbitals, nonbonding combination of 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⁺ . Practise questions, previous year question papers Rules for filling electrons in various orbitals, electronic configurations of the atoms, stability of half-filled and completely filled orbitals, concept of exchange energy, relative energies of atomic orbitals, anomalous electronic configurations. Practise questions, previous year question papers	GE-I B.Sc. Life Sciences-I B.Sc. Biological Sciences-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Chemistry BS C-1

Practical:	1) 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. 2) Quiz 3) Mock test	B.Sc. Chem (H)-Sem I	C II- Physical Chemistry Practicals
	1) Qualitative functional group tests for alcohols, aldehydes, ketones, carboxylic acids, esters, amines and amides 2) Quiz 3) Mock test	B.Sc. Biological Sciences-I	Chemistry BS C-1 Practicals
	1) Identify and separate the sugars present in the given mixture by radial/ascending paper chromatography. 2) Quiz 3) Mock Test	GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Practicals
	1) Separation of mixtures by chromatography: Measure the R _f value in each case (combination of two compounds to be given): Identify and separate the sugars present in the given mixture by radial/ascending paper chromatography. 2) Mock test	B.Sc. Life Sciences-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons Practicals
		GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Atomic structure & Chemical Bonding	B.Sc. Life Sciences-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
	Atomic structure	B.Sc. Biological Sciences-I	Chemistry BS C-1
	Chemical thermodynamics		
Test:			



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2021-22) (Odd-Semester)

Name of the Faculty: Dr. S. Venkata Kumar

Department: Commerce

Course: B.Com (H)

Semester: V

Mode of Teaching: On-line

Month	Type of Class	Topics	Course	Paper Code/Name
July 2021	Theory	Leadership, Power and Conflict : Concept and theories, Styles of leadership, Behavioural approach, Situational approach, Leadership effectiveness. Power and conflict. Bases of power, power tactics Screencast-O-Matic - (screencast-o-matic.com) ; Sources of conflict, Conflict Resolution Strategies.	B.COM H V	BCH 5.3(b)ORGANIZATIONAL BEHAVIOUR
August 2021	Theory	Dynamics of Organisational Behaviour, Organisational Culture and climate- Concept and determinants of organisational culture. Developing Organizational culture.	B.COM H V	BCH 5.3(b)ORGANIZATIONAL BEHAVIOUR
September 2021	Theory	Organisational change- Importance, Stability vs. Change, Proactive vs Reaction Change, Change Process https://youtu.be/kerDFvln7hU , Managing Change.	B.COM H V	BCH 5.3(b)ORGANIZATIONAL BEHAVIOUR
	Assignment	Issue of Assignments to the students for internal assessment purpose.	B.COM H V	BCH 5.3(b)ORGANIZATIONAL BEHAVIOUR
October 2021	Theory	Individual and organisational factors to stress; Work Stressors, Consequences of stress on individual and organization; Prevention and Management of stress.	B.COM H V	BCH 5.3(b)ORGANIZATIONAL BEHAVIOUR
	Test	Test will be conducted for internal assessment purpose.	B.COM H V	BCH 5.3(b)ORGANIZATIONAL BEHAVIOUR

Month	Type of Class	Topics	Course	Paper Code/Name
November 2021	Theory	Case studies on various topics	B.COM H V	BCH 5.3(b)ORGANIZATIONAL BEHAVIOUR



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2021-22) (Odd-Semester)

Name of the Faculty: Dr. Mamta Arora

Department: Commerce

Course: B.Com (H)

Semester: V

Mode of Teaching: On-line

Month	Type of Class	Topics	Course	Paper Code/Name
July 2021	Theory	Unit I: Introduction Nature, Scope and Objectives of financial management, Time value of money, Risk & Return	B.Com.(Hons) – V (Section A + Section B)	BCH 5.2: Financial Management
August 2021	Theory	Unit II: Capital Budgeting The Capital Budgeting Process, Cash Flow Estimation, Payback Period Method, Discounted Payback Period Method, Accounting Rate of Return, Net Present Value (NPV), Net Terminal Value, Internal Rate of Return (IRR), Profitability Index, Capital Budgeting under Risk & Uncertainty – Certainty Equivalent Approach and Risk-Adjusted Discount Rate Method. Unit III: Cost of Capital and Financing Decision 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 Preference Capital, Weighted Average Cost of Capital.	B.Com.(Hons) – V (Section A + Section B)	BCH 5.2: Financial Management
September 2021	Theory	Unit III: Cost of Capital and Financing Decision 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	B.Com.(Hons) – V (Section A + Section B)	BCH 5.2: Financial Management
	Assignment	Issue of Assignments to the students for internal assessment purpose.	B.Com.(Hons) – V (Section A + Section B)	BCH 5.2: Financial Management

Month	Type of Class	Topics	Course	Paper Code/Name
October 2021	Theory	Unit IV: Dividend Decision Theories of relevance and irrelevance of dividend decision for corporate valuation – Walter’s Model, Gordon’s Model, MM Approach, Forms of dividend payment, types of dividend policies and determinants of dividend policy.	B.Com.(Hons) – V (Section A + Section B)	BCH 5.2: Financial Management
	Test	Test will be conducted for internal assessment purpose.	B.Com.(Hons) – V (Section A + Section B)	BCH 5.2: Financial Management
Month	Type of Class	Topics	Course	Paper Code/Name
November 2021	Theory	Unit V: Working Capital Decision Concepts of working capital, operating & cash cycles, Risk-return trade-off, sources of short-term finance, working capital estimation, cash management, an overview of receivables management and inventory management	B.Com.(Hons) – V (Section A + Section B)	BCH 5.2: Financial Management



SEMESTER WISE TEACHING PLAN
2021-22 Odd Semester
SRI VENKATESWARA COLLEGE

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	<u>Unit 3: Organizing</u> - Organisational forms (Mintzberg); - Factors affecting organisational design; - Departmentalization; - Organisational structures - Organograms- traditional and modern - comparative suitability and changes over time, - formal- informal organisations' interface. <u>Unit 5 Salient Developments and Contemporary Issues in Management</u> - 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
December	Tutorials	Case studies/ presentations/ management games related to the topics done in theory	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	Theory	Revision of topics	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications

Tutorial	• Doubt solving, Discussion 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 2021-22

Name of the Faculty: Dr Pooja Jain

Department: Commerce

Semester: I/III/V

Month	Type of Class	Topics	Course	Paper Code/Name
JULY	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.	1. B.Com. (Hons) – V A+B	1. BCH 5.3/Management Accounting
AUGUST	Theory	1. Unit II: 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	2. B.Com. (Hons) – V A+B 3. 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
SEPTEMBER	Theory	1. Unit II: 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 III: Decision making: Costs for decision making, variable costing and differential analysis as aids in making	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

		decisions – fixation of selling price, exploring new markets, make or buy, product mix, operate or shut down, sell or process further 2. UNIT 1: Introduction: E-commerce business models (introduction, key elements of a business model and categorizing major E-commerce business 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.) UNIT IV: E-payment system models and methods of e-payments (Debit cards, Credit cards, Smart cards, 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.		
	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	1. One assignment will be given from the topic: Absorption and	1. B.Com. (Hons) – V A+B	1.BCH 5.3/Management Accounting

		variable Costing and CVP analysis. 2. Presentations/Projects will be taken in E-Commerce	2. B.Com. (Hons) – III A+B	2. BCH 3.5 E-Commerce
OCTOBER	Theory	1. UNIT V Responsibility Accounting: Concept, Significance, Different Responsibility Centres, Divisional Performance Measurement – Financial Measures. UNIT IV Concept of budget, budgeting and budgetary control; Objectives, merits and limitations; Budget Administration; Functional Budgets; Fixed and Flexible budgeting; Zero base budgeting; Programme and Performance budgeting 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 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	3. B.Com. (Hons) – V A+B 4. B.Com. (Hons) – III A+B	1. BCH 5.3/Management Accounting 2. BCH 3.5 E-Commerce

		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 Practical-HTML	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
NOVEMBER-DECEMBER	Theory	1. Unit IV: 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 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	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

		(financial, travel and career), auctions (online portal ,online learning, publishing and entertainment) online shopping (amazon ,snapdeal, alibaba, flipkart , etc)		
	Practicals	Frames and Cascading style sheets	1. B.Com. (Hons) – III A 2. B.Com. (Hons) – III B	1. BCH 3.5 E-Commerce Practical Part C



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
JULY-DEC 2021-22

Name of the Faculty: Dr. Sindhumani Bag

Department: Commerce

Month	Type of Class	Topics	Course	Paper Code/Name
July-2021	Theory	Auditing: Basic principles and Technique; classification of audit, audit planning, internal control-internal check and internal audit, Audit procedures-vouching & verification of Assets & Liabilities.	B.Com (P)-Sem-V	BC: 5. 1: Auditing & Corporate Governance.
	Tutorials	1. Case law of corporate Governance	B.Com. (P) – V	BC. 5.1:Auditing and corporate Governance.
August -2021	Theory	1. Memorandum of Association, Articles of Association. 2. Company Auditor: Qualifications and Disqualifications, Appointment, Rotation, Removal, Remunerations, Rights and Duties; Auditor's Report-Contents and Types, Liabilities of Statutory Auditors under the Companies Act-2013. Special Areas of Audit-Cost audit ,Tax Audit, and Management Audit, recent trends in Auditing, Basic considerations in audit in EDP Environment, Relevant auditing and Assurance standard (AASs). Corporate Governance frame work in India: Initiatives- Confederation of Indian Industry (CII) (1997), Kumara	1. B.Com. (P) – IIIA 2. B.Com (p)-V	1. BC 3.1:Company Laws 2. BC.5. 1: Auditing and Corporate Governance.

		Mangalam Birla (1999), N.R. Narayana Murthy Committee (2005), and Provisions of Companies Act-2013, and Listing Obligations and Disclosure Requirements Regulations (LODR) 2015, Uday Kotak Committee (2017)		
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	Computer Lab	1. Income Tax Practical: Income tax Return Filing 2. Income Tax Practical: Income tax Return Filing	1. B.Com (H)-III(A&B) 2. B.Com (p)-IIIA	1. BCH 3.2: Income Tax Laws and Practice. 3. BC: 3.2: Income Tax Law and Practice.
	Tutorials	1. Case study present by the students. 2. Case study present by the students.	1. B.Com. (P) – IIIA 2. B.Com. (p) – V	1. BC 3.1 Company Laws 2. BC. 5.1: Auditing and corporate Governance.
September-2021	Theory	1. Prospectus, Shares and share capital, Members and Shareholders, Director and Key Managerial Personnel. 2. Board committee and their functions, Insider trading Rating Agencies,, Green governance, E-Governance, clause 49 of listing agreements, class action, whistle blowing, shareholders activism. Major Corporate Governance Failures: BCCI (UK),Maxwell Communication (UK), Enron (USA), Anderson Worldwide (USA), Vivendi (France), Harshad Mehta Scam, Satyam Computer Service	1. B.Com. (P) – IIIA 2. B.Com. (P) – V	1.BC 3.1:Company Laws 2.BC.5.1: Auditing and corporate Governance.

		Limited and Kingfisher Airlines & PNB Heist, common governance problems noticed in various corporate failures, Codes and standard on corporate governance, Initiatives in India.		
	Computer Lab	1.Income tax Practical: Income tax Return Filing 2.Income tax Practical: Income tax Return Filing	1.B.Com(H)-III (A&B) 2. B.Com (P)- IIIA	1, BCH. 3.2: Income Tax Laws & Practices. 3.BC3.2: Income Tax Law & Practice
	Tutorials	1. Case laws present by the students. 2. Case laws present by the students.	1. B.Com. (P) – III 2. B.Com. (P) – V	1. BC 3.1 Company Laws 2. BC.5. 1: Auditing and corporate Governance.

Month	Type of Class	Topics	Course	Paper Code/Name
October-2021	Theory	1. Shareholders Meeting, Accounts and Audit. 2. Business Ethics and CSR: Morality and Ethics, Business Value and Ethics, Various approaches to business Ethics, Ethical theories, Ethical Governance, Corporate Ethics, Benefit of adopting Ethics in business. Ethics programme, codes of Ethics, Ethics committee.	1. B.Com. (P) – IIIA 2. B.Com (P) – V	1. BC 3.1: Company Laws BC.5.1: Auditing and Corporate Governance.
	Computer lab.	1. Income Tax Practical: Income tax Return Filing 2. Income Tax Practical: ITR Filing	1. B.Com (H)- III(A&B) 2. B.Com (p)- IIIA	1. BCH3.2: Income Tax Laws & Practices 3. B.C: 3.2: Income Tax Law & Practice

	Tutorials	1. Case laws present by the students. 2. Case laws present by the students.	1. B.Com. (P) – III 2. B.Com. (P) – V	1.BC 3.1: Company Laws 2.BC.5. 1: Auditing and corporate Governance.
	Assignment	1.Topic allotment for assignment & collect 2. Topics allotment and collect of assignment.	B.Com. (P) – III 2. B.Com. (P) – V	1.BC 3.1:Company Laws 2.BC. 1: Auditing and corporate Governance.

	Test	1. Notification of date schedule and conduct of the Internal Examination. 2. Notification of date schedule and conduct of the Internal Examination.	1. B.Com. (P) – IIIA 2. B.Com. (P) – V	1. BC 3.1:Company Laws 2. BC.5. 1: Auditing and corporate Governance.
	Computer Lab	1. Income Tax Practical: Income tax Return Filing 2. Income Tax Practical: ITR Filing	1. B.Com (H)-III (A&B) 2. B.Com (p)-IIIA	1. BC 3.2: Income Tax Laws & Practices. 2.BC 3.2: Income Tax Law &Practice
		Finalization of Internal Assessment	B.Com (P)- V sem	BC.5.1- Auditing & Corporate Governance

November-2021	Theory	1. Dividend provisions, Winding up of Companies, Tribunal and Court. 2. Concept of corporate Philanthropy, CSR, CR, Corporate Sustainability, Environmental Aspects of CSR, CSR provision under the companies Act-2013, CSR Committees, CSR	1. B.Com. (P) – IIIA 2.B.Com (P)-Sem-V	1. BC 3.1:Company Laws 2. BC5. 1: Auditing and corporate Governance.
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		Reporting, CSR Models, Drivers of CSR, Codes and standard on CSR, Global Reporting Initiatives, ISO-26000.		
	Computer Lab	1. Notification and Conduct of Practical Examination 2. Notification and Conduct of Practical Examination	1. B.Com (H) III- (A&B) 2. B.Com (p) IIIA	1. BCH 3.2: Income Tax Laws & Practices. 2. BC 3.2: Income Tax Laws & Practice
	Test	Finalization of Internal Assessment	1. B.Com. (P) – IIIA	2. BC 3.1: Company Laws

December-2021	Theory	1. The Depository System	1. B.Com (P)- Sem-III	1. BC3.1: Company Laws .
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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2021-22) (Odd-Semester)

Name of the Faculty: Dr. Vinod Kumar

Department: Commerce

Course: B.Com (H)/B.Com

Semester: V

Mode of Teaching: Online

Month	Type of Class	Topics	Course	Paper Code/Name
July 2021	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
August 2021	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,	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

		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, 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
September 2021	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: Fundamentals 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 :Fundamenta l of Financial Management 2. BC 5.3 (b) SEC: Personal Finance
October 2021	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 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	1. B.Com.- V 2. B.Com. - V 3. B. Com. - V	1. BC 5.2 (a) DSE :Fundamenta l of Financial Management 2. BC 5.3 (b) SEC: Personal Finance 3. BC 5.2 (a) DSE: Fundamenta l of Financial Managemen t
	Practical	1. Dividend decision with MS-EXCEL Software	1. B.Com. (H) -V	2. BCH 5.2 DSE: Financial Managemen t
	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 :Fundamenta l of Financial Management 2. BC 5.3 (b) SEC: Personal Finance
NOVEMBER 2021	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	1. B.Com.- V 2. B.Com. - V 3. B. Com. - V	1. BC 5.2 (a) DSE :Fundamenta l of Financial Management 2. BC 5.3 (b) SEC: Personal Finance 3. BC 5.2 (a) DSE:

		retirement planning, pension plans available in India, reverse mortgage, new pension scheme 3. Unit V: Working capital decisions		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 Managemen t
	Practical Examination	1. Working capital management with MS- EXCEL Software	1. B.Com. (H) -V	1. BC 5.2(a) DSE: Financial Managemen t



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. Neha Singhal

Department: Commerce

Semester : III

Month		Topics	Course	Paper
AUGUST	Theory:	1. HRM-Concepts, Policies and Evolution. 2. HRM-Job Analysis, HR Planning, Recruitment. 3. MPA-Evolution of Management, Contemporary Management Thinkers.	1. B.Com (H)-III 2. B.com (H) -III 3. B.com (H) -III	1. BCH-3.1/Human Resource Management 2. BCH-3.3 Management Principles and
	Practicals:	1. HTML	1. B.Com (H)-III	1. BCH-3.5 (a), E Commerce
SEPTEMBER	Theory	1. HRM-Selection, Placement, Training, Developing HR, Performance Appraisal and Employee Counselling. 2. MPA-Contemporary Management Thinkers, Organizing and Authority-Responsibility Relationships. 3. Planning Online Business and Technology for Online Business	1. B.Com (H)-III 2. B.com (H) -III 3. B.Com (H)-V	1. BCH-3.1/Human Resource Management 2. BCH-3.3 Management Principles and Applications 3. BCH-3.5 (a), E Commerce
	Practicals	1. HTML	1. B.Com (H)-III	

OCTOBER	Theory	1. HRM- Job Changes, HR Audit, Job Evaluation, Compensation, Incentives and Employee Health. 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 (H)-III 2. B.com (H) -III 3. B.com (H) -III	1. BCH-3.1/Human Resource Management 2.BCH-3.3 Management Principles and Applications 3. BCH-3.5 (a), E Commerce
	Practicals	1. HTML	1. B.Com (H)-III	1. BCH-3.5 (a), E Commerce
	Test	1. Test from HRM- Concepts, Policies and Evolution, Job Analysis, HR Planning, Recruitment and Selection. 2. Test from MPA- Evolution of Management, Contemporary Management Thinkers and Organizing 3. Planning Online Business, Technology for online Business	1.B.Com (H)-III 2. B.com (H) -III 3. B.Com (H)-III	1.BCH-3.1/Human Resource Management 2. BCH-3.3/ Management Principles and Applications 3. BCH-3.5 (a), E Commerce

	Assignment	1. Assignment from HRM - Concepts, Policies and Evolution, Job Analysis, HR Planning. 2. Assignment from MPA- Organizing, Authority-Responsibility Relationships, Delegation and Decentralization of Authority. 3. Supply Chain Management, The Life Cycle Approach	1. B.Com (H)-III 2. B.com (H) -III 3. B.Com (H)-III	1. BCH-3.1/Human Resource Management 2. BCH-3.3 Management Principles and Applications 3. BCH-3.5 (a), E Commerce
NOVEMBER	Theory	1. HRM-Employee Grievances, Industrial Dispute, Employee empowerment, E HRM, Emerging Issues in HRM. 2. MPA- Types of Organizational Structure, Formal and Informal Organizations and Staffing. 3. Security and Legal Aspects of E Commerce	1. B.Com (H)-III 2. B.com (H) -III 3. B.Com (H)-III	1. BCH-3.1/Human Resource Management 2. BCH-3.3 Management Principles and Applications 3. BCH-3.5 (a), E Commerce
	Practicals	1. Internal Practical based on HTML	1. B.Com (H)-III	1. BCH-3.5 (a), E Commerce



SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Name of the Faculty: SHILPA

Department: COMMERCE

Semester:III/V

Month		Topics	Course	Paper Code/Name
August	Theory	Introduction Unit -1	B.com(H) semester III (B)	BCH 3.1/Human Resource Management
		Introduction Unit -1	B.com semester V	BC 5.3(a)/Entrepreneurship Development
	Practicals Microsoft excel-basic introduction ,formatting etc B.com (P) semester III BC3.4(a)/Computer Application in Business Tutorials Case study discussion BCH 3.1/Human Resource Management			
September	Theory:	Recruitment, selection and development –Unit 2	B.com(H) semester III (B)	BCH 3.1/Human Resource Management
		Individual & Entrepreneurship –Unit 2	B.Com Semester V	BC 5.3(a)/Entrepreneurship Development
	Practical: Microsoft excel-mathematical formulae, Loan sheet B.com (P) semester III BC3.4(a)/Computer Application in Business Tutorials Doubt discussion BCH 3.1/Human Resource Management			
October	Theory:	Unit 3&4-Performance Appraisal and Compensation	B.com(H) semester III (B)	BCH 3.1/Human Resource Management

		Entrepreneurial Process & Entrepreneurial Eco-system -Unit 3&4	B.Com Semester V	BC 5.3(a)/Entrepreneurship Development
	Practicals: Microsoft excel Ratio Analysis ,Regression Analysis , payroll B.com (P) semester III BC3.4(a)/Computer Application in Business Tutorial Case Study Discussion BCH 3.1/Human Resource Management			
	<u>Assignment :</u>	Unit 1&2	B.com(H) semester III (B)	BCH 3.1/Human Resource Management
		Unit 1&2	B.Com Semester V	BC 5.3(a)/Entrepreneurship Development
November	Theory:	Employee Maintenance and Emerging Issues in HRM - Unit -5	B.com(H) semester III (B)	BCH 3.1/Human Resource Management
		Managerial aspects of business Unit-5	B.Com Semester V	BC 5.3(a)/Entrepreneurship Development
	Practicals: Microsoft Excel capital budgeting B.com (P) semester III BC3.4(a)/Computer Application in Business Tutorial Doubt discussion BCH 3.1/Human Resource Management			
	<u>Test</u>	Unit 3&4	B.com(H) semester III (B)	BCH 3.1/Human Resource Management
		Unit 3&4	B.Com Semester V	BC 5.3(a)/Entrepreneurship Development



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. Arpita Kaul

Department: Commerce

Semester : 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=F9OzaQPIQvs, 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 Lalita Ji https://www.youtube.com/watch?v=ALxiXkHxqCc Introduction: Organisational Theories: Classical, Neo-classical and Contemporary https://www.youtube.com/watch?v=sI5dxHfKGaI. Organisational Behaviour: concepts, determinants, challenges and Formal and Informal structures; Flat and Tall structures. Opportunities of OB. Contributing disciplines of OB. Organizational Behaviour Models. Individual Behaviour Personality- Type A and B, Big Five personality types, Factors influencing personality https://www.youtube.com/watch?v=RoQi9Mvqip0 https://www.truity.com/test/big-five-personality-test https://www.youtube.com/watch?v=m95poi3VMEs https://openpsychometrics.org/tests/MACH-IV	B.Com V	BC 5.1(b) PRINCIPLES OF MARKETING
	Tutorials	Case studies and doubts will be taken up	B.COM H V	BCH 5.3(b) ORGANIZATIONAL BEHAVIOUR

AUG	Theory	Consumer Behavior: An overview, Consumer buying process https://www.bing.com/videos/search?q=consumer+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 Values and Attitudes- Concept and types of values: Terminal value and Instrumental Value. Component of attitude, job related attitudes, measurement of attitude. Learning- Concept and Learning theories and reinforcement, Schedules of reinforcement. Perception and Emotions- Concept, Perceptual process, Importance, Factors influencing perception, perceptual errors and distortions, Emotional Intelligence. Group Decision making and Communication Concept and nature of decision making process, Individual versus group decision making. Nominal group technique and Delphi technique. https://www.youtube.com/watch?v=vsfkk3tQmtw https://www.youtube.com/watch?v=qtpY9zwuzFM Database, Relational Data Base Management	B.Com V	BC 5.1(b) PRINCIPLES OF MARKETING
			B.Com H V	BCH 5.3 (b) ORGANIZATIONAL BEHAVIOUR
	Practical	MS Access : Creating Tables	B.Com III	BC 3.4(a) Computer Applications in Business
	Tutorials	Case studies and doubts will be taken up	B.Com III	BC 3.4(a) Computer Applications in Business

SEP	Theory	Product: Meaning and importance. Product classifications; Concept of product mix; Branding, packaging and labeling; After-sales services; Product life-cycle; New Product Development. Communication and Feedback, Models of Communication. Transactional Analysis https://youtu.be/NfluXG8AN9Y, Johari Window. https://youtu.be/BWii4Tx3GJk Motivation : Meaning and Importance of motivation, Theories- Vroom's Valence - Expectancy Theory, Intrinsic motivation by Ken Thomas .Behaviour modification, Motivation and organisational effectiveness, Measurement of motivation using standard questionnaire. MS Word	B.Com V	BC 5.1(b) PRINCIPLES OF MARKETING
			B.Com H V	BCH 5.3 (b)ORGANIZATIONAL BEHAVIOUR
			B.Com III	BC 3.4(a) Computer Applications in Business
	Practical	MS: Creating Queries	B.Com III	BC 3.4(a) Computer Applications in Business
	Tutorials	Case studies and doubts will be taken up		

OCT	Theory	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. 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	B.Com V	BC 5.1(b) PRINCIPLES OF MARKETING
			B.Com H V	BCH 5.3 (b) ORGANIZATIONAL BEHAVIOUR
		MS Excel	B.Com III	
	Practicals	Creation of forms	B.Com III	
	Tutorials	Case studies and doubts will be taken up		
NOV	Assignments	Group presentations will be given for OB and Principles of Marketing. Workbook questions of access will be given.		
	TEST	MS Team s online objective test will be conducted		
	Theory	Promotion decisions: Communicatio Process, Nature and Importance of promotion, promotion mix concept and distinctive characteristics of advertising, sales promotions, public relations, personal selling, publicity and direct marketing. Factors influencing promotion mix decisions.	B.Com V	BC 5.1(b) PRINCIPLES OF MARKETING
		Organisational change- Importance, Stability vs. Change, Proactive vs Reaction Change, Change Process https://youtu.be/kerDFvln7hU , Managing Change. Individual and organisational factors to stress; Work Stressors, Consequences of stress on individual and organization; Prevention and Management of stress.	B.Com H V	BCH 5.3 (b) ORGANIZATIONAL BEHAVIOUR
		MS powerpoint	B.Com III	BC 3.4(a) Computer Applications in Business
	Practicals	MS Access Creating Reports	B.Com III	BC 3.4(a) Computer Applications in Business
	Tutorials	Case studies and doubts will be taken up		

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SEMESTER WISE TEACHING
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mr. Ajit Singh

Department: Commerce

Semester : III,V

Month		Topics	Course	Paper Code/Name
JULY- AUGUST- 2021	Theory	1. Introduction, meaning & features, Administration of company laws, Kinds of companies, Formation of company.	1. B.Com (P)-III A	1.BC 3.1: Corporate Laws.
		2. Introduction, meaning & features.	2. B.Com (P)- III B	2. BC 3.1: Corporate Laws
		3. Channels of distribution. Types & functions. Delivering value. Factors affecting.	3. B.Com(P)-V	3. Principles of Marketing.
		4. Relationship Marketing Concept & dimensions.	4. B.Com (H)-V A	4. Principles of Marketing.
		5. Relationship Marketing Concept & dimensions.	5. B.Com (H)-V B	5. Principles of Marketing.
	Tutorials /Practical:	1. Case laws presented by the Students.	1. B.Com (P)-III	1.BC 3.1: Corporate Laws
		2. Introduction to Preparing Presentation. Inserting tables, Images, Text, Symbols.	2. B.Com (P)-III	2. BC 3.4 (A) Computer Application In Business.
		3. Case Studies discussion.	3. B.Com (H)-V	3. Principles of Marketing.

SEPTEMBER 2021	Theory:	1. Memorandum of Association & Articles of Association, Prospectus, Issue and allotment of shares, Calls, Forfeiture and transfer of shares. 2. Administration of company laws. 3. Distribution Strategies. Distribution Logistics. Concept, Importance . 4. Sustainable Marketing- Concept & Issues. 5. Sustainable Marketing- Concept & Issues.	1. B.Com (P)-III A 2. B.Com (P)- III B 3. B.Com(P)-V 4. B.Com (H)-V A 5. B.Com (H)-V B	1. BC 3.1: Corporate Laws. 2. BC 3.1: Corporate Laws 3. Principles of Marketing. 4. Principles of Marketing. 5. Principles of Marketing
	Tutorials/Practical:	1. Case laws presented by the Students. 2. Media, Design, Transition, Animation, and Slideshow. Business Presentation Using All Tools. 3. Case Studies.	1. B.Com (P)-III 2. B.Com(P)-III 3. B.Com (H)-V	1. BC 3.1: Corporate Laws 2. BC 3.4 (A) Computer Application In Business. 3. Principles of Marketing.
	<u>Assignment</u>	Assignment and Presentation Given to the students.	1. B.Com (P)-III 2. B.Com(P)-III 3. B.Com (H)-V	1. BC 3.1: Corporate Laws 2. BC 3.4 (A) Computer Application In Business. 3. Principles of Marketing.
OCTOBER 2021	Theory:	1. Company Management, Meetings and Requisites of Valid Meeting. 2. Kinds of Companies. 3. Social marketing- concept, tools & issues. 4. Wholesaling & Retailing; Types of retail formats; Emerging distribution trends. 5. Wholesaling & Retailing; Types of retail formats; Emerging distribution trends.	1. B.Com (P)-III A 2. B.Com (P)- III B 3. B.Com(P)-V 4. B.Com (H)-V A 5. B.Com (H)-V B	1. BC 3.1: Corporate Laws. 2. BC 3.1: Corporate Laws 3. Principles of Marketing. 4. Principles of Marketing. 5. Principles of Marketing.

	Tutorials/Practical:	1. Case laws presented by the Students. & Case Studies Discussed. 2. Word Processing Concept & Use. 3. Case Studies Discussion.	1. B.Com (P)-III 2. B.Com(P)-III 3. B.Com (H)-V	1. BC 3.1: Corporate Laws 2. BC 3.4 (A) Computer Application In Business. 3. Principles of Marketing.
	<u>Test/Work Book</u>	Time schedule decided for conduct of Internal exam in October.	1. B.Com (P)-III 2. B.Com(P)-III	1. BC 3.1: Corporate Laws 2. BC 3.4 (A) Computer Application In Business.
NOVEMBER/December 2021	Theory:	1.Dividend provisions, Winding up of Companies, Audit and Auditors The Depository System. 2. Formation of Company. 3. Digital marketing – concept, tools & issues. 4. Relationship Marketing – concept & dimensions. 5. Relationship Marketing – concept & dimensions.	1. B.Com (P)-III A 2. B.Com (P)- III B 3. B.Com(P)-V 4. B.Com (H)-V A 5. B.Com (H)-V B	1.BC 3.1: Corporate Laws. 2. BC 3.1: Corporate Laws 3. Principles of Marketing. 4. BCH 5.1 Principles of Marketing. 5. BCH 5.1 Principles of Marketing.

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SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

Name of the Faculty: Ms. Priyanka

Department: Commerce

Semester : I/III/V

Month		Topics	Course	Paper Code/Name
JULY/AUGUST	Theory:	1. Basic concepts of GST 2. Concept of supply 3. Levy of GST 4. Exemption of GST 5. Place of Supply 6. Time of Supply	B.COM V	DSE BC 5.2
		1. Basic Concepts of Income Tax 2. Residential Status and its effect of tax Incidence 3. Income from house property and its computation	B.COM(H) III	BCH 3.2
	Practicals:	Discussion on Concepts of ITR	B.COM V	BCH 3.2
	Tutorials:	1.Problem Class on Concept of GST 2. Problem class on Income Tax	1 B.COM V 2 B.COM (H) III	1 DSE BC 5.2 2 BCH 3.2

SEPTEMBER	Theory:	7. Value of taxable of Supply 8. Reverse Charge Mechanism 9. Input Tax Credit 10. Composition Scheme and alternative Composition scheme	B.COM V	DSE BC 5.2
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		4. Income under the head Salaries and its computation 5. Income under the head income from other sources.	B.COM (H) III	BCH 3.2
	Practicals:	Discussion on Income tax Concepts	B.COM (H) III	BCH 3.2
	Tutorials:	1. Problem Class on Concept of GST 2. Problem class on Income Tax	1 B.COM V 2 B.COM (H) III	1 DSE BC 5.2 2 BCH 3.2
	<u>Assignment :</u>	1. Topics were allotted for making the Assignment 2. Topics were allotted for making the Assignment	1. B.COM –V 2. B.COM (H) III	1 DSE BC 5.2 2 BCH 3.2
OCTOBER	Theory:	11. Registration 12. Tax invoice credit debit notes 13. Returns, tax payment and interest 14. Problems on GST INCOME TAX 6. Income under the head Profits and Gains of Business or Profession and its computation 7. Income under the head Capital Gains and its Computation	B.COM V B.COM(H) III	DSE BC 5.2 BCH 3.2
	Practicals:	Practical question on ITR	1. B.COM (H) III	BCH 3.2

	Tutorials:	1.Problem Class on Concept of GST 2. Problem class on Income Tax	1 B.COM V 2 B.COM (H) III	1 DSE BC 5.2 2 BCH 3.2
	<u>Test</u>	1.Test would be conducted on the concerned subject after mid semester break 2.Test would be conducted on the concerned subject after mid semester break	1. B.COM V 2. B.COM (H) III	1 DSE BC 5.2 2 BCH 3.2
NOVEMBER	Theory:	15. Basic concepts of Custom duty 16. Types of custom duty 17. Valuation 18. Customs procedures , Baggage, Exemption INCOME TAX 8. Clubbing of income 9. Set off and carry forward of losses	B.COM V B.COM (H) III	DSE BC 5.2 BCH 3.2
	Practicals:	Practical questions on ITR 2	B.COM (H) III	BCH 3.2
	Tutorials:	1.Problem Class on Concept of GST 2. Problem class on Income Tax	1 B.COM V 2 B.COM (H) III	1 DSE BC 5.2 2 BCH 3.2
DECEMBER	Theory	INCOME TAX 10. Permissible Deductions from Gross total income 11. Revision	B.COM (H) III	BCH 3.2

	Practical	Practical questions on ITR 2	B.COM (H)III	BCH 3.2
	Tutorial	. Problem class on Income Tax	B.COM (H) III	BCH 3.2



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Simranjeet Kaur

Department: Commerce

Semester:III/V

Month		Topics	Course	Paper Code/Name
July-August	Theory	Basics of investing, Risk and return, primary markets, stock exchanges Introduction to financial system, components and economic development, financial sector reforms since 1951	GE-III B.Com(Hons.) V	BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services
	Tutorials/ Practical	Discussion on case studies provided for further reading. Discussion on case studies provided for further reading. Practical question on NPV and IRR.	GE-III B.Com(Hons.) V B.Com (Hons.) V	BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services BCH-5.4(b)Financial Management
September	Theory	Indian securities markets, clearing house, market participants, sources of financial information. Money market instruments, capital markets, an overview of stock exchanges including BSE and NSE, SEBI and Investor protection	GE-III B.Com(Hons.) V	BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services
	Tutorials	Solving self-experential excercises and discussion on results. Solving self-experential excercises and discussion on results. Practical questions related to capital budgeting.	GE-III B.Com(Hons.) V B.Com (Hons.) V	BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services BCH-5.4(b)Financial Management
	Assignme nt	Research paper presentations. Writing review articles.	GE-III B.Com(Hons.) V	BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services
	Theory	Fundamental analysis, technical analysis, trading rules, moving averages, PEG ratios, understanding shareholding pattern of the company Commercial banking, MUDRA financing, problem of NPAs, financial inclusion, Mutual funds, ETFs and pension funds.	GE-III B.Com(Hons.) V	BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services

	Tutorials	Discussion on case studies given for further reading. Discussion on case studies given for further reading. Revision of practical questions	GE-III B.Com(Hons.) V B.Com (Hons.) V BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services BCH-5.4(b)Financial Management
	Test	Practical test to be conducted. Case study and application based questions to be asked. Practical test to be conducted.	GE-III B.Com(Hons.) V B.Com (Hons.) V BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services BCH-5.4(b)Financial Management
November	Theory	Investing in mutual funds, open ended vs. closed ended mutual funds, equity, debt, hybrid money market. Merchant banking, leasing and hire purchase, venture capital finance, factoring services, financial advisory and portfolio management services	GE-III B.Com(Hons.) V BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services
	Tutorials	Debate amongst students on contemporary issues in management. Revision of various topics done in the class.	GE-III B.Com(Hons.) V BCH-3.4(a)Investing in Stock Markets BCH 5.4(b) Financial Markets, Institutions and services



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Department of Commerce (Year 2021-22)

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. b) Positional averages: absolute & relative 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 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.	3. B.Com – (H) III Semester-V 4. B.Com – II Semester-III	4. BCH 5.4 (e): Business Statistics 5. BC 3.2: Income Tax
	Practical	BUSINESS STATISTICS 1. Frequency - Excel	1. B.Com H Semester – V	1. BCH 5.4 :

				Business Statistic s
September	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 5) Probability distribution: a) Binomial distribution: probability distribution function, constants, shape, fitting of binomial distribution b) Poisson distribution: probability function c) Normal distribution, properties of normal curve. 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)	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. BC 5.4€: Business Statistics
October	Theory	Business Statistics a) Correlation analysis: meaning of correlation-simple, multiple & partial:linear & non-lenear, scatter diagram, pearson's co-efficient of correlation:	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

		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 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)		Tax
	Practical	BUSINESS STATISTICS Regression & Correlation – Excel	1. B.Com – (H) I Semester-V	1. BCH 5.4 e: Business Statistics
	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	3. 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

November	Theory	Business Statistics - Components of time series. Additive & multiplicative models - trend analysis, fitting of trend line using principle of least squares- linear, second degree parabola & exponential. Conversion of annual linear trend equation to quarterly/monthly basis & vice-versa. Moving averages. - Seasonal variations- calculation & uses. Simple averages, ratio to trend, ratio to moving averages & link-relatives methods. Uses of seasonal indices. Income Tax Computation of Income on the basis of various heads- - Income from other sources (Including all latest amendments & provisions of Gifts & Black Money) - Income from Agricultural Income - Set off & Carry forward	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	Internal Exam conducted for Business Statistics (Frequency, Regression, Correlation, Index)	1. B.Com H Semester – V	1. BCH 5.4 (e): Business Statistics



SEMESTER WISE TEACHING PLAN (2021-22 odd Semester)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mohini Yadav

Department: Commerce

Semester: 4/6

Month		Topics	Course	Paper Code/Name
July	Theory	Concepts & Perspectives on HRM & HR Challenges in a dynamic business environment	B.Com: Sem V (GE)	Paper BC 5.4 (a): HUMAN RESOURCE MANAGEMENT
August	Theory	Introduction, Agricultural income, Exempted income, Residential Status	B.COM – Sem 3	BC 3.2- Income tax law and Practice
		Job Analysis and Role Description, Corporate Objectives & Human Resource Planning	B.Com: Sem V (GE)	Paper BC 5.4 (a): HUMAN RESOURCE MANAGEMENT
	Tutorials/ Practical	Introduction to ITR	B.COM – Sem 3	BC 3.2- Income tax law and Practice
		Introduction, Agricultural income, Exempted income, Residential Status	B.COM (H) – Sem 3	BCH 3.2- Income tax law and Practice
September	Theory	Computation of Income under different heads- HP & Salary	B.COM – Sem 3	BC 3.2- Income tax law and Practice
		Recruitment & Selection, Induction	B.Com: Sem V (GE)	Paper BC 5.4 (a): HUMAN RESOURCE MANAGEMENT
	Tutorials/ Practical	ITR – 2 (Practice questions)	B.COM – Sem 3	BC 3.2- Income tax law and Practice
		Computation of Income under different heads- HP & Salary	B.COM (H) – Sem 3	BCH 3.2- Income tax law and Practice
	Assignment	Introduction and Income under Salaries	B.COM – Sem 3	BC 3.2- Income tax law and Practice
		Concepts & Perspectives on HRM & HR Challenges in a dynamic business environment, Job Analysis and Role Description	B.Com: Sem V (GE)	Paper BC 5.4 (a): HUMAN RESOURCE MANAGEMENT
October	Theory	Computation of Income under different heads- PGBP & Other Sources	B.COM – Sem 3	BC 3.2- Income tax law and Practice
		Performance Management, Employee health, safety, welfare and social security (excluding legal provisions)	B.Com: Sem V (GE)	Paper BC 5.4 (a): HUMAN RESOURCE MANAGEMENT

	Tutorials/ Practical	ITR – 2 (Generation of XML) Computation of Income under different heads- PGBP & Other Sources	B.COM – Sem 3 B.COM (H) – Sem 3	BC 3.2- Income tax law and Practice BCH 3.2- Income tax law and Practice
	Test	Income under the head Salary and HP Corporate Objectives & Human Resource Planning, Recruitment & Selection, Induction, Performance Management	B.COM – Sem 3 B.Com: Sem V (GE)	BC 3.2- Income tax law and Practice Paper BC 5.4 (a): HUMAN RESOURCE MANAGEMENT
November	Theory	Computation of Income under Other Sources, Set off and carry forward of losses, Clubbing of Income, Deductions, Tax liability of Individuals and Firms Grievance Redressal Dispute Resolution & Conflict Management, International Dimensions of HRM & Emerging challenges	B.COM – Sem 3 B.Com: Sem V (GE)	BC 3.2- Income tax law and Practice Paper BC 5.4 (a): HUMAN RESOURCE MANAGEMENT
	Tutorials/ Practical	ITR – 2 (Practice full questions) Computation of Income under Other Sources, Set off and carry forward of losses, Clubbing of Income, Deductions, Tax liability of Individuals and Firms	B.COM – Sem 3 B.COM (H) – Sem 3	BC 3.2- Income tax law and Practice BCH 3.2- Income tax law and Practice
December	Theory	Tax liability of Individuals and Firms	B.COM – Sem 3	BC 3.2- Income tax law and Practice
	Tutorials/ Practical	ITR – 2 (Practice full questions) Tax liability of Individuals and Firms	B.COM – Sem 3 B.COM (H) – Sem 3	BC 3.2- Income tax law and Practice BCH 3.2- Income tax law and Practice
	Test	ITR – 2 (Practical Paper)	B.COM – Sem 3	BC 3.2- Income tax law and Practice



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mrs. Sunita Chhabra

Department: Commerce

Semester: 5th

Month		Topics	Course	Paper Code/Name
July - August	Theory	1. Introduction: Meaning, Nature and scope of marketing; Evolution of marketing concept and modern marketing concept; Marketing mix. 2. Marketing Environment- macro and micro environmental concepts; Consumer buying process; Factors influencing consumer buying decisions. 3. Market segmentation – meaning, benefits, and Bases of segmentation; Positioning – meaning and importance; Major bases of positioning a product	B.Com. (Hons.) 5 th Semester CBCS	Paper BCH 5.1 Principles of Marketing
	Tutorials	1. Nature of marketing. 2. Difference between marketing and selling. 3. Marketing mix and its components. 4. Marketing Environment – explain customer supplier, social cultural technological environment.		
September	Theory	1. Product: Concept, Product classification; Major product decisions: Product attributes Branding, Packaging and labeling; After-sales service; Product life cycle, new product development. 2. Pricing: Significance, factors affecting price determination, major pricing methods; pricing policies and strategies. 3. Promotion: Nature and importance, promotion mix, Promotion tools, advertising personal selling, public relation, sales promotion and publicity.	B.Com. (Hons.) 5 th Semester CBCS	Paper BCH 5.1 Principles of Marketing
	Tutorials	1. Dimensions of product in 5 layers. 2. Branding. 3. Product life cycle. 4. Pricing		

	Assignment	1. Consumer Behaviour. 2. Write note on marketing and selling, significance of marketing.		
October	Theory	1. Factors affecting promotion mix, integrated marketing communication approach. 2. Distribution: Channels of distribution – Meaning, importance, and functions; Factors affecting choice of distribution channel; Distribution logistics: Meaning, importance and decisions. 3. Retailing: Store based, Non store based, specialty store, super market, retail vending machine, mail order house.	B.Com. (Hons.) 5 th Semester CBCS	Paper BCH 5.1 Principles of Marketing
	Tutorials	1. Pricing policies and factors affecting pricing. 2. Skimming and penetration pricing. 3. Distribution logistics. 4. Retailing – store based and non-store based.		
	Test	1. Introduction 2. Consumer Behavior 3. Market selection 4. Product		
November	Theory	1. Management of Retailing; an overview in India changing scenario. 2. Development and Issues in Marketing: Rural, Social, Online, Direct, Services, Green and relationship marketing, marketing ethics.	B.Com. (Hons.) 5 th Semester CBCS	Paper BCH 5.1 Principles of Marketing
	Tutorials	1. Promotion mix 2. Relationship, green, online and direct marketing.		



**SEMESTER WISE TEACHING
PLAN (2021-22)
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Jitesh Rana

Department: Economics

Semester V, BA.(H) Economics

Month		Topics	Course	Paper Code/Name
July+August	Theory	AVSI: Characteristics of Development, Debraj Ray Ch2,	B.A. Hons Economics	2271502: Development Economics – I
	Tutorials	Student doubts and Past year questions from the topics covered.		
September	Theory:	HDR 2016 Technical Note 1, Pranab Bardhan Ch10, Debraj Ray Ch 3 & 4.	B.A. Hons Economics	2271502: Development Economics – I
	Tutorials:	Student doubts and Past year questions from the topics covered.		

	<u>Test 1:</u>	All topics of first 2 units.		
October	Theory:	DE Ch6, Ch8, Angus Deaton Ch1, Amartya Sen Ch4, Picketty and Saez: Inequality in the Long Run	B.A. Hons Economics	2271502: Development Economics – I
	Tutorials:	Student doubts and Past year questions from the topics covered.		
	<u>Test 2:</u>	All topics of unit 3 and covered topics of unit 4.		
November	Theory:	Dani Rodrik: Ch1, Shleifer and Vishny: Corruption, QJE 1993.	B.A. Hons Economics	2271502: Development Economics – I
	Tutorials:	Student doubts and Past year questions from the topics covered. Preparation for		



SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Name of the Faculty: Ankit Joshi

Department: Economics

Semester: III (2021- 22)

Month		Topics	Course	Paper Code/Name
AUGUST	Theory:	TOPIC 1: LABOR MARKET TOPIC 2: AGGREGATE DEMAND & AGGREGATE SUPPLY CURVE Dornbush: Chapter5, 7 O. Blanchard: Pg 292- 294, Pg 300-306, Ch- 6	B . A . (H o n s .) Economics	227302 Intermediate Macroeconomics- I
	Tutorials:	Discussion on the current Macroeconomic Issues and try to link the macroeconomic models with reality Practice of Back Questions of Unit -1		
SEPTEMBER	Theory:	TOPIC 3 : INFLATION, UNEMPLOYMENT & EXPECTATIONS O. Blachard: Ch- 8 & 9 CLF, Attfied & NW Duck: Pg 5 – 28 Steven Sheffin: Ch- 2; Pg 24- 40	B . A . (H o n s .) Economics	227302 Intermediate Macroeconomics- I

	Tutorials:	Question Bank Topic 3		
	<u>Assignment</u> :	TEST 1: Unit- 1 & 2		
OCTOBER	Theory:	TOPIC 4: MICROECONOMI C FOUNDATIONS A) Consumption Branson, Ch-12	B . A . (H o n s .) Economics	227302 Intermediate Macroeconomics- I
	Tutorials:	Discussion of Back Questions		
	<u>Test</u>	TEST 2: Unit -3		
NOVEMBE R	Theory:	TOPIC 4: MICROECONOMI C FOUNDATIONS B) Investment Dornbush & Fischer, Ch12 C) Demand for Money Branson, Ch-14	B . A . (H o n s .) Economics	227302 Intermediate Macroeconomics- I
	Tutorials:	Discussion of Past Years Question Bank Topic 4		

DECEMBER	Theory:	Revision		
	Tutorials:	Discussion of Past Years and additional questions		

Department: Economics
N KALITHASAMMAL
Indian Economy-CC

Semester-V

Month	Theory/Tutorial/ Practical	Topics	Course	Paper Name/ Code
JULY-2021	Theory	.Macroeconomics over view of India, and the growth story is discussed.	ECONOMICS III YEAR.	INDIAN ECONOMY PART - I
	Tutorials	The basic educational trend and development and the problems of migrated people discussed. elaborately.		
AUGUST	Theory:	Recovery of India , Mahalanobis strategy discussed, Vijay Joshi Reading of India's long road discussed		
	Tutorials:	Reasons for failure of growth and its reforms , role of agriculture explained and the reasons are pointing out clearly.		

SEPT	Theory:	LABOUR MARKET AND ITS LEGISLA- TION, AND UNEM- PLOYMENT IS GO- ING TO EXPLAIN,		
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	Tutorials:	IN EQUWALITY AND CONCEN-TRATION OF IN-COME IS GOING TO EXPLAIN WITH SOME IN-CLUSIVE IDEAS.		
	<u>Assign-ment :</u>	TWO TESTS ARE GOING TO CON-DUCT ACCORD-ING TO THE GIV-EN SCHEDULE.		
OCTOBER /NOVEM- BE	Theory:	FINANCIAL SEC-TOR, POLICY FRAME WORK IS GOING TO TAKE, STRUCTURAL CHANGES ARE GOING TO EX-PLAIN.		
	Tutorials:	MAJOR FEA-TURES AND SAV-INGS AND IN-VESTMENT RE-LATED QUES-TIONS GOING TO WORKOUT.		



SEMESTER WISE TEACHING PLAN (2021-20220)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Aruna Rao
Semester: I

Department: Economics

Month		Topics	Course	Paper Code/ Name
November- December	Theory	Units 1&2 of syllabus: Introduction, supply, demand, markets & welfare	BA(H) Sem 1	12271101 Introductory Microeconomics
	Tutorials	3 allocated tutorials taken per week for the above topics	BA(H) Sem 1	12271101 Introductory Microeconomics
January	Theory:	Unit 3: The Households	BA(H) Sem 1	12271101 Introductory Microeconomics
	Tutorials:	3 allocated tutorials to be taken per week for the above topics	BA(H) Sem 1	12271101 Introductory Microeconomics
	<u>Assignment:</u>	Unit 1,2&3	BA(H) Sem 1	12271101 Introductory Microeconomics
February	Theory:	Unit 4&5: Firm and perfect market structure Imperfect market structure,	BA(H) Sem 1	12271101 Introductory Microeconomics

	Tutorials:	3 allocated tutorials to be taken per week for the above topics	BA(H) Sem 1	12271101 Introductory Microeconomics
	<u>Test</u>	Test will cover entire syllabus, especially units 4&5	BA(H) Sem 1	12271101 Introductory Microeconomics
March 1-10	Theory:	Unit 6: Input labour market	BA(H) Sem 1	12271101 Introductory Microeconomics
	Tutorials:	3 allocated tutorials to be taken per week for the above topics	BA(H) Sem 1	12271101 Introductory Microeconomics



TEACHING PLAN
SRI VENKATESWARA COLLEGE
2021-22

Name of the Faculty: Meenakshi Sharma Department: ECONOMICS

ODD SEMESTER

Semester: III, B.A. (H) Economics -Intermediate Microeconomics-I

Month		Topics	Course	Paper Code
August	Theory	Budget constraint-Taxes, subsidies and Rationing and Preferences: Assumptions about preferences, MRS, ICs	B.A (H), Economics, Semester III	HC31
	Tutorials	Numerical from Varian Workbook and past years' questions		
September	Theory:	Utility; demand; Slutsky equation Hicksian demand: Cardinal, Ordinal, Quasilinear preferences.		
	Tutorials:	Numericals from Varian Workbook and past years' questions, Appendix of Varian		
October	Theory:	Revealed preference. Buying and selling; choice under risk and intertemporal choice;		
	Tutorials:	Numericals from Varian Workbook and past years' questions, questions from B. Douglas Bernheim and M. Whinston (2009):		
	<u>Test 1 :</u>	Utility, preferences, budget constraint, choice, demand, Slutsky equation		
November	Theory:	Technology, isoquants, production with one and more variable inputs, returns to scale.		
	<u>Test 2:</u>	Buying and selling; choice under risk and intertemporal choice; revealed preference		

	Tutorials:	Back questions from C. Snyder and W. Nicholson (2010): Fundamentals of Microeconomics		
December	Theory:	Cost: short run and long run costs, cost curves in the short and long run; review of perfect competition.		
	Tutorials:	Back questions from C. Snyder and W. Nicholson (2010): Fundamentals of Microeconomics		

Semester: I,
GE- Introductory Microeconomics

Month		Topics	Course	Paper Code
October	Theory	Scarcity and choice: concepts of scarcity, choice and opportunity cost; production	GE Introductory Microeconomics, Semester I	GE11
	Tutorials	Problem of scarcity and choice: Numerical from Case n Fair n		
November	Theory:	Demand and supply; applications of demand and supply; elasticity law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply, shifts of supply versus movements along a supply curve, market supply, market equilibrium		
	Tutorials:	Applications of demand and supply: price rationing, price floors, consumer surplus, producer surplus. Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, other elasticities		
December	Theory:	Consumer theory: Budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; consumer choice: indifference curves, derivation of demand curve from indifference curve and budget constraint.		
	Tutorials:	Numericals from Case & Fair; and Appendix of Chapter 6		
	<u>Test 1 :</u>	Demand and supply and consumer theory		
January	Theory:	Production and costs Production: behaviour of profit maximising firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing equilibrium condition		

	Tutorials:	Numerical from Case & Fair; past years' question papers, and Appendix of Chapter 7.		
	<u>Test 2:</u>	Production and costs.		
February	Theory:	Perfect competition and welfare: Assumptions: theory of a firm under perfect competition, demand and revenue; equilibrium of the firm in the		
	Tutorials:	Perfect competition and welfare		

Data Analysis (shared with Ms. Yogita Yadav 3 lectures-2 practical, 1-Theory)

Month		Topics	Course	Paper Code HS31
August	Theory	Using Data: Available statistical software, steps in data storage.	B.A (H), Economics, Semester III	HS31
	Practical	Using Data: Available statistical software, steps in data storage. Familiarization with the RStudio interface and R's read-eval-print-loop. Projects and file organization. When and how to use R Markdown Notebooks.		
September	Theory	Using Data: Available statistical software organization and Cleaning.		
	Practical	Using Data: Available statistical software, steps in data storage. Familiarization with the RStudio interface and R's read-eval-print-loop. Projects and file organization. When and how to		
October	Theory	Using Data: Available statistical organization and Cleaning.		

	Practicals:	Using Data: Available statistical organization and Cleaning. Data Types: Character, numeric and factor. Data frames. Variables. Importing data from different file formats.		
	Test 1			
November	Theory	Visualization and Representation: Alternative forms of presenting summarizing and		
	Practicals	Visualization and Representation: Alternative forms of presenting summarizing and presenting data. Introduction to ggplot, scatter plots, line		
December	Theory	Visualization and Representation: Alternative forms of presenting summarizing and		
	Practicals	Visualization and Representation: Alternative forms of presenting summarizing and presenting data. Introduction to ggplot, scatter plots, line		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2021-22

Name of the Faculty: Amit Kumar Jha

Department: ECONOMICS

ODD SEMESTER

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

Month		Topics	Course	Paper Code/
November	Theory	Introduction Hammond and sydsaeter ch 1	B.A. (H) Economics	Mathematical methods for Economics I
	Tutorials	Last year papers, students doughts		
December	Theory:	Function of one variable, polynomial power and exponentials, Single variable differentiation, More on differentiation Hammond and sydsaeter ch	B.A. (H) Economics	Mathematical methods for Economics I
	Tutorials:	Last year papers, students doughts		
January	Theory:	Limit, continuity and series, Implications of continuity and Differentiability, Exponential and logarthimic function Hammond and sydsaeter ch 6,7,8	B.A. (H) Economics	Mathematical methods for Economics I
	Tutorials:	Last year papers, students doughts		
	Test 1:	On the above topics		
Feburary	Theory:	Single variable optimization, linear algebra, determinants and matrix inversion Hammond and sydsaeter ch 9,12,13	B.A. (H) Economics	Mathematical methods for Economics I
	Test2	Above topics		
	Tutorials:	Last year papers, students		

	Tutorials:	Last year papers, students doughts		
March	Theory:	Further topic in linear algebra Hammond and sydsaeter ch 14	B.A. (H) Economics	Mathematical methods for Economics I
	Tutorials:	Last year papers, students doughts		



SEMESTER WISE TEACHING PLAN (2021-20220)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Aruna Rao
Semester: I

Department: Economics

Month		Topics	Course	Paper Code/Name
November-December	Theory	Unit 1: Introduction	BA(P) Sem 1	62271101 Principles of Microeconomics
	Tutorials	1 Allocated tutorial per week taken for above topic	BA(P) Sem 1	62271101 Principles of Microeconomics
January	Theory:	Unit 2: Consumer theory	BA(P) Sem 1	62271101 Principles of Microeconomics
	Tutorials:	1 Allocated tutorial per week to be taken for above topic	BA(P) Sem 1	62271101 Principles of Microeconomics

	<u>Assignment:</u>	Unit 1&2	BA(P) Sem 1 1	62271101 Principles of Microeconomics
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February	Theory:	Unit 3	BA(P) Sem 1	62271101 Principles of Microeconomics
	Tutorials:	1 Allocated tutorial per week to be taken for above topic	BA(P) Sem 1	62271101 Principles of Microeconomics
	<u>Test</u>	Test will include entire syllabus covered, especially unit 3	BA(P) Sem 1	62271101 Principles of Microeconomics
March 1-10	Theory:	Unit 4: perfect competition	BA(P) Sem 1	62271101 Principles of Microeconomics
	Tutorials:	1 Allocated tutorial per week to be taken for above topic	BA(P) Sem 1	62271101 Principles of Microeconomics



SEMESTER WISE TEACHING PLAN

**SRI
VENKATESWAR
A COLLEGE**

Name of the Faculty: KRISHNAKUMAR S (2021-22)

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

	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:			
	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



**SEMESTER WISE TEACHING
PLAN (2021-22)
SRI VENKATESWARA COLLEGE**

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
	Practicals			
	Tutorials	1. Assignment on 1. Introduction & Overview 2. Elementary Probability Theory		
SEPTEMBER	Theory:	1. Random Variables & Probability Distributions (Discrete & continuous Variables) 2. Random Sampling & Jointly Distributed random variables	B.A (H) Economics	12271303 / Statistical methods for Economics
	Practicals:			

	Tutorials:	Assignment on : 1. Random Variables & Probability Distributions (Discrete & continuous Variables) 2. Random Sampling & Jointly Distributed random variables		
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	Test :	Internal Assessment 1 on Elementary Probability theory & Probability Distributions (Discrete Variables)		
OCTOBER	Theory:	1. Random Sampling & Jointly Distributed random variables 2. Sampling	B.A (H) Economics	12271303 / Statistical methods for Economics
	Practicals:			
	Tutorials:	Assignment on : 1. Random Sampling & Jointly Distributed random variables 2. Sampling		
	Test :	Internal Assessment 2 on Probability distribution (Continuous variables & jointly distributed variables) & Sampling		
NOVEMBER	Theory:	1. Point & Interval Estimation 2. Hypothesis Testing	B.A (H) Economics	12271303 / Statistical methods for Economics
	Practicals:			
	Tutorials:	Assignment on : 1. Point & Interval Estimation 2. Hypothesis testing		
	Test:	Internal Assessment 3 on Estimation & Hypothesis Testing		

DECEMBER	Theory:	1. Hypothesis Testing	B.A (H) Economics	12271303 / Statistical methods for Economics
	Practicals:			
	Tutorials:	Assignment on Hypothesis Testing		



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. M PADMA SURESH

Department: ECONOMICS

Applied Econometrics

Semester : V /2021-22

MONTH		TOPICS	COURSE	PAPER CODE/NAME
JULY	Theory	Matrix approach to k-variable regression model	BA(Hons) Economics	HE55 12277502- DSE Applied Econometrics
	Tutorials	Exercises from Basic Econometrics on matrix approach, 6 th ed.		
AUGUST	Theory	Matrix approach, Stages in empirical econometric research, Regression Diagnostics- Multicollinearity, Heteroscedasticity, Autocorrelation. Functional forms and Dummy variables. Use of GRET/STATA in econometrics by using Econometrics By Example		
	Tutorials	Review and revision of essentials of econometrics using EBE, question papers-problem solving. Discussion on Project using cross section and time series data.		
SEPTEMBER	Theory	Model specification-Ramsey RESET Test, LM Test, DW test. Measurement errors, AIC, SIC, Outliers, Leverage etc. Non-normal errors. STATA/ GRETL exercises from EBE for specification and diagnostics. Advanced topics in regression analysis-Dynamic econometric models, Panel data.		

	Tutorials	Conduct of first internal test covering Matrix approach, Review chapters and Model specification. Exercises from Basic econometrics, Gujarati and Wooldridge. Question papers-problem solving. Discussion on Project topic and submission of preliminary results.		
OCTOBER	Theory	Advanced topics in regression analysis- Panel data and Instrumental Variable estimation, GRETL/STATA exercises using EBE		
	Tutorials	Exercises from Basic econometrics, Gujarati and Wooldridge. Question papers-problem solving		
NOVEMBER	Theory	Simultaneous equation models Limited Dependent Variable		
	Tutorials	Conduct of practice internal test covering Advanced topics in regression analysis. Submission and evaluation of projects.		

**SEMESTER WISE TEACHING
PLAN (2021-22)
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: ANKIT JOSHI
ECONOMICS**

Department:

Semester: V (2021-22)

Month		Topics	Course	Paper Code/Name
J u l y – August	Theory	U n i t 1 (a) : Deterministic Cash Flow Streams David G Luenberger, Chapter 3 & 4 Brealy, Richard, Myers Chapter 2	B . A . (H o n s .) Economics	Financial Economics
	Practicals			
	Tutorials	Suggested problem set of Chapter 2, 3 & 4		
SEPTEMBE R	Theory:	Unit 2(b): Single Period Cash Flows David G Luenberger, Chapter 6 Unit 2(c): CAPM David G Luenberger, Chapter 7, 8 Unit 3: Options & Derivatives Hull, Chapter 2, 3, 5	B . A . (H o n s .) Economics	Financial Economics

	Practicals:			
	Tutorials:	Suggested problem set of David G Luenberger Chapter 6, 7 & 8 Suggested problem set Hull, Chapter 2, 3, 5		

	<u>Assignment</u> :	Test: Unit-1		
OCTOBER	Theory:	Unit 3: Options & Derivatives Hull, Chapter 10, 11, 12, 13, 14	B . A . (H o n s .) Economics	Financial Economics
	Practicals:			
	Tutorials:	Suggested problem set of Chapter 10, 11, 12, 13, 14 Discussion on contemporary topics		
	<u>Test</u>	Term Paper/ Project		
NOVEMBER	Theory:	Unit 3: Options & Derivatives Hull, Chapter 15, 19	B . A . (H o n s .) Economics	Financial Economics

	Practicals:			
	Tutorials:	Discussion of past years		



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: KRISHNAKUMAR S
ECONOMICS**

Department:

International Trade HE-52

Semester : I/

III/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,	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.		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: **BRAHMAREDDY D**

Department: **ECONOMICS** **Semester: III/V 2021-22**

Month		Topics	Course	Paper Code/ Name
July & August	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	B.A. (P)-III DSE	Money & Banking
		MONEY: Concept, Functions	Generic Elective III (Honours)	Money & Banking
	Tutorials	1. Discussion of Chapter end questions and problems	B.A. (P)-III DSE	Money & Banking
		2. Project Discussion	Generic Elective III (Honours)	Money & Banking
September	Theory:	3. Discussion of Chapter end questions and problems	B.A. (P)-III DSE	Money & Banking
		4. Project Discussion		
		b) Money and Capital Markets; Organization, Structure and Reforms in India; Role of Financial Derivatives and Other Innovations c) INTEREST RATES: Determination, Sources of interest rates differentials, Theories of term structure of interest rates ; interest rates in India b) Money and Capital Markets; Organization, Structure and Reforms	B.A. (P)-III DSE	Money & Banking

	Tutorials:	1. Discussion of Chapter end questions and problems 2. Project Discussion 3. Discussion of Chapter end questions and problems 4. Project Discussion	B.A. (P)-III Economics Generic Elective III (Honors)	Money & Banking Money & Banking
October	Theory:	BANKING SYSTEM: a) Balance Sheet and Portfolio Management b) Indian Banking System. Changing Role and Structure, Banking Sector Reforms	B.A. (P)-III Economics Generic Elective III (Honors)	Money & Banking Money & Banking

	Tutorials :	1. Discussion of Chapter end questions and problems 2. Project Discussion 3. Discussion of Chapter end questions and problems 4. Project Discussion	B.A. (P)-III Economics Generic Elective III (Honors)	Money & Banking Money & Banking
	<u>TEST:</u> Project Presentation	25 th October 27 th October to 3 rd November		
November/ December	Theory:	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	B.A. (P)-III Economics Generic Elective III (Honors)	Money & Banking Money & Banking
	Tutorials :	1. Discussion of Chapter end questions and problems 2. Project Discussion 3. Discussion of Chapter end questions and problems 4. Project Discussion	B.A. (P)-III Economics Generic Elective III (Honors)	Money & Banking

<u>Test</u>	8 th November 2021	B.A. (P)-III Economics	Money & Banking
<u>Project Presenta tion</u>	9 th to 13 th November 2021	Generic Elective III	Money & Banking

B.A (P) II- SEC: Understanding ES & UBI

Month	Topics	Paper Code/ Name
August	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) http://www.mospi.gov.in/sites/default/files/Statistical_year_book_india_chapters/ch7.pdf State of the Economy, Chapter 1, Section 1.6 to 1.20, Economic Survey vol. II, 2021 Government of India https://www.indiabudget.gov.in/economicsurvey/doc/vol2chapter/echap01_vol2.pdf	B.A (P) SEC: Understanding ES & UBI
September	Fiscal Development Chapter 2 vol.2 https://www.indiabudget.gov.in/economicsurvey/doc/vol2chapter/echap02_vol2.pdf . External Sector, chapter 3, Section 3.1 to 3.29, Box 1, and Annexure 1 [Pg 122 – Students should be able to comprehend the BoP Table], Economic Survey vol. II, Government of India Prices and Inflation Chapter 5 vol. 2	B.A (P) SEC: Understanding ES & UBI
October	Prices and Inflation Chapter 5 vol. 2 https://www.indiabudget.gov.in/economicsurvey/doc/vol2chapter/echap05_vol2.pdf Health Care takes centre stage, finally Chapter 5, vol. 1 https://www.indiabudget.gov.in/economicsurvey/doc/vol1chapter/echap05_vol1.pdf Internal Assessment	B.A (P) SEC: Understanding ES & UBI

November	Saving lives and livelihoods amidst a once in a century crises, chapter 1, vol. 1 https://www.indiabudget.gov.in/economicsurvey/doc/vol1chapter/echap01_vol1.pdf g. Golden Jubilee of Bank Nationalisation: Taking Stock, Chapter 7, Section 7.1 to 7.12 (Page 149 – 155), Economic Survey 2019-20 vol I, Government of India https://www.indiabudget.gov.in/economicsurvey/doc/vol1chapter/echap07_vol1.pdf	B.A (P) SEC: Understanding ES & UBI
December	Digitalisation and Development: Digitalisation and Development: Issues for India and Beyond, Dibyendu Maiti, Fulvio Castellacci and Arne Melchior, Springer book of the same name, Springer, 2019, p 11-18, https://link.springer.com/content/pdf/10.1007%2F978-981-13-9996-1_1.pdf	B.A (P) SEC: Understanding ES & UBI



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2021-22

Name of the Faculty: Amit Kumar Jha

Department: ECONOMICS

ODD SEMESTER

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

Month		Topics	Course	Paper Code/Name
JULY	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		

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 10, H. 10.1 & 10.2)	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 & Myles, Chapter 8)	B.A. (H) Economics	Public Economics
	<u>Test 2 :</u>	First four units from reading		
	Tutorials:	Past Year question, Students doubts		
NOVEMBER	Theory:	Indian Public Finance: tax system, budget, deficit, public debt, fiscal federalism in India	B.A. (H) Economics	Public Economics
	Tutorials/ Presentatio	Past Year question, Students doubts		

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

Month		Topics	Course	Paper Code/
November	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	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	Theory:	Limits , continuity and series, Implications of continuity and differentiability, exponential and logarithmic functions Hammond and sydsaeter ch 6 7 8	B.A. (H) Economics	Mathematical methods for Economics I
	Tutorials:	Last year papers, students doubts		
	<u>Test 1:</u>	On above topics		
Feburary	Theory:	Single variable optimization, difference equation Linear algebra, Hammond and sydsaeter ch 11,12	B.A. (H) Economics	Mathematical methods for Economics I
	Test2	Above topic		
	Tutorials:	Last year papers, students doubts		
March	Theory:	Linear algebra, determinants and matrix inversion, further topic in linear algebra Hammond and sydsaeter ch 13,14	B.A. (H) Economics	Mathematical methods for Economics I
	Tutorials:	Last year papers, students doubts		



SEMESTER WISE TEACHING PLAN (2021-22)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Sneha Bhardwaj

Department: ECONOMICS

Semester : I / 2021-22

MONTH		TOPICS	COURSE	PAPER CODE/NAME
NOVEMBER/ DECEMBER		Introduction What is microeconomics? Scope and method of economics; the economic problem: scarcity and choice; the concept of opportunity cost; the question of what to produce, how to produce and how to distribute output; science of economics; Institutions for allocating resources; the basic competitive model; prices, property rights and profits; incentives and information; rationing; positive versus normative analysis. The		

	Theory:	Scientific method; the role of assumptions; models and mathematics; why economists sometimes disagree. Supply and demand: Markets and welfare Markets and competition; determinants of individual demand/ supply; demand/supply schedule and demand/ supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; taxes and the	Generic Elective- I (BA Hons. Economics)	Introductory Microeconomics
	Tutorials:	Discussion on doubts and questions		
	Test:	Test-1		

JANUARY	Theory:	The households consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; description of preferences (representing preferences with indifference curves); properties of indifference curves; consumer's optimum choice; income and substitution effects; labour supply and savings decision - choice		
	Tutorials:	Discussion on doubts and questions		
	Assignment:			
FEBRUARY	Theory	The Firm and Perfect Market Structure Behaviour of profit maximizing firms and the production process; short run costs and output decisions; costs and output in the long run Imperfect Market Structure Monopoly and anti-trust policy; government policies towards competition; imperfect competition		
	Tutorials	Discussion on doubts and questions		
	Test:	Test-2		

MARCH	Theory:	Input Markets Labour and land markets - basic concepts (derived demand, productivity of an input, marginal productivity of labour, marginal revenue product); demand for labour; input demand curves; shifts in input demand curves; competitive labour markets; and labour		
	Tutorials:	Discussion of doubts and past year papers		



SEMESTER WISE TEACHING PLAN (2021-22) SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Meenakshi Sharma

Department: ECONOMICS

Semester : I / 2021-22

Semester: I-Introductory Microeconomics

Month		Topics	Course	Paper Code/Name
November	Theory	Scarcity and choice: concepts of scarcity, choice and opportunity cost;	Introductory Microeconomics	GE11
	Tutorials	Problem of scarcity and choice: Numericals from Case n		
December	Theory:	Demand and supply; applications of demand and supply; elasticity law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply, shifts of supply versus movements along a supply		
	Tutorials:	Applications of demand and supply: price rationing, price floors, consumer surplus, producer surplus. Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, other		
January	Theory:	Consumer theory: Budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; consumer choice: indifference curves, derivation of demand curve from indifference curve		

	Tutorials:	Numericals from Case & Fair; and Appendix of Chapter 6		
	<u>Test 1 :</u>	Demand and supply and consumer theory		
February	Theory:	Production and costs Production: behaviour of profit maximising firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing		
	Tutorials:	Numerical from Case & Fair; past years' question papers, and Appendix of Chapter 7.		
	<u>Test 2:</u>	Production and costs.		
March	Theory:	Perfect competition and welfare: Assumptions: theory of a firm under perfect competition, demand and revenue; equilibrium of the		
	Tutorials:	Perfect competition and welfare		



SEMESTER WISE TEACHING PLAN (2021-22) SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Meenakshi Sharma

Department: ECONOMICS

Semester : I / 2021-22

Semester: I-Introductory Microeconomics

Month		Topics	Course	Paper Code/Name
November	Theory	Scarcity and choice: concepts of scarcity, choice and opportunity cost;	Introductory Microeconomics	GE11
	Tutorials	Problem of scarcity and choice: Numericals from Case n		
December	Theory:	Demand and supply; applications of demand and supply; elasticity law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply, shifts of supply versus movements along a supply		
	Tutorials:	Applications of demand and supply: price rationing, price floors, consumer surplus, producer surplus. Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, other		
January	Theory:	Consumer theory: Budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; consumer choice: indifference curves, derivation of demand curve from indifference curve		

	Tutorials:	Numericals from Case & Fair; and Appendix of Chapter 6		
	<u>Test 1 :</u>	Demand and supply and consumer theory		
February	Theory:	Production and costs Production: behaviour of profit maximising firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing		
	Tutorials:	Numerical from Case & Fair; past years' question papers, and Appendix of Chapter 7.		
	<u>Test 2:</u>	Production and costs.		
March	Theory:	Perfect competition and welfare: Assumptions: theory of a firm under perfect competition, demand and revenue; equilibrium of the		
	Tutorials:	Perfect competition and welfare		



SEMESTER WISE TEACHING PLAN

**SRI
VENKATESWAR
A COLLEGE**

Name of the Faculty: Dr M. PADMA SURESH

Department: ECONOMICS

Semester : V / 2021-22

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 Developme nt
	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		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: **BRAHMAREDDY D**

Department: **ECONOMICS** **Semester: III/V 2021-22**

Month		Topics	Course	Paper Code/ Name
July & August	Theor y	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	Generic Elective III (Honours)	Money & Banking
	Tutori als	1. Discussion of Chapter end questions and problems 2. Project Discussion		Money & Banking
Septem ber	Theor y:	b) Money and Capital Markets; Organization, Structure and Reforms in India; Role of Financial Derivatives and Other Innovations c) INTEREST RATES: Determination, Sources of interest rates differentials, Theories of term structure of interest rates ; interest rates in India b) Money and Capital Markets; Organization, Structure and Reforms	Generic Elective III (Honours)	Money & Banking

	Tutorials:	1. Discussion of Chapter end questions and problems 2. Project Discussion	Generic Elective III (Honors)	Money & Banking
October	Theory:	BANKING SYSTEM: a) Balance Sheet and Portfolio Management b) Indian Banking System. Changing Role and Structure, Banking Sector Reforms	Generic Elective III (Honors)	Money & Banking

	Tutorials :	1. Discussion of Chapter end questions and problems 2. Project Discussion	Generic Elective III (Honors)	Money & Banking
	<u>TEST:</u> Project Presentation	25 th October 27 th October to 3 rd November		
November/ December	Theory:	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	Generic Elective III (Honors)	Money & Banking
	Tutorials :	1. Discussion of Chapter end questions and problems 2. Project Discussion 3. Discussion of Chapter end questions and problems 4. Project Discussion	Generic Elective III (Honors)	Money & Banking

	<u>Test</u>	8 th November 2021		
	<u>Project Presentation</u>	9 th to 13 th November 2021	<u>Generic Elective III (Honors)</u>	Money & Banking



SEMESTER WISE TEACHING PLAN (2021-22)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Sneha Bhardwaj

Department: ECONOMICS

Semester : III / 2021-22

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		
	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		
	Assignment:	An assignment linking the topics to the		

	Test:	Test-2		
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SEMESTER WISE TEACHING PLAN (2021-22)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Sneha Bhardwaj

Department: ECONOMICS

Semester : III / 2021-22

MONTH		TOPICS	COURSE	PAPER CODE/
AUGUST/ SEPTEMBER	Theory:	BASIC BUDGET CONCEPTS a. Glossary of Budget Concepts and Documents b. The Union Budget Cycle GENDER BUDGETING a. INTRODUCTION, Recognising Gender	B.A. Program	SEC- Understandin g the Economic Survey and Union Budget of India
	Tutorials:			
OCTOBER	Theory:	b. STATUS OF WOMEN: An Overview and Development Indicators of Women in the Study States, Situation Analysis, Recognising Gender Biases Fiscal Federalism 15th FINANCE COMMISSION: Summary Report of the 15th Finance		

	Tutorials:			
	Test:	Test based on the topics covered		
NOVEMBER/ DECEMBER	Theory:	Key to Budget Documents, (Government of India documents) Budget At a Glance (Govt of India Documents)- Receipts, Expenditure, Budget Profile Let's Talk About Budget a. Union Budget of India, chapter 4 b. How is the Union Budget prepared? c. What do Union Budget papers look like?		
	Tutorials:			
	Assignment:	Project work		



SEMESTER WISE TEACHING PLAN (2021-22)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Sneha Bhardwaj

Department: ECONOMICS

Semester: III / 2021-22

MONTH		TOPICS	COURSE	PAPER CODE/NAME
NOVEMBER	Theory:	Introduction What is microeconomics? Scope and method of economics; the economic problem: scarcity and choice; the concept of opportunity cost; the question of what to produce, how to produce and how to distribute output; science of economics; Institutions for allocating resources; the basic competitive model; prices, property rights and profits; incentives and information; rationing; positive versus normative analysis. The Scientific method; the role of assumptions; models and mathematics; why economists sometimes disagree. Interdependence and gains from trade; specialisation and trade;	Generic Elective- I (BA Hons. Economics)	Introductory Microeconomics

	Tutorials:	Discussion on doubts and questions		
DECEMBER	Theory:	Supply and demand; Markets and welfare Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; taxes and the costs of taxation; consumer surplus; producer surplus and the efficiency of the markets. Application to international trade; comparison of equilibria with and without trade, the winners and losers from trade; effects of tariffs and quotas;		
	Tutorials:	Discussion on doubts and questions		
	Test:	Test-1		

JANUARY	Theory:	The households The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; description of preferences (representing preferences with indifference curves); properties of indifference curves; consumer's optimum choice; income and substitution effects; labour supply and savings decision - choice		
	Tutorials:	Discussion on doubts and questions		
	Assignment:			
FEBRUARY	Theory	The Firm and Perfect Market Structure Behaviour of profit maximizing firms and the production process; short run costs and output decisions; costs and output in the long run Imperfect Market Structure Monopoly and anti-trust policy; government policies towards competition; imperfect competition		
	Tutorials	Discussion on doubts and questions		
	Test:	Test-2		

MARCH	Theory:	Input Markets Labour and land markets - basic concepts (derived demand, productivity of an input, marginal productivity of labour, marginal revenue product); demand for labour; input demand curves; shifts in input demand curves; competitive labour markets; and labour		
	Tutorials:	Discussion of doubts and past year papers		

Name of the Faculty: N. KALITHASAMMAL

Department: Economics

Semester:III

Course plan 2021 July

Month	Theory/ Tutorial/ Practical	Topics	Course	Paper Name/ Code
July 2021	Theory	Growth and development under different , macro policy Regimes. Its goals and constraints, discussed clearly.	G.E III SEM.	INDIAN ECONOMIC DEVELOPMENT
	Tutorial	Various regional imbalances discussed along with the problems of inequalities.		
August	Theory:	Major features of the economy, population and human development, demographic trends and issues, education and health and malnutrition discussed.		
	Tutorial	BIMARU states and their features discussed very inclusively.		

September	Theory:	Trends and policies in poverty, inequality, employment, international comparisons discussed.		
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	Tutorials:	An uncertain glory by Amartya sen will be going to discuss in detail.		
	<u>Assignment :</u>	Two tests are going to conduct according to the given schedule.		
October/ november	Theory:	AGRICULTURE AND NEW POLICY REFORMS, IS PLANNING TO TAKE		
	Tutorials:	ASSIGNMENTS TOPICS WILL BE GOING TO DISCUSS.		
		Finalisation of internal assesments.		



**SEMESTER WISE TEACHING
PLAN (2021-22)
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Yogita Yadav

Department: Economics

Semester : III

Month		Topics	Course	Paper Code/Name
JULY	Theory	Unit 1 Introduction Problem of scarcity and choice: scarcity, choice and	B. Com (Prog)	Principles of Microeconomics
	Practicals			
	Tutorials	Doubts and questions on sections covered in class		
AUGUST	Theory:	Unit 2 Consumer Theory Budget constraint, concept of utility, diminishing marginal utility, diamond-water paradox, income	B. Com (Prog)	Principles of Microeconomics
	Practicals:			

	Tutorials:	Doubts and questions on sections covered in class		
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SEPTEMBER	Theory:	Unit 2 Consumer Theory consumer choice: indifference curves, derivation of demand curve from	B. Com (Prog)	Principles of Microeconomics
	Practicals:			
	Tutorials:	Doubts and questions on sections covered in class		
	Test:	Internal Assessment 01		
OCTOBER	Theory:	Unit 3 Production and Costs Production: behaviour of profit maximising firms, production process, production	B. Com (Prog)	Principles of Microeconomics
	Practicals:			
	Tutorials:	Doubts and questions on sections covered in class		
	Test:	Internal Assessment 02		

NOVEMBER	Theory:	Unit 4 Perfect Competition Assumptions: theory of a firm under perfect competition, demand and revenue; equilibrium of the firm in the short run and long run; long run industry supply curve: increasing, decreasing and constant cost industries	B. Com (Prog)	Principles of Microeconomics
	Practicals:			
	Tutorials:	Doubts and questions on sections covered in class		



TEACHING PLAN
SRI VENKATESWARA COLLEGE
2021-22

Name of the Faculty: Meenakshi Sharma **Department:** ECONOMICS

ODD SEMESTER

Semester: III, B.A. (H) Economics -Intermediate Microeconomics-I

Month		Topics	Course	Paper Code
August	Theory	Budget constraint-Taxes, subsidies and Rationing and Preferences: Assumptions about preferences, MRS, ICs	B.A (H), Economics, Semester III	HC31
	Tutorials	Numerical from Varian Workbook and past years' questions		
September	Theory:	Utility; demand; Slutsky equation Hicksian demand: Cardinal, Ordinal, Quasilinear preferences.		
	Tutorials:	Numericals from Varian Workbook and past years' questions, Appendix of Varian		
October	Theory:	Revealed preference. Buying and selling; choice under risk and intertemporal choice;		
	Tutorials:	Numericals from Varian Workbook and past years' questions, questions from B. Douglas Bernheim and M. Whinston (2009):		
	<u>Test 1 :</u>	Utility, preferences, budget constraint, choice, demand, Slutsky equation		
November	Theory:	Technology, isoquants, production with one and more variable inputs, returns to scale.		
	<u>Test 2:</u>	Buying and selling; choice under risk and intertemporal choice; revealed preference		

	Tutorials:	Back questions from C. Snyder and W. Nicholson (2010): Fundamentals of Microeconomics		
December	Theory:	Cost: short run and long run costs, cost curves in the short and long run; review of perfect competition.		
	Tutorials:	Back questions from C. Snyder and W. Nicholson (2010): Fundamentals of Microeconomics		



**SEMESTER WISE TEACHING
PLAN (2021-22)
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Yogita Yadav

Department: Economics

Semester : III

Month		Topics	Course	Paper Code/Name
AUGUST	Theory	1. Unit 1	B.A (H) Economics	Data Analysis
	Practicals	Introduction to Database on Indian Economy		
	Tutorials			

SEPTEMBER	Theory:	Unit 1	B.A (H) Economics	Data Analysis
	Practicals:	Introduction to Excel & R		
	Tutorials:			

	Test :			
OCTOBER	Theory:	1. UNit 4 Estimation Techniques	B.A (H) Economics	Data Analysis
	Practicals:	Lab Session on Estimation Techniques		
	Tutorials:			
	Test :			
NOVEMBER	Theory:	1. Unit 4 Statistical Inference & Hypothesis Testing	B.A (H) Economics	Data Analysis
	Practicals:	Lab Sessions on Statistical Inference & Hypothesis Testing		
	Tutorials:			
	Test:	Practical Internal Assessment		

DECEMBER	Theory:	Unit 04 Hypothesis Testing	B.A (H) Economics	Data Analysis
	Practicals:	Lab Session on Hypothesis Testing		
	Tutorials:			

B.A (P) II- SEC: Understanding ES & UBI
D. BRAHMA REDDY
Sneha Bhardwaj

Month	Topics	Paper Code/ Name
August	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) http://www.mospi.gov.in/sites/default/files/Statistical_year_book_india_chapters/ch7.pdf State of the Economy, Chapter 1, Section 1.6 to 1.20, Economic Survey vol. II, 2021 Government of India https://www.indiabudget.gov.in/economicsurvey/doc/vol2chapter/echap01_vol2.pdf UNIT 1: BASIC CONCEPTS (10 lectures) 1.1 BASIC BUDGET CONCEPTS a. ANNEXURE I: Glossary of Budget Concepts and Documents, pages 76-80 b. ANNEXURE II: The Union Budget Cycle, page 81 [Reference: Decoding-the-Priorities-AnAnalysisofUnionBudget-2020-21, Centre for Budget and Governance Accountability: (2020) https://www.cbgaindia.org/	B.A (P) SEC: Understanding ES & UBI
September	Fiscal Development Chapter 2 vol.2 https://www.indiabudget.gov.in/economicsurvey/doc/vol2chapter/echap02_vol2.pdf . External Sector, chapter 3, Section 3.1 to 3.29, Box 1, and Annexure 1 [Pg 122 – Students should be able to comprehend the BoP Table], Economic Survey vol. II, Government of India Prices and Inflation Chapter 5 vol. 2 1.2 GENDER BUDGETING a. INTRODUCTION, Recognising Gender Biases, Rethinking Budgets, Chapter 1, Unit 1.1 only, p 11-12 b. * STATUS OF WOMEN: An Overview and Development Indicators of Women in the Study States, Situation Analysis, Recognising Gender Biases, Rethinking Budgets, Chapter 2, Unit 2.1 and 2.2 only, p 21-30 (*teachers reading) [Reference: Recognising Gender Biases, Rethinking Budgets, Centre for Budget and Governance Accountability, 2020, https://www.cbgaindia.org/	B.A (P) SEC: Understanding ES & UBI

October	Prices and Inflation Chapter 5 vol. 2 https://www.indiabudget.gov.in/economicsurvey/doc/vol2chapter/echap05_vol2.pdf Health Care takes centre stage, finally Chapter 5, vol. 1 https://www.indiabudget.gov.in/economicsurvey/doc/vol1chapter/echap05_vol1.pdf Internal Assessment 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,	B.A (P) SEC: Understanding ES & UBI
November	Saving lives and livelihoods amidst a once in a century crises, chapter 1, vol. 1 https://www.indiabudget.gov.in/economicsurvey/doc/vol1chapter/echap01_vol1.pdf g. Golden Jubilee of Bank Nationalisation: Taking Stock, Chapter 7, Section 7.1 to 7.12 (Page 149 – 155), Economic Survey 2019-20 vol I, Government of India https://www.indiabudget.gov.in/economicsurvey/doc/vol1chapter/echap07_vol1.pdf 1.4 15th FINANCE COMMISSION::Summary Report of the 15th Finance Commission for FY 2020-21 by Rohin Garg and Saket Surya, pages 1-4 [Reference: PRS Legislative Research, Institute for Policy Research Studies, Feb. 2020, https://www.prsindia.org/sites/default/files/parliament_or_policy_pdfs/Report%20Summary_15th%20FC_2020-21.pdf]	B.A (P) SEC: Understanding ES & UBI
December	Digitalisation and Development: Digitalisation and Development: Issues for India and Beyond, Dibyendu Maiti, Fulvio Castellacci and Arne Melchior, Springer book of the same name, Springer, 2019, p 11-18, https://link.springer.com/content/pdf/10.1007%2F978-981-13-9996-1_1.pdf	B.A (P) SEC: Understanding ES & UBI



SEMESTER-WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sunita Jain

Department: Electronics

Semester: V (Odd semester 2021-22)

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: Microprocessor & Microcontroller. Program for addition and subtraction using 8085 microprocessors Sem V: Numerical Analysis Introductory Lab	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers DSE-2 Lab : Numerical Techniques
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: Microprocessor & Microcontroller. Program for multibyte addition and subtraction, Program for block movement of data, Program for ascending and descending order Sem V : Numerical Analysis Program to implement Bisection Method, Secant Method and Regula falsi method.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers DSE-2 Lab : Numerical Techniques

SEPTEMBER	Theory	Stack Memory & Subroutine, Delay loops and counters. Various interrupts, Latency and response time, Concept of interfacing of various devices with 8085.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	Practical	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 Sem V : Numerical Analysis Program to implement Newton Raphson Method, Trapezoidal rule , Simpson's rule and Runge Kutta Method.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers DSE-2 Lab : Numerical Techniques Core Course V
	<u>Assignment</u>	Programs based on 8085 microprocessors	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
OCTOBER	Theory	Programmable Peripheral Interface 8255, Programmable interval Timer 8253 & Priority Interrupt Controller 8259. Basic architecture of 8086. Introduction to Microcontroller, RISC & CISC architecture. Princeton & Harvard architecture. Introduction to PIC microcontroller.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers

	Practical	Sem V: Microprocessor & Microcontroller. LED interface using 8255, interfacing a switch using 8255. Sem V: Numerical Analysis Program to implement Euler-Cauchy Method and Gauss-Jordon Method .	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers DSE-2 Lab : Numerical Techniques
	<u>Mid Term Test</u>	Complete 8085 microprocessors, Introduction to PIC microcontroller	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
NOVEMBER	Theory	Introduction to PIC16F887, Pin diagram, basic architecture & core features, Program & data memory organization. I/O ports addressing modes. Instruction set. Interfacing of PIC with input & output devices.	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	Practical	Sem V: Microprocessor & Microcontroller. Program for addition & subtraction using PIC, Multiplication & division using PIC. Block movement of data. Interfacing Input & Output devices. Sem V: Numerical Analysis Program to implement Gauss-Seidel Iteration	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers DSE-2 Lab : Numerical Techniques



SEMESTER WISE TEACHING PLAN

**SRI
VENKATESWAR
A COLLEGE**

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
B.Sc(H) Electronics, Sem V

Month		Topics	Course	Paper Code/Name
JULY/August -2021	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

		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 Savart's law and Applications, Magnetic dipole, Ampere's Circuital Law, Curl and Stoke's Theorem, Maxwell's Equation, 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
	<u>Assignment</u>			
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	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics

		Electromagnetic Wave Propagation: Time-Harmonic Electromagnetic Fields and use of Phasors, the Electromagnetic Spectrum, Wave Equation in a source free isotropic homogeneous media.		
	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
	<u>Mid Term Test</u>			
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



**SEMESTER WISE
TEACHING PLAN**

**SRI
VENKATESWARA COLLEGE
August-December, 2021**

Name of the Faculty: Dr. Neeru Kumar

Department: Electronics

Semester: Third

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.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.		CC VI/ 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
	Practicals:	6. Find the GCD of two integer numbers. 7. Calculate factorial of a given number. 8. Find all the roots of a quadratic equation $Ax^2 + Bx + C = 0$ 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.		CC VI/ Digital Electronics and VHDL Lab CCVII/ C Programming and Data Structures

		12. Find the sum & difference of two matrices of order $M \times N$ and $P \times Q$.		
	Tutorials:			
October	Theory:	Sequential logic design Programmable Logic Devices	B.Sc. Electronics	CC VI/ Digital Electronics and VHDL
	Practicals:	Sem III: 1. Design a seven segment display driver on Multisim. 2. Design a 4 X 1 Multiplexer using gates on Multisim. 3. To build a Flip- Flop Circuits using elementary gates. (RS, Clocked RS, D-type) on Multisim. Sem III: 13. Find the product of two matrices of order $M \times N$ and $P \times Q$. 14. Find the transpose of given $M \times N$ matrix. 15. Find the sum of principle and secondary diagonal elements of the given $M \times N$ 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		CC VI/ Digital Electronics and VHDL Lab CCVII/ C Programming and Data Structures
	<u>Assignment</u>			
	<u>Tutorials:</u>			
November	Theory	Introduction to VHDL Behavioral Modeling Sequential Processing	B.Sc. Electronics	CC VI/ Digital Electronics and VHDL

	Practicals:	Sem III: 1. Design a counter using D/T/JK Flip-Flop on Multisim. 2. Design a shift register and study Serial and parallel shifting of data on Multisim. Sem III: 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.		CC VI/ Digital Electronics and VHDL Lab CCVII/ C Programming and Data Structures
	Tutorials:			
December	Theory:	Data types of VHDL	B.Sc. Electronics	CC VI/ Digital Electronics and VHDL
	Practicals:	Sem III: To implement all the experiments in VHDL software. Sem III: 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.		CC VI/ Digital Electronics and VHDL Lab CCVII/ C Programming and Data Structures

	Tutorials:			
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Teaching Plan for the Semester

August - November (2021)

Dr Lalita Josyula / Department of Electronics

Paper : Generic Elective (III semester) / Internet of Things ----> (4T + 4P)/Week

Subject Month	Theory	Practicals
August	Introduction to IoT: 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 Elements of IoT: Hardware Components- Computing (Arduino, Raspberry Pi), Communication, Sensing, Actuation, I/O interfaces	Programs based on Theory taught Software Components- Programming API's (using Python/Node.js/Arduino) for Communication Protocols-MQTT, ZigBee, Bluetooth, CoAP, UDP, TCP.
September	Classification of transducers: 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. Assignment for 10 Marks -IA!!	Programs based on Theory taught

October	IoT Application Development: 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. Written Test for 10 Marks -IA After Semester Break !!	Programs based on Theory taught
November	Sensor: Contact and Proximity, Position, Velocity, Force, Tactile etc. Introduction to Cameras: Camera calibration, Geometry of Image formation, Euclidean/Similarity/Affine/Projective transformations IoT Case Studies: IoT case studies and mini projects based on Industrial automation, Transportation, Agriculture, Healthcare, Home Automation	Programs based on Theory taught
December	Final Exams	Submit Project Work ! Final Exams

Papers : 1. SEC (BSc(H) / III sem / Electronics) / Data Science ---> (4P) / Week

2. GE-I / Data Science -----> 2P / Week

Month		Topics	Course	Paper
AUGUST	Practicals	Basic programs in introduction to python.	B.Sc.(H) Electronics, Sem III	SEC/ Data Science
SEPTEMBER	Practicals	Program in python on strings. Programs in python on lists and dictionaries and introduction to object oriented programming.	B.Sc.(H) Electronics, Sem III	SEC/ Data Science
OCTOBER	Practicals	Programs in python on libraries for Data Science: Matplotlib, NumPy, Scikit-learn.	B.Sc.(H) Electronics, Sem III	SEC/ Data Science
NOVEMBER	Practicals	Sem I: Basic programs in introduction to python. Sem III: Write a program in Python to predict the class of the flower based on available attributes using KNN Write a program in Python to predict the class of the flower based on available attributes using decision tree Write a program in Python to predict if a loan will get approved or not. (logistic regression) Write a program in Python to identify the tweets which are hate tweets and	B.Sc.(H) Electronics, Sem I B.Sc.(H) Electronics, Sem III	GE-1/ Data Science SEC/Data Science

DECEMBER	Practicals	Sem I: Program in python on strings. Programs in python on lists and dictionaries and introduction to object oriented programing. Sem III: Case studies and project	B.Sc.(H) Electronics, Sem I B.Sc.(H) Electronics, Sem III	GE-1/ Data Science SEC/Data Science
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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2021-2022 (Odd Semester)

Name of the Faculty : **Mr. Hari Singh**
Department : **Electronics**
Semester: **Theory** : **B.Sc. (H) Electronics, Semester III**
Practical : **B.Sc. (H) Electronics, Semester III**

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.	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 II: 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. Introduction to C++: Object oriented programming, characteristics of an object-oriented language.	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure
	Assignment	As per the syllabus covered		
	Practical	✚ Find the GCD of two integer numbers. ✚ Calculate factorial of a given number. ✚ Find all the roots of a quadratic equation: $Ax^2 + Bx + C = 0$ 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
Oct	Theory	Unit III: Data Structures: Definition of stack, array implementation of stack, conversion of infix expression to prefix, postfix expressions, evaluation of postfix expression. 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, Semester III	Core-Course-VII/ C-Programming and Data Structure
	Practical	✚ Find the product of two matrices of order MxN and	B.Sc.(Hons)	Core-Course-VII/

		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	Electronics, Semester III	C-Programming and Data Structure Lab
	Mid Term Test	As per the syllabus covered		
Nov	Theory	Unit IV: Searching and sorting: Insertion sort, selection sort, bubble sort, merge sort, linear Search, binary search. 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
	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
Dec	Theory	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
	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



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Academic Year 2021-2022(Odd Semester)

Name of the Faculty: Ms. Shubhra Gupta

Department Electronics

Semester :Sem III :Electronics Circuits Practical

Sem V :Numerical Analysis Theory & Practical

Sem V : Microprocessor and Microcontroller Practical

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

	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 SEM III : Study of half wave and center tapped full wave rectifier circuit.	Bsc (Hons) Electronics	DSE-2 Lab : Numerical Techniques CC XI Lab: Microprocessors and Microcontrollers Practical CC-V Lab : Electronic Circuits
	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 SEM III: Study of Full wave bridge rectifier. Study of power supply using C filter and Zener diode.	Bsc (Hons) Electronics	DSE-2 Lab : Numerical Techniques CC XI Lab: Microprocessors and Microcontrollers Practica CC-V Lab : Electronic Circuits
	Tutorials:			
	<u>Assignment :</u>	Based on Unit 1 and Unit 2		

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-Jordan Method SEM V : Microprocessor & Microcontroller. LED interface using 8255, interfacing a switch using 8255. SEM III : Study of clipping and clamping circuits. Study of Fixed Bias, Voltage divider and Collector-to-Base bias Feedback configuration for transistors.	Bsc (Hons) Electronics	DSE-2 Lab : Numerical Techniques CC XI Lab: Microprocessors and Microcontrollers Practical CC-V Lab : Electronic Circuits
	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-Jordan, Iterative Methods: Gauss-Seidel Iteration, Jacobian Iteration. Matrix Eigenvalue: Power Method	Bsc (Hons) Electronics	DSE-2 : Numerical Techniques

DECEMBER	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 III : Designing of a Single Stage CE amplifier. Study of Class A, B and C Power Amplifier. Study of the Colpitt's Oscillator. Study of the Hartley's Oscillator.	Bsc (Hons) Electronics	DSE-2 Lab : Numerical Techniques CC XI Lab: Microprocessors and Microcontrollers Practical CC-V Lab : Electronic Circuits
	Tutorials:			
	Practicals	SEM III : Study of the Phase Shift Oscillator Study of the frequency response of Common Source FET amplifier.	Bsc (Hons) Electronics	CC-V Lab : Electronic Circuits



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-December 2021-22

Name of the Faculty: Dr. Rakhi Narang

Department: Electronics

Semester : I/III/V

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

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

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 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 $X[z]$.	BSc Electronics Sem V	DSE- Digital Signal Processing Lab
		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 III Half Wave and Full Wave Rectifiers with C filter, and Zener Regulation	B.Sc. Electronics Sem III	Core Course-V/Electronic Circuits Lab
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	BSc Electronics Sem V	DSE- Digital Signal Processing Lab
		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	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
		Sem III Bridge Rectifier Study of power supply using C filter and Zener diode. Designing and testing of 5V/9 V DC regulated power supply and find its load-regulation	B.Sc. Electronics Sem III	Core Course-V/Electronic Circuits Lab
	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
		7. Programs and Contour Plots to illustrate Method of Images 8. Solutions of Poisson and Laplace	B. Sc.(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
		Sem III: Study of Fixed Bias, Voltage divider and Collector-to-Base bias Feedback configuration for transistors. Designing of a Single Stage CE amplifier.	B.Sc. Electronics Sem III	Core Course-V/Electronic Circuits Lab

	Mid term Test	Sem V: Test based on Unit II and III 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	DSE- Digital Signal Processing Lab
	Practicals:	Sem V: Design of IIR and FIR digital filters	B. Sc.(H) Electronics Sem-V	DSE- Digital Signal Processing Lab
		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 Study of Class A, B and C Power Amplifier. Study of the Colpitt's Oscillator. Study of the Hartley's Oscillator. Study of the Phase Shift Oscillator	B.Sc. Electronics Sem III	Core Course-V/Electronic Circuits Lab
DECEMBER	Theory:		B. Sc. Electronics	
	Practicals:	Sem III: Study of the frequency response of Common Source FET amplifier.	B.Sc. Electronics	Electronic Circuits Lab



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

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

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

Month		Topics	Course	Paper Code/Name
AUGUST	Theory	Unit-1 : expressions and evaluation of expressions, type cast operator, implicit conversions, precedence of operators. 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
	Practicals	1.To Print "C Promming 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-2: Decision making, branching & looping: Decision making, branching and looping: if, if-else, else-if, switch statement, break, for loop, while loop and do loop. 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
	Practicals	6. Find the GCD of two integer numbers. 7. Calculate factorial of a given number. 8. Find all the roots of a quadratic equation $Ax^2 + Bx + C = 0$ 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.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures Lab

OCTOBER	Theory	Unit-3: Data Structures: Definition of stack, array implementation of stack, conversion of infix expression to prefix, postfix expressions, evaluation of postfix expression. 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
	Practicals	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 V	CC-VII/ C Programming and Data Structures Lab
	Assignment	Assignment: Questions based on topics covered.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures
NOVEMBER	Theory	Unit-4: Searching and sorting: Insertion sort, selection sort, bubble sort, merge sort, linear Search, binary search.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures
	Practicals	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
	Tutorials	NA	NA	NA
	Mid Term Test	Test: As per the covered topics.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures
DECEMBER	Theory	Trees : Introduction to trees, Binary search tree, Insertion and searching in a BST, preorder, postorder and inorder traversal (recursive)	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures
	Practicals	25. Implement binary search tree using linked lists. Compare its time complexity over that of linear search.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data

		26. Implement Insertion sort, Merge sort, Bubble sort, Selection sort.		Structures Lab
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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
 Academic Session 2020-2021 (Odd Semester)

Name of the Faculty: Dr. Basant Saini

Department: Electronics

Semester: I & III

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

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

Month		Topics	Course	Paper
AUGUST	Theory	Linear Algebra: Vectors, Matrices; Statistics: Describing a Single Set of Data, Correlation, Simpson's Paradox, Correlation and Causation; Probability: Dependence and Independence, Conditional Probability	B.Sc.(H) Electronics, Sem III	SEC/ Data Science
	Practicals	Basic programs in introduction to python.	B.Sc.(H) Electronics, Sem III	SEC/ Data Science
	Tutorials	NA		
SEPTEMBER	Theory	Bayes's Theorem, Random Variables, Continuous Distributions, The Normal Distribution, The Central Limit Theorem ; Hypothesis and Inference: Statistical Hypothesis Testing, Confidence Intervals, Phacking, Bayesian Inference Overview of Machine learning concepts – Over fitting and train/test splits, Types of Machine learning – Supervised, Unsupervised, Reinforced learning, Introduction to Bayes Theorem, Linear Regression- model assumptions, regularization (lasso, ridge, elastic net)	B.Sc.(H) Electronics, Sem III	SEC/ Data Science
	Practicals	Program in python on strings. Programs in python on lists and dictionaries and introduction to object oriented programing.	B.Sc.(H) Electronics, Sem III	SEC/ Data Science
	Tutorials	Assignment on basics of Data Science		
OCTOBER	Theory	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 (Example: Using the Twitter APIs), Cleaning and Munging, Manipulating Data, Rescaling, Dimensionality Reduction	B.Sc.(H) Electronics, Sem III	SEC/ Data Science
	Practicals	Programs in python on libraries for Data Science: Matplotlib, NumPy, Scikit-learn.	B.Sc.(H) Electronics, Sem III	SEC/ Data Science
	Tutorials	NA		

NOVEMBER	Theory	Sem I: Structure of a Python Program, Elements of Python, Python Interpreter, Using Python as calculator, Python shell, Indentation. Atoms, Identifiers and keywords, Literals, Strings, Operators(Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bit wise Operator, Increment or Decrement operator), Input and Output Statements, Control statements(Branching, Looping, Conditional Statement, Exit function, Difference between break, continue and pass.), Defining Functions, default arguments, Errors and Exceptions. Sem III: Classification and Regression algorithms- Naïve Bayes, K-Nearest Neighbors, logistic regression, support vector machines (SVM), decision trees, and random forest, Classification Errors	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science
			B.Sc.(H) Electronics, Sem III	SEC/Data Science
	Practicals	Sem I: Basic programs in introduction to python. Sem III: Write a program in Python to predict the class of the flower based on available attributes using KNN Write a program in Python to predict the class of the flower based on available attributes using decision tree Write a program in Python to predict if a loan will get approved or not. (logistic regression) Write a program in Python to identify the tweets which are hate tweets and which are not. (naïve Bayes)	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science
			B.Sc.(H) Electronics, Sem III	SEC/Data Science
	Tutorials	Sem III: Assignment on machine learning algorithm.	B.Sc.(H) Electronics, Sem III	SEC/Data Science
DECEMBER	Theory:	Sem I: Conditional execution, Alternative execution, Nested conditionals, The return statement, Recursion, Stack diagrams for recursive functions, Multiple assignment, The while statement, Tables, Two-dimensional tables, 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 Sem III: Analysis of Time Series- Linear Systems Analysis, Nonlinear Dynamics, Rule Induction, Neural Networks Learning And Generalization, Overview of Deep Learning.	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science
			B.Sc.(H) Electronics, Sem III	SEC/Data Science

	Practicals	Sem I: Program in python on strings. Programs in python on lists and dictionaries and introduction to object oriented programming. Sem III: Case studies and project	B.Sc.(H) Electronics, Sem I B.Sc.(H) Electronics, Sem III	GE-1/ Data Science SEC/Data Science
	Tutorials:	NA		
JANUARY	Theory:	Linear Algebra: Vectors, Matrices; Statistics: Describing a Single Set of Data, Correlation, Simpson's Paradox, Correlation and Causation; Probability: Dependence and Independence, Conditional Probability, Bayes's Theorem, Random Variables, Continuous Distributions, The Normal Distribution, The Central Limit Theorem ; Hypothesis and Inference: Statistical Hypothesis Testing, Confidence Intervals, Phacking, Bayesian Inference 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 (Example: Using the Twitter APIs), Cleaning and Munging, Manipulating Data, Rescaling, Dimensionality Reduction	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science
	Practicals	Programs in python on libraries for Data Science: Matplotlib, NumPy, Scikit-learn.	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science
	Test	Basics of Python and Libraries	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science
FEBRUARY	Theory:	Overview of Machine learning concepts – Over fitting and train/test splits, Types of Machine learning – Supervised, Unsupervised, Reinforced learning, Introduction to Bayes Theorem, Linear Regression- model assumptions, regularization (lasso, ridge, elastic net), Classification and Regression algorithms- Naïve Bayes, K-Nearest Neighbors, logistic regression, support vector machines (SVM)	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science
	Practicals	Write a program in Python to predict the class of the flower based on available attributes using KNN Write a program in Python to predict if a loan will get approved or not. (logistic regression) Write a program in Python to identify the tweets which are hate tweets and which are not. (naïve Bayes)	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science
	Test	Algorithms and Machine learning	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science

MARCH	Theory:	Decision trees, and random forest, Classification Errors, Analysis of Time Series- Linear Systems Analysis, Nonlinear Dynamics, Rule Induction, Neural Networks Learning And Generalization, Overview of Deep Learning.		
	Practicals	Write a program in Python to predict the class of the flower based on available attributes using decision tree Case studies on Data Science and Project work	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science



**SEMESTER WISE
TEACHING PLAN
ODD SEMESTER 2020-21
SRI VENKATESWARA COLLEGE**

Name of the Faculty: DEBARATI SEN

Department: ENGLISH

Semester: I/III/V

Month		Topics	Course	Paper Code/ Name
JULY	Theory November	Introduction to Sanskrit <i>Kavya</i> and <i>Natyashastra</i> . Analysis of Sudraka's <i>Mricchakatika</i> Acts- 1-3 with criticism.	B.A.(H) English I yr.	Indian Classical Literature (Paper 1)
		Introduction to Modernism Introduction to W.B. Yeats	B.A.(H) English III yr	British literature: The Early 20 th Century (Paper 12)
		Introduction to Dharamvir Bharti's <i>Andha Yug</i>	B.A.(H) English III yr	Modern Indian Writing in English Translation (DSE 1)
	November	Introduction	B.Sc (H) Chemistry B.A.(H) Hindi B.Sc (H) Life Sciences Sec A & Sec B B.Sc (H) Maths Sec A & Sec B B.A.(P) Sem I Sec B	AECC
	November	Introduction Introduction	B.A.(P) Sem I B.A.(P) Sem III	English Discipline English Discipline
AUGUST	Theory	Analysis of Acts- 4-6 with criticism.	B.A.(H) English I yr	Indian Classical Literature (Paper 1)
		Part I of <i>Sons and Lovers</i> . <i>Leda and the Swan</i> , <i>No Second Troy</i> , <i>The Second Coming</i> .	B.A.(H) English III yr	British literature: The Early 20 th Century (Paper 12)

		Act 1	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
		Readings 1 & 2	B.Sc (H) Chemistry B.A.(H) Hindi B.Sc (H) Life Sciences Sec A & Sec B B.Sc (H) Maths Sec A & Sec B B.A.(P) Sem I Sec B	AECC
		Readings 1 & 2 Readings 1 & 2	B.A.(P) Sem I B.A.(P) Sem III	English Discipline English Discipline
SEPTEMBER	Theory December	Analysis of Acts- 7-9 with criticism.	B.A.(H) English I yr	Indian Classical Literature (Paper 1)
		Sailing to Byzantium. Critical reading of the Yeats's poems.	B.A.(H) English IIIyr	British literature: The Early 20 th Century (Paper 12)
		Act II	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
	December	Readings 3 & 4	B.Sc (H) Chemistry B.A.(H) Hindi B.Sc (H) Life Sciences Sec A & Sec B B.Sc (H) Maths Sec A & Sec B B.A.(P) Sem I Sec B	AECC
	December	Readings 3 & 4 Readings 3 & 4	B.A.(P) Sem I B.A.(P) Sem III	English Discipline English Discipline

	<u>Assignment</u>	Poems of W.B.Yeats & T.S.Eliot	B.A.(H) English IIIyr	British literature: The Early 20 th Century (Paper 12)
			B.Sc (H) Maths Sec A B.A.(H) Hindi	AECC
OCTOBER	Theory January	Analysis of Act- 10 with criticism.	B.A.(H) English I yr	Indian Classical Literature (Paper 1)
		Introduction to T.S.Eliot. The Love Song of Alfred J. Prufrock, Sweeney Among the Nightingales	B.A.(H) English IIIyr	British literature: The Early 20 th Century (Paper 12)
		Act III	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
	January	Reading 5	B.Sc (H) Chemistry B.A.(H) Hindi B.Sc (H) Life Sciences Sec A & Sec B B.Sc (H) Maths Sec A & Sec B B.A.(P) Sem I Sec B	AECC
		Reading 5 Reading 5	B.A.(P) Sem I B.A.(P) Sem III	English Discipline English Discipline
	<u>Mid Term Test</u>	Poems of W.B.Yeats & T.S.Eliot	B.A.(H) English IIIyr	British literature: The Early 20 th Century (Paper 12)
			B.Sc (H) Maths Sec A B.A.(H) Hindi	AECC
NOVEMBER	Theory: February	Analysis of the text with a critical perspective	B.A.(H) English I yr	Indian Classical Literature (Paper 1)
		Hollow Men . Analysing the poems critically.	B.A.(H) English IIIyr	British literature: The Early 20 th Century (Paper 12)
		Critical analysis of the play.	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)

	February	Revision	B.Sc (H) Chemistry B.A.(H) Hindi B.Sc (H) Life Sciences Sec A & Sec B B.Sc (H) Maths Sec A & Sec B B.A.(P) Sem I Sec B	AECC
	February	Revision Revision	B.A.(P) Sem I B.A.(P) Sem III	English Discipline English Discipline
	March	Revision	B.A.(H) English I yr	Indian Classical Literature (Paper 1)
		Revision	B.Sc (H) Chemistry B.A.(H) Hindi B.Sc (H) Life Sciences Sec A & Sec B B.Sc (H) Maths Sec A & Sec B B.A.(P) Sem I Sec B B.A.(P) Sem I	AECC
		Revision		English Discipline



Name of the Faculty: Ritika Singh Semester : I/III/V August – December

Department: English

SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

2021

Month		Topics	Cour
AUGUST	Theory	Introduction to: American Literature Toni Morrison - <i>Beloved</i> Women's Writing: Autobiography Alice Walker: <i>The Color Purple</i> AECC English Communication Renaissance love poetry: English Discipline	B.A] Honc III B.A] Honc V B.A] Honc V B., III
	Practicals	-	
	Tutorials	Semester 5 Paper 11: Women's Writing M.A. Semester III Core: Life, Literature and Culture: The Long Nineteenth Century	-
Month		Topics	Cour

SEPTEMBER	Theory	Toni Morrison and the African American Novel, race, trauma, and memory Mary Wollstonecraft: Historical Voice, reading <i>Vindications</i> , Introduction to <i>Sangati</i> : reading caste, reading gender. Exploring race, gender, and background: <i>The Color Purple</i> AECC English Communication Renaissance love poetry: English Discipline	B.A [Honc III B.A [Honc V B.A [Honc V B.Sc. Scier B.A (
	Practicals	-	
	Tutorials	Semester 5 Paper 11: Women's Writing M.A. Semester III Core: Life, Literature and Culture: The Long Nineteenth Century	-

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Month

Topics

Reading Toni Morrison's *Beloved* Reading Bama, Sangati, *Events*,

Chapter 2-4; Reading Alice Walker's *The*

Color Purple

Renaissance love poetry: Shakespeare, Wyatt, Donne, Milton

Course

Paper Code/Name

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Theory

B.A English Honours Sem: III B.A English Honours Sem: V

B.A English Honours Sem: V B.A (P) Sem III

Semester 3 Paper 5: Unit 2 American Literature Semester 5 Paper 11:
Women's Writing

Semester 5 Paper 11: Women's Writing English Discipline

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Practicals

-

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OCTOBER

Tutorials	Semester 5 Paper 11: Women's Writing M.A. Semester III Core: Life, Literature and Culture: The Long Nineteenth Century	-



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

Name of the Faculty: Dr. Abhishek Chandra

Department: Environmental Sciences

Semester: I

Month		Topics	Course	Paper
November	Theory	Introduction to Environmental Studies	College offer (Environmental Science) to 50% undergraduate students in odd semesters.	72182801 AECC - Environmental Studies
		9 Batches 18 Lecture per week		
	Practical	Nil		
	Tutorials	NIL		
December	Theory:	Definition and concept of Ecosystem Structure of ecosystem (biotic and abiotic components); Functions of Ecosystem: Physical (energy flow), Biological (food chains, food web, ecological succession), and Biogeochemical (nutrient cycling) processes. Concepts of productivity, ecological pyramids and homeostasis		
	Practical:			
	Tutorials:			

January	Theory:	Types of Ecosystems: Tundra, Forest, Grassland, Desert, Aquatic (ponds, streams, lakes, rivers, oceans, estuaries); importance and threats with relevant examples from India Ecosystem services (Provisioning, Regulating, Cultural, and Supporting); Ecosystem preservation and conservation strategies; Basics of Ecosystem restoration		
	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:	Nil		
	<u>Assignment :</u>	Separate topic allotted to each student for class presentation and discussion		
February	Theory:	Land resources: Minerals, soil, agricultural crops, natural forest products, medicinal plants, and forest-based industries and livelihoods; Land cover, land use change, land degradation, soil erosion, and desertification; Causes of deforestation; Impacts of mining and dam building on environment, forests, biodiversity, and tribal communities Water resources: Natural and man-made sources; Uses of water; Over exploitation of surface and ground water resources; Floods, droughts, and international & inter- state conflicts over water Energy resources: Renewable and non-renewable energy sources; Use of alternate energy sources; Growing energy needs; Energy contents of coal, petroleum, natural gas and bio gas; Agro-residues as a biomass energy source Case studies: Contemporary Indian issues related to mining, dams, forests, energy, etc (e.g., National Solar Mission, Cauvery river water conflict, Sardar Sarovar dam, Chipko movement, Appiko movement, Tarun Bharat Sangh, etc)		

	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:			
	<u>Test</u>	Test conducted on the basis of covered syllabus		
March	Theory:	Human population growth: Impacts on environment, human health, and welfare; Carbon foot-print Resettlement and rehabilitation of developmental project affected persons and communities; relevant case studies Environmental movements: Chipko movement, Appiko movement, Silent valley movement, Bishnois of Rajasthan, Narmada Bachao Andolan, etc Environmental justice: National Green Tribunal and its importance Environmental philosophy: Environmental ethics; Role of various religions and cultural practices in environmental conservation Environmental communication and public awareness: case studies (e.g., CNG vehicles in Delhi, Swachh Bharat Abhiyan, National Environment Awareness Campaign (NEAC), National Green Corps (NGC) "Eco-club" programme, etc)		
	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:			



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

Name of the Faculty: Dr. Abhishek Chandra

Department: Environmental Sciences

Semester: I1

Month		Topics	Course	Paper
April	Theory	Introduction to Environmental Studies	College offer (Environmental Science) to 50% undergraduate students in odd semesters.	72182801 AECC - Environmental Studies
		9 Batches 18 Lecture per week		
	Practical	Nil		
	Tutorials	NIL		
May	Theory:	Definition and concept of Ecosystem Structure of ecosystem (biotic and abiotic components); Functions of Ecosystem: Physical (energy flow), Biological (food chains, food web, ecological succession), and Biogeochemical (nutrient cycling) processes. Concepts of productivity, ecological pyramids and homeostasis		
	Practical:			
	Tutorials:			

June	Theory:	Types of Ecosystems: Tundra, Forest, Grassland, Desert, Aquatic (ponds, streams, lakes, rivers, oceans, estuaries); importance and threats with relevant examples from India Ecosystem services (Provisioning, Regulating, Cultural, and Supporting); Ecosystem preservation and conservation strategies; Basics of Ecosystem restoration		
	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:	Nil		
	<u>Assignment:</u>	Separate topic allotted to each student for class presentation and discussion		
July	Theory:	Land resources: Minerals, soil, agricultural crops, natural forest products, medicinal plants, and forest-based industries and livelihoods; Land cover, land use change, land degradation, soil erosion, and desertification; Causes of deforestation; Impacts of mining and dam building on environment, forests, biodiversity, and tribal communities Water resources: Natural and man-made sources; Uses of water; Over exploitation of surface and ground water resources; Floods, droughts, and international & inter- state conflicts over water Energy resources: Renewable and non-renewable energy sources; Use of alternate energy sources; Growing energy needs; Energy contents of coal, petroleum, natural gas and bio gas; Agro-residues as a biomass energy source Case studies: Contemporary Indian issues related to mining, dams, forests, energy, etc (e.g., National Solar Mission, Cauvery river water conflict, Sardar Sarovar dam, Chipko movement, Appiko movement, Tarun Bharat Sangh, etc)		

	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:			
	<u>Test</u>	Test conducted on the basis of covered syllabus		
August	Theory:	Human population growth: Impacts on environment, human health, and welfare; Carbon foot-print Resettlement and rehabilitation of developmental project affected persons and communities; relevant case studies Environmental movements: Chipko movement, Appiko movement, Silent valley movement, Bishnois of Rajasthan, Narmada Bachao Andolan, etc Environmental justice: National Green Tribunal and its importance Environmental philosophy: Environmental ethics; Role of various religions and cultural practices in environmental conservation Environmental communication and public awareness: case studies (e.g., CNG vehicles in Delhi, Swachh Bharat Abhiyan, National Environment Awareness Campaign (NEAC), National Green Corps (NGC) "Eco-club" programme, etc)		
	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:			



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

Name of the Faculty: Dr. Robin Suyesh

Department: Environmental Sciences

Semester: I

Month		Topics	Course	Paper
November	Theory	Introduction to Environmental Studies	College offer (Environmental Science) to 50% undergraduate students in odd semesters.	72182801 AECC - Environmental Studies
		9 Batches 18 Lecture per week		
	Practical	Nil		
	Tutorials	NIL		
December	Theory:	Definition of Biodiversity; Levels of biological diversity: genetic, species and ecosystem diversity India as a mega-biodiversity nation; Biogeographic zones of India; Biodiversity hotspots; Endemic and endangered species of India; IUCN Red list criteria and categories Value of biodiversity: Ecological, economic, social, ethical, aesthetic, and informational values of biodiversity with examples; sacred groves and their importance with examples		
	Practical:			
	Tutorials:			

January	Theory:	Threats to biodiversity: Habitat loss, degradation, and fragmentation; Poaching of wildlife; Man-wildlife conflicts; Biological invasion with emphasis on Indian biodiversity; Current mass extinction crisis Biodiversity conservation strategies: in-situ and ex-situ methods of conservation; National Parks, Wildlife Sanctuaries, and Biosphere reserves; Keystone, Flagship, Umbrella, and Indicator species; Species reintroduction and translocation <i>Case studies:</i> Contemporary Indian wildlife and biodiversity issues, movements, and projects (e.g., Project Tiger, Project Elephant, Vulture breeding program, Project Great Indian Bustard, Crocodile conservation project, Silent Valley movement, Save Western Ghats movement, etc)		
	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:	Nil		
	<u>Assignment:</u>	Separate topic allotted to each student for class presentation and discussion		
February	Theory:	Environmental pollution (Air, water, soil, thermal, and noise): causes, effects, and controls; Primary and secondary air pollutants; Air and water quality standards Nuclear hazards and human health risks Solid waste management: Control measures for various types of urban, industrial waste, Hazardous waste, E-waste, etc; Waste segregation and disposal Pollution case studies: Ganga Action plan (GAP), Delhi air pollution and public health issues, Plastic waste management rules, Bhopal gas tragedy, etc		
	Practicals:	Field work for unit 8 of Syllabus		

	Tutorials:			
	<u>Test</u>	Test conducted on the basis of covered syllabus		
March	Theory:	Causes of Climate change, Global warming, Ozone layer depletion, and Acid rain; Impacts on human communities, biodiversity, global economy, and agriculture International agreements and programmes: Earth Summit, UNFCCC, Montreal and Kyoto protocols, Convention on Biological Diversity(CBD), Ramsar convention, The Chemical Weapons Convention (CWC), UNEP, CITES, etc Sustainable Development Goals: India's National Action Plan on Climate Change and its major missions Environment legislation in India: Wildlife Protection Act, 1972; Water (Prevention and Control of Pollution) Act, 1974; Forest (Conservation) Act 1980; Air (Prevention & Control of Pollution) Act, 1981; Environment Protection Act, 1986; Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006		
	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:			



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

Name of the Faculty: Dr. Robin Suyesh

Department: Environmental Sciences

Semester: II

Month		Topics	Course	Paper
April	Theory	Introduction to Environmental Studies	College offer (Environmental Science) to 50% undergraduate students in odd semesters.	72182801 AECC - Environmental Studies
		9 Batches 18 Lecture per week		
	Practical	Nil		
	Tutorials	NIL		
May	Theory:	Definition of Biodiversity; Levels of biological diversity: genetic, species and ecosystem diversity India as a mega-biodiversity nation; Biogeographic zones of India; Biodiversity hotspots; Endemic and endangered species of India; IUCN Red list criteria and categories Value of biodiversity: Ecological, economic, social, ethical, aesthetic, and informational values of biodiversity with examples; sacred groves and their importance with examples		
	Practical:			
	Tutorials:			

June	Theory:	Threats to biodiversity: Habitat loss, degradation, and fragmentation; Poaching of wildlife; Man-wildlife conflicts; Biological invasion with emphasis on Indian biodiversity; Current mass extinction crisis Biodiversity conservation strategies: in-situ and ex-situ methods of conservation; National Parks, Wildlife Sanctuaries, and Biosphere reserves; Keystone, Flagship, Umbrella, and Indicator species; Species reintroduction and translocation <i>Case studies:</i> Contemporary Indian wildlife and biodiversity issues, movements, and projects (e.g., Project Tiger, Project Elephant, Vulture breeding program, Project Great Indian Bustard, Crocodile conservation project, Silent Valley movement, Save Western Ghats movement, etc)		
	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:	Nil		
	<u>Assignment:</u>	Separate topic allotted to each student for class presentation and discussion		
July	Theory:	Environmental pollution (Air, water, soil, thermal, and noise): causes, effects, and controls; Primary and secondary air pollutants; Air and water quality standards Nuclear hazards and human health risks Solid waste management: Control measures for various types of urban, industrial waste, Hazardous waste, E-waste, etc; Waste segregation and disposal Pollution case studies: Ganga Action plan (GAP), Delhi air pollution and public health issues, Plastic waste management rules, Bhopal gas tragedy, etc		
	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:			

	<u>Test</u>	Test conducted on the basis of covered syllabus		
August	Theory:	Causes of Climate change, Global warming, Ozone layer depletion, and Acid rain; Impacts on human communities, biodiversity, global economy, and agriculture International agreements and programmes: Earth Summit, UNFCCC, Montreal and Kyoto protocols, Convention on Biological Diversity(CBD), Ramsar convention, The Chemical Weapons Convention (CWC), UNEP, CITES, etc Sustainable Development Goals: India's National Action Plan on Climate Change and its major missions Environment legislation in India: Wildlife Protection Act, 1972; Water (Prevention and Control of Pollution) Act, 1974; Forest (Conservation) Act 1980; Air (Prevention & Control of Pollution) Act, 1981; Environment Protection Act, 1986; Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006		
	Practicals:	Field work for unit 8 of Syllabus		
	Tutorials:			

SRI VENKATESWARA COLLEGE

WORK PLAN (August-November 2021)

Course Name: B. A. (H.) HINDI

Semester: III

Paper Code:

Paper Name: हिंदी साहित्य का इतिहास (आधुनिक काल)

Faculty: डॉ. जीतेन्द्रवीर कालरा

Month	Lectures	पाठ योजना (यूनिट3)
AUGUST	1	छायावादी काव्य का स्वरूप
	2	छायावादी काव्य :परिवेश और परिस्थितियां
	3	छायावादी काव्य प्रमुख प्रवृत्तियाँ –I1
	4	छायावादी काव्य प्रमुख प्रवृत्तियाँ –I2
SEPTEMBER	5	उत्तर छायावादी काव्य का स्वरूप
	6	उत्तर छायावादी काव्य परिवेश और परिस्थिति
	7	उत्तर छायावादी काव्य: परिवेश और प्रवृत्तियाँ
	8	उत्तर छायावादी काव्य की मुख्य प्रवृत्तियां
OctoberOctober	9	प्रश्न और अभ्यास-1
	10	प्रश्न और अभ्यास-1
	11	प्रगतिवाद : परिवेश और प्रवृत्तियाँ-1
	12	प्रगतिवाद : परिवेश और प्रवृत्तियाँ-2

November	13	प्रयोगवाद : परिवेश और प्रवृत्तियाँ
	14	नयी कविता : परिवेश और परिस्थितियां
	15	नयी कविता : प्रमुख प्रवृत्तियाँ
	16	प्रश्न और अभ्यास
		सहायक पुस्तकें
		हिंदी साहित्य का इतिहास- संपादक डॉ. नगेन्द्र
		कविता के नए प्रतिमान- नामवर सिंह
		तारसप्तक और दूसरा सप्तक (पहले संस्करण और दूसरे संस्करण की भूमिकाएँ से)
		समकालीन हिंदी कविता- विश्वनाथ प्रसाद तिवारी
		आधुनिक साहित्य- नंददुलारे वाजपेयी

SRI VENKATESWARA COLLEGE

WORK PLAN (August-November 2021)

Course Name: B. A. (HONS) HINDI

Semester: III

Paper Code:

Paper Name: हिंदी साहित्य का इतिहास (आधुनिक काल)

Faculty: डॉ. जय विनोद

Month	Lectures	पाठ योजना (यूनिट 2)
AUGUST	1	गद्य साहित्य का आरंभ
	2	आधुनिक कथा साहित्य की पहचान
	3	आधुनिक काल में नाटक का आरंभ और विकास
	4	हिंदी के प्रमुख नाटककार
SEPTEMBER	5	हिंदी निबंध साहित्य का विकास
	6	हिंदी के प्रमुख निबंधकार
	7	प्रश्न और अभ्यास
	8	संस्मरण और रेखाचित्र :स्वरूप और विशेषता
OctoberOctober	9	हिंदी के प्रमुख रेखाचित्र और संस्मरण लेखक
	10	गद्य विधा के रूप में यात्रा वृत्तांत
	11	हिंदी के प्रमुख यात्रा वृत्तांत लेखक
	12	डायरी और रिपोर्टाज विधा की विशेषतायें
November	13	साक्षात्कार और साहित्यिक पत्रकारिता
	14	पत्रकारिता और लघु पत्रकारिता आन्दोलन

	15	प्रश्न और अभ्यास-1
	16	प्रश्न और अभ्यास-2
		सहायक पुस्तकें
		हिंदी साहित्य का इतिहास- संपादक डॉ. नगेन्द्र
		हिन्दी साहित्य का सरल इतिहास- विश्वनाथ त्रिपाठी
		हिंदी नाटक : नयी परख संपादक -रमेश गौतम
		कथेतर गद्य - माधव हाडा

SRI VENKATESWARA COLLEGE

WORK PLAN (August-November 2021)

Course Name: B. A. (HONS) HINDI

Semester: III

Paper Code

Paper Name: हिंदी साहित्य का इतिहास (आधुनिक काल)

Faculty: डॉ.पुष्पलता भट्ट

Month	Lectures	पाठ योजना (यूनिट 1, यूनिट 4)
AUGUST	1	मध्यकालीन बोध तथा आधुनिक बोध का स्वरूप -1
	2	मध्यकालीन बोध तथा आधुनिक बोध का स्वरूप -1
	3	नवजागरण की पृष्ठभूमि
	4	राजनितिक परिस्थिति
	5	सामाजिक परिस्थिति
	6	सांस्कृतिक परिस्थिति/ धार्मिक परिस्थिति
	7	भारतेंदु युग
	8	प्रश्न और अभ्यास
SEPTEMBER	9	महावीर प्रसाद द्विवेदी और हिंदी साहित्य
	10	हिंदी पत्रकारिता और महावीर प्रसाद द्विवेदी
	11	खड़ीबोली के विकास में हिंदी पत्रकारिता का योगदान
	12	खड़ीबोली आन्दोलन और हिंदी साहित्य
	13	स्वाधीनता आंदोलन और नवजागरणकालीन चेतना
	14	विभिन्न वैचारिक मत

	15	विभिन्न वैचारिक मत और साहित्य से उनका संबंध
	16	प्रश्न और अभ्यास
OCTOBER	17	साठोत्तरी कविता स्वरूप और विशेषता
	18	साठोत्तरी कविता की पहचान
	19	साठोत्तरी कविता स्वरूप और विशेषता
	20	नवगीतकी विशेषता
	21	समकालीन हिंदी कविता की पहचान
	22	समकालीन कथा साहित्य एक परिचय
	23	समकालीन कथा कथेतर साहित्य
	24	समकालीन कथा एवं कथेतर साहित्य में अंतर और समानता
November	25	आलोचना और साहित्यिक पत्रकारिता परिचय
	26	हिंदी आलोचना के विकास में साहित्यिक पत्रकारिता का योगदान
	27	अस्मिता विमर्श का स्वरूप दलित, आदिवासी विमर्श
	28	अस्मिता विमर्श का स्वरूप और साहित्य
	29	अस्मिता विमर्श और दलित साहित्य
	30	अस्मिता विमर्श और आदिवासी साहित्य
	31	प्रश्न और अभ्यास -1
	32	प्रश्न और अभ्यास -2
	सहायक पुस्तकें	
		1.आधुनिक साहित्य की प्रवृत्तियां - नामवर सिंह

		2. भारतेन्दु और हिंदी नवजागरण की समस्याएँ- रामविलास शर्मा
		3. महावीर प्रसाद द्विवेदी और हिंदी नवजागरण- रामविलास शर्मा
		4. हिंदी का गद्य साहित्य-रामचन्द्र तिवारी
		5. हिंदी साहित्य और संवेदना का विकास- रामस्वरूप चतुर्वेदी
		6. हिंदी गद्य : विन्यास और विकास- रामस्वरूप चतुर्वेदी
		7. आधुनिक साहित्य - नंददुलारे वाजपेयी
		8. छायावाद - नामवर सिंह

SRI VENKATESWARA COLLEGE

WORK PLAN (August-November 2021)

Course Name: B. A. (HONSONS) HINDI

Semester: III

Paper Code

Paper Name: हिंदी कविता (आधुनिक काल-छायावाद तक)

Faculty: डॉ.पूनम सूद

Month	Lectures	पाठ योजना (यूनिट 1, यूनिट 2)
AUGUST	1	मैथिलीशरण गुप्त का साहित्यिक परिचय
	2	खड़ीबोली हिंदी की काव्यभाषा के रूप में प्रतिष्ठा और मैथिलीशरण गुप्त
	3	यशोधरा काव्य का परिचय
	4	यशोधरा काव्य का महत्व
	5	सखी वे मुझसे कहकर जाते -पाठ और विश्लेषण 1
	6	सखी वे मुझसे कहकर जाते -पाठ और विश्लेषण 2
	7	अब कठोर, हो वज्रादपि -पाठ और विश्लेषण 1
	8	अब कठोर, हो वज्रादपि -पाठ और विश्लेषण 2
SEPTEMBER	9	मानिनी, मान तजो लो, रही तुम्हारी बान -पाठ और विश्लेषण 1
	10	मानिनी, मान तजो लो, रही तुम्हारी बान -पाठ और विश्लेषण 2
	11	दीन न हो गोपी -पाठ और विश्लेषण 1
	12	दीन न हो गोपी -पाठ और विश्लेषण 2

	13	मैथिलीशरण गुप्त की काव्यगत सामान्य विशेषता
	14	मैथिलीशरण गुप्त: भाषा और शिल्प
	15	प्रश्न और अभ्यास-1
	16	प्रश्न और अभ्यास-2
OCTOBER	17	जयशंकर प्रसाद का साहित्यिक परिचय
	18	काव्यभाषा का परिष्कार और जयशंकर प्रसाद
	19	उठ उठ री लघु -पाठ विश्लेषण 1
	20	उठ उठ री लघु -पाठ विश्लेषण 2
	21	मधुप गुनगुना कर -पाठ विश्लेषण 1
	22	मधुप गुनगुना कर -पाठ विश्लेषण 2
	23	तुम्हारी आँखों का बचपन - पाठ विश्लेषण
	24	
November	25	अरे कहीं देखा है तुमने- पाठ विश्लेषण
	26	प्रश्न और अभ्यास
	27	अरी वरुणा की शांत कछार- पाठ विश्लेषण
	28	ले चल मुझे भुलावा दे कर- पाठ विश्लेषण
	29	पेशोला की प्रतिध्वनि -पाठ विश्लेषण
	30	संवेदना और शिल्प-1
	31	संवेदना और शिल्प-2
	32	प्रश्न और अभ्यास
	सहायक पुस्तकें	
		1.आधुनिक साहित्य की प्रवृत्तियां - नामवर सिंह

		2. मोनोग्राफ- मैथिलीशरण गुप्त, निराला, प्रसाद, दिनकर, सुभद्राकुमारी चौहान
		3. महावीर प्रसाद द्विवेदी और हिंदी नवजागरण- रामविलास शर्मा
		४. हिंदी साहित्य और संवेदना का विकास -रामस्वरूप चतुर्वेदी
		5..आधुनिक साहित्य -नंददुलारे वाजपेयी
		6. छायावाद -नामवर सिंह

SRI VENKATESWARA COLLEGE

WORK PLAN (August-November 2021)

Course Name: B. A. (HONSONS) HINDI

Semester: III

Paper Code

Paper Name: हिंदी कविता (आधुनिक काल-छायावाद तक)

Faculty: डॉ.रामकिशोर यादव

Month	Lectures	पाठ योजना (यूनिट 3, यूनिट 4)
AUGUST	1	सूर्यकांत त्रिपाठी निराला
	2	संध्या सुंदरी कविता का पाठ विश्लेषण
	3	बादल राग कविता का पाठ विश्लेषण
	4	खेत जोत कर घर आए हैं कविता का पाठ विश्लेषण
	5	बांधों न नाव, स्नेह निर्झर, वर दे कविता का पाठ विश्लेषण
	6	मैं अकेला, दुरित दूर करो नाथ कविता का पाठ विश्लेषण
	7	वह तोड़ती पत्थर कविता का पाठ विश्लेषण
	8	स्नेह निर्झर और वर दे वीणा वादिनी कविता का पाठ विश्लेषण
SEPTEMBER	9	निराला की कविता: संवेदना के विविध पहलू -1
	10	निराला की कविता: संवेदना के विविध पहलू -2
	11	निराला की कविता: संवेदना के विविध पहलू -3
	12	निराला काव्य का शिल्प पक्ष-1
	13	निराला काव्य का शिल्प पक्ष-1

	14	प्रश्न और अभ्यास
	15	प्रश्न और अभ्यास
	16	रामधारी सिंह दिनकरका साहित्यिक परिचय
OCTOBER	17	राष्ट्रवादी कवि रामधारी सिंह दिनकर
	18	खंडकाव्य के रूप में रश्मिरथी
	19	कृष्ण- कर्ण संवाद का महत्व
	20	कृष्ण- कर्ण संवाद का पाठ विश्लेषण-1
	21	कृष्ण- कर्ण संवाद का पाठ विश्लेषण-2
	22	कृष्ण- कर्ण संवाद का पाठ विश्लेषण-3
	23	रश्मिरथी –संवेदना और शिल्प-1
	24	रश्मिरथी –संवेदना और शिल्प-2
November	25	प्रश्न और अभ्यास
	26	सुभद्राकुमारी चौहान- साहित्यिक परिचय
	27	ठुकरा दो या प्यार करो- पाठ विश्लेषण
	28	वीरों का कैसा हो वसंत और बालिका कविता का पाठ विश्लेषण
	29	मुरझाया फूल और मेरे पथिक कविता का पाठ विश्लेषण
	30	झाँसी की रानी की समाधि पर और अनोखा दान कविता का पाठ
	31	संवेदना और शिल्प
	32	प्रश्न और अभ्यास -2
	सहायक पुस्तकें	
		1.आधुनिक साहित्य की प्रवृत्तियों नामवर सिंह
		2. आधुनिक साहित्य नंददुलारे वाजपेयी
		3. छायावाद नामवर सिंह

		४.हिंदी साहित्य और संवेदना का विकास रामस्वरूप चतुर्वेदी
		5. मोनोग्राफ- मैथिलीशरण गुप्त, निराला, प्रसाद, दिनकर, सुभद्राकुमारी चौहान

SRI VENKATESWARA COLLEGE

WORK PLAN (August-November 2021)

Course Name: B. A. (H.) HINDI

Semester: III

Paper Code:

Paper Name: हिंदी कहानी

Faculty: डॉ. चन्द्रमोहन सिंह रावत

Month	Lectures	पाठ योजना (यूनिट 3 यूनिट 4)
AUGUST	1	निर्मल वर्मा- साहित्यिक परिचय
	2	नयी कहानी और निर्मल वर्मा
	3	‘माया का मर्म’ - पाठ विश्लेषण-1
	4	‘माया का मर्म’ - पाठ विश्लेषण-2
	5	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास
	6	उषा प्रियंवदा- साहित्यिक परिचय
	7	महिला कथाकार के रूप में उषा प्रियंवदा
	8	‘वापसी’ कहानी पाठ और विश्लेषण -1
SEPTEMBER	9	‘वापसी’ कहानी पाठ और विश्लेषण -2
	10	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास
	11	कृष्णा सोबती साहित्यिक परिचय
	12	समकालीन कथा परिदृश्य और कृष्णा सोबती
	13	‘सिक्का बदल गया’ पाठ और विश्लेषण -1
	14	‘सिक्का बदल गया’ पाठ और विश्लेषण -1

	15	‘सिक्का बदल गया’ मूल्याङ्कन, विभाजन पर आधारित रचनाएँ-संक्षिप्त परिचय
	16	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास
OCTOBER	17	कहानीकार काशीनाथ सिंह परिचय
	18	समकालीन हिंदी कहानी और काशीनाथ सिंह
	19	‘जंगल जातकम’ पाठ और विश्लेषण –11
	20	‘जंगल जातकम’ पाठ और विश्लेषण 2
	21	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास
	22	कहानीकार अमरकांत परिचय
	23	समकालीन कहानीकार में अमरकांत की पहचान
	24	‘दोपहर का भोजन’ पाठ और विश्लेषण –11
November	25	‘दोपहर का भोजन’ पाठ और विश्लेषण –12
	26	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास
	27	ओमप्रकाश बाल्मीकि का साहित्यिक परिचय
	28	दलित कथा साहित्य और ओमप्रकाश बाल्मीकि
	29	‘घुसपैठिए’ कहानी पाठ विश्लेषण 1
	30	‘घुसपैठिए’ कहानी पाठ विश्लेषण 2
	31	‘घुसपैठिए’ कहानी पाठ और विश्लेषण 3
	32	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास
	सहायक पुस्तकें	
		कहानी: नयी कहानी नामवर सिंह

		एक दुनिया समानान्तर राजेंद्र यादव
		हिंदी कहानी : अंतरंग पहचान रामदरश मिश्र
		हिन्दी कहानी का इतिहास गोपाल राय
		कुछ कहानियाँ कुछ विचार विश्वनाथ त्रिपाठी

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WORK PLAN (August-November 2021)

Course Name: B. A. (H.) HINDI

Semester: III

Paper Code:

Paper Name: हिंदी कहानी

Faculty: डॉ. ऋचा मिश्र

Month	Lectures	पाठ योजना (यूनिट 1, यूनिट 2)
AUGUST	1	कहानी, कहानी और किस्सागोई
	2	हिन्दी कहानी के विकास का संक्षिप्त परिचय
	3	हिन्दी कहानी के विकास का संक्षिप्त परिचय
	4	चन्द्रधर शर्मा गुलेरी का संक्षिप्त साहित्यिक परिचय 'उसने कहा था': पाठ और विश्लेषण 1
	5	'उसने कहा था': पाठ और विश्लेषण 2
	6	'उसने कहा था': पाठ और विश्लेषण 3
	7	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास और जाँच परीक्षा 1
	8	प्रेमचंद एवं उनके साहित्य का संक्षिप्त परिचय 'पूँस की रात' पाठ और विश्लेषण 1
SEPTEMBER	9	'पूँस की रात' पाठ और विश्लेषण 2
	10	'पूँस की रात' पाठ और विश्लेषण 3,
	11	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास
	12	जाँच परीक्षा 2

	13	जयशंकर प्रसाद, उनका समय एवं साहित्य
	14	‘छोटा जादूगर’ पाठ और विश्लेषण 1
	15	‘छोटा जादूगर’ पाठ और विश्लेषण 2
	16	‘छोटा जादूगर’ पाठ और विश्लेषण 3 , प्रेमचंद एवं प्रसाद की कहानियों की तुलना
OCTOBER	17	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास और जाँच परीक्षा 3
	18	जैनेन्द्र एवं जैनेन्द्रयुगीन कहानियाँ
	19	‘पाजेब’ पाठ और विश्लेषण 1
	20	‘पाजेब’ पाठ और विश्लेषण 2
	21	‘पाजेब’ पाठ और विश्लेषण 3
	22	परीक्षोपयोगी चर्चा, अभ्यास और जाँच परीक्षा 4
	23	फणीश्वर नाथ रेणु का साहित्यिक परिचय , आंचलिक कहानीकार रेणु
	24	‘तीसरी कसम’ पाठ और विश्लेषण 1
November	25	‘तीसरी कसम’ पाठ और विश्लेषण 2
	26	‘तीसरी कसम’ पाठ और विश्लेषण 3
	27	परीक्षोपयोगी प्रश्नों की चर्चा, अभ्यास और जाँच परीक्षा 5
	28	भीष्म साहनी का साहित्यिक परिचय
	29	‘चीफ की दावत’ पाठ और विश्लेषण 1
	30	‘चीफ की दावत’ पाठ और विश्लेषण 2
	31	‘चीफ की दावत’ पाठ और विश्लेषण 3
	32	परीक्षोपयोगी प्रश्नों की चर्चा, अभ्यास और जाँच परीक्षा 6
	सहायक पुस्तकें	
		कहानी: नयी कहानी नामवर सिंह

		नयी पन्हानी की भूमिका कमलेश्वर
		एक दुनिया समानान्तर राजेंद्र यादव
		हिंदी कहानी : अंतरंग पहचान रामदरश मिश्र
		हिन्दी कहानी का इतिहास गोपाल राय
		कुछ कहानियाँ कुछ विचार विश्वनाथ त्रिपाठी
		नई कहानी संदर्भ और प्रकृति देवीशंकर अवस्थी
8		हिन्दी कहानी का विकास मधुरेश

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WORK PLAN (Aug-November 2021)

Course Name: B. A. (Hons.) HINDI

Semester: III HSEC

Paper Code:

Paper Name: विज्ञापन और हिंदी भाषा

Faculty: डॉ. अरुण भारद्वाज

Month	Lectures	पाठ योजना (यूनिट 4)
AUGUST	1	विज्ञापन निर्माण अर्थ और स्वरूप
	2	विज्ञापन निर्माण की प्रक्रिया
	3	विज्ञापन निर्माण का अभ्यास -1
	4	विज्ञापन निर्माण का अभ्यास -2
SEPTEMBER	5	प्रिंट माध्यम में विज्ञापन का महत्व
	6	वर्गीकृत एवं सजावटी विज्ञापन
	7	वर्गीकृत एवं सजावटी विज्ञापन अभ्यास -1
	8	वर्गीकृत एवं सजावटी विज्ञापन अभ्यास -2
OctoberOctober	9	रेडियो जिंगल लेखन का महत्व
	10	रेडियो जिंगल लेखन का प्रभाव
	11	रेडियो जिंगल लेखन का अभ्यास -1

	12	रेडियो जिंगल लेखन अभ्यास -2
November	13	टेलीविज़न विज्ञापन में स्टोरी बोर्ड का महत्व
	14	टेलीविज़न विज्ञापन के लिए स्टोरी बोर्ड निर्माण की प्रक्रिया
	15	प्रश्न एवं परिचर्चा
	16	प्रश्न एवं अभ्यास
		सहायक पुस्तकें
		1.विज्ञापन; अशोक महाजन, हरियाणा साहित्य अकादमी, चण्डीगढ़, 2007
		2.विज्ञापन कला; एकेश्वर प्रसाद हतवाल; राजस्थान हिन्दी गन्य अकादमी, जयपुर: 1989
		3. विज्ञापन विजयकुलश्रेष्ठ, माया प्रकाशन मन्दिर, जयपुर 1995
		4. आधुनिक विज्ञापन प्रेमचन्द पतंजलि, वाणी प्रकाशन, नई दिल्ली, 2007

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Course Name: B. A. (Hons.) HINDI

Semester: III HSEC

Paper Code:

Paper Name: विज्ञापन और हिंदी भाषा

Faculty: डॉ. लता

Month	Lectures	पाठ योजना (यूनिट 1)
AUGUST	1	विज्ञापन : स्वरूप एवं अवधारणा
	2	विज्ञापन की भारतीय अवधारणा
	3	विज्ञापन की पश्चमी अवधारणा
	4	विज्ञापन : अर्थ और परिभाषा
SEPTEMBER	5	विज्ञापन का महत्व
	6	विज्ञापन का महत्व विविध सन्दर्भ
	7	विज्ञापन के सामाजिक के सामाजिक उद्देश्य
	8	विज्ञापन के व्यावसायिक उद्देश्य
OctoberOctober	9	विज्ञापन और मार्केटिंग
	10	ब्रांड निर्माण में विज्ञापन की भूमिका
	11	प्रश्न एवं परिचर्चा
	12	प्रश्न एवं अभ्यास

November	13	विज्ञापन के नए संदर्भ (प्रायोजित कार्यक्रम)
	14	प्रायोजित समाचार और विज्ञापन
	15	प्रायोजित सामाजिक गतिविधियाँ और विज्ञापन
	16	प्रश्न एवं अभ्यास
		सहायक पुस्तकें
		1. विज्ञापन; अशोक महाजन, हरियाणा साहित्य अकादमी, चण्डीगढ़,
		2. विज्ञापन कला; एकेश्वर प्रसाद हतवाल; राजस्थान हिन्दी गन्य अकादमी, जयपुर: 1989
		3. विज्ञापन विजयकुलश्रेष्ठ, माया प्रकाशन मन्दिर, जयपुर 1995
		4. आधुनिक विज्ञापन प्रेमचन्द पतंजलि, वाणी प्रकाशन, नई दिल्ली,

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WORK PLAN (Aug-November 2021)

Course Name: B. A. (HONSONS) HINDI

Semester: III HSEC

Paper Code

Paper Name: विज्ञापन और हिंदी भाषा

Faculty: डॉ.मुकुल शर्मा

Month	Lectures	पाठ योजना (यूनिट 2, यूनिट 3)
AUGUST	1	विज्ञापन: अर्थ एवं इतिहास -1
	2	विज्ञापन: अर्थ एवं इतिहास – 2
	3	विज्ञापन: विविध माध्यम सामान्य परिचय
	4	विज्ञापन माध्यम का चयन
	5	प्रिंट माध्यम के लिए कॉपी लेखन-1
	6	प्रिंट माध्यम के लिए कॉपी लेखन-2
	7	प्रिंट के लिए कॉपी लेखन का अभ्यास
	8	रेडियो माध्यम के लिए कॉपी लेखन-1
SEPTEMBER	9	रेडियो माध्यम के लिए कॉपी लेखन-2
	10	रेडियो माध्यम के लिए कॉपी लेखन का अभ्यास
	11	टेलीविजन माध्यम के लिए कॉपी लेखन-1
	12	टेलीविजन माध्यम के लिए कॉपी लेखन-2
	13	टेलीविजन माध्यम के लिए कॉपी लेखन का अभ्यास

	14	विविध माध्यमों के लिए कॉपी लेखन का अभ्यास
	15	विज्ञापन की भाषा का स्वरूप
	16	विज्ञापन की भाषागत विशेषताएँ1
OCTOBER	17	विज्ञापन की भाषागत विशेषताएँ2
	18	विज्ञापन की भाषा के विभिन्न पक्ष1
	19	विज्ञापन की भाषा के विभिन्न पक्ष2
	20	सादृश्य विधान
	21	अलंकरण
	22	तुकांतता
	23	समानांतरता
	24	विचलन, मुहावरे- लोकोक्तियाँ-1
November	25	विचलन, मुहावरे- लोकोक्तियाँ-2
	26	भाषा संकर
	27	हिंदी विज्ञापनों की भाषा1
	28	हिंदी विज्ञापनों की भाषा1
	29	प्रश्न और अभ्यास1
	30	प्रश्न और अभ्यास2
	31	प्रश्न और अभ्यास3
	32	सामूहिक परिचर्चा
		सहायक पुस्तकें
		1.विज्ञापन; अशोक महाजन, हरियाणा साहित्य अकादमी, चण्डीगढ़, 1994
		2.विज्ञापन कला; एकेश्वर प्रसाद हतवाल; राजस्थान हिन्दी गन्य अकादमी, जयपुर: 1989
		3. विज्ञापन विजयकुलश्रेष्ठ, माया प्रकाशन मन्दिर, जयपुर 1995



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

Name of the Faculty: Rajbir Kaur

Department: History

Semester: III

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 - History of India-III (c.750-1200)
		I. Foundation, expansion and consolidation of the Sultanates of Delhi c.13 th to 15 th Century: Expansion; iqta system; administrative reforms; nobility	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
	Tutorials:	Introducing the course and its themes.		
		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: Brahmins and temples; sacred spaces and conflicts; courtly cultures (c) Issue of 'Foreign and Indian' : Arabs and Ghaznavids in the north-west, Cholas in Southeast Asia	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)

	Tutorials:	III. Foundation, expansion and consolidation of the Mughal state, c. 16 th to 17 th 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 - History of India, c. 1200-1700
		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 <i>varna-jati</i> 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)
	Tutorials:	II. Regional political formations: Vijayanagara IV. 17 th century transitions: Marathas; Sikhs	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
		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 - 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 - History of India, c. 1200-1700
	Tutorials:	Virtual Tours of Monuments, Discussion group for Hindi medium students		
	<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 - 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: <i>Chakki-Nama</i> and <i>Charkha-Nama</i>	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
	Tutorials:	Revision of the courses		
		Discussion on previous year's question papers		



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

20th July-16th November 2021

Name of the Faculty: Ningmuanching

Department: HISTORY

Semester: ODD Semester

Month		Topics	Course	Paper Code/Name
NOVEMBER July, 2021	THEORY	- Introducing the course - Theory and Concepts: Understanding Gender, Patriarchy,	B.A(P) THIRD YEAR GE HISTORY	BA (P) GE: Women in Indian History
	Tutorials:	TUTORIALS/ QUESTION /ANSWER SESSIONS- Discussion of Syllabus		
	THEORY	Unit I: Understanding Concepts: Feminism and Gender as a tool for historical analysis Unit II: Women in Ancient India - Historiographic overview - Evolution of Patriarchy with a focus on Brahmanical Patriarchy	B.A(P) THIRD YEAR GE HISTORY	BA (P) GE: Women in Indian History
	Tutorials:	TUTORIALS/ QUESTION ANSWER SESSIONS/ QUIZZES		
	THEORY	Unit II: Women in Ancient India - Women and Property - Women and work: voices from Tamilakam - Unit III: Women in Medieval India - Historiography and the politics of the harem and the household - Case Studies: Razia Sultan, Nur Jahan, Jahanara	B.A(P) THIRD YEAR GE HISTORY	BA (P) GE: Women in Indian History
		QUESTION/ ANSWER SESSIONS.		
August				
September				
	Assignment	Assignment	B.A(P) THIRD YEAR GE HISTORY	

October	THEORY	Unit III: Women in Medieval India • Women Bhaktas Unit IV: Women in Modern India • Gender debate in Colonial India • Gandhi, Women's participation and Indian Nationalism	B.A(P) THIRD YEAR GE HISTORY	BA (P) GE: Women in Indian History
	Tutorials:	QUESTION/ ANSWER SESSIONS/ Test or assignment on selected topics		
November	THEORY	Unit IV: Women in Modern India • Partition, Refugee women and Rehabilitation -taught through the movie Pinjar	B.A(P) THIRD YEAR GE HISTORY	BA (P) GE: Women in Indian History
	Tutorials:	TUTORIALS/ REVISION		



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

July-November 2021

Name of the Faculty: NUTI NAMITA

Department: HISTORY

Semester: ODD Semester

Month		Topics	Course	Paper Code/Name
July	THEORY	China and the Great Divergence. Imperialism and China during the 19 th century Canton system,	B.A(HONS) THIRD YEAR HISTORY	DSE-1X HISTORY OF MODERN CHINA (1840-19650s)
	Tutorials:	TUTORIALS/ QUESTION /ANSWER SESSIONS- REVISION		
August	THEORY	Opium Wars. Taiping rebellion, Reform Movement; Self -Strengthening movement	B.A(HONS) THIRD YEAR HISTORY	DSE-1X HISTORY OF MODERN CHINA (1840-1950s)
	Tutorials:	TUTORIALS/ QUESTION ANSWER SESSIONS/ QUIZZES		
September	THEORY	Reform movement of 1898; Boxer movement; Revolution of 1911 Sun-Yat-Sen and his ideology	B.A(HONS) THIRD YEAR HISTORY	DSE-1X HISTORY OF MODERN CHINA (1840-1950s)
	Assignment	QUESTION/ ANSWER SESSIONS. REMEDIAL CLASSES FOR HINDI MEDIUM STUDENTS		
Assignment was given to students on the causes and historiography of Opium Wars in China		B.A(HONS) THIRD YEAR HISTORY		
Warlordism: May Fourth Movement Nationalism and Communism; 1921-1927,		B.A(HONS) THIRD YEAR HISTORY	DSE-1X HISTORY OF MODERN CHINA (1840-1950s)	
October	THEORY			
	Tutorials:	QUESTION/ ANSWER SESSIONS		

	THEORY NOVEMBER	Formation of CCP, Re-organization of the KMT, First United Front; 1928-1949-Kiangsi Soviet, Peasant Nationalism, Communist Victory		DSE-1X HISTORY OF MODERN CHINA (1840-1950s)
	Tutorials:	TUTORIALS/ REVISION		



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

July-November 2021

Name of the Faculty: RAJNI CHANDIWAL

Department: HISTORY

Semester: ODD Semester

Month		Topics	Course	Paper Code/Name
July	THEORY 1.	Transition From Feudalism to Capitalism – Problems and Theory	B.A (HONS.) IInd YEAR, Course Code -VI	CORE-RISE OF MODERN WEST-I
	Tutorials:	Question and Answer on the theme. Problem solving.		
	THEORY 2.	I. Foundation, expansion and consolidation of the Sultanates of Delhi c.13 th to 15 th Century: Expansion; iqta system; administrative reforms; nobility	B.A (Prog)., IInd YEAR, Course Code-	CORE – HISTORY OF INDIA c. 1200-1700
	Tutorials:	Question and Answer with Maps and visual representation of the period.		
AUGUST	THEORY 1.	Questions of Euro-Centrism Early Colonial Expansion, Factors for Colonization, Trade and Empire		
	Tutorials	Visual Representation of the theme through Maps and Small youtube clips		
	THEORY.2	Regional Political Formations -Vijayanagra Empire		
	Tutorials:	Questions and Answers with Mapping the Area of the polity in modern Maps.		
SEPTEMBER	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.		

	THEORY.2	III. Foundation, expansion and consolidation of the Mughal state, c. 16 th to 17 th 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 the Class-Transition Debate and Eurocentrism, Early Colonization and Voyages, Slavery. 2. On Land Grant System and Iqta		
	Tutorials:	Question and Answer/Revision.		
OCTOBER	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. 17 th 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 the units and themes taught in the class.		
NOVEMBER	THEORY 1	Emergence of European State Systems, with two 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 the Deccan: <i>Chakki-Nama</i> and <i>Charkha-Nama</i>		
	Tutorial	Discussion/ Revision		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-November, 2021 odd semester

Name of the Faculty: Saurabh Kumar Department: History

Semester: III SEC- Understanding Heritage (BA Hons. IInd Year), BA Prog. Sem III SEC- Heritage and Tourism, BA Prog. Sem V Issues in world History 20th Century I and BA Hons. Semester III -History of India- IV (1200-1500), only 1 lecture per week

Please Note: Joined the College on 09.08.2021

Month		Topics	Course	Paper Code/Name
JULY	Theory:	JOINED COLLEGE ON 09.08.2021		
	Practicals:			
	Tutorials:			
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 II: First World War (b) League of Nations (Paper shared with Prof. Vandana Joshi)	BAP/DSE	Issues in 20 th century world history
		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;	BA-Prog Sem 3	SEC Heritage and Tourism

		Kew Gardens, London; Indian Museum, Kolkata; Tranquebar; guide books and travel literature.		
		ONLY 1 Lecture assigned per week (paper shared with Prof. Nirmal Kumar) UNIT 2 Political Structures and Consolidation of Identities-Rajputs	BA Hons. SEM III	History of India IV (1200-1500)
	Practicals:			
	Tutorials:	Presentations and assignments		
		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 IV: section on UNITED Nations (Paper shared with Prof. Vandana Joshi)	BAP/DSE	Issues in 20 th century world history
		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
		ONLY 1 Lecture assigned per week (paper shared with Prof. Nirmal Kumar) UNIT 2 Political Structures and Consolidation of Identities-Rajputs	BA Hons. SEM III	History of India IV (1200-1500)

	Practicals:	Presentations and test		
	Tutorials:	Presentations and assignments		
		Presentations and assignments		
	Assignment			
OCTOBER	Theory	Unit III: Challenges facing tangible and intangible heritage Development, antiquity smuggling, conflict (specific cases studies)	BA HONS	SEC Understanding Heritage
		section on Japan (Paper shared with Prof. Vandana Joshi)	BAP/DSE	Issues in 20th th century world history
		Unit III: Sustainable Tourism a. Interface with local sensibilities: case study of Agra, Simla, Goa b. Conservation of Heritage: Humayun's Tomb, Ajanta Caves	BA-Prog Sem 3	SEC Heritage and Tourism
		ONLY 1 Lecture assigned per week (paper shared with Prof. Nirmal Kumar) UNIT 2 Political Structures and Consolidation of Identities-Other Warrior Lineages	BA Hons. SEM III	History of India IV (1200-1500)
	Practicals:			
	Tutorials:	Presentations and class test		
		Presentations and assignments		

	Mid Term Test			
NOVEMBER	Theory:	Unit IV: Heritage and travel: [a] Viewing heritage sites [b] The relationship between cultural heritage, landscape and travel; recent trends 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 place of residence)	BA HONS	SEC-Understanding Heritage
		Unit V: Modernity, Rights and Democracy Section on Suffrage movement (England) Paper shared with Prof. Vandana Joshi	BAP DSE	Issues in 20 th century world history
		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 Semester III	SEC Heritage and Tourism
		ONLY 1 Lecture assigned per week (paper shared with Prof. Nirmal Kumar) UNIT 2 Political Structures and Consolidation of Identities-Other Warrior Lineages	BA Hons. SEM III	History of India IV (1200-1500)
	Practicals:			
	Tutorials:	Presentations and assignments		
		Presentations and assignments		



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA
COLLEGE**

July-November, 2021 odd semester

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. The French Revolution [a] Crisis of the Ancien Regime [b] Intellectual currents 2.	BA HONS Core Course XI History	Modern European History
		Unit I: The Concept and Definition World History :	BA Programme DSE	Issues in 20 th century world history
	Practicals:			
	Tutorials:	The French Revolution discussion on the historical background	BA HONS	Modern European History
		Concept and definition discussion	BAP /DSE	Issues in 20 th century world history
AUGUST	Theory:	[c] Social classes and emerging gender relations [d] Phases of the French Revolution 1789-99 [e] Art and culture of the French Revolution [f] Napoleonic consolidation –reform and empire	BA HONS Core Course	Modern European History

		Unit 1 completed 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 (shared with Saurabh Kumar)	BAP/DSE	Issues in 20th th century world history
	Practicals:			
	Tutorials:	Presentations and assignments		
		Presentations and assignments		
SEPTEMBER	Theory:	(g) Historiography of French Revolution II. Restoration and revolution: c 1815-1848 [a] Forces of conservatism and restoration of old hierarchies [b] Social, political and intellectual currents [c] Revolutionary and radical movements 1830-1848 III. Capitalist industrialization and social and economic transformation (Late 18 th 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.	BA HONS	Modern European History

		[Unit III: 1917 Russian Revolution Screening of Sergei Eisenstein: battle Potempkin film (a) Formation of the USSR; (b) Debates on socialism and the role of the Communist International (Comintern) Unit IV: Fascism and Nazism Italy UNITED Nations (Saurabh Kumar)	BAP/DSE	Issues in 20th th century world history
	Practicals:	Presentations and test		
	Tutorials:	Presentations and assignments		
		Presentations and assignments		
	<u>Assignment</u>			
OCTOBER	Theory	[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 19 th and 20 th 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
		: Germany and Second World War Japan and second World war (Saurabh)	BAP/DSE	Issues in 20th th century world history
	Practicals:			

	Tutorials:	Presentations and class test		
		Presentations and assignments		
	<u>Mid Term Test</u>			
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 V: Modernity, Rights and Democracy (b) Suffrage movement (England) Saurabh (c) The formation of the United Nations (Saurabh did in September) (d) Art and politics (Picasso)	BAP DSE	Issues in 20 th century world history
	Practicals:			
	Tutorials:	Presentations and assignments		
		Presentations and assignments		



SRI VENKATESWARA COLLEGE

Semester Teaching Plan (2020-21)

Name of the Faculty: Mr. Anirban Chatterjee

Department: Mathematics

Semester: V

Month		Topics	Course	Paper Code/Name
July	Theory	Transportation problem and its mathematical formulation, northwest-corner method.	BA Prog Sem- V	SEC-3/Transportation & Network flow problems
	Practical	Transportation problem (northwest-corner method)	BA Prog Sem- V	SEC-3/Transportation & Network flow problems
August	Theory	least cost method and Vogel approximation method for determination of starting basic feasible solution. Algorithm for solving transportation problem	BA Prog Sem- V	SEC-3/Transportation & Network flow problems
	Practical	Transportation problem (Vogel approximation method & least cost method)	BA Prog Sem- V	SEC-3/Transportation & Network flow problems
September	Theory	Modified distribution method/ u-v method for optimizing transportation model after having basic feasible solution. Assignment problem and its mathematical formulation, Hungarian method for solving assignment problem. traveling salesperson problem.	BA Prog Sem- V	SEC-3/Transportation & Network flow problems
	Practical	Modified distribution method/ u-v method. Assignment problem by traditional transportation method.	BA Prog Sem- V	SEC-3/Transportation & Network flow problems
October	Theory	Network models, minimum spanning tree algorithm, shortest-route problem, maximum flow model	BA Prog Sem- V	SEC-3/Transportation & Network flow problems
	Practical	minimum spanning tree algorithm, shortest-route problem- Dijkstra's and Floyd's algorithm, maximum flow algorithm	BA Prog Sem- V	SEC-3/Transportation & Network flow problems
November	Theory	Project network representation. CPM and PERT.	BA Prog Sem- V	SEC-3/Transportation & Network flow problems

	Practical	CPM and PERT, calculation and graphical representation of time schedule.	BA Prog Sem- V	SEC-3/Transportation & Network flow problems
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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2021-22 (Odd Semester)

Name of the Faculty: Dr. Deepti Jain

Department: Mathematics

Semester: III/V

Month		Topics	Course	Paper Code/Name
JULY	Theory	Definition and examples of ordered sets, Chains and antichains, Order-isomorphism, The Covering Relation, Hasse Diagram, 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	Exercises and doubts based on Hasse diagram and Order-isomorphism, Verification of order-preserving, order-embedding and order-isomorphisms.		
	Practical	N/A		
AUGUST	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.		
	Practical	N/A		
	Practical	Practical 8- To draw surfaces and level curves. Practical 9- To draw surfaces and discuss whether limit exists or not. Find the limit, if it exists	B.Sc.(H) Mathematics III semester	BMATH 307 Multivariate Calculus

SEPTEMBER	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.		
	Practical	N/A		
	Assignment	Question from the topics including ordered sets, Lattices and Boolean Algebras.		
	Practical	Practical 10-To Draw the tangent planes Practical 11- Use incremental approximations to estimate functions. Practical 12-To find critical points and identify relative maxima, relative minima or saddle points to surfaces, if it exists. Practical 13- To draw and check type-I and type-II regions	B.Sc.(H) Mathematics III Semester	BMATH 307 Multivariate Calculus
OCTOBER	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.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Tutorial	Exercises based on isomorphism of graphs, paths and circuits and adjacency matrix.		
	Practical	N/A		
	<u>Mid Term Test</u>	Ordered Sets, Lattices, Boolean Algebras, Graphs.		
	Practical	Practical 1- using epsilon delta definition. Practical 2 – discuss the limit of a function when x tends to 0. Practical 3 – discuss the limit of a function when x tends to infinity. Practical 4- To discuss continuity.	B.Sc.(H) Mathematics III Semester	BMATH 307 Multivariate Calculus
NOVEMBER	Theory	Weighted Graphs, Travelling salesman's Problem, Shortest path, Dijkstra's algorithm, Floyd-Warshall algorithm.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	Tutorial	Exercises based on various algorithms mentioned above to find the shortest path in a given weighted graph.		
	Practical	N/A		
	Practical	Practical 5 – Illustrate the geometric meaning of Rolle's theorem Practical 6 – Illustrate the geometric meaning of Lagranges Mean Value Theorem Practical Test (Internal)	B.Sc.(H) Mathematics V Semester	BMATH 307 Multivariate Calculus

DECEMBER	Practical	Practical 7 – Visualization by creating graphs. Revision of all topics. Practical Examination.	B.Sc.(H) Mathematics III Semester	BMATH 307 Multivariate Calculus
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SEMESTER (ODD) WISE TEACHING PLAN 2021-22

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Mohd. Aquib

Department: Mathematics

Month		Topics	Course	Paper Code/Name
JULY/ AUGUST	Theory	Definition of the limit, Sequential criterion for limits, Criterion for non-existence of limit, Algebra of limits of functions with illustrations and examples, Squeeze theorem	B.Sc(H) Maths Sem-III B	BMATH305 Theory of Real Functions
	Theory	Introduction to TeX and LaTeX, Typesetting a simple document, Adding basic information to a document, Environments, Footnotes	B.Sc(H) Maths Sem-III A	SEC-1 LaTeX and HTML
	Practical	Chapter 9 (Exercises 4 to 10)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Theory	Correlation coefficient, Covariance, Calculation of covariance from joint moment generating function	Sem V BA(P)	BA(P) V Statistics
	Assignment	Assignments to be given on each course		

Month		Topics	Course	Paper Code/Name
SEPTEMBER	Theory	Definition and illustration of the concepts of one-sided limits, Infinite limits and limits at Infinity, Definitions of continuity at a point and on a set, Sequential criterion for continuity, Algebra of continuous functions, Composition of continuous functions, Various properties of continuous functions defined on an interval, viz., Boundedness theorem, Maximum-minimum theorem,	B.Sc(H) Maths Sem-III B	BMATH305 Theory of Real Functions
	Theory	Sectioning and displayed material, Accents of 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) Maths Sem-III A	SEC-1 LaTeX and HTML
	Practical	Chapter 10 (Exercises 1 to 4 and 6 to 9)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Theory	Independent random variables, Linear regression for two variables, and the method of least squares	Sem V BA(P)	BA(P) V Statistics
	Assignment	Assignments to be given on each course		

Month		Topics	Course	Paper Code/Name
OCTOBER	Theory	Statement of the location of roots theorem, Intermediate value theorem and the preservation of intervals theorem, Definition of uniform continuity, Illustration of non-uniform continuity criteria, Uniform continuity theorem, Differentiability of a function, Algebra of differentiable functions	B.Sc(H) Maths Sem-III B	BMATH305 Theory of Real Functions
	Theory	Graphics in LaTeX, Simple pictures using PSTricks, Plotting of functions, Beamer presentation	B.Sc(H) Maths Sem-III A	SEC-1 LaTeX and HTML
	Practical	Chapter 11 (Exercises 1, 3, 4, and 5),	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Theory	Chebyshev's theorem, Statement and interpretation of the strong law of large numbers	Sem V BA(P)	BA(P) V Statistics
	Test	To take internal lab test of the practicals		
	Test	To take internal test of above courses		
	Assignment	Assignments to be given on each course		

Month		Topics	Course	Paper Code/Name
NOVEMBER	Theory	Caratheodory's theorem and chain rule, Relative extrema, Interior extremum theorem, Mean value theorem and its applications, Intermediate value property of derivatives – Darboux's theorem, Taylor polynomial, Taylor's theorem and its applications	B.Sc(H) Maths Sem-III B	BMATH305 Theory of Real Functions
	Theory	HTML basics, Creating simple web pages, Adding images and links	B.Sc(H) Maths Sem-III A	SEC-1 LaTeX and HTML
	Practical	Chapter 15 (Exercises 5, 6 , 8,9)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Theory	Central limit theorem and the weak law of large numbers.	Sem V BA(P)	BA(P) V Statistics
	Assignment	Assignments to be given on each course		

Month		Topics	Course	Paper Code/Name
DECEMBER	Theory	Taylor's series expansions of e^x , $\sin x$ and $\cos x$	B.Sc(H) Maths Sem-III B	BMATH305 Theory of Real Functions
	Theory	Design of web pages	B.Sc(H) Maths Sem-III A	SEC-1 LaTeX and HTML
	Practical	Chapter 15 (Exercises 10 and 11)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Assignment	Assignments to be given on each course		



SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE
2021-22 Odd Semester

Name of the Faculty:
Semester: V

Dr. Mainak Mukherjee

Department: Mathematics

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
August	Theory:	Cauchy sequences, Complete Metric Spaces, 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.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Practicals	NA		
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Metric spaces, Cauchy sequences, Complete Metric Spaces, 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.		
	Practicals	1. Bisection method 2. Newton-Raphson method 3. Secant method 4. Regula-Falsi method	B.Sc(H) Maths Sem V	Numerical Analysis

September	Theory:	Subspaces, dense sets, separable spaces, Continuous mappings, sequential criterion and other characterizations of continuity, Uniform continuity.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Practicals:	NA		
	Tutorials:	To discuss the doubt of students and various 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 to syllabus.		
	Practicals:	5. LU decomposition method 6 Gauss–Jacobi method 7. SOR method 8 Gauss–Seidel method 9. Lagrange interpolation 10. Newton interpolation	B.Sc.(H) Maths Sem-V	Numerical Analysis
OCTOBER	Theory:	Homeomorphism, Contraction mappings, Banach Fixed point Theorem. Connectedness, connected subsets of $\mathbf{R}$, connectedness and continuous mappings. Compactness.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Homeomorphism, Contraction mappings, Banach Fixed point Theorem. Connectedness, connected subsets of $\mathbf{R}$, connectedness and continuous mappings. Compactness.		
	Test	To take internal Test.		
	Practicals:	11. Trapezoidal rule 12. Simpson's rule 13. Euler's method 14. Second order Runge–Kutta methods.	B.Sc.(H) Maths Sem-V	Numerical Analysis
	Test	To take internal Lab Test.		

NOVEMBER	Theory:	Compactness and boundedness, continuous functions on compact spaces and to revise whole syllabus, to discuss last previous year questions papers.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Practicals:	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 discuss last previous year questions papers.		
	Practicals:	Revision of Practical	B.Sc.(H) Maths Sem-V	Numerical Analysis



SRI VENKATESWARA COLLEGE

Semester Teaching Plan (July 2021-Nov 2021)

Name of the Faculty: Dr. Neelesh Kumar

Department: Mathematics

Semester: V

Month		Topics	Course	Paper Name/Code
July	Theory	Fundamentals of programming, Organization of logic flow in stored program model of computation, C++ as a general purpose programming language, Basic structure of a C++ program, Some useful compilers and IDE's, Basic data-types.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
	Practicals	Instructions for the installation and setting up of C++ computing environment on Linux/Windows/Mac-OS; gcc/g++/mingw/cc, Program-development methodology and use IDE's or other tools. Demonstration of sample programs: "Hello World", Sum of an arithmetic progression, Value of $\sin x$ using series expansion. All the practical works will be performed in C++ computing environment.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
August	Theory	Variables and literals in C++, Various operators, expressions, evaluation precedence, and Type compatibility. Outline of program development in C++, Debugging	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics

		and testing; Applications of Greatest common divisor, and Random number generation to a problem.		
	Practicals	Finding/demonstrating: Machine epsilon, Integer and float overflow/underflow, Iteration and selection based logic. Greatest common divisor (including Euclid's Method), Random number generation (including a Monte Carlo Program).	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
	Class Test	To take class test related to the syllabus covered so far.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
September	Theory	Discussion of 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 (2 & 3-dimensional), and Pythagorean triples. Containers and Template Libraries: Sets, Iterators, Multisets.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
	Practicals	Factorization of an integer, and Euler's totient., Cartesian geometry using points (2 & 3-dimensional), Pythagorean triples, Basic set algebra.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
	Class test	To take class test and lab tests based on the topics covered in the current month.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
October	Theory	Containers and Template Libraries: Vectors, Maps, Lists,	B.Sc.(H) Maths Sem-V,	DSE-I (iii) C++

		Stacks and Queues; Applications: Basic set algebra, Modulo arithmetic, Permutations, and Polynomials. Arbitrary precision arithmetic using the GMP package; Linear algebra: Two-dimensional arrays in C++ with applications in finding eigenvalues, eigenvectors, rank, nullity, and solving system of linear equations in matrices.	Sec-A & B	Programming for Mathematics
	Practicals	Modulo arithmetic, Permutations, Polynomials, Arbitrary precision arithmetic using the GMP package.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
	Assignment	To be given assignment based on the syllabus covered so far.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
November	Theory	Features of C++ for input/output and visualization: strings, streams, formatting method; Processing files in a batch, Command-line arguments, Visualization packages and their use in plots.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
	Practicals	Finding eigenvalues, eigenvectors, rank, nullity, and solving system of linear equations in matrices. Plots (using the GNU plotutils package)	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics
	Assignment	To be given assignment containing the questions based on the various parts of the covered syllabus.	B.Sc.(H) Maths Sem-V, Sec-A & B	DSE-I (iii) C++ Programming for Mathematics

Department of Mathematics

Sri Venkateswara College

Odd Semester Teaching Plan (July-November 2021)

Faculty: Dr. Nisha Bohra

<u>Month</u>		<u>Topics</u>	<u>Course</u>	<u>Paper Name and code</u>
August	Theory 1	Latin Squares, Table for a finite group as a Latin square, Latin squares as in design of experiments	B A Prog. Sem III	Analytic Geometry and Applied Algebra
	Theory 2	Metric Spaces: Definitions and examples	B.Sc. (H) Mathematics V A	Metric spaces, BMATH511
	Tutorial Theory 2	To discuss the doubt of the students and exercise problems based on the topic covered in the class.	B.Sc. (H) Mathematics V A	Metric spaces, BMATH511
	Practical 1	1. Installing Latex and Miktex and learning the basics of software. 2. Ch-9, Exercise 4, 5,6	B.Sc. (H) Mathematics III Sem	SEC-Latex and HTML
September	Theory 1	Mathematical models for matching jobs, Spelling checker, Network reliability, Street surveillance, Scheduling meetings. Interval graph modelling and Influence model, Pitcher pouring puzzle.	B A Prog. Sem III	Analytic Geometry and Applied Algebra
	Theory 2	Sequences in metric spaces, Cauchy sequences, Complete metric spaces, open and closed balls, Neighborhood, open set, Interior of a set, Limit point of a set.	B.Sc. (H) Mathematics V A	Metric spaces, BMATH511
	Tutorial Theory 2	To discuss the doubt of the students and exercise problems based on the topic covered in the class.	B.Sc. (H) Mathematics V A	Metric spaces, BMATH511

	Practical 1	Chapter 9, Exercise 7,8,9 and 10. Chapter 10-Exercise 1 to 4	B.Sc. (H) Mathematics III Sem	SEC-Latex and HTML
October	Theory 1	Rectangular coordinates in 3-dimensional space with problems, Spheres, Cylindrical surfaces, Cones. Vectors in coordinate systems, Vectors viewed geometrically, Vectors determined by length and angle, Dot product, Cross product and their geometrical properties.	B A Prog. Sem III	Analytic Geometry and Applied Algebra
	Theory 2	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) Mathematics V A	Metric spaces, BMATH511
	Tutorial Theory 2	To discuss the doubt of the students and exercise problems based on the topic covered in the class.	B.Sc. (H) Mathematics V A	Metric spaces, BMATH 511
	Practical 1	Chapter 10-Exercise 6 to 9 Chapter 11 -Exercises 1, 3, 4, and 5 Chapter 15-Exercises 5, 6	B.Sc. (H) Mathematics III Sem	SEC-Latex and HTML
	Internal Test	Internal Exam conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics VA and B A Prog. Sem III	Metric Spaces and Analytic Geometry and Applied Algebra
	Assignment	Assignment given on the topics covered in the class before mid-semester break	B.Sc. (H) Mathematics VA and B A Prog. Sem III	Metric Spaces and and Analytic Geometry and Applied Algebra
November	Theory 1	Parametric equations of lines in plane, Planes in 3-dimensional space. Revision of course	B A Prog. Sem III	Analytic Geometry and Applied Algebra

	Theory-2	Uniform continuity, Homeomorphism, Contraction mappings, Banach Fixed point theorem, Connectedness, connectedness and continuous mappings	B.Sc. (H) Mathematics V A	Metric spaces, BMATH511
	Tutorial Theory 2	To discuss the doubt of the students and exercise problems based on the topic covered in the class.	B.Sc. (H) Mathematics V A	Metric spaces, BMATH 511
	Practical 1	Ch 15- Exercises 8 to 11	B.Sc. (H) Mathematics III Sem	SEC-Latex and HTML

SEMESTER (ODD) WISE TEACHING PLAN 2021-22

SRI VENKATESWARA COLLEGE

Name of the Faculty: Pratibha Gaur

Department: Mathematics

Month		Topics	Course	Paper Code/ Name
AUGUST	Theory	Techniques of Sketching Parabola	B.A. (Prog.) Sem-III	Paper III: Analytical Geometry and Applied Algebra
	Theory	Partial Differential Equations: Basic Concept and Definition	G.E. Sem-III	Differential Equation
	Practical	Chapter 9 (Exercises 4 to 10)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Assignment	Assignments to be given on each course		

Month		Topics	Course	Paper Code/ Name
SEPTEMBER	Theory	Techniques of Sketching Parabola, Ellipse and Hyperbola	B.A. (Prog.) Sem-III	Paper III Analytical Geometry and Applied Algebra
	Theory	Mathematical Problems, First Order Partial Differential Equations, Classification, Geometrical interpretation, Method of Characteristics. General Solution of First Order Partial Differential Equations.	G.E. Sem-III	Differentia Equations
	Practical	Chapter 10 (Exercises 1 to 4 and 6 to 9)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Tutorials	Various exercise and doubts based on Limits of Functions	B.SC.(Maths) Sem-III	BMATH305: Theory of Real Functions.
	Tutorials	Various Exercise and doubts based on parabola, ellipse and hyperbola.	BA(P) SEM III	Analytical Geometry and Applied Algebra
	Assignment	Assignments to be given on each course		

Month		Topics	Course	Paper Code/ Name
OCTOBER	Theory	Reflection Properties of Parabola, Ellipse and Hyperbola and their applications to signals.	B.A.(Prog) Sem-III	Paper-III : Analytical Geometry and Applied Algebra
	Theory	Canonical forms and Method of Variables for 1 st order P.D.E	G.E. Sem-III	Differential Equations
	Practical	Chapter 11 (Exercises 1, 3, 4, and 5),	B.Sc.(H) Maths Sem-III	SEC-1 LAB (LaTeX and HTML)
	Tutorials	Doubts and exercise based on Reflection Properties of Parabola, Ellipse and Hyperbola and their applications to signals	BA(P) SEM-III	Paper-III : Analytical Geometry and Applied Algebra
	Tutorials	Doubts and exercise based on Continuous Functions.	B.SC.(Maths) Sem-III	BMATH305: Theory of Real Functions
	Test	To take internal lab test of the practicals		
	Test	To take internal test of above courses		
	Assignment	Assignments to be given on each course		

Month		Topics	Course	Paper Code/ Name
NOVEMBER	Theory	Classifications of quadratic equations representing lines, parabola, ellipse and hyperbola.	B.A.(Prog) Sem-III	Paper-III: Analytical Geometry and Applied Algebra
	Theory	Classifications of 2 nd order P.D.E. Reduction to canonical forms. Second order P.D.E.with constant coefficients.	G.E. Sem-III	Differential Equations
	Practical	Chapter 15 (Exercises 5, 6 , 8,9)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Tutorials	Doubts and exercises based on Classifications of quadratic equations representing lines, parabola, ellipse and hyperbola	Sem III BA(P)	Paper-III : Analytical Geometry and linear algebra
	Tutorials	Doubts and various exercises based on Derivability and its Applications.	B.SC.(Maths) Sem-III	BMATH305: Theory of Real Functions
	Assignment	Assignments to be given on each course		

Month		Topics	Course	Paper Code/ Name
DECEMBER	Theory	Classification of Quadratic Equations	B.A.(Prog) : Sem-III	Paper-III : Analytical Geometry and Applied Algebra
	Theory	Second order P.D.E with constant coefficients and General solutions	G.E. Sem-III	Differential Equations
	Practical	Chapter 15 (Exercises 10 and 11)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Tutorials	Doubts and exercises based on Classification of Quadratic Equations	BA(Prog) Sem-III	Paper-III : Analytical Geometry and Applied Algebra
	Tutorials	Doubts and exercises based on Taylor's Theorem and its applications	B.Sc(H) Maths Sem-III	BMATH305: Theory of Real Functions
	Assignment	Assignments to be given on each course		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
AUGUST 2021 to NOV 2021

Faculty: Dr. R. K. BUDHRAJA

Sem : III /V

Deptt: MATHEMATICS

Odd Semester 2021 - 2022

Month		Topics	Course	Paper Code/
August	Theory	Limits of Functions	B. Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real Functions
	Practicals	Making basic programs in C++, compilation and execution. 1. Calculate the Sum of the series $1/1 + 1/2 + 1/3 + \dots + 1/N$ for any positive integer N. 2. Write a user defined function to find the	B.Sc.(Hons) Maths Sem-V	DSE 1: C++ programming
	Tutorials	Questions based on Limits of Functions	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real Functions
September	Theory	Limit of Functions, Introduction to Continuity.	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real Functions
	Practicals	3. Calculate the factorial of any natural number. 4. Read floating numbers and the average of negative numbers and the average of positive numbers. 5. Write a program that prompts the user to input a positive integer. It should then output a message indicating whether the number is a prime number. 6. Write a program that prompts the user to input the value of a, b and c involved in the equation $ax^2 + bx + c = 0$ and outputs the type of the roots of the equation. 7. Write a program that generates Fibonacci numbers. 8. Write a program that prompts the user to input five decimal numbers, converts each decimal number to the nearest integer, finds the sum and	B.Sc.(Hons) Maths Sem-V	DSE 1: C++ programming

	Tutorials	Questions based on Limit of Functions and Continuous Functions.	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real Functions
October	Theory	Properties of Continuous functions. Uniform Continuity, Differentiability of Functions	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real Functions
	Practicals	9. Write a program that uses while loops to prompt the user to input two integer, output all odd and even numbers between them, output the sum of all even numbers between them, output the sum of the square of the odd numbers between them. 10. Write a program that prompts the user to input five decimal numbers, then add them, convert the sum to the nearest integer, and print the result. 11. Write a program that prompts the user to enter the lengths of three sides of a triangle and then outputs a message indicating type of triangle. 12. Write a value returning function smaller to determine the smallest number from a set of numbers. Use this function to determine the smallest number from a set of 10 numbers.	B.Sc.(Hons) Maths Sem-V	DSE 1: C++ programming
	Tutorials	Questions based on Continuity, Uniform Continuity and Differentiability of Functions.,	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real Functions
	Assignment	Based on Limits, Continuity & Uniform Continuity of Functions	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real Functions

November	Theory	, Mean Value Theorems, Taylor's Theorems, Maxima & Minima, Taylor's Series & Maclaurin's Series	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real Functions
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November	Practicals	13. Write a function that takes as a parameter an integer and returns the number of odd, even, and zero digits. 14. Enter 100 integers into an array and sort them in an ascending/ descending order and print the largest/ smallest integers. 15. Enter 10 integers into an array and then search for a particular integer in the array. 16. Multiplication/ Addition of two matrices using two dimensional arrays. 17. Using arrays, read the vectors and compute the product and addition of these vectors. 18. Read from a text file and write to a text file. 19. Write a program to create the grids using for loops: 20. Write a function that takes an integer as a	B.Sc.(Hons) Maths Sem-V	DSE 1: C++ programming
	Tutorials	Questions based on Mean Value Theorem, Taylor's Theorems, Maxima & Minima, Taylor's Series & Maclaurin's Series Expansions	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real Functions
	Test	Based on whatever have been taught till Oct. 29, 2021.	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real
December	Theory	Expansions of e^x , $\sin x$ and $\cos x$	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real
	Practicals	Revision/Discussions for Practicals/ Practical Exams	B.Sc.(Hons) Maths Sem-V	DSE 1: C++ programming
	Tutorials	Questions based on Maclaurin's Expansions	B.Sc.(Hons) Maths Sem III A	BMATH 305 : Theory of Real

SEMESTER (ODD) WISE TEACHING PLAN 2021-22

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shahna

Department: Mathematics

Month		Topics	Course	Paper Code/ Name
AUGUST	Theory	Functions of several variables, Level curves and surfaces, Limits and continuity, Partial differentiation, Higher order partial derivative.	B.Sc(H) Maths Sem-III B	BMATH307- Multivariate Calculus
	Theory	Graphical method of solution, Basic feasible solutions, Linear programming and convexity; Introduction to the simplex method	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons)	GE-III Linear programming and Game Theory
	Practicals	1 Discuss the limit of the following functions using epsilon- delta definition. 2. Discuss the limit of the given functions when x tends to 0.	B.Sc(H) Maths Sem-III B	BMATH307- Multivariate Calculus
	Tutorial	Discuss exercise questions and doubts of theory classes.		
SEPTEMBER	Theory:	Tangent planes, Total differential and differentiability, Chain rule. Directional derivatives, The gradient, Maximal and normal property of the gradient, Tangent planes and normal lines. Extrema of functions of two variables, Method of Lagrange multipliers, Constrained optimization problems	B.Sc(H) Maths Sem-III B	BMATH307- Multivariate Calculus

	Theory	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. Definition and mathematical formulation of transportation problems, Methods of finding initial basic feasible solutions, North West corner rule, Least-cost method.	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-III Linear programming and Game Theory
	Practicals	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 B	BMATH307- Multivariate Calculus
	Assignment :	To give assignment to students of the above courses		
	Tutorial	Discuss exercise questions and doubts of theory classes.		
OCTOBER	Theory:	Definition of vector field, Divergence and curl. Double integration over rectangular and nonrectangular regions, Double integrals in polar coordinates, Triple integral over a parallelepiped and solid regions, Volume by triple integrals, Triple integration in cylindrical and spherical coordinates, Change of variables in double and triple	B.Sc(H) Maths Sem-III B	BMATH307- Multivariate Calculus

	Theory	Vogel's approximation method, Algorithm for solving transportation problems; Mathematical formulation and Hungarian method of solving assignment problems. Introduction to game theory, Formulation of two-person zero-sum rectangular game, Solution of rectangular games with saddle points.	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-III Linear programming and Game Theory
	Practicals	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 exists 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 B	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.		
NOVEMBER	Theory:	Line integrals, Applications of line integrals: Mass and Work, Fundamental theorem for line integrals, Conservative vector fields, Green's theorem, Area as a line integral	B.Sc(H) Maths Sem-III B	BMATH307- Multivariate Calculus
	Theory	Mixed strategies, Dominance principle, Rectangular games without saddle points	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-III Linear programming and Game Theory

	Practicals	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 B	BMATH307- Multivariate Calculus
	Assignment	To give assignment to students of the above courses		
	Tutorial	Discuss exercise questions and doubts of theory classes.		
DECEMBER	Theory:	Surface integrals, Stokes' theorem, Gauss divergence theorem.	B.Sc(H) Maths Sem-III B	BMATH307- Multivariate Calculus
	Theory	Graphical and linear programming solution of rectangular games.	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons)	GE-III Linear programming and Game Theory
	Practicals	12. Draw the given regions D and check whether these regions are of Type I or Type II.	B.Sc(H) Maths Sem-III B	BMATH307- Multivariate Calculus
	Assignment	To give assignment to students of the above courses		
	Tutorial	Discuss exercise questions and doubts of theory classes.		



SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE
Odd Semester Teaching Plan (Aug-November 2021)

Name of the Faculty: Amit Kumar

Department: Mathematics

Semester: III

Month		Topics	Course	Paper Code/Name
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 A	C6- 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),	B.Sc(H) Maths Sem-III A	C6- Group Theory-I
	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	Differential Equations

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 A	C6- Group Theory-I
	Tutorials	To discuss the doubt of students and problems like- elementary properties of groups. Subgroups, and examples of subgroup, centralizer, normalizer, center of a group, product of two subgroups. Properties of cyclic groups, classification of subgroups of cyclic groups. various exercise questions and examples related to cycle notation for permutations,	B.Sc(H) Maths Sem-III A	C6- Group Theory-I
	Assignments	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-III A	C6- Group Theory-I
	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
OCTOBER	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	C6- 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. 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	C6- Group Theory-I

	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
	Test	To take internal test related to syllabus And internal lab test related to above Practicals.	B.Sc(H) Maths Sem-III A	C6- Group Theory-I
NOVEMBER	Theory	Cayley's theorem, properties of isomorphism, First, Second and Third isomorphism theorems and revise whole syllabus, to discuss previous year questions papers.	B.Sc(H) Maths Sem-III A	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 A	C6- Group Theory-I
	Practicals	Revision of Practicals	GE-III	Differential Equations



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
 2021-22 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, Automorphism groups of finite and infinite cyclic 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

Theory	Characteristic subgroups, Commutator subgroup and its properties; 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
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	Differential Equations
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/ Differential Equations

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	Classification of groups of order p^2 , : Statement of the Fundamental theorem of finite abelian groups, The isomorphism classes of Abelian groups, Group actions and permutation representations; Stabilizers and kernels of group actions, : Groups acting on themselves by left multiplication and consequences.	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	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

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	Conjugacy classes, Class equation, K-groups, State three Sylow theorems and give their applications, Finite simple groups, Nonsimplicity tests; Generalized Cayley's theorem.	B.Sc(H) Maths Sem-V B	C12- Group Theory-II
	Practical s	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
	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/ Differential Equations

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, 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	Revision of Practicals	GE-III	Differential Equations
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



SEMESTER WISE TEACHING PLAN- 2021-22

SRI VENKATESWARA COLLEGE

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 and Random variables	B.Sc.(H) Maths Sem-V DSE-2	Probability Theory and Statistics
	Theory 2	Sample space, Events, Probability Classical, Relative frequency and axiomatic approaches to probability	B.A.(P) Sem-V DSE-1	Statistics
AUGUST	Theory 1	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	Theorems of total and compound probability , Conditional probability, Independent events, Baye's theorem, Random Variables, Discrete and continuous random variables, Probability distribution functions discrete random variables, p.m.f, c.d.f, Expectation, Moments, Moment generating functions of discrete random variables	B.A.(P) Sem-V DSE-1	Statistics
	Theory 3	Introduction to TeX and LaTeX, typesetting a simple document, adding basic information, mathematical symbols, environments, sectioning and displayed material; related problems	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
	Practical	Introduction to TeX and LaTeX, typesetting a simple document, Downloading and installing MiKTeX and an appropriate editor and using overleaf, adding basic information, mathematical symbols, environments, sectioning and displayed material; related problems	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML

	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	Probability Distribution functions continuous random variables, p.d.f, c.d.f, Expectation, Moments, Moment generating functions of continuous random variables, Discrete distribution: Binomial distribution and its m.g.f., Discrete distribution: Poisson and its m.g.f, Geometric distribution, Continuous distribution: Normal and its m.g.f.	B.A.(P) Sem-V DSE-1	Statistics
	Theory 3	Footnotes, Assents and symbols, Mathematical typesetting (Elementary and advanced), subscript, superscript, fractions, roots, ellipsis, arrays, delimiters, multiline formulas, spacing and changing style in math mode	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
	Practicals	Footnotes, Assents and symbols, Mathematical typesetting (Elementary and advanced), subscript, superscript, fractions, roots, ellipsis, arrays, delimiters, multiline formulas, spacing and changing style in math mode and related exercises	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
	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
		Problems covering all topics done	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
		Problems covering all topics done	B.A.(P)	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, 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.	B.Sc.(H) Maths Sem-V DSE-2	Probability Theory and Statistics
	Theory 2	Exponential distribution and its "memoryless" property, Bivariate distribution, conditional distribution and marginal distribution, Covariance, Correlation and regression, Weak law of large numbers and central limit theorem for independent and identically distributed random variables.	B.A.(P) Sem-V DSE-1	Statistics
	Theory 3	Graphics in LaTeX, use of PS Tricks	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
	Practicals	Learning how to make graphics in LaTeX, use of PS Tricks	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
	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
		Problems from all the topics covered in class till that date	B.A.(P)	Statistics
NOVEMBER	Theory 1	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	Weak law of large numbers and central limit theorem for independent and identically distributed random variables.	B.A.(P)	Statistics

	Theory 3	Plotting of functions in LaTeX, Beamer presentation, Introduction to HTML, creating simple web pages Tricks to customize HTML page and revision of the syllabus	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
	Practical	Plotting of functions in LaTeX, Making Beamer presentation, Using HTML, creating simple web pages Tricks to customize HTML	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
	Tutorials	To discuss the doubts of students and previous years' question papers	B.Sc.(H) Maths Sem-V DSE-2	Probability Theory and Statistics
	<u>Mid Term Test</u>	Problems from all the topics covered in class till that date	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
December	Theory	Tricks to customize HTML page and revision of the syllabus	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML
	Practical	Customizing HTML page and practising it.	B.Sc.(H) Mathematics Sem-3	SEC-1 LaTeX and HTML



SEMESTER WISE TEACHING PLAN- 2021-22

SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Shakuntla Wadhwa

Department: Mathematics

Semester: Odd (August-December)

Month		Topics	Course	Paper Code/ Name
August	Theory	First order ordinary differential equations: Basic concepts and ideas. Exact differential equations, Integrating factors, Bernoulli equations, Orthogonal trajectories of curves.	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations
	Practical	1. Solution of first order differential equation 2. Plotting of second order solution family of differential equation	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations
September	Theory	Existence and uniqueness of solutions, Second order differential equations: Homogenous linear equations of second order; related problems, Second order homogenous equations with constant coefficients, Differential operator, Euler-Cauchy equation,	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations
	Practical	3. Plotting of third order solution family of differential equation 4. Solution of differential equation by variation of parameter method. 5. Solution of system of ordinary differential equations.	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations
OCTOBER	Theory	Existence and uniqueness theory, Wronskian, Non- homogenous ordinary differential equations, Solution by undetermined coefficients, Solution by variation of parameters; related problems, Conversion of n th order ODEs to a system, Basic concepts and ideas, Homogenous system with constant coefficients; related problems	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations

	Practicals	6. Solution of Cauchy problem for first order partial differential equation. 7. Plotting the characteristics for the first order partial differential equation.	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations
	Assignment	Problems covering all topics done during August-September	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations
	Test	An online internal test conducted on the basis of topics covered in the class.	GE	Differential Equations
NOVEMBER	Theory	Higher order homogenous equations with constant coefficients, System of differential equations, System of differential equations; related problems	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations
	Practicals	8. Plot the integral surfaces of a given first order partial differential equation with initial data	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations
December	Theory	Revision of the course and discussing previous year papers with the students.	B.Sc.(H) Electronics, Physics, Economics Sem-3	GE-3 Differential Equations

SEMESTER (ODD) WISE TEACHING PLAN 2021-22

SRI VENKATESWARA COLLEGE

Name of the Faculty: Aanchal

Department: Mathematics

Month		Topics	Course	Paper Code/ Name
AUGUST	Practical	Chapter 11 (Exercises 1 and 3)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Practical	Limit of a function at some point, To Discuss the limits of functions when x tends to 0	B.Sc(H) Maths Sem-III B	Multivariate Calculus
	Practical Assignment	Assignments to be given on each course		
Month		Topics	Course	Paper Code/ Name
SEPTEMBER	Practical	Chapter 11 (Exercises 4 and 5)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Practical	To discuss the limit of the functions when x tends to infinity.	B.Sc(H) Maths Sem-III B	Multivariate Calculus
	Assignment	Assignments to be given on each course		

Month		Topics	Course	Paper Code/Name
OCTOBER	Practical	Chapter 15 (Exercises 5 and 6),	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Practical	To discuss the continuity of the functions	B.Sc(H) Maths Sem-III B	Multivariate Calculus
	Test	To take internal lab test of the practicals		
	Assignment	Assignments to be given on each course		
Month		Topics	Course	Paper Code/Name
NOVEMBER	Practical	Chapter 15 (Exercises 8 , 9)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Practical	To illustrate the geometric meaning of Rolle's theorem	B.Sc(H) Maths Sem-III B	Multivariate Calculus
	Assignment	Assignments to be given on each course		
Month		Topics	Course	Paper Code/Name
DECEMBER	Practical	To illustrate the geometric meaning of Lagrange's mean value theorem	B.Sc(H) Maths Sem-III B	Multivariate Calculus

	Practical	Chapter 15 (Exercises 10 and 11)	B.Sc(H) Maths Sem-III A	SEC-1 LAB (LaTeX and HTML)
	Assignm ent	Assignments to be given on each course		

Department of Mathematics
Sri Venkateswara College
Odd Semester Teaching Plan (July-November 2021)

Dr. Garima V. Arora

Month		Topics	Course	Paper Code/ Name
JULY	Theory	Automorphism, Inner Automorphism, Automorphism groups and Examples.	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to topics	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II
AUGUST	Theory:	Definition of Functions of several variables, graphs of functions of two variables-level curves and surfaces, limit and continuity of functions of two variables, partial differentiation	B.Sc(H) Maths Sem-III A	BMH307- Multivariate Calculus
	Practicals	Practical 8- To draw surfaces and level curves.	B.Sc(H) Maths Sem-III B	BMH307- Multivariate Calculus
	Theory	Automorphism groups of finite and infinite cyclic groups, applications of factor groups to Automorphism groups, Characteristic subgroups, Commutator subgroup and its properties, Properties of external direct products, the group of units modulo n as an EDP. Applications to data security and	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II
	Tutorials	To discuss the doubts of students and various exercise questions and examples related to the topics covered in the theory class.	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II

SEPTEMBER	Theory:	Partial derivative as slope and rate, higher order partial derivatives, tangent planes, incremental approximations, Total differential, differentiability, Chain rule for one, two and three independent parameters, directional derivatives, the gradient, maximal and normal property of the gradient, tangent planes and normal lines, first and second partial derivative tests for relative extrema of functions of two variables, absolute extrema of	B.Sc(H) Maths Sem-III A	BMH307- Multivariate Calculus
	Practicals:	Practical 9-To draw surfaces and discuss whether limit exists or not. Find the limit, if it exists Practical 10-To Draw the tangent planes Practical 11- Use incremental approximations to estimate functions. Practical 12-To find critical points and identify relative maxima, relative minima or saddle points to surfaces, if it exists. Practical 13- To draw and check	B.Sc(H) Maths Sem-III B	BMH307- Multivariate Calculus
	Theory	Internal direct products, classification of groups of order p^2 , statement of Fundamental Theorem of finite abelian groups, isomorphism classes of abelian groups, Group actions, stabilizers and kernels, permutation representation associated with a given group action.	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to the topics covered in the class.	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II

OCTOBER	Theory:	Lagrange multipliers method for optimization problem with one constraint, Definition of vector field, divergence and curl, Double integration over rectangular region and nonrectangular region, Double integrals in polar co-ordinates, Triple integral over a parallelopiped and solid regions, Volume by triple integrals, triple integration in cylindrical and spherical co-ordinates, Change of variables in double integrals and triple integrals .	B.Sc(H) Maths Sem-III A	BMH307- Multivariate Calculus
	Practicals	Practical 1- using epsilon delta definition. Practical 2 – discuss the limit of a function when x tends to 0. Practical 3 – discuss the limit of a function when x tends to infinity. Practical 4- To discuss continuity	B.Sc(H) Maths Sem-III B	BMH307- Multivariate Calculus
	Test	To take internal lab test of the above Practical.		
	Theory	Groups acting on themselves by left multiplication and consequences, conjugacy in S_n , conjugacy classes, class equation, p-groups, Sylow's theorems and their applications	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to topics covered	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II
NOVEMBER	Theory	Line integrals and its properties, Applications of line integrals: Mass and work. Fundamental theorem for line integrals, conservative vector fields and path independence. Green's theorem for simply connected regions, area as a line integral, surface integrals,	B.Sc(H) Maths Sem-III A	BMH307- Multivariate Calculus
	Practicals	Practical 5 – Illustrate the geometric meaning of Rolles theorem Practical 6 – Illustrate the geometric meaning of Lagranges Mean Value Theorem	B.Sc(H) Maths Sem-III B	BMH307- Multivariate Calculus

	Theory	Finite simple groups, nonsimplicity tests: generalized Cayley's theorem, Index theorem, Embedding theorem and applications, Simplicity of	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II
	Tutorials	To discuss the doubt of students and various exercise questions and examples. To discuss previous years question papers.	B.Sc(H) Maths Sem-V A	BMH512- Group Theory-II
DECEMBER	Theory	Stokes' theorem, The Divergence theorem	B.Sc(H) Maths Sem-III B	BMH307- Multivariate Calculus
	Practicals	Practical 7 – Visualization by creating graphs.	B.Sc(H) Maths Sem-III B	BMH307- Multivariate Calculus



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

July-November, 2021

Name of the Faculty: Dr. Swarn Singh

Department: Mathematics

Semester: V

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 Interpolation, (10) Newton Interpolation	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Tutorials:			
	<u>Assignment</u>	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) Trapezoidal rule (12) Simpson's rule (13) Euler's method	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Tutorials:			
	<u>Mid Term Test</u>	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:			



SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
July-November, 2021-22

Name of the Faculty: Dr. Anant Pandey

Department: Physics

Semester: I/ III/V (Odd Semester)

Month		Topics	Course	Paper Code/Name
August	Theory	Integrated Circuits (Qualitative treatment only): Active and Passive components. Discrete components. Wafer. Chip. Advantages and drawbacks of ICs. Scale of integration: SSI, MSI, LSI and VLSI (basic idea and definitions only). Classification of ICs. Examples of Linear and digital ICs. Difference between analog and digital circuits , binary numbers Decimal to binary & binary to decimal conversion, BCD, octal & hexadecimal numbers, AND, OR, NOT Gates (realization using diodes and transistors), NAND ^& NOR Gates as Universal gates, XOR & XNOR gates and applications as parity checkers.	B.Sc. (Hons) Physics Sem -III	PHYSICS-C VII: DIGITAL SYSTEMS A N D APPLICATIONS
	Practical	1. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO. 2. To design a combinational logic system for a specified Truth Table. (b) To convert Boolean expression into logic circuit & design it using logic gate ICs. (c) To minimize a given logic circuit. 3. Half Adder, Full Adder and 4-bit binary Adder. 4. Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C. 5. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates. 6. To build JK Master-slave flip-flop using Flip-Flop ICs 7. To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram. 8. To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop ICs. 9. To design an astable multivibrator of given specifications using 555 Timer. 10. To design a monostable multivibrator of given specifications using 555 Timer.	B.Sc. (Hons) Physics Sem III	P H Y S I C S PRACTICAL-C VII LAB

August	Theory	De Morgans theorem , Boolean laws, Simplification of logic circuits using Boolean algebra fundamental products idea of min-term and max-terms, conversion of truth tables into equivalent logic circuits by sum of product method. Karnaugh map , Multiplexer, Demultiplexer, Decoder, Encoder, Binary Addition. Binary Subtraction using 2's Complement, Half and Full Adders. Half & Full Subtractors, 4-bit binary Adder/Subtractor. SR, D, and JK Flip-Flops. Clocked (Level and Edge Triggered) Flip-Flops. Preset and Clear operations. Race-around conditions	B.Sc. (Hons) Physics Sem III	PHYSICS-C VII: DIGITAL SYSTEMS A N D APPLICATIONS
	Practical	1. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO. 2. To design a combinational logic system for a specified Truth Table. (b) To convert Boolean expression into logic circuit & design it using logic gate ICs. (c) To minimize a given logic circuit. 3. Half Adder, Full Adder and 4-bit binary Adder. 4. Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C. 5. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates. 6. To build JK Master-slave flip-flop using Flip-Flop ICs 7. To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram. 8. To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop ICs. 9. To design an astable multivibrator of given specifications using 555 Timer. 10. To design a monostable multivibrator of given specifications using 555 Timer.	B.Sc. (Hons) Physics Sem III	PHYSICS PRACTICAL-C VII LAB

September	Theory	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. IC 555: block diagram and applications: Astable multivibrator and Monostable multivibrator. Serial in serial out, serial in parallel out, parallel in serial out and parallel in parallel out shift register, ring counter, asynchronous counter, decade counter, synchronous counter. Block diagram of CRO, electron gun, deflection system, time base deflection, sensitivity, application of CRO: study of waveform, measurement of Voltage, current, frequency and phase difference.	B.Sc. (Hons) Physics Sem III	PHYSICS-C VII: DIGITAL SYSTEMS AND APPLICATIONS
	Practical	1. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO. 2. To design a combinational logic system for a specified Truth Table. (b) To convert Boolean expression into logic circuit & design it using logic gate ICs. (c) To minimize a given logic circuit. 3. Half Adder, Full Adder and 4-bit binary Adder. 4. Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C. 5. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates. 6. To build JK Master-slave flip-flop using Flip-Flop ICs 7. To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram. 8. To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop ICs. 9. To design an astable multivibrator of given specifications using 555 Timer. 10. To design a monostable multivibrator of given specifications using 555 Timer.	B.Sc. (Hons) Physics Sem III	PHYSICS PRACTICAL-C VII LAB

October	Theory	Input/Output Devices. Data storage (idea of RAM and ROM). Computer memory. Memory organization and addressing. Memory Interfacing. Memory Map. Main features of 8085. Block diagram. Components. Pin-out diagram. Buses. Registers. ALU. Memory. Stack memory. Timing and Control circuitry. Timing states. Instruction cycle, Timing diagram of MOV and MVI.	B.Sc. (Hons) Physics Sem III	PHYSICS-C VII: DIGITAL SYSTEMS A N D APPLICATIONS
	Practical	Programs using 8085 Microprocessor: 1. Addition and subtraction of numbers using direct addressing mode 2. Addition and subtraction of numbers using indirect addressing mode 3. Multiplication by repeated addition. 4. Division by repeated subtraction. 5. Handling of 16-bit Numbers. 6. Use of CALL and RETURN Instruction. 7. Block data handling. 8. Other programs (e.g. Parity Check, using interrupts, etc.).	B.Sc. (Hons) Physics Sem III	PHYSICS-C VII: DIGITAL SYSTEMS A N D APPLICATIONS
November	Theory	Introduction to Assembly Language: 1 byte, 2 byte and 3 byte instructions.	B.Sc. (Hons) Physics Sem III	PHYSICS-C VII: DIGITAL SYSTEMS A N D APPLICATIONS
	Practical	Programs using 8085 Microprocessor: 1. Addition and subtraction of numbers using direct addressing mode 2. Addition and subtraction of numbers using indirect addressing mode 3. Multiplication by repeated addition. 4. Division by repeated subtraction. 5. Handling of 16-bit Numbers. 6. Use of CALL and RETURN Instruction. 7. Block data handling. 8. Other programs (e.g. Parity Check, using interrupts, etc.).	B.Sc. (Hons) Physics Sem III	PHYSICS PRACTICAL-C VII LAB

SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
July-November, 2021-22

Name of the Faculty: Dr. Anant Pandey

Department: Physics

Semester: I (Odd Semester)

Month		Topics	Course	Paper Code/Name
November 2021	Practical	1. Ballistic Galvanometer: (i) Measurement of charge and current sensitivity (ii) Measurement of CDR (iii) Determine a high resistance by Leakage Method (iv) To determine Self Inductance of a Coil by Rayleigh's Method. 2. To compare capacitances using De'Sauty's bridge. 3. Measurement of field strength B and its variation in a Solenoid (Determine dB/dx) 4. To study the Characteristics of a Series RC Circuit. 5. To study a series LCR circuit LCR circuit and determine its (a) Resonant frequency, (b) Quality factor 6. To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor Q 7. To determine a Low Resistance by Carey Foster's Bridge. 8. To verify the Thevenin and Norton theorems 9. To verify the Superposition, and Maximum Power Transfer Theorems	B.Sc. (H), Sem-I	GE LAB: ELECTRICITY AND MAGNETISM

December 2021	Practical	1. Ballistic Galvanometer: (i) Measurement of charge and current sensitivity (ii) Measurement of CDR (iii) Determine a high resistance by Leakage Method (iv) To determine Self Inductance of a Coil by Rayleigh's Method. 2. To compare capacitances using De'Sauty's bridge. 3. Measurement of field strength B and its variation in a Solenoid (Determine dB/dx) 4. To study the Characteristics of a Series RC Circuit. 5. To study a series LCR circuit LCR circuit and determine its (a) Resonant frequency, (b) Quality factor 6. To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor Q 7. To determine a Low Resistance by Carey Foster's Bridge. 8. To verify the Thevenin and Norton theorems 9. To verify the Superposition, and Maximum Power Transfer Theorems	B.Sc. (H), Sem-I	GE LAB: ELECTRICITY AND MAGNETISM
January 2022	Practical	1. Ballistic Galvanometer: (i) Measurement of charge and current sensitivity (ii) Measurement of CDR (iii) Determine a high resistance by Leakage Method (iv) To determine Self Inductance of a Coil by Rayleigh's Method. 2. To compare capacitances using De'Sauty's bridge. 3. Measurement of field strength B and its variation in a Solenoid (Determine dB/dx) 4. To study the Characteristics of a Series RC Circuit. 5. To study a series LCR circuit LCR circuit and determine its (a) Resonant frequency, (b) Quality factor 6. To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor Q 7. To determine a Low Resistance by Carey Foster's Bridge. 8. To verify the Thevenin and Norton theorems 9. To verify the Superposition, and Maximum Power Transfer Theorems	B.Sc. (H), Sem-I	GE LAB: ELECTRICITY AND MAGNETISM

February 2022	Practical	1. Ballistic Galvanometer: (i) Measurement of charge and current sensitivity (ii) Measurement of CDR (iii) Determine a high resistance by Leakage Method (iv) To determine Self Inductance of a Coil by Rayleigh's Method. 2. To compare capacitances using De'Sauty's bridge. 3. Measurement of field strength B and its variation in a Solenoid (Determine dB/dx) 4. To study the Characteristics of a Series RC Circuit. 5. To study a series LCR circuit LCR circuit and determine its (a) Resonant frequency, (b) Quality factor 6. To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor Q 7. To determine a Low Resistance by Carey Foster's Bridge. 8. To verify the Thevenin and Norton theorems 9. To verify the Superposition, and Maximum Power Transfer Theorems	B.Sc. (H), Sem-I	GE LAB: ELECTRICITY AND MAGNETISM
March 2022	Practical	1. Ballistic Galvanometer: (i) Measurement of charge and current sensitivity (ii) Measurement of CDR (iii) Determine a high resistance by Leakage Method (iv) To determine Self Inductance of a Coil by Rayleigh's Method. 2. To compare capacitances using De'Sauty's bridge. 3. Measurement of field strength B and its variation in a Solenoid (Determine dB/dx) 4. To study the Characteristics of a Series RC Circuit. 5. To study a series LCR circuit LCR circuit and determine its (a) Resonant frequency, (b) Quality factor 6. To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor Q 7. To determine a Low Resistance by Carey Foster's Bridge. 8. To verify the Thevenin and Norton theorems 9. To verify the Superposition, and Maximum Power Transfer Theorems	B.Sc. (H), Sem-I	GE LAB: ELECTRICITY AND MAGNETISM



SRI VENKATESWARA COLLEGE

SEMESTER WISE TEACHING PLAN

July-November, 2021-22

Name of the Faculty: Dr. Anunay K. Chaudhary

Department: Physics

Semester: I/ III/V (Odd Semester)

Month	Papers	Topics	Course	Paper Code/Name
July /August	Theory	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. Even and odd functions and their Fourier expansions. Application. Summing of Infinite Series. Parseval Identity and its application to summation of infinite series.	B.Sc. Physics(H), Sem.-III	PHYSICS-C V: MATHEMATICAL PHYSICS-II
	Practical	Introduction to Numerical computation software Scilab: Introduction to Scilab, Advantages and disadvantages, Scilab environment, Command window, Figure window, Edit window, Variables and arrays, Initialising variables in Scilab, Multidimensional arrays, Sub-array, Special values, Displaying output data, data file, Scalar and array operations, Hierarchy of operations, Built in Scilab functions,	B.Sc. Physics(H), Sem.-III	PHYSICS LAB-C V LAB (MP-II, ICT Lab)
September	Theory	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. 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 ($J_0(x)$ and $J_1(x)$) and Orthogonality.	B.Sc. Physics(H), Sem.-III	PHYSICS-C V: MATHEMATICAL PHYSICS-II

	Practical	Introduction to plotting, 2D and 3D plotting, Branching Statements and program design, Relational and logical operators, the while loop, for loop, details of loop operations, break and continue statements, nested loops, logical arrays and vectorization. User defined functions, Introduction to Scilab functions, Variable passing in Scilab, optional arguments, preserving data between calls to a function, Complex and Character data, string function, Multidimensional arrays an introduction to Scilab file processing, file opening and closing, Binary I/o functions, comparing binary and formatted functions, Numerical methods and developing the skills of writing a program.	B.Sc. Physics(H), Sem.-III	PHYSICS LAB-C V LAB (MP-II, ICT Lab)
October	Theory	Some Special Integrals: Beta and Gamma Functions and Relation between them. Expression of Integrals in terms of Gamma Functions.	B.Sc. Physics(H), Sem.-III	PHYSICS-C V: MATHEMATICAL PHYSICS-II
	Practical	Curve fitting, Least square fit, Goodness of fit, standard deviation using Scilab Ohms law calculate R, Hooke's law, Calculate spring constant, Given Bessel's function at N points find its value at an intermediate point. Solution of Linear system of equations by Gauss elimination method and Gauss Seidal Solution of mesh equations of electric circuits (3 meshes)	B.Sc. Physics(H), Sem.-III	PHYSICS LAB-C V LAB (MP-II, ICT Lab)
November	Theory	Partial Differential Equations: Solutions to partial differential equations, using separation of variables: Laplace's Equation in problems of rectangular geometry.	B.Sc. Physics(H), Sem.-III	PHYSICS-C V: MATHEMATICAL PHYSICS-II
	Practical	Diagonalisation of matrices, Inverse of a matrix, Eigen vectors, eigen-values problems Solution of coupled spring mass systems (3 masses) Generation of Special functions using User defined functions in Scilab: Generating and plotting Legendre Polynomials Generating and plotting Bessel	B.Sc. Physics(H), Sem.-III	PHYSICS LAB-C V LAB (MP-II, ICT Lab)
December	Theory	Solution 20 of wave equation for vibrational modes of a stretched string, rectangular and circular membranes. Solution of 1D heat flow equation (equation not to be derived).	B.Sc. Physics (H), Sem.-III	PHYSICS-C V: MATHEMATICAL PHYSICS-II
	Practical	Solution of ODE: First order Differential equation Euler, modified Euler and RungeKutta (RK), second and Fourth order methods, Second order differential equation Fixed difference method	B.Sc. Physics(H), Sem.-III	PHYSICS LAB-C V LAB (MP-II, ICT Lab)

SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
July-November, 2021-22

Name of the Faculty: Dr. Anunay K. Chaudhary

Department: Physics

Semester: I (Odd Semester)

Month	Papers	Topics	Course	Paper Code/Name
November				
	Practical	Introduction and Overview: Computer architecture and organization, memory and Input/output devices,	B.Sc. Physics(H), Sem.-I	PHYSICS LAB-CI LAB (MP-I, ICT lab)
December	Practical	Basics of scientific computing: Binary and decimal arithmetic, Floating point numbers, algorithms, Sequence, Selection and Repetition, single and double precision arithmetic, underflow and overflow - emphasize the importance of making equations in terms of dimensionless variables, Iterative methods Algorithms and Flow charts: Purpose, symbols and description	B.Sc. Physics(H), Sem.-I	PHYSICS LAB-CI LAB (MP-I, ICT lab)
January	Practical	Introduction to C++: Introduction to Programming: Algorithms: Sequence, Selection and Repetition, Structured programming, basic idea of Compilers. Data Types, Enumerated Data, Conversion & casting, constants and variables, Mathematical, Relational, Logical and Bitwise Operators. Precedence of Operators, Expressions and Statements, Scope and Visibility of Data, block, Local and Global variables, Auto, static and External variables. C++ Control Statements: if-statement, if-else statement, Nested if Structure, Else-if statement, Ternary operator, Goto statement, switch statement, Unconditional and Conditional looping, While loop, Do-while loop, For loop, nested loops, break and	B.Sc. Physics(H), Sem.-I	PHYSICS LAB-CI LAB (MP-I, ICT lab)

February	Practical	Random Number generator: To find value of pi using Monte Carlo simulations Arrays and Functions: Sum and average of a list of numbers, largest of a given list of numbers and its location in the list, sorting of numbers in ascending descending order using Bubble sort and Sequential sort, Binary search. Solution of Algebraic and Transcendental equations by Bisection, Newton Raphson and	B.Sc. Physics(H), Sem.-I	PHYSICS LAB-CI LAB (MP-I, ICT lab)
March	Practical	Interpolation by Newton Gregory Forward and Backward difference formula, Error estimation of linear interpolation, Numerical differentiation (Forward and Backward difference formula)	B.Sc. Physics(H), Sem.-I	PHYSICS LAB-CI LAB (MP-I, ICT lab)



SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
July-November, 2021-22

Name of the Faculty: Dr. Chandrabhan Dohare

Department: Physics

Semester: I/III/V (Odd Semester)

Month	Papers	Topics	Course	Paper Code/Name
July- 2021	Theory	Crystal Structure: Solids: Amorphous and Crystalline Materials. Lattice Translation Vectors. Lattice with a Basis– Central and Non-Central Elements. Symmetry Elements Unit Cell. Miller Indices. Reciprocal Lattice. Types of Lattices. Brillouin Zones. Diffraction of X-rays by Crystals. Bragg's Law. Laue Condition, Atomic and Geometrical Factor.	B.Sc. (Hons) Physics, Sem- V	PHYSICS-C XII: SOLID STATE PHYSICS
	Practical	1. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO. 2. To design a combinational logic system for a specified Truth Table. (b) To convert Boolean expression into logic circuit & design it using logic gate ICs. (c) To minimize a given logic circuit. 3. Half Adder, Full Adder and 4-bit binary Adder. 4. Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C. 5. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates. 6. To build JK Master-slave flip-flop using Flip-Flop ICs 7. To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram. 8. To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop ICs. 9. To design an astable multivibrator of given specifications using 555 Timer. 10. To design a monostable multivibrator of given specifications using 555 Timer.	B.Sc. (Hons) Physics, Sem- III	PHYSICS PRACTICAL- C VII LAB

August-2021	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-Drude Model, Density of states (1-D,2-D,3-D), Elementary band theory: Kronig Penny model. Band Gap, Effective mass, mobility, Hall Effect (Metal and Semiconductor).	B.Sc. (Hons) Physics, Sem- V	PHYSICS-C XII: SOLID STATE PHYSICS
	Practical	1. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO. 2. To design a combinational logic system for a specified Truth Table. (b) To convert Boolean expression into logic circuit & design it using logic gate ICs. (c) To minimize a given logic circuit. 3. Half Adder, Full Adder and 4-bit binary Adder. 4. Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C. 5. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates. 6. To build JK Master-slave flip-flop using Flip-Flop ICs 7. To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram. 8. To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop ICs. 9. To design an astable multivibrator of given specifications using 555 Timer. 10. To design a monostable multivibrator of given specifications using 555 Timer.	B.Sc. (Hons) Physics, Sem- III	PHYSICS PRACTICAL- C VII LAB
September - 2021	Theory	Magnetic Properties of Matter: Dia-, Para-, Ferri- and Ferromagnetic Materials. Classical Langevin Theory of dia- and Paramagnetic Domains. Quantum Mechanical Treatment of Paramagnetism. Curie's law, Weiss's Theory of Ferromagnetism and Ferromagnetic Domains, B-H Curve. Hysteresis, soft and hard material and Energy Loss.	B.Sc. (Hons) Physics, Sem- V	PHYSICS-C XII: SOLID STATE PHYSICS

	Practical	1. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO. 2. To design a combinational logic system for a specified Truth Table. (b) To convert Boolean expression into logic circuit & design it using logic gate ICs. (c) To minimize a given logic circuit. 3. Half Adder, Full Adder and 4-bit binary Adder. 4. Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C. 5. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates. 6. To build JK Master-slave flip-flop using Flip-Flop ICs 7. To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram. 8. To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop ICs. 9. To design an astable multivibrator of given specifications using 555 Timer. 10. To design a monostable multivibrator of given specifications using 555 Timer.	B.Sc. (Hons) Physics, Sem- III	PHYSICS PRACTICAL- C VII LAB
October-2 021	Theory	Dielectric Properties of Materials: Polarization. Local Electric Field at an Atom. Depolarization Field. Electric Susceptibility. Polarizability. Clausius Mosotti Equation. Classical Theory of Electric Polarizability. Normal and Anomalous Dispersion. Cauchy and Sellmeier relations. Langevin-Debye equation. Complex Dielectric	B.Sc. (Hons) Physics Sem- V	PHYSICS-C XII: SOLID STATE PHYSICS

	Practical	1. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO. 2. To design a combinational logic system for a specified Truth Table. (b) To convert Boolean expression into logic circuit & design it using logic gate ICs. (c) To minimize a given logic circuit. 3. Half Adder, Full Adder and 4-bit binary Adder. 4. Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C. 5. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates. 6. To build JK Master-slave flip-flop using Flip-Flop ICs 7. To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram. 8. To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop ICs. 9. To design an astable multivibrator of given specifications using 555 Timer. 10. To design a monostable multivibrator of given specifications using 555 Timer.	B.Sc. (Hons) Physics, Sem- III	PHYSICS PRACTICAL- C VII LAB
November 2021	Theory	Ferroelectric Properties of Materials: Classification of crystals, Piezoelectric effect, Pyroelectric effect, Ferroelectric effect, Electrostrictive effect, Curie-Weiss Law, Ferroelectric domains, PE hysteresis loop. 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)	B.Sc. (Hons) Physics, Sem- V	PHYSICS-C XII: SOLID STATE PHYSICS
	Practical	Section-B: Programs using 8085 Microprocessor: 1. Addition and subtraction of numbers using direct addressing mode 2. Addition and subtraction of numbers using indirect addressing mode 3. Multiplication by repeated addition. 4. Division by repeated subtraction. 5. Handling of 16-bit Numbers. 6. Use of CALL and RETURN Instruction. 7. Block data handling. 8. Parity Check	B.Sc. (Hons) Physics, Sem- III	PHYSICS PRACTICAL- C VII LAB

December 2021	Practical	Section - B: Programs using 8085 Microprocessor: 1. Addition and subtraction of numbers using direct addressing mode 2. Addition and subtraction of numbers using indirect addressing mode 3. Multiplication by repeated addition. 4. Division by repeated subtraction. 5. Handling of 16-bit Numbers. 6. Use of CALL and RETURN Instruction. 7. Block data handling. 8. Parity Check	B.Sc. (Hons) Physics, Sem- III	PHYSICS PRACTICAL- C VII LAB
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SEMESTER WISE TEACHING PLAN (2021-2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Chandrabhan Dohare

Department: Physics

Semester: 1st (Odd Semester) Session 2021-22

Month	Papers	Topics	Course	Paper Code/ Name
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November 2021	Theory	Fundamentals of Dynamics: Inertial frames; Review of Newton's Laws of Motion.	B.Sc., Physics (H) Sem- I	PHYSICS-C II: MECHANICS
	Practical	Random Number generator: To find value of pi using Monte Carlo simulations	B.Sc., Physics (H) Sem- I	PHYSICS LAB-CI LAB (ICT lab), MP-I
	Practical	1. Measurements of length (or diameter) using Vernier calliper, screw gauge and travelling microscope. 2. To study the random error in observations. 3. To determine the height of a building using a Sextant. 4. To study the motion of the spring and calculate (a) Spring constant and, (b) g. 5. To determine the Moment of Inertia of a Flywheel. 6. To determine g and velocity for a freely falling body using Digital Timing Technique. 7. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method). 8. To determine the Young's Modulus of a Wire by Optical Lever Method. 9. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 10. To determine the elastic Constants of a wire by Searle's method. 11. To determine the value of g using Bar Pendulum. 12. To determine the value of g using	B.Sc., Physics (H) Sem- I	PHYSICS LAB-C II LAB
December 2021	Theory	Momentum of variable mass system, Determination of Centre of Mass of discrete and continuous objects (1-D, 2-D & 3-D)	B.Sc., Physics (H) Sem- I	PHYSICS-C II: MECHANICS
	Practical	Taylor and Maclaurin Series	B.Sc., Physics (H) Sem- I	PHYSICS LAB-CI LAB (ICT lab), MP-I

	Practical	1. Measurements of length (or diameter) using Vernier calliper, screw gauge and travelling microscope. 2. To study the random error in observations. 3. To determine the height of a building using a Sextant. 4. To study the motion of the spring and calculate (a) Spring constant and, (b) g. 5. To determine the Moment of Inertia of a Flywheel. 6. To determine g and velocity for a freely falling body using Digital Timing Technique. 7. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method). 8. To determine the Young's Modulus of a Wire by Optical Lever Method. 9. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 10. To determine the elastic Constants of a wire by Searle's method. 11. To determine the value of g using Bar Pendulum. 12. To determine the value of g using	B.Sc., Physics (H) Sem- I	PHYSICS LAB-C II LAB
January 2022	Theory	Work and Kinetic Energy Theorem, Potential Energy, Law of conservation of Energy, Collisions, Centre of Mass and Laboratory Frames, Rotational Dynamics, Torque,	B.Sc., Physics (H) Sem- I	PHYSICS-C II: MECHANICS
	Practical	Arrays and Functions: Sum and average of a list of numbers, largest of a given list of numbers and its location in the list, sorting of numbers in ascending descending order using Bubble sort and Sequential sort, Binary search,	B.Sc., Physics (H) Sem- I	PHYSICS LAB-CI LAB (ICT lab), MP-I

	Practical	1. Measurements of length (or diameter) using Vernier calliper, screw gauge and travelling microscope. 2. To study the random error in observations. 3. To determine the height of a building using a Sextant. 4. To study the motion of the spring and calculate (a) Spring constant and, (b) g. 5. To determine the Moment of Inertia of a Flywheel. 6. To determine g and velocity for a freely falling body using Digital Timing Technique. 7. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method). 8. To determine the Young's Modulus of a Wire by Optical Lever Method. 9. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 10. To determine the elastic Constants of a wire by Searle's method. 11. To determine the value of g using Bar Pendulum. 12. To determine the value of g using	B.Sc., Physics (H) Sem- I	PHYSICS LAB-C II LAB
February 2022	Theory	Moment of Inertia of discrete and continuous objects [1-D, 2-D & 3-D], Gravitation and Central Force Motion, Motion of a particle under a central force field, Energy diagram, Kepler's Laws. Geosynchronous orbits, Differential	B.Sc., Physics (H) Sem- I	PHYSICS-C II: MECHANICS
	Practical	Solution of Algebraic and Transcendental equations by Bisection, Newton Raphson and Secant methods,	B.Sc., Physics (H) Sem- I	PHYSICS LAB-CI LAB (ICT lab), MP-I

	Practical	1. Measurements of length (or diameter) using Vernier calliper, screw gauge and travelling microscope. 2. To study the random error in observations. 3. To determine the height of a building using a Sextant. 4. To study the motion of the spring and calculate (a) Spring constant and, (b) g. 5. To determine the Moment of Inertia of a Flywheel. 6. To determine g and velocity for a freely falling body using Digital Timing Technique. 7. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method). 8. To determine the Young's Modulus of a Wire by Optical Lever Method. 9. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 10. To determine the elastic Constants of a wire by Searle's method. 11. To determine the value of g using Bar Pendulum. 12. To determine the value of g using	B.Sc., Physics (H) Sem- I	PHYSICS LAB-C II LAB
March 2022	Theory	Damped oscillation, Forced oscillations, Non-Inertial Systems	B.Sc., Physics (H) Sem- I	PHYSICS-C II: MECHANICS
	Practical	Numerical differentiation: Numerical differentiation (Forward and Backward difference and central formula)	B.Sc., Physics (H) Sem- I	PHYSICS LAB-CI LAB (ICT lab), MP-I
	Practical	1. Measurements of length (or diameter) using Vernier calliper, screw gauge and travelling microscope. 2. To study the random error in observations. 3. To determine the height of a building using a Sextant. 4. To study the motion of the spring and calculate (a) Spring constant and, (b) g. 5. To determine the Moment of Inertia of a Flywheel. 6. To determine g and velocity for a freely falling body using Digital Timing Technique. 7. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method). 8. To determine the Young's Modulus of a Wire by Optical Lever Method. 9. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 10. To determine the elastic Constants of a wire by Searle's method. 11. To determine the value of g using Bar Pendulum. 12. To determine the value of g using	B.Sc., Physics (H) Sem- I	PHYSICS LAB-C II LAB

Teaching plan

Dr. Garima Saxena

Mathematical Physics-I

Semester-1

2021-2022

Month-Novemeber 2021

Vector Algebra: Scalars and vectors, laws of vector algebra, scalar and vector product, triple scalar product, interpretation in terms of area and volume, triple cross product, product of four vectors. Scalar and vector fields.

Month-December 2021

Vector Differentiation: Ordinary derivative of a vector, the vector differential operator $\tilde{\nabla}$. Directional derivatives and normal derivative. Gradient of a scalar field and its geometrical interpretation. Divergence and curl of a vector field. Laplacian operator. Vector identities. Orthogonal Curvilinear Coordinates: Orthogonal Curvilinear Coordinates. Derivation of Gradient, Divergence, Curl and Laplacian in Cartesian, Spherical and Cylindrical Coordinate Systems.

Month-January 2022

Probability and statistics: Independent and dependent events, Conditional Probability. Bayes' Theorem, Independent random variables, Probability distribution functions, special distributions: Binomial, Poisson and Normal. Sample mean and variance and their confidence intervals for Normal distribution.

Vector Integration: Ordinary Integrals of Vectors. Double and Triple integrals, Jacobian. Notion of infinitesimal line, surface and volume elements.

Month-Feburary 2022

Line, surface and volume integrals of Scalar and Vector fields. Flux of a vector field. Gauss' divergence theorem, Green's and Stokes Theorems, their verification (no rigorous proofs) and applications.

Functions: Recapitulate the concept of functions. Plot and interpret graphs of functions using the concepts of calculus.

First Order Differential Equations: First order differential Equations: Variable separable, homogeneous, non-homogeneous, exact and inexact differential equations and Integrating Factors. Application to physics problems.

Month-March 2022

Second Order Differential Equations: Homogeneous Equations with constant coefficients.

Wronskian and general solution. Particular Integral with operator method, method of undetermined coefficients and method of variation of parameters. Cauchy-Euler differential equation and simultaneous differential equations of First and Second order.



SEMESTER WISE TEACHING PLAN
VENKATESWARA COLLEGE

SRI

July-November, 2021-22

Name of the Faculty: Dr. K. Chandramani Singh

Department: Physics

Semester: V

Month		Topics	Course	Paper Code/ Name
JULY	Theory:	Time dependent Schrodinger equation: Time dependent Schrodinger equation and dynamical evolution of a quantum state; Properties of Wave Function.	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
	Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB

		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 $\lambda^2 - T$ 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.	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS
AUGUST	Theory:	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. 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	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS

Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to		PHYSICS PRACTICAL-C XII LAB
	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 $\lambda^2 \propto T$ 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.	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS

SEPTEMBER	Theory:	Wave packets, Fourier transforms and momentum space wavefunction; Position-momentum uncertainty principle. General discussion of bound states in an arbitrary potential - continuity of wavefunction, 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. 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	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
	Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB

		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 $\lambda^2 \propto T$ 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.	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS
	<u>Assignment</u>	Topics covered till September 2018	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
OCTOBER	Theory	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. Atoms in Electric and Magnetic Fields: Electron angular momentum. Space quantization. Electron Spin and Spin Angular Momentum. Larmor's Theorem. Spin Magnetic Moment. Stern-Gerlach Experiment. Normal Zeeman Effect: Electron Magnetic	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS

	Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB
		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 $\lambda^2 \propto T$ 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.	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS
	Mid Term Test	Topic covered till 15 October 2018	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
	Theory:	Many electron atoms: Pauli's Exclusion Principle. Symmetric and Antisymmetric Wave Functions. Spin orbit coupling. Spectral Notations for Atomic States. Total angular momentum. Spin-orbit coupling in atoms - L-S and J-J couplings.	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
NOVEMBER				

Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB
	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 $\lambda^2 \propto T$ 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.	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA
COLLEGE**

August- December, 2021

Name of the Faculty: Dr Manoj Giri

Department: Physics

Semester: Odd Semester (III)

Month		Topics	Course	Paper Code/ Name
August	Theory:	Superposition of Two Collinear Harmonic oscillations: Simple harmonic motion (SHM). Linearity and Superposition Principle. (1) Oscillations having equal frequencies and (2) Oscillations having different frequencies (Beats).	B.Sc. (Hons) Sem III	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 $\lambda^2 \propto T$ 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	B.Sc. (H) GE: Sem III	32225310/ Waves and Optics: GE- LAB

	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 Thermoe-mf 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	B.Sc. (Hons) Physics Sem III	32221302/CC-VI: Thermal Physics Lab
	Theory/ Practical :	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	B.Sc. (Hons) Physics Sem III	32223905/ Renewable Energy and Energy Harvesting (SEC)
SEPTEMBER	Theory:	Superposition of Two Perpendicular Harmonic Oscillations: Graphical and Analytical Methods. Lissajous Figures (1:1 and 1:2) and their uses. Waves Motion- General: Transverse waves on a string. Travelling and standing waves on a string. Normal Modes of a string. Group velocity, Phase velocity. Plane waves. Spherical waves, Wave intensity.	B. Sc. (Hons)- Sem-III- GE	32225310/Waves and Optics -GE

	Practical s: 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 $\lambda^2 - T$ Law. 3. To study Lissajous Figures 4. Familiarization with Schuster's focusing; 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	B.Sc. (H) GE: Sem III	Waves and Optics: GE-LAB
	Practical s: 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 Thermoe.mf 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	B. Sc. (Hons)- Sem-III	32221302/CC-VI: Thermal Physics Lab

	Theory/ Practical :	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	B.Sc. (Hons) Physics Sem III	32223905/ Renewable Energy and Energy Harvesting (SEC)
October	Theory/ Practical s:	Sound waves, production and properties. Intensity and loudness of sound. Decibels. Intensity levels. General idea of musical notes and musical scale. Acoustics of buildings (General idea). 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. Phase change on reflection: Stokes' treatment. Interference in Thin Films: parallel and wedge-shaped films. Newton's Rings: measurement of wavelength and refractive index	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 $\lambda^2 \propto T$ 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.	B.Sc. (H) GE: Sem III	32225310/ Waves and Optics: GE-LAB
Wind Energy harvesting: Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies.; Ocean Energy: Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices.; Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy, Osmotic Power, Ocean Bio-mass.; Geothermal Energy: Geothermal Resources, Geothermal Technologies. Hydro Energy: Hydropower resources, hydropower	B.Sc. (Hons) Physics Sem III	32223905/ Renewable Energy and Energy Harvesting (SEC)

	<u>Practicals</u> 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 Thermoe-mf 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	B.Sc. (Hons) Physics Sem III	32221302/CC-VI: Thermal Physics Lab
November	Theory: Diffraction: Fraunhofer diffraction- Single slit; Double Slit. Multiple slits and Diffraction grating. Fresnel Diffraction: Half-period zones. Zone plate. Fresnel Diffraction pattern of a straight edge, a slit and a wire using half-period zone analysis. Polarization: Transverse nature of light waves. Plane polarized light – production and analysis. Circular and elliptical polarization (General idea).	B. Sc. (Hons)- Sem-III- GE	32225310/Waves and Optics -GE

Practical s:	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 $\lambda^2 \propto T$ 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 Diffraction Grating	B. Sc. (Hons)- Sem-III- GE	Waves and Optics: GE-LAB
Theory/ Practical :	Piezoelectric Energy harvesting: Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity, Piezoelectric parameters and modeling piezoelectric generators, Piezoelectric energy harvesting applications, Human power Electromagnetic Energy Harvesting: Linear generators, physics mathematical models, recent applications.; Carbon captured technologies, cell, batteries, power consumption , Environmental issues and Renewable sources of energy,	B.Sc. (Hons) Physics Sem III	32223905/ Renewable Energy and Energy Harvesting (SEC)

December	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	B.Sc. (Hons) Physics Sem III	32221302/CC-VI: Thermal Physics Lab
		Revision of syllabus and assignment evaluations	B. Sc. (Hons)- Sem-III- GE & B.Sc. (Hons) Physics Sem III B.Sc. (Hons) Physics Sem III	32225310/Waves and Optics -GE & 32223905/ Renewable Energy and Energy Harvesting (SEC) & 32221302/CC-VI: Thermal Physics Lab



SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
July-November, 2021-22

Name of the Faculty: Narender Kumar
Semester: III/V (Odd Semester)

Department: Physics

Month	Papers	Topics	Course	Paper Code/Name
July	Theory	Basic Astronomical Parameters: Astronomical scales (Distance, Mass and Time), Brightness, Radiant Flux and Luminosity, Apparent and Absolute magnitude scale, Distance Modulus.	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
	Practical	_____ —	B.Sc. (Hons) Physics Sem III	32223905/Renewable Energy and Energy Harvesting (SEC)
	Practical	Introduction of python programming language.	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)

	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	32221302/CC-VI: Thermal Physics Lab
August	Theory	Measurement of Astronomical Quantities (Distances, Stellar Radii, Masses of Stars from binary orbits, Stellar Temperature, Color index of stars). Stellar spectra: Spectral types and their temperature dependence, Hertzsprung-Russell Diagram.	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
	Practical	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	32223905/Renewable Energy and Energy Harvesting (SEC)
	Practical	Introduction of scipy, numpy, matplotlib and other libraries integrated with python. One dimensional Problems of Quantum	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)

	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	32221302/CC-VI: Thermal Physics Lab
September	Theory	Astronomical telescopes and techniques: Atmospheric Windows, Optical telescopes, Radio telescope, Telescope mountings, Magnification, Light gathering power, resolving power and diffraction limit, Detection limit of telescope, Modern terrestrial and space telescopes (GMRT, Keck, Chandra, HST)	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
	Practical	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	32223905/Renewable Energy and Energy Harvesting (SEC)

	Practical	One dimensional Problems of Quantum mechanics.	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)
	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	32221302/CC-VI: Thermal Physics Lab
October	Theory	The Sun and the Solar System: Solar Atmosphere, Solar Photosphere, Chromosphere, Corona, Solar Activity, Basics of Solar Magneto-hydrodynamics, Origin of the Solar System (The Nebular Model, Tidal Forces, Planetary Rings and their formation); ExtraSolar Planets.	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)

Practical	Wind Energy harvesting: Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies.; Ocean Energy: Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices.; Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy, Osmotic Power, Ocean Bio-mass.; Geothermal Energy: Geothermal Resources, Geothermal Technologies. Hydro Energy: Hydropower resources, hydropower technologies,	B.Sc. (Hons) Physics Sem III	32223905/Renewable Energy and Energy Harvesting (SEC)
Practical	One dimensional Problems of Quantum mechanics.	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)
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	32221302/CC-VI: Thermal Physics Lab

November	Theory	The Milky Way: Basic Structure and Properties of the Milky Way, Nature of Rotation of the Milky Way (Differential Rotation of the Galaxy and Oort Constants, Rotation Curve of the Galaxy and the Dark Matter, Nature of the Spiral Arms), Stellar Clusters, Morphological classification of the	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
	Practical	Piezoelectric Energy harvesting: Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity, Piezoelectric parameters and modeling piezoelectric generators, Piezoelectric energy harvesting applications, Human power Electromagnetic Energy Harvesting: Linear generators, physics mathematical models, recent applications.; Carbon captured technologies, cell, batteries, power consumption , Environmental issues and Renewable sources of energy, sustainability	B.Sc. (Hons) Physics Sem III	32223905/Renewable Energy and Energy Harvesting (SEC)
	Practical	One dimensional Problems of Quantum mechanics.	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)

	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	32221302/CC-VI: Thermal Physics Lab
December				
	Theory	_____	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
	Practical	_____	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)
	Practical			



**SEMESTER WISE TEACHING PLAN
VENKATESWARA COLLEGE**

SRI

August-December 2021

Name of the Faculty: Dr. Pratima Vyas

Department: Physics

Semester: III

Month		Topics	Course	Paper Code/ Name
August	Theory:	Introduction to Thermodynamics: Zeroth and First Law of Thermodynamics: Extensive and intensive Thermodynamic Variables, Thermodynamic Equilibrium, Zeroth Law of Thermodynamics & Concept of Temperature, Concept of Work & Heat,	B.Sc. (Hons) Physics Sem III	32221302/ PHYSICS-C VI: THERMAL PHYSICS
	Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to	B.Sc. (Hons) Physics Sem V	32221502/ PHYSICS PRACTICAL-C XII LAB
		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	B.Sc. Sem III Physics (H)	32221302/CC-VI: Thermal Physics Lab

September	Theory:	First Law of Thermodynamics and its differential form, Internal Energy, First Law & various processes, 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	B.Sc. (Hons) Physics Sem III	32221302/ PHYSICS-C VI: THERMAL PHYSICS
	Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to determine its band gap. 8. To determine the Hall coefficient of a	B.Sc. (Hons) Physics Sem V	32221502/ PHYSICS PRACTICAL-CC XII LAB

	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	B.Sc. Sem III Physics (H)	32221302/CC-VI: Thermal Physics Lab
October	Theory:	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. Thermodynamic Potentials: 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	B.Sc. (Hons) Physics Sem III	32221302/ PHYSICS-C VI: THERMAL PHYSICS
	Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to	B.Sc. (Hons) Physics Sem V	32221502/ PHYSICS PRACTICAL-CC XII LAB

	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	B.Sc. Sem III Physics (H)	32221302/CC-VI: Thermal Physics Lab
November	Theory	Maxwell's Relations: (1) Clausius Clapeyron equation, (2) Value of $C_p - C_v$, (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. 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	B.Sc. (Hons) Physics Sem III	32221302/ PHYSICS-C VI: THERMAL PHYSICS

	Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to	B.Sc. (Hons) Physics Sem V	32221502/ PHYSICS PRACTICAL-CC XII LAB
	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	B.Sc. Sem III Physics (H)	32221302/CC-VI: Thermal Physics Lab
December	Theory:	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. Vapour and Gas. Boyle Temperature. van der Waal's Equation of State for Real Gases. Values of Critical Constants. Law of Corresponding States. 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 derWaal Gases. Temperature of Inversion. Joule-Thomson	B.Sc. (Hons) Physics Sem III	32221302/ PHYSICS-C VI: THERMAL PHYSICS

Practicals:	1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method) 2. To measure the Magnetic susceptibility of Solids. 3. To determine the Coupling Coefficient of a Piezoelectric crystal. 4. To measure the Dielectric Constant of a dielectric Materials with frequency. 5. To study the PE Hysteresis loop of a Ferroelectric Crystal. 6. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis. 7. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to	B.Sc. (Hons) Physics Sem V	32221502/ PHYSICS PRACTICAL-CC XII LAB
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	B.Sc. Sem III Physics (H)	32221302/CC-VI: Thermal Physics Lab



SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
July-November, 2021-22

Name of the Faculty: Ram Lal Awasthi
Semester: I/ III/V (Odd Semester)

Department: Physics

Month	Papers	Topics	Course	Paper Code/Name
July	Theory	Review of Vector Analysis, Set, Function, Binary operation. Function, Relation and Groups. Groups, Fields. Linear Vector Spaces Abstract systems: Binary Operations and Relations. Vector Spaces and Subspaces. Linear Independence and Dependence of Vectors. Basis and Dimensions of a Vector Space.	BSc (Hons) Physics - V Semester	DSE: Advanced Mathematical Physics - I (32227502)
	Theory	Introduction to Astronomy and Astronomical Scales: Overview of the Night Sky, Diurnal and Yearly motions of the Sun, Stars and Constellations.	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
	Practical	Introduction of python programming language.	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)
	Practical	_____	BSc (Hons) Physics - III Semester	CC-V: Mathematical Physics-II (32221301)

August	Theory	Change of basis. Homomorphism and Isomorphism of Vector Spaces. Linear Transformations. Algebra of Linear Transformations. Non-singular Transformations. Rank and Nullity. 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	BSc (Hons) Physics - V Semester	DSE: Advanced Mathematical Physics - I (32227502)
	Theory	Basic concepts of Positional Astronomy: Celestial Sphere, Geometry of a Sphere, Spherical Triangle, Astronomical Coordinate Systems, Horizon System, Equatorial System, Conversion of Coordinates. Celestial Latitude Longitude, Sidereal time, mean solar day, Rising and Setting Times, Measurement of Time, Apparent Solar Time, Mean Solar Time, Equation of Time, Astronomical Time Systems (LMT, UT, UTC).	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
	Practical	Introduction of scipy, numpy, matplotlib and other libraries integrated with python. One dimensional Problems of Quantum mechanics.	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)

	Practical	Introduction to Scilab, Advantages and disadvantages, Scilab environment, Command window, Figure window, Edit window, Variables and arrays, Initializing variables in Scilab, Multidimensional arrays, Sub-array, Special values, Displaying output data, data file, Scalar and array operations, Hierarchy of operations, Built in Scilab functions, Introduction to plotting, 2D and 3D plotting, Branching Statements and program design, Relational and logical operators, the while loop, for loop, details of loop operations, break and continue statements.	BSc (Hons) Physics - III Semester	CC-V: Mathematical Physics-II (32221301)
September	Theory	Eigenvalues and Eigenvectors: Finding Eigenvalues and Eigenvectors of a Matrix. Diagonalization of Matrices. Properties of Eigen-values and Eigen Vectors of Orthogonal, Hermitian and Unitary Matrices. Cayley-Hamilton Theorem (Statement only). Finding inverse of a matrix using Cayley-Hamilton Theorem. Use of Matrices in Solving ordinary second order differential equations and Coupled Linear Ordinary Differential Equations of first order. Functions of a		DSE: Advanced Mathematical Physics - I (32227502)
	Theory	Stellar Spectra, Atomic Spectra Revisited, Introduction to Boltzmann and Saha Equations, Balmer Lines of H, H and K lines of Ca, Spectral Types and Their Temperature Dependence. Black Body Approximation, Luminosity Classification, H R Diagram and Relations Between Stellar Parameters. Shortcomings of HR Diagram.	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)

	Practical	One dimensional Problems of Quantum mechanics.	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)
	Practical	Nested loops, logical arrays and vectorization. User defined functions, Introduction to Scilab functions, Variable passing in Scilab, optional arguments, preserving data between calls to a function, Complex and Character data, string function, Multidimensional arrays an introduction to Scilab file processing, file opening and closing, Binary I/o functions, comparing binary and formatted functions, Numerical methods and developing the skills of writing a program. Interpolation by Newton Gregory Forward and Backward difference formula, Error estimation of linear	BSc (Hons) Physics - III Semester	CC-V: Mathematical Physics-II (32221301)
October	Theory	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. 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. General Tensors: Transformation of coordinates. Contravariant & Covariant Vectors. Contravariant, Covariant and Mixed Tensors. Kronecker Delta and Permutation Tensors.	BSc (Hons) Physics - V Semester	DSE: Advanced Mathematical Physics - I (32227502)

Theory	Physical Properties in stellar systems. Gravity as important ingredient. Virial theorem for N particle systems, applications in astrophysics. Systems in Thermodynamic Equilibrium, Equations for Hydrostatic equilibrium, Mean Molecular Weight of stellar gas, Stellar Energy Sources. Modelling stellar structure. Stellar Model : Vogt Russell Theorem, Lane Emden equation.	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
Practical	One dimensional Problems of Quantum mechanics.	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)
Practical	Simple Matrix manipulations. Solution of Linear system of equations: Solve system of linear equations using Gauss elimination method and Gauss Seidal method. Inverse of a matrix (by Gauss elimination), and their applications to various physics problems.	BSc (Hons) Physics - III Semester	CC-V: Mathematical Physics-II (32221301)

November	Theory	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. 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	BSc (Hons) Physics - V Semester	DSE: Advanced Mathematical Physics - I (32227502)
	Theory	Cosmology: Standard Candles (Cepheids and SNe Type Ia), Cosmic Distance Ladder, Olbers Paradox, Hubble Expansion, Cosmological Principle, Newtonian Cosmology and Friedmann	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
	Practical	One dimensional Problems of Quantum mechanics.	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)
	Practical	Solution of Ordinary Differential Equations (ODE) First order Differential equation Euler, modified Euler and Runge-Kutta (RK) second and fourth order methods.	BSc (Hons) Physics - III Semester	CC-V: Mathematical Physics-II (32221301)

December	Theory	_____	BSc (Hons) Physics - V Semester	DSE: Advanced Mathematical Physics - I (32227502)
	Theory	_____	BSc (Hons) Physics - V Semester	DSE: Astronomy and Astrophysics (32227506)
	Practical	_____	BSc (Hons) Physics - V Semester	CC-XI: Quantum Mechanics & Applications (32221501)
	Practical	System of First order Differential Equations, Second order differential equation (Euler and RK Methods), Numerous physics problems based on these methods.	BSc (Hons) Physics - III Semester	CC-V: Mathematical Physics-II (32221301)



**SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE**

August- December, 2021

Name of the Faculty: Dr Surendra Kumar

Department: Physics

Semester: Odd Semester

Month		Topics	Course	Paper Code/Name
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August	Practical	1. Linear algebra: Power and Inverse Power methods for finding largest and smallest Eigenvalue and eigenvectors of matrices. 2. Determination of the principal axes of moment of inertia through diagonalization (Matrix can be generated for a given distribution of discrete masses). 3. Application to solve differential equations for a bound system – Eigen value problem. 4. Application to computer graphics 5. Lagrangian formulation in classical mechanics with constraints. 6. Vector space of wave functions in Quantum Mechanics: Position and Momentum differential operators and their commutator, wave functions for stationary states as eigenfunction	B.Sc. (Hons) Sem V	32227502/Advanced Mathematical Physics: DSE-LAB
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September	Practical	1. Linear algebra: Power and Inverse Power methods for finding largest and smallest Eigenvalue and eigenvectors of matrices. 2. Determination of the principal axes of moment of inertia through diagonalization (Matrix can be generated for a given distribution of discrete masses). 3. Application to solve differential equations for a bound system – Eigen value problem. 4. Application to computer graphics 5. Lagrangian formulation in classical mechanics with constraints. 6. Vector space of wave functions in Quantum Mechanics: Position and Momentum differential operators and their commutator, wave functions for stationary states as eigenfunction	B.Sc. (Hons) Sem V	32227502/Advanced Mathematical Physics: DSE-LAB
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October	Practical:	1. Linear algebra: Power and Inverse Power methods for finding largest and smallest Eigenvalue and eigenvectors of matrices. 2. Determination of the principal axes of moment of inertia through diagonalization (Matrix can be generated for a given distribution of discrete masses). 3. Application to solve differential equations for a bound system – Eigen value problem. 4. Application to computer graphics 5. Lagrangian formulation in classical mechanics with constraints. 6. Vector space of wave functions in Quantum Mechanics: Position and Momentum differential operators and their commutator, wave functions for stationary states as eigenfunction	B.Sc. (Hons) Sem V	32227502/Advanced Mathematical Physics: DSE-LAB
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November	Practical:	1. Linear algebra: Power and Inverse Power methods for finding largest and smallest Eigenvalue and eigenvectors of matrices. 2. Determination of the principal axes of moment of inertia through diagonalization (Matrix can be generated for a given distribution of discrete masses). 3. Application to solve differential equations for a bound system – Eigen value problem. 4. Application to computer graphics 5. Lagrangian formulation in classical mechanics with constraints. 6. Vector space of wave functions in Quantum Mechanics: Position and Momentum differential operators and their commutator, wave functions for stationary states as eigenfunction	B.Sc. (Hons) Sem V	32227502/Advanced Mathematical Physics: DSE-LAB
	Theory:	Reference frames, Inertial frames, Galilean transformations, Michelson-Morley Experiment	B.Sc. (Hons) Sem I	32221102/ CC: Mechanics

	Practical:	1. To study the motion of the spring and calculate (a) Spring constant and, (b) g. 2. To determine the Moment of Inertia of a Flywheel. 3. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method). 4. To determine the Young's Modulus of a Wire by Optical Lever Method. 5. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 6. To determine the elastic Constants of a wire by Searle's method. 7. To determine the value of g using Bar Pendulum. 8. To determine the value of g using Kater's Pendulum.	B.Sc. (Hons) Sem I	32221102/ CC: Mechanics Lab
December	Theory:	Outcomes of Michelson-Morley Experiment. Postulates of Special Theory of Relativity. Lorentz Transformations.	B.Sc. (Hons) Sem I	32221102/ CC: Mechanics

Practical:	1. To study the motion of the spring and calculate (a) Spring constant and, (b) g. 2. To determine the Moment of Inertia of a Flywheel. 3. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method). 4. To determine the Young's Modulus of a Wire by Optical Lever Method. 5. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 6. To determine the elastic Constants of a wire by Searle's method. 7. To determine the value of g using Bar Pendulum. 8. To determine the value of g using Kater's Pendulum.	B.Sc. (Hons) Sem I	32221102/ CC: Mechanics Lab
Theory:	Vector algebra (Scalar and Vector product), gradient, divergence, Curl and their significance	B.Sc. (Hons) Sem I	32225101/GE: Electricity and Magnetism
Practical:	To compare capacitances using De'Sauty's bridge.	B.Sc. (Hons) Sem I	32225101/GE: Electricity and Magnetism Lab



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

Name of the Faculty: Ashish Kumar Thakur (Adhoc-joined 28th Sept. 2020)
Department: Political Science

Semester : I/III/V(ODD SEM)

Month		Topics	Course	Paper Code/ Name
JULY		Course Objective: The course seeks to meet two essential objectives: one, to acquaint the students with the art of reading texts, to enable them to grasp its conceptual and argumentative structure and to help them acquire the skills to locate the texts in a broader intellectual and socio-historical context. Second, it aims to acquaint the students with the social and political	B.A.(P) GE- Political Science, Sem V	Understanding Gandhi
		Course Objective: This course proposes to introduce students to the conditions, contexts and forms of Political contestation over contemporary development paradigms and the retrieval of democratic voice of	B.A.(H), Sem V	Development Process and Social Movements in Contemporary India

AUGUST		Course Objective: to acquaint the student broadly with the legislative process in India at various levels, introduce them to the requirements of peoples' representatives and provide elementary skills to be part of a legislative support team. Unit IV: Reading the budget document • Celestine, A. How to read the Union Budget • Government of India (Lok Sabha Secretariat) • Parliamentary Procedures (Abstract Series) • Kapur, Devesh and Pratap Banu Mehta, "The Indian Parliament as an Institution of Accountability"	AECC (Elective s) B.A. (H), Sem III	Legislative Practices and Procedures
		Unit VII: Nationalism • A.Parel (ed.) (1997) 'Editor's Introduction', in Gandhi, Hind Swaraj and Other Writings • D. Hardiman, (2003) 'Fighting Religious Hatreds', in Gandhi in His Time and Ours • Ram Chandra Pradhan (2011) 'Gandhi, Jinnah and Savarkar and the Indian nationalism' in Reading and Reappraising Gandhi • M K Gandhi "Hind Swaraj" • Ram Chandra Pradhan (2011) 'Gandhi, and the Communal Harmony: Religion, Politics and secularism' in Reading and	B.A.(P) GE- Political Science, Sem V	Understanding Gandhi

		Unit 1: Development Process since Independence a. State and planning - Varshney, (2010) ‘Mass Politics or Elite Politics? Understanding the Politics of India’s Economic Reforms’ in R. Mukherji (ed.) India’s Economic Transition: The Politics of Reforms P. Chatterjee, (2000) ‘Development Planning and the Indian State’, in Zoya Hasan (ed.), Politics and the State in	B.A.(H), Sem V	Development Process and Social Movements in Contemporary India
		Course Objective: The purpose of the course is to familiarise students with the nature and scope of the study of comparative politics. The course aims at examining politics in a historical framework while engaging with various themes of comparative analysis in developed and developing countries.	B.A.(P), Sem III	Comparative Government and Politics
SEPTEMBER		Unit IV: Reading the budget document - Parliamentary Procedures (Abstract Series) - Kapur, Devesh and Pratap Banu Mehta, “The Indian Parliament as an Institution of Accountability”	AECC (Electives) B.A. (H), Sem III	Legislative Practices and Procedures
		Unit VII: Nationalism - A.Parel (ed.) (1997) ‘Editor’s Introduction’, in Gandhi, Hind Swaraj and Other Writings D. Hardiman, (2003) ‘Fighting Religious Hatreds’, in Gandhi in His Time and Ours - Ram Chandra Pradhan (2011) ‘Gandhi, Jinnah and Savarkar and the Indian nationalism’ in Reading and Reappraising Gandhi - M K Gandhi “ Hind Swaraj”	B.A.(P) GE- Political Science, Sem V	Understanding Gandhi

		Unit 1: Development Process since Independence a. State and planning - Varshney, (2010) 'Mass Politics or Elite Politics? Understanding the Politics of India's Economic Reforms' in R. Mukherji (ed.) India's Economic Transition: The Politics of Reforms P. Chatterjee, (2000) 'Development Planning and the Indian State', in Zoya Hasan (ed.), Politics and the State in	B.A.(H), Sem V	Development Process and Social Movements in Contemporary India
		Unit 1: The nature, scope and methods of comparative political analysis - Newton, K. and Deth, Jan W. V. (2010) Foundations of Comparative Politics: Democracies of the Modern World. - Caramani, D. (ed.). (2008) Comparative Politics. - Mohanty, M. (1975) 'Comparative Political Theory and Third World Sensitivity', in	B.A.(P), Sem III	Comparative Government and Politics

		Course Objective: This course provides a comprehensive introduction to the most important multilateral political organization in international relations. Unit I: The United Nations (a) An Historical Overview of the United Nations (b) Principles and Objectives • Hurd, Ian (2011), "Theorizing International Organizations: Choices and Methods in the Study of International Organizations" • Karns, Margaret P. and Karen A. Mingst (2009), International Organizations: The Politics and Processes of Global Governance • Taylor, P. and Groom, A.J.R. (eds.) (2000) The United Nations at the millennium. • Gareis, S.B. and Varwick, J.	B.A.(H) GE- Political Science, Sem I	12325908/ United Nations and Global Conflicts
	Practicals			
	Tutorials	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		
OCTOBER	Theory	Revision: Unit IV	AECC (Electives) B.A. (H), Sem I	Legislative Practices and Procedures

	Unit VIII: Communal Unity • A.Parel (ed.) (1997) ‘Editor’s Introduction’, in Gandhi, Hind Swaraj and Other Writings • D. Hardiman, (2003) ‘Fighting Religious Hatreds’, in Gandhi in His Time and Ours • Ram Chandra Pradhan (2011) ‘Gandhi, Jinnah and Savarkar and the Indian nationalism’ in Reading and Reappraising Gandhi • M K Gandhi “ Hind Swaraj” • Ram Chandra Pradhan (2011) ‘Gandhi, and the Communal Harmony: Religion, Politics and secularism ‘in Reading and	B.A.(P) GE- Political Science, Sem V	Understanding Gandhi
	Unit 1: Development Process since Independence b. Liberalization and reforms • Mozoomdar, (1994) ‘The Rise and Decline of Development Planning in India’, in T. Byres (ed.) The State and Development Planning in India.	B.A.(H), Sem V	Development Process and Social Movements in Contemporary India
	Unit 1: The nature, scope and methods of comparative political analysis • Newton, K. and Deth, Jan W. V. (2010) Foundations of Comparative Politics: Democracies of the Modern World. • Caramani, D. (ed.). (2008) Comparative Politics. Mohanty, M. (1975) ‘Comparative Political Theory and Third World Sensitivity’, in Teaching Politics.	B.A.(P), Sem III	Comparative Government and Politics
Practicals			
Tutorials	Discussion around the above topics, answering doubts and other information regarding answer writing		

NOVEMBER	Theory:	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		
		Course Objective: This course provides a comprehensive introduction to the most important multilateral political organization in international relations.	B.A.(H) GE- Political Science, Sem I	12325908/ United Nations and Global Conflicts
		Course Objective: The aim of this course is to enable students to gain knowledge about the constitutional design as well as the empirical practice of state structures and institutions.	B.A.(H), Sem I	Constitutional Government and Democracy in India
	Practicals:			

Tutorials:

DECEMBER	Theory:	• Discussion - Previous year questions - Individual doubts - Assignments		
	Practicals:			
	Tutorials:			
	<u>Test</u>			



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

Name of the Faculty: Rajan Jha(Adhoc-joined 2nd Dec 2020)

Department: Political Science

Semester : I/III/IV(ODD SEM)

Month		Topics	Course	Paper Code/
JULY	Theory	- NA	NA	NA
	Practicals			
	Tutorials			

AUGUST	Theory:	Course Objective: The purpose of this course is to help students understand historically the imposition of colonialism in India and nationalism as an ideology and movement of resistance against colonial rule. Unit 1 Colonialism and Nationalism: a. Main perspectives on colonialism: Liberalism, Marxism, Postcolonialism Chandra, B. (1988) India's	B.A.(H) GE- Political Science, Sem III	Nationalism in India
	Practicals:			
	Tutorials:			

SEPTEMBER	Theory:	b. Approaches to the study of nationalism in India: Nationalist, Imperialist, Marxist, and Subaltern interpretations Unit 2 Colonial Rule in India and its impact: a. Constitutional developments and the colonial state b. Colonial ideology of civilizing mission: Utilitarians and Missionaries • Chandra, B. (1988) India's Struggle for Independence • Guha, Ranajit. (1982). Subaltern Studies • Thapar, R. (2000) 'Interpretations of Colonial History: Colonial, Nationalist, Post-colonial', in DeSouza, P.R. (ed.) Contemporary India: Transitions. • Bandopadhyay, S. (2015 revised edition) From Plassey to	B.A.(H) GE- Political Science, Sem III	Nationalism in India
	Practicals:			

	Tutorials:	• Discussion - Previous year questions		
	<u>Test</u>			
OCTOBER	Theory:	c. Impact on agriculture, land relations, industry and ecology Unit 3 Reform and Resistance: a. The 1857 rebellion b. Major social and religious movements c. Education and the rise of the new middle class • Guha, R. and Gadgil, M. (1989) 'State Forestry and Social Conflict in British India', in Guha, R. and Gadgil, M. Past and Present: A Journal of Historical Studies. • Bandopadhyay, S. (2015 revised edition) From Plassey to Partition and After: A History of Modern India.	B.A.(H) GE- Political Science, Sem III	Nationalism in India
	Practicals:			

	Tutorials:	
NOVEMBER		B.A.(H) GE- Political Science, Sem III/ Nationalism in India
		Unit 4 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 mobilisation: 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 Unit 5 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 Bandopadhyay, S. (2015, revised edition) From Plassey to Partition and After: A History of Modern India. Sarkar, S. (1983) Modern India (1885-1847).
		Course: BA(PROG), Sem I/62321101/ Introduction to Political Theory Course Objective: to introduce certain key aspects of conceptual analysis in political theory.
DECEMBER		B.A.(H) GE- Political Science, Sem III/ Nationalism in India

	Tutorials:	Discussion around the whole syllabus, revising the core areas, answering doubts and other information regarding answer writing with relevant examples and thought experiments.
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**SEMESTER WISE TEACHING
PLAN (2021 -2022)
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr Arup Singh

Department: Political Science

Course BA (Hons) Political Science, 3rd year

Semester: V

Paper: Indian Political Thought - 1

Month		Topics	Course	Paper Code/Name
JULY	Theory	1 Traditions of Pre-colonial Indian Political Thought a) Brahmanic & Shramanic b) Islamic & Syncretic. 2 Ved Vyasa (Shantiparva): Rajadharma		
	Practicals			
	Tutorials	Traditions of Pre-colonial Indian Political Thought		
AUGUST	Theory:	2 Ved Vyasa (contd.) 3. Manu : Social Laws		
	Practicals:			
	Tutorials:	Ved Vyasa. Manu		

	<u>Assignment :</u>	Traditions of Pre-colonial Indian Political Thought. Manu		
September	Theory:	4. Kautilya : Theory of State		
	Practicals:			
	Tutorials:	Kautilya		
	<u>Test</u>	Kautilya – Theory of State		
OCTOBER	Theory:	5. Aggannasutta (Digha Nikaya): Theory of Kingship 6.Barani: Ideal Polity		
	Practicals:			
	Tutorials:	Aggannasutta. Barani		

NOVEMBER	Theory:	7. Abul Fazal: Monarchy 8.Kabir: Syncretism		
	Practicals:			
	Tutorials:	Abul Fazal. Kabir		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-November, 2021

Name of the Faculty: Dr SANTOSH KUMAR SINGH

Department: POLITICAL SCIENCE

Semester: B.A (Hons) Vth Semester
Paper XI-Classical Political Philosophy

Month		Topics	Course	Paper Code/ Name
JULY	Theory:	What is Political Thought, Theory and Philosophy. Debates on Decline and Resurgence of Political Theory Methods of Interpretation: Textual, Contextual and Postmodern	B.A (Hons) Vth Semester	Paper XI- Classical Political Philosophy
	Tutorials:	Text and Interpretation Philosophy and science Metaphysics and Epistemology		
AUGUST	Theory:	Textual Approach – Terence Ball, Hannah Arendt, Leo Strauss. Contextual Approach-Quentin Skinner, Thomas Kuhn, Sheldon Wolin Postmodern Approach- Herbert Marcuse, Jurgen Habermas, Michel Foucault, Nietzsche	B.A (Hons) Vth Semester	Paper XI- Classical Political
		Plato's Philosophy- Theory of Forms, Justice, Philosopher King/ Queen, Communism Plato's Later Political Thought		

	Tutorials:	Textual, Contextual and Postmodern Approach Plato's Philosophy		
SEPTEMBER	Theory:	Aristotle Philosophy-Comparison with Plato Religion, Theory on State, Citizenship, Slavery, and Forms of Government, Ethics, Constitution, Justice Political Thought from Ancient Greece to Early Christianity Machiavelli's Philosophy-Virtu, Religion, Republicanism, Separation of State vs Religion, morality and statecraft; vice and virtue and Modern thinker	B.A (Hons) Vth Semester	Paper XI- Classical Political Philosophy
	Assignment	Plato's Philosophy Aristotle Philosophy		
OCTOBER	Theory	Hobbes Philosophy-Human nature, State of Nature, Social Contract, State, Leviathan; atomistic individuals. Locke's Philosophy- Laws of Nature, Natural Rights, Property, right to dissent, Theory on State, Rights, Forms of Government	B.A (Hons) Vth Semester	Paper XI- Classical Political Philosophy
	Tutorials:	Hobbes Philosophy compare with Locke's Philosophy		
	<u>Mid Term Test</u>			

NOVEMBER	Theory:	Understanding the Political Philosophy – From Plato to Locke Revision of previous topics	B.A (Hons) Vth Semester	Paper XI- Classical Political
	Tutorials:	Debates on Contractarian Thinkers		

(Dr Santosh Kumar Singh)



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-November, 2021

Name of the Faculty: Dr SANTOSH KUMAR SINGH

Department: POLITICAL SCIENCE

Semester: B.A (Prog) Vth Semester
Paper GE (Interdisciplinary): Understanding Gandhi

Month		Topics	Course	Paper Code/ Name
JULY	Theory:	Philosophy Vs Theory, Thought Vs Theory, Thought Vs Philosophy in the context of Gandhi Approaches of Interpretation: Textual, Contextual and	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Understanding Gandhi
	Tutorials:	Philosophy and Politics Philosophy and science Metaphysics and Epistemology		
AUGUST	Theory:	Gandhi's Philosophy Gandhi in his own words: A close reading of Hind Swaraj Commentaries on Hind Swaraj and Gandhian thought by A.J.Parel, B.Parekh, and D.Hardiman	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading
	Tutorials:	Gandhi's Philosophy Utility in contemporary Era		
SEPTEMBER	Theory:	Gandhi's Satyagraha Philosophy Gandhi on Trusteeship Gandhi on Sadeshi	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading Gandhi

	Assignment	Gandhi's Philosophy- Modernity, Swaraj, Satyagraha, Swadeshi		
OCTOBER	Theory	Gandhi on religion and Politics Gandhi on Modern Civilisation	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading
	Tutorials:	Relevance of Gandhi in Our life		
	<u>Mid Term Test</u>			
NOVEMBER	Theory:	Understanding the Overall Gandhi's Philosophy and Contribution Revision of previous topics	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading
	Tutorials:	Where do you find Gandhi's Philosophy		

(Dr Santosh Kumar Singh)



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

Name of the Faculty: Namita Pandey

Department: Political Science

Semester : V

Month		Topics	Course	Paper Code/Name
JULY	Theory	Approaches to Understanding Patriarchy. Feminist theory of Sex/Gender Distinction Biologism vs. Social Construction Understanding Patriarchy and Feminism	BA(Hons), Fifth Semester, Political Science	Feminism: Theory and Practice
	Tutorials	Discussion on Sylvia Walby - Theorizing Patriarchy		

AUGUST	Theory:	Liberal Theory of Feminism. Discussion of First Wave of Feminism with special reference to Mary Wollstonecraft & other Feminist authors. Marxist theory of Feminism with special reference to Marx and Engels perspective on Feminism		
	Tutorials:	Understanding Sex/Gender distinctions in day to day living		

	<u>Assignment :</u>	Critically Examine the liberal theory of Feminism from Marxian Perspective		
SEPTEMBER	Theory:	Feminism in the Socialist Countries: China, Cuba and erstwhile USSR Socialist Theory of Feminism with Special reference to Dual Patriarchy, Zilla Einstein's notion of Capitalist Patriarchy Emphasis on Women's Question from Neomarxist Perspective Radical Theory of Feminism		
	Tutorials:	A discussion on Betty Friedans Feminine Mystique, Simon De Beauvoir's Second Sex		
	<u>Test</u>	A Critical Comparison between Radical and Socialist Feminism		

OCTOBER	Theory:	Origin of Feminist in the West: Women in French Revolution, Suffrage Movement in Britain and West, Feminism in Socialist Countries, Women in Russian Revolution, Feminist Movements in China and Cuba, Feminist Issues and Womens Participation in Anti Colonial and national Liberation Movements with special reference to India		
	Tutorials:	Class Presentation on Women in Indian National Movement		

NOVEMBER	Theory:	Traditional Histiography and Feminist Critiques: A Criticism of Traditional History by Analyzing the Social Reform movement and Indian National Movement & Position of Women in India Family in India: Patrilineal and Matrilineal, Patterns of Consumption, Intra Household Bargaining and Entitlement, Property Rights Women in Work, Seual Division of Productive and Reproductive Work, Paid, Underpaid and Unpaid work, Visible and Invisible Work, Methods of Computing Women's Work, Female Head Households		
	Practicals:			
	Tutorials:	A discussion on domestic labor debate emerging in the context of unpaid labour		



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

Name of the Faculty: Namita Pandey

Department: Political Science

Semester : III

Month		Topics	Course	Paper Code/Name
JULY	Theory	How do you understand International Relations: Levels of Analysis History of IR: Emergence of the International State System	B.A (H) 3 rd Sem	Perspectives on International Relations and World History
	Practicals			
	Tutorials			
AUGUST	Theory:	Pre-Westphalia and Westphalia Post-Westphalia Classical Realism & Neo-Realism		
	Practicals:			

	Tutorials:			
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	<u>Assignment :</u>			
SEPTEMBER	Theory:	Classical Realism & Neo-Realism, Liberalism & Neoliberalism Marxist Approaches- Dependency and World System Approach		
	Practicals:			
	Tutorials:			
	<u>Test</u>	Critically examine the realist theory to understand the International Relations. Do you think that the Andre Gunder Franks Theory to understand the international relations is correct? Explain		
OCTOBER	Theory:	Feminist Perspectives -Tickner Eurocentrism and Perspectives from the Global South		

	Practicals:			
	Tutorials:			
November	Theory:	Revision and discussions the International Theories		
	Practicals:			

NOVEMBER	Theory:	Traditional Histiography and Feminist Critiques: A Criticism of Traditional History by Analyzing the Social Reform movement and Indian National Movement & Position of Women in India Family in India: Patrilineal and Matrilineal, Patterns of Consumption, Intra Household Bargaining and Entitlement, Property Rights Women in Work, Seual Division of Productive and Reproductive Work, Paid, Underpaid and Unpaid work, Visible and Invisible Work, Methods of Computing Women's Work, Female Head Households		
	Practicals:			
	Tutorials:	A discussion on domestic labor debate emerging in the context of unpaid labour		



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

Name of the Faculty: Dr Santosh Kumar Singh

Department: Political Science

Semester : III

Month		Topics	Course	Paper Code/Name
JULY	Theory	What is Global Vs International Key Concepts of International Relations	B.A (H) 3 rd Sem	Perspectives on International Relations and World History
	Tutorials	How do you see the Taliban role in Afghanistan		
AUGUST	Theory:	World war-I and Its Politics Bolshevik Revolution-Rise and Impact		
	Tutorials:			

	<u>Assignment :</u>			
SEPTEMBER	Theory:	Rise of Fascism & Nazism and its Impact World War-II, Origin, Impact and Role in the Contemporary Era		
	Tutorials:			
	<u>Assignment</u>	Where do you find the WW-I to shape the WW-II		
OCTOBER	Theory:	Cold war- Nature, Origin and Impact on International Relations Collapse of the USSR and the End of the Cold War Emergence of the Third World		
	Tutorials:	Do you think Third World is there? Where do you find the underdeveloped countries?		
November	Theory:	Post-Cold War Developments and Emergence of Other Power Centers of Power Revision of topics		

NOVEMBER	Theory:	Traditional Histiography and Feminist Critiques: A Criticism of Traditional History by Analyzing the Social Reform movement and Indian National Movement & Position of Women in India Family in India: Patrilineal and Matrilineal, Patterns of Consumption, Intra Household Bargaining and Entitlement, Property Rights Women in Work, Seual Division of Productive and Reproductive Work, Paid, Underpaid and Unpaid work, Visible and Invisible Work, Methods of Computing Women's Work, Female Head Households		
	Practicals:			
	Tutorials:	A discussion on domestic labor debate emerging in the context of unpaid labour		



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

Name of the Faculty: Dr. Vikash Kumar

Department: Political Science

Semester : I/III/V

Month		Topics	Course	Paper Code/Name
July	Theory	Unit-2: Introduction of Administration and Public policy paper, Democratization	BA (P) Political Science 3 rd Semester-MIL Course	1. Administrative and Public Policy
		Unit-2: Industrial Development in India	BA (H) Political Science 5 th Semester	2. Development Process and Social Movement in Contemporary India- (12327903)
	Practicals			
	Tutorials			
August	Theory:	Unit-2: Decentralization	BA (P) Political Science 3 rd Semester-MIL Course	1. Administrative and Public Policy
		Unit-2: Industrial Development Strategy	BA (H) Political Science 5 th Semester	2. Development Process and Social Movement in Contemporary India (12327903)
	Practicals:			

Tutorials:			
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	<u>Assignment :</u>			
September	Theory:		BA (P) Political Science 3 rd Semester-MIL Course BA (H) Political Science 5 th Semester	1.Administrative and Public Policy 2. Development Process and Social Movement in Contemporary India-(12327903)
	Practicals:			
	Tutorials:			
	<u>Test</u>			
October	Theory:		BA (P) Political Science 3 rd Semester-MIL Course BA (H) Political Science 5 th Semester BA (H) Political Science 1 th Semester BA (prog.) Political Science 1 th Semester	1.Administrative and Public Policy 2. Development Process and Social Movement in Contemporary India-(12327903) 3. Understanding Political Theory-(12321101) 4. A: Globalizing world
	Practicals:			
	Tutorials:			

November	Theory:		BA (P) Political Science 3 rd Semester-MIL Course BA (H) Political Science 5 th Semester BA (H) Political Science 1 th Semester BA (prog.) Political Science 1 th Semester	1. Administrative and Public Policy 2. Development Process and Social Movement in Contemporary India- (12327903) 3. Understanding Political Theory- (12321101) 4. A: Globalizing world
	Practicals:			
	Tutorials:			



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

Name of the Faculty: Dr JITA MISHRA

Department: Political Science

**Semester : V INDIA'S FOREIGN POLICY IN A GLOBALISING
WORLD**

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	India's foreign policy from a post colonial state to an aspiring global power	BaHons political science III YEAR VI Semester	Paper 5.3f India's foreign policy in a globalizing world
	Practicals			
	Tutorials	Determinants Continuity and change		
FEBRUARY	Theory:	India's relations with USA and USSR		
	Practicals:			
	Tutorials:	Trump administration		

	<u>Assignment :</u>	Discuss India and Russia relations in the 1990's		
MARCH	Theory:	India china relations		
	Practicals:			
	Tutorials:	Border dispute		
	<u>Test</u>	Discuss India -china relation with special reference to the border dispute and the Tibetan issue		
APRIL	Theory:	India in South Asia debating regional strategies		
	Practicals:			
	Tutorials:	India and Nepal		

MAY	Theory:	Trade environment and security regimes India in a contemporary multipolar world		
	Practicals:			
	Tutorials:	India as an emerging power		



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

Name of the Faculty: Dr. Kanwar Singh

Department: Sanskrit

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
AUGUST	Theory:	UNIT I: INTRODUCTION TO SANSKRIT POETICS	B.A. 2 ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
NOVEMBER		UNIT I: VEDIC LITERATURE (BRIEF INTRODUCTION)	B.A. 1 ST YEAR (H)	C-2 CRITICAL SURVEY OF SANSKRIT LITERATURE
DECEMBER		UNIT I: VEDIC LITERATURE SAMHITA (BRIEF INTRODUCTION)	B.A. 1 ST YEAR (H)	C-2 CRITICAL SURVEY OF SANSKRIT LITERATURE
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

SEPTEMBER	Theory:	UNIT II: FORMS OF KAVYA LITERATURE	B.A. 2 ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
JANUARY		UNIT I: VADIC LITERATURE BRAHMANA, ARANYAKA, UPANISAD, VEDANGA (BRIEF INTRODUCTION) AND UNIT II: RAMAYANA	B.A. 1 ST YEAR (H)	C-2 CRITICAL SURVEY OF SANSKRIT LITERATURE
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	<u>Assignment :</u>	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS.		
OCTOBER	Theory:	UNIT III: SABDA SAKTI (POWER OF WORD) UNIT IV: RASA-SUTRA	B.A. 2 ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
FEBRUARY		UNIT III: MAHABHARATA AND UNIT IV: PURANAS	B.A. 1 ST YEAR (H)	C-2 CRITICAL SURVEY OF SANSKRIT LITERATURE
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	<u>Test</u>	TESTS WILL BE TAKEN TIMELY.		

NOVEMBER	Theory:	UNIT V: ALANKARA (FIGURES OF SPEECH)	B.A. 2 ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
MARCH		UNIT VI: CHANDASA (METRE)		
		UNIT V:GENERAL INTRODUCTION TO VYAKARANA AND SAHITYASASTRA AND UNIT VI: GENERAL INTRODUCTION TO DARSANA	B.A. 1 ST YEAR (H)	C-2 CRITICAL SURVEY OF SANSKRIT LITERATURE
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
DECEMBER	Theory:	UNIT VI: CHANDASA (METRE)	B.A. 2 ND YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
APRIL	Theory:	UNIT VI: GENERAL INTRODUCTION TO DARSANA	B.A. 1 ST YEAR (H)	C-2 CRITICAL SURVEY OF SANSKRIT LITERATURE
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

SRI VENKATESWARA COLLEGE

DEPARTMENT OF SOCIOLOGY

FACULTY TEACHING PLANS

(July to December 2021)



TEACHING PLAN
ODD SEMESTER, 2021
SRI VENKATESWARA COLLEGE

Department: Sociology
Name of the Faculty: Geeta J. Sodhi
Semester: I (August- December, 2021) as
per University notification dt. 9th August,
2021 (subject to revision)

Month		Topic(s)	Course	Paper Code/Name
AUGUST	Theory	Thinking Sociologically	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
	Practical	NA	NA	NA
	Tutorial	Sociological and Individualistic Perspectives	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
SEPTEMBER	Theory	1. Emergence of Sociology & Social Anthropology 2. Sociology & History 3. Sociology and Psychology	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
	Practical	NA	NA	NA
	Tutorial	Historical development of Sociology	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
OCTOBER	Theory	1. Sociology and Anthropology 2. Sociological Investigation	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
	Practical	NA	NA	NA
	Tutorial	Relation between Sociology and Social Anthropology	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I

	Assignment	What does it mean to 'think sociologically'?	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
NOVEMBER	Theory	1. Individual and Group 2. Associations and Institutions	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
	Practical	NA	NA	NA
	Tutorial	Nature and Classification of Social groups	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
DECEMBER	Theory	1. Culture and Society 2. Social Change	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
	Practical	NA	NA	NA
	Tutorial	The Theories of Social Change	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I



TEACHING PLAN
ODD SEMESTER, 2021
SRI VENKATESWARA COLLEGE

Department: Sociology

Name of the Faculty: Geeta J. Sodhi

Semester: V (July-December, 2021)

Month		Topics	Course	Paper Code/Name
JULY	Theory	1. Work in historical perspective	B.A. (H) Sociology DSE 04	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	Discuss the nature of work in pre-industrial times.	B.A. (H) Sociology DSE 04	Sociology of Work
AUGUST	Theory	1. Interlinking Work and Industry 2. Industrialism	B.A. (H) Sociology DSE 04	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	Discuss the contribution of the founding fathers to the sociology of work.	B.A. (H) Sociology DSE 04	Sociology of Work
SEPTEMBER	Theory	1. Post-industrial Society 2. Information Society	B.A. (H) Sociology DSE 04	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	Theories of Alienation	B.A. (H) Sociology DSE 04	Sociology of Work
	<u>Assignment</u>	Critically examine the theory of post-industrial society.	B.A. (H) Sociology DSE 04	Sociology of Work

OCTOBER	Theory	1. Dimensions of Work: Alienation, Gender 2. Work in the Informal sector	B.A. (H) Sociology DSE 04	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	Features of work in the informal sector	B.A. (H) Sociology DSE 04	Sociology of Work
NOVEMBER	Theory	1. Unpaid Work and Forced labour 2. Risk, Hazard and Disaster	B.A. (H) Sociology DSE 04	Sociology of Work
	Practical	NA	NA	NA
	Tutorial	Analysis of work in hazardous situations	B.A. (H) Sociology DSE 04	Sociology of Work



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Department: Sociology
Name of the Faculty: Subas C Mohapatra
Semester: III (August- December, 2021)

Month		Topic(s)	Course	Paper Code/Name
AUGUST	Theory	1. Introduction to Sociological Theory 2. Forms of Solidarity (Emile Durkheim)	B.A.(P) Sociology Core Course III	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Social Solidarity	B.A.(P) Sociology Core Course III	Sociological Theories
SEPTEMBER	Theory	1. Social Fact 2. Historical Materialism (Karl Marx)	B.A.(P) Sociology Core Course III	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Historical Materialism	B.A.(P) Sociology Core Course III	Sociological Theories
OCTOBER	Theory	1. Historical Materialism	B.A.(P) Sociology Core Course III	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Rules of Sociological method and critiques to it	B.A.(P) Sociology Core Course III	Sociological Theories

	Assignment	Write a note on Durkheim's Rules of Sociological Method and explain its limitations.	B.A.(P) Sociology Core Course 1II	Sociological Theories
NOVEMBER	Theory	Max Weber 1. Social Action 2. Ideal Type	B.A.(P) Sociology Core Course 1II	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Ideal type of Max Weber	B.A.(P) Sociology Core Course 1	Sociological Theories
DECEMBER	Theory	Types of Authority	B.A.(P) Sociology Core Course 1II	Sociological Theories
	Practical	NA	NA	NA
	Tutorial/Assignment	Examine the adequacy of Weber's theory of Legal-Rational Authority	B.A.(P) Sociology Core Course 1II	Sociological Theories



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Department: Sociology

Name of the Faculty: Subas Mohapatra

Semester: V (July-December,2021)

Month		Topics	Course	Paper Code/Name
JULY	Theory	Sociology of Religion: Meaning and Scope	B.A. (P) Sociology DSE 01	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Discussion on various approaches to religion	B.A. (P) Sociology DSE 01	Religion and Society
AUGUST	Theory	1. Sacred and Profane 2. Religion and rationalization	B.A. (P) Sociology DSE 01	Religion and Society
	Practical	NA	NA	NA
	Tutorial/Assignment-1	Discussion on limitations of Durkheim and Weber's theories of religion	B.A. (P) Sociology DSE 01	Religion and Society
SEPTEMBER	Theory	Rites of Passage	B.A. (P) Sociology DSE 01	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Symbolic approach to religion	B.A. (P) Sociology DSE 01	Religion and Society
	<u>Assignment-2</u>	Examine the linkage between religion and rationality. Explain its limitations	B.A. (P) Sociology DSE 01	Religion and Society

OCTOBER	Theory	1. Hinduism 2. Islam 3. Christianity 4. Sikhism	B.A. (H) Sociology DSE 01	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Hinduism and Sikhism	B.A. (H) Sociology DSE 01	Religion and Society

NOVEMBER	Theory	1. Buddhism 2. Communalism 3. Secularism	B.A. (H) Sociology DSE 01	Religion and Society
	Practical	NA	NA	NA



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: Dr. ABHIJIT KUNDU

Department: Sociology

Semester: ODD-IIIrd Semester, 16th Aug to 8th Dec

Month		Topic(s)	Course	Paper Code/Name
August	Theory	Scope And Development of Political Sociology	HONOURS-III Sem	Core Course-05 POLITICAL SOCIOLOGY
	Practical	NA	NA	NA
	Tutorial	Kate Nash and Eric Wolf	Same	Same
September	Theory	Political Anthropology, Post Colonialism and Power	Same	Same
	Practical	NA	NA	NA
	Tutorial	1. Facing Power-Eric Wolf 2. Post Colonial-Jonathan Spencer	Same	Same
SEPTEMBER	Theory	1. Concepts of Power and Authority 2. Elite Theories	Same	Same

	Practical	NA	NA	NA
	Tutorial	-Max Weber, Lukes , Foucault, Young - Tom Bottomore	Same	Same
	<u>Assignment</u>	Discuss the scope and development of Political anthro and sociology	Same	Same
OCTOBER	Theory	1.State, and Types Democracy 2. Development of Citizenship Rights	Same	Same
	Practical	NA	NA	NA
	Tutorial	- Timothy Mitchel - Macpherson - T. Marshall - Charles Tilly	Same	Same
	<u>Mid-Semester Examination</u>	TOPIC : State , Democracy and Civil Society	Same	Same
NOVEMBER- 8thDECEMBER	Theory	1.Everyday State and Local Structures of Power 2.Case Study of Emergency	Same	Same
	Practical	NA	NA	NA
	Tutorial	- Bailey - Akhil Gupta etc - Corbridge and Harris - Ema Tarlow	Same	Same



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: Dr. ABHIJIT KUNDU

Department: Sociology

Semester: ODD, V SEMESTER, (July-December)

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	- Characteristics of Social Facts _ Suicide as Social Facts	Same	Same
	<u>Mid-Semester Examination</u>	_ Max Weber and Emile Dirckheim _____	Same	Same

NOVEMBER	Theory	Types of Suicide	Same	Same
	Practical	NA	NA	NA
	Tutorial	Individual and Society	Same	Same



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: I (July-December, 2021)

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 (10 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>Mid-Semester Examination (10 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



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: III (July-December, 2021)

Month		Topic(s)	Course	Paper Code/Name
JULY	Theory	Introduction: learning the virtues of repetition Re-Reading and Re-writing in academics	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
	Practical	NA	NA	NA
	Tutorial	NA	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
AUGUST	Theory	Techniques for Reading academic texts: -Titles -Section headings -Summaries Introduction and Conclusion	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
	Practical	NA	NA	NA
	Tutorial		B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
SEPTEMBER	Theory	Stages of argument and its structuring, Distribution of emphasis on writing Background knowledge	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology

	Practical	NA	NA	NA
	Tutorial	NA	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
	<u>Assignment</u>	Write an essay on a context/space based on repeated observation and critical reflection.	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
OCTOBER	Theory	Writing paragraphs: building prose Sentences, punctuation, balance, continuity Paraphrasing and plagiarism	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
	Practical	NA	NA	NA
	Tutorial	NA	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
	<u>Mid-Semester Examination</u>	Write the review essay on the topic decided upon by you with reference to articles and books.	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
NOVEMBER	Theory	Citation	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology
	Practical	NA	NA	NA
	Tutorial	NA	B. A. (H) SEC	Reading, Writing and Reasoning for Sociology



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: Padma Priyadarshini

Department: Sociology

Semester: V (August -December, 2020)

Month		Topic(s)	Course	Paper Code/Name
August	Theory	1.The Logic of Social Research A. Sociological Imagination	Core Course-12	Sociological Research Methods I
	Practical	NA	NA	NA
	Tutorial	How does the Sociological Imagination contribute to the understanding of our society? Ref: C. Wright Mills	Core Course-12	Sociological Research Methods I
September	Theory	B.The Problem Of Objectivity C. Reflexivity	Core Course-12	Sociological Research Methods I
	Practical	NA	NA	NA
	Tutorial	Why is there a problem of objectivity in the social sciences? Ref: Rules of Sociological Method. Durkheim.	Core Course-12	Sociological Research Methods I
October	Theory	2. Methodological Perspectives A.Comparative Method	Core Course-12	Methods of Sociological Research I

	Practical	NA	NA	NA
	Tutorial	Reflexivity amounts to critical self introspection. Ref: Gouldner	Core Course-12	Methods of Sociological Research I
	<u>Mid Sem Assignment:</u>	Topics: Sociological Imagination, Objectivity and Reflexivity	Core Course-12	Methods of Sociological Research I
November	Theory	B. Feminist Method 3. Modes of Enquiry A. Theory and Research Ref: R.K. Merton	Core Course-12	Methods of Sociological Research I
	Practical	NA	NA	Methods of Sociological Research I
	Tutorial	The Comparative Method is a method par excellence. Ref: Radcliffe Brown Andre Beteille	Core Course-12	Methods of Sociological Research I
	<u>End Sem Assignment</u>	Research Project using both quantitative and qualitative techniques; primary sources of data collection based on on-line mode.	Core Course-12	Methods of Sociological Research I
December	Theory	Analyzing Data: Quantitative and Qualitative Ref: Alan Bryman	Core Course-12	Methods of Sociological Research I
	Practical	NA	NA	NA
	Tutorial	Is there a distinct feminist method? Ref: Sandra Harding	Core Course-12	Methods of Sociological Research I



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: Padma Priyadarshini

Department: Sociology

Semester: V

Month		Topics	Course	Paper Code/Name
August	Theory	1. Envisioning Environmental Sociology Nature and Scope of Environmental Sociology	DSE - 03	Environmental Sociology
	Practical	Movie Screened "An Inconvenient Truth"	DSE 03	Environmental Sociology
	Tutorial	What are the fundamental debates of Environmental Sociology Ref: Michael Bell Hannigan	DSE-03	Environmental Sociology
September	Theory	B. Realist-Constructionist Debate 2. Approaches A. Treadmill of Production B. Ecological Modernization	DSE 03	Environmental Sociology
	Practical	Movie Screened: "Chipko Movement as it stands today"	DSE 03	Environmental Sociology
	Tutorial	Realism and Constructionism do not represent two opposed strands of thought. Ref: Leahy Evanoff	DSE 03	Environmental Sociology

October	Theory	C. Risk D. Eco Feminism and Feminist Environmentalism E. Political ecology	DSE 03	Environmental Sociology
	Practical	Movie Screened: “Narmada Bachao Andolan: Its social, economic and Environmental impact explained.”	DSE 03	Environmental Sociology
	Tutorial	Relevance of approaches to the study of Environmental Sociology Ref: Schnaiberg and Gould, Mol and Spaargaren, Beck, Shiva and Agarwal, Robbins.	DSE 03	Environmental Sociology
	<u>Mid Sem Assignment:</u>	Topics: What is environmental sociology? Realism and Constructionism	DSE 03	Environmental Sociology
November	Theory	3. Environmental Movements in India A. Chipko B. Narmada Ref: Guha Khagram	DSE 03	Environmental Sociology
	Practical	Movie Screened: 1. “Seeds of Life” 2. “Should India have genetically modified crops?”	DSE 03	Environmental Sociology
	Tutorial	Can the Chipko Movt be designated as a woman’s movement?	DSE 03	Environmental Sociology
	<u>End Sem Assignment</u>	Class Presentations and Viva Topics: Chipko, Narmada, Anti-mining, Seed.	DSE 03	

December	Theory	C. Anti-Mining and Seed Ref: Padel and Das Scoones	DSE 03	Environmental Sociology
	Practical	Movie Screened: 1. "Battle ground Niyamgiri" 2. Resettlement and Rehabilitation: Problems and concerns	DSE 03	Environmental Sociology
	Tutorial	The success of the Narmada movement can be attributed to its transnational coalitions.	DSE 03	Environmental Sociology



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: DR. URMI BHATTACHARYYA

Department: SOCIOLOGY

Semester: V

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

	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
	<u>Assignment</u>	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
	<u>Mid-Semester Examination</u>	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



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: DR. URMI BHATTACHARYYA

Department: SOCIOLOGY

Semester: I

Month		Topic(s)	Course	Paper Code/Name
JULY	Theory	History of Sociology Relationship of Sociology with other Social Sciences: -Anthropology	B. A. (Prog.) Core Course 01	Introduction to Sociology
	Practical	NA	NA	NA
	Tutorial	Enlightenment, industrial revolution, positivism, founding fathers of sociology	B. A. (Prog.) Core Course 01	Introduction to Sociology
AUGUST	Theory	Relationship of Sociology with other Social Sciences: -Anthropology -Psychology -History Introduction to concepts	B. A. (Prog.) Core Course 01	Introduction to Sociology
	Practical	NA	NA	NA
	Tutorial	Discussing the scope of sociology and its relation to other social science disciplines: similarities and differences in perspectives and methodology What are concepts?	B. A. (Prog.) Core Course 01	Introduction to Sociology

SEPTEMBER	Theory	Sociological Concepts: -Status -Role -Groups The concept of culture	B. A. (Prog.) Core Course 01	Introduction to Sociology
	Practical	NA	NA	NA
	Tutorial	Discussing concepts: -Status and Role, in relation to class and power; what is status; what are social roles? -Different types of groups -The significance of the concept of culture in sociology	B. A. (Prog.) Core Course 01	Introduction to Sociology
	<u>Assignment</u>	Explain how culture is conceptualized in sociology and its contribution to the social structure.	B. A. (Prog.) Core Course 01	Introduction to Sociology

OCTOBER	Theory	Sociological Concepts: -Socialization - The concepts of Structure and Function	B. A. (Prog.) Core Course 01	Introduction to Sociology
	Practical	NA	NA	NA
	Tutorial	Discussing the concept of socialization and the kinds, causes, effects. Interdependence of structure and function	B. A. (Prog.) Core Course 01	Introduction to Sociology
	<u>Mid-Semester Examination</u>	Write a note on the history of sociology as a discipline.	B. A. (Prog.) Core Course 01	Introduction to Sociology
NOVEMBER	Theory	Social Control Social Change	B. A. (Prog.) Core Course 01	Introduction to Sociology
	Practical	NA	NA	NA
	Tutorial	Measures of social control Types and dimensions of social change	B. A. (Prog.) Core Course 01	Introduction to Sociology



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

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
	<u>Assignment</u>	How does Anthropology accommodates Gender Studies	Core Course-07	Sociology of Gender
SEPTEMBER	Theory	Production of Masculinity and Femininity- Halberstam Judith, Alter Joseph, Patricia Uberoi; Class, Caste- Walby Sylvia	Core Course-07	Sociology of Gender

	Practical	NA	NA	NA
	Tutorial	Masculinity and Femininity	Core Course-07	Sociology of Gender
	<u>Field Work</u>	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
	<u>Mid-Semester Examination</u>	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



**SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)**

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

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
	<u>Assignment</u>	How is Development considered to be Freedom	Generic Elective 03	Rethinking Development
OCTOBER	Theory	Developmental Regimes in India- Pranab Bardhan, Partha Chatterjee; Issues in Developmental Praxis- T. Scudder	Generic Elective 03	Rethinking Development
	Practical	NA	NA	NA
	Tutorial	Political Economy of Development	Generic Elective 03	Rethinking Development
	<u>Mid-Semester Examination</u>	With reference to Pranab Bardhan and Partha Chatterji explain how there has been an influence of	Generic Elective 03	Rethinking Development

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



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: Dr. Nupurnima Yadav

Department: Sociology

Semester: Vth B.A Program (August-December, 2021)

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

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
	<u>Assignment (10 Marks)</u>	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
	<u>Mid-Semester Examination (10 Marks)</u>			

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



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: Nupurnima Yadav

Department: Sociology

Semester: 5th B.A Prog. (August- December, 2021)

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

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

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

NOVEMBER	Theory			
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

Name of the Faculty: Niharika Jaiswal

Department: Sociology

Semester: I

Month		Topics	Course	Paper Code/Name
NOVEMBER	Theory	Ideas of India Eck (2012)	Generic Elective no 01	General Elective Indian Society: Images and Reality
	Practicals			
	Tutorials	how have the socio- political transformations in the last two centuries shaped the idea of India?		
DECEMBER	Theory:	Village, Town and Region Breman (1997) Cohn (1987) Caste, Class and Religion Zeliot (2004) Alavi (1989) Mines	Generic Elective no 01	General Elective Indian Society: Images and Reality
	Practicals:			
	Tutorials:	Discuss the diverse ways of conceptualizing Indian villages in social science discourse.		

	<u>Assignment :</u>	Discuss the diverse ways of conceptualizing Indian villages in social science discourse.		
JANUARY	Theory:	Family and Gender Dube (1988) Gray and Mearns (1989)	Generic Elective no 01	General Elective Indian Society: Images and Reality
	Practicals:			
	Tutorials:			
	<u>Test</u>	is the idea of a distinctive 'Indian household' viable? Illustrate your answer with suitable examples.		
FEBRUARY	Theory:	Political Economy Chatterjee (1997)	Generic Elective no 01	General Elective Indian Society: Images and Reality
	Practicals:			
	Tutorials:	write an essay on the political history of independent India.		

MARCH	Theory:	critiques Omvedt (2011) Jayawardena (2016) Baruah (2001)	Generic Elective no 01	General Elective Indian Society: Images and Reality
	Practicals:			
	Tutorials:	Do you agree with the view that caste and class relations are based on patriarchy?		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(July to Dec 2021)

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:			

	<u>Assignment :</u>	Common 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 significant 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?		

DECEMBER	Theory:	Religion and State Marx (1843) Smith (1963)	Core Course 06	Sociology of Religion
	Practicals:			
	Tutorials:	To discuss secularism within the Indian society.		

Odd Semester Papers

Teachers Name	Paper Name
Dr. Veena Budhraj	1) Stochastic Processes and Queuing Theory 2) Mathematical Analysis
Dr. M. K. Sukla	1) GE-III Basics Principals of Statistical Inference 2) GE-I -Statistical Methods 3) Calculus
Mr. Akash Varshney	1) Time Series Analysis 2) Mathematical Analysis 3) Calculus
Dr. Dipika	1) Operations Research 2) Survey Sampling and Indian Official Statistics 3) GE-III Basics Principals of Statistical Inference
Dr. Alok Kumar Singh	1) Statistical Computing Using C/C++ Programming
Dr. Ramesh Kumar Singh	1) Econometrics 2) Sampling Distributions 3) GE-III Basics Principals of Statistical Inference
Dr. Tanuja Sriwastava	1) Operation Research 2) Sampling and Indian Official Statistics 3) Calculus 4) Descriptive Statistics
Ms. Parul Saini	1) Statistical Data Analysis Using R 2) Stochastic Processes and Queuing Theory
Dr. Chetan	1) Descriptive Statistics 2) GE-I -Statistical Methods 3) GE-III Basics Principals of Statistical Inference 4) Econometrics
Ms. Kanika Verma	1) Time Series Analysis 2) Econometrics

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Odd Semester 2021-22

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

Department: Statistics

Month		Topics	Course	Paper Code/Name
JULY	Theory:	Probability Distributions: Generating functions, Bivariate probability generating functions	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processes and 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 Processes and 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 Processes and 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 Processes and 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 Processes and Queuing Theory

	Practicals :	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 (Statements and Examples only).	B.Sc. (H) Statistics	STAT-C-303: Mathematical Analysis
		To classify the state and to find the stability of Markov system	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processes and 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 Poisson process	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processes and Queuing Theory
		Assignment based on neighborhoods, open set, closed set, 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 Processes and 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 Processes and 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 Processes and Queuing Theory

		Taylor's and Maclaurin's series expansions of $\sin x$, $\cos x$, $\log(1+x)$	B.Sc. (H) Statistics Semester III	STAT-C-303: Mathematical Analysis
	Practicals	Based on Ruin Problem	B.Sc. (H) Statistics	STAT-C-501 Stochastic Processes and 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:			



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

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

		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 Bivariate 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

		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 Cartesian forms)	B.Sc. (Hons.) Statistics	STAT C-102 Calculus
	Practical	--	--	--
	Tutorials	Numerical based on asymptotes	B.Sc. (Hons.) Statistics	STAT C-102 Calculus



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

July-December, 2021

Name of the Faculty: Akash Varshney

Department: Statistics

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
JULY	Theory:	Introduction to times series data, application of time series from various fields, Components of a times series, Decomposition of time series.	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
	Practicals:	Estimation of trend by free hand curve method, method of semi averages, fitting mathematical curve and growth curves.	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
		1.Fitting and plotting of modified exponential curve by different methods	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
AUGUST	Theory:	Estimation of trend by method of moving averages. Detrending: effect of elimination of trend on other components of a time series.	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
		Numerical Analysis: Factorial, finite differences and interpolation. Operators, and divided difference.	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
		Newton's forward, backward and divided differences interpolation,	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
		Seasonal Component: Estimation of seasonal component by the methods of - simple averages, Ratio to Trend, Ratio to Moving Averages and Link Relative method. Deseasonalization. Practical work.	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
	Practicals:	2.Fitting and plotting of Gompertz curve by different methods. 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 6. Measurement of Seasonal indice	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis

	Tutorials:	Based on Newton's Gregory forward difference interpolation formula . Based on Newton's backward difference interpolation formula	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
		Formation of difference table, fitting of polynomial and missing terms for equal interval of Differencing	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
SEPTEMBER	Theory:	Cyclic Component: Harmonic Analysis. Random Component: Variate difference method.	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
		Central differences, Derivation of Gauss and Stirling interpolation formulae. Lagrange's interpolation formulae.	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
		Stationary Time series: Weak stationarity, autocorrelation function and the correlogram. Some Special Processes: Moving-average (MA) process and Autoregressive (AR) processes. Estimation of	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
	Practicals:	. Measurement of Seasonal indices • Simple Averages method. • Ratio-to-Trend method • Ratio-to-Moving Average method • Link Relative method	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
	<u>Assignment</u>	Q1 Different Methods of fitting of Logistic Curve (i) Yule's Method (ii) Hotelling's Method (iii) Successive approximation Method Q. Periodogram and Harmonic Analysis	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
OCTOBER		divided difference. Newton's divided differences interpolation, Central differences, Gauss forward, Gauss Backward formulae	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
	Theory	Introduction to methods of Forecasting a time series. Forecasting by the methods of Exponential smoothing	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis

		Integration Revision Integral Calculus: Review of integration and definite integral. Differentiation under integral sign. Beta and Gamma functions: properties and relationship between them	B.Sc.(H) Statistics Sem-I	STAT-C-102: CALCULUS
		Numerical integration. Trapezoidal rule, Simpson's one-third rule, three-eighths rule, Weddle's rule with error terms. Stirling's Formulae. Euler-Maclaurin summation formula.	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
		Introduction to ARMA and ARIMA models. Short-term forecasting method: Brown's discounted regression.	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
	Practicals:	Estimation of variance of the random component by variate difference method 8. Forecasting by exponential smoothing 9. Plotting of Correlogram of moving average.	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
		Practical : Based on method of successive approximation or iteration Based on method of reversion of series Based on Trapezoidal Rule, Simpson's one-third rule, Simpson's three-eighth rule, Weddle's rule	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
	Tutorials:			
	<u>Mid Term Test-Assignment</u>	Cyclic Component: Harmonic Analysis. Random Component: Variate difference method. Estimation of the parameters of AR (1) and AR (2). Autocorrelation functions of AR(1) and AR(2) processes.	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
		Topics based on Central Difference Formulae, Numerical Integration.	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
	Theory:	Short-term forecasting method: Box-Jenkins method. Short-term forecasting method: Bayesian forecasting	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
NOVEMBER		Double integral, change of order of integration, transformation of variables . Formation and solution of a partial differential equations. Equations easily integrable. Linear partial differential equations of first order. Non-linear partial differential equation of first order and their different forms. Charpit's method.	B.Sc.(H) Statistics Sem-I	STAT-C-102: CALCULUS

December		Solution of difference equations of first order. Revision	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
	Practicals:	Forecasting by exponential smoothing 9. Plotting of Correlogram of moving average. Revision of Practicals.	B.Sc.(H) Statistics Sem-V	STAT-DSE – 1 (A): Time Series Analysis
		To find sum by Euler-Maclaurin summation formula. Revision of Practicals.	B.Sc.(H) Statistics Sem-III	STAT-C-303: Mathematical Analysis
	Test - Assignment	Beta Gamma Function, Double Integral.	B.Sc.(H) Statistics Sem-I	STAT-C-102: CALCULUS
	Theory	Homogeneous linear partial differential equations with constant coefficients. Different cases for complimentary functions and particular integrals.	B.Sc.(H) Statistics Sem-I	STAT-C-102: CALCULUS



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Odd Semester -2021-22

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

Department: Statistics

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

		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). $\times$ variances of these estimates ($N = n \times k$)		
		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

		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
	Practicals	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			
	<u>Assignment</u>	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
	<u>Test</u>	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:

			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



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

Teaching Plan 2021-22

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 3		
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



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

July-November, 2021

Name of the Faculty: Dr. Ramesh Kumar

Department: Statistics

Semester: III, V

Month		Topics	Course	Paper Code/Name
JULY	Theory:	Introduction: Objective behind building econometric models, nature of econometrics, model building, role of econometrics. General linear model (GLM)	Bachelor of Statistics (Hons.)	DSE 2-(B): Econometrics
	Practicals:	1. Problems based on estimation of General linear model. 2. Testing of parameters of General linear model		
	Tutorials:	Discuss problems related to theory		
AUGUST	Theory:	Definitions of random sample, parameter and statistic, sampling distribution of a statistic, 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 statistic. Estimation of population mean, confidence intervals for the parameters of a normal distribution (one sample and two sample problems). The basic idea of significance test, Null and alternative hypothesis, Type I & Type II errors	Bachelor of Statistics (Hons.)	STAT-C-301: Sampling Distributions GE-3: Basics of Statistical Inference
	Practicals:	Practical based on Sampling distributions: sample mean, sample proportions		STAT-C-301: Sampling Distributions
		Estimators of population mean.		GE-3
	Assignment	Based on Sampling distribution of sample variance		STAT-C-301: Sampling Distributions
SEPTEMBER	Theory:	Large sample tests: for single mean, single proportion, difference of two means, difference of two proportions, difference of two standard deviations all with examples by classical and p-value		STAT-C-301: Sampling Distributions

		approaches. Exact sampling distribution: Definition and derivation of pdf of χ^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 χ^2 distribution. Tests of significance and confidence intervals based on distribution level of significance, Concept of pvalue, Tests of hypotheses for the parameters of a normal distribution (one sample and two sample problems)		
			Bachelor of Statistics (Hons.)	GE-3: Basics of Statistical Inference
	Practicals:	Testing of significance and confidence intervals for single proportion and difference of two proportions. Testing of significance and confidence intervals for single mean and difference of two means. Testing of significance and confidence intervals for difference of two standard deviations., To test if the population variance has a specific value and its confidence intervals. To test the goodness of fit. To test the independence of attributes. Test based on 2 X 2 contingency table without and with Yates' corrections. To test the homogeneity of independent estimates of population correlation coefficient.		STAT-C-301: Sampling Distributions
		Confidence interval for the parameters of a normal distribution (one sample and two sample problems). Tests of hypotheses for the parameters of a normal distribution (one sample and two sample problems).		STAT-C-301: Sampling Distributions
	Assignment	Based on Chi-square distribution Based on confidence intervals		STAT-C-301 GE-3
OCTOBER	Theory	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. Derivation of distribution of sample correlation coefficient when population correlation coefficient is zero (Sawkin's Methods). Snedecore's F distribution: Derivation of pdf, nature of pdf nature of pdf curve with different degrees of freedom, mean, variance and mode. Distribution of $1/F(n_1, n_2)$. Relationship between t, F and χ^2 distributions. Test of significance and confidence Intervals based on t and F distributions	Bachelor of Statistics (Hons.)	STAT-C-301: Sampling Distributions
		Categorical data: Tests of proportions, tests of association		GE-3: Basics of Statistical Inference
	Practicals:	Testing of significance and confidence intervals for single mean and difference of two means and paired t – test. Testing of significance and confidence intervals of an observed sample correlation coefficient. Testing and confidence intervals of equality of two population variances. Testing of significance of an observed multiple correlation coefficients		SAT-C-301: Sampling Distributions
		Chi-square test of proportions. Chi-square tests of association		GE-3: Basics of Statistical Inference

	<u>Mid Term Test</u>	Test based on Unit-II and Unit-III Test based on Unit-I and Unit-II		SAT-C-301: Sampling Distributions GE-3: Basics of Statistical Inference
NOVEMBER	Theory:	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, 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 Categorical data: test of association and goodness-of-fit using Chisquare Test, Yates' correction	Bachelor of Statistics (Hons.)	STAT-C-301: Sampling Distributions GE-3: Basics of Statistical Inference
	Practicals:	Practical based on different types of convergence and Central Limit Theorem (CLT)		STAT-C-301: Sampling Distributions
		Chi-square test of goodness-of-fit. Test for correlation coefficient		GE-3: Basics of Statistical Inference



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

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	--	--	--

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	--	--	--

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.

Dr Chetan
Assistant Professor (Statistics)



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

Teacher Name: Parul Saini

Department: Statistics

Semester: Odd Semester (Semester I, III, V)

Month		Topics	Course	Paper Code/ Name
Aug	Theory	Introduction, Installation of R loading of data, Introduction to data types.	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Practical	Based on Some basic concept	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Theory	Queuing System: General concept	B.Sc. (Hons.) Statistics	STAT-501: Stochastic Processes and Queuing Theory
Sept	Theory	Graphical representation and interpretation viz. bar-plot, pie- chart, and box plot, stem-leaf, histograms (equal class intervals and unequal class intervals), frequency polygon, ogives with graphical summaries of data, Generate automated reports giving detailed descriptive statistics.	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R

	Practical	Plotting Graphs and Descriptive Statistics	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Assignment	Assignment based on different topic of R	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Theory	Introduction: Need for simulation, general principals, simulation models, event type simulation.	B.A. (Programme)	SEC-3: Simulation Techniques in Statistics
	Theory	Steady State distribution, queuing model,	B.Sc. (Hons.) Statistics	STAT-501: Stochastic Processes and Queuing Theory
Oct	Theory	Correlation and lines of regression, curvilinear regression, Introduction to flow control: if(), for() and while() loop. Random number generation and sampling procedures, Q-Q plot, Multiple Regression.	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Practical	Correlation, Regression, Based on Random Number generation, fitting curves , Q-Q plot,	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Assignment	Assignment based on different topic of R	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Theory	Random Number Generation, The inverse method, discrete and continuous distributions Transformation of random variable	B.A. (Programme)	SEC-3: Simulation Techniques in Statistics
	Practical	Random number generation Methods, The inverse transform	B.A. (Programme)	SEC-3: Simulation Techniques in Statistics

	Theory	M/M/1 with finite and infinite system capacity, waiting time distribution	B.Sc. (Hons.) Statistics	STAT-501: Stochastic Processes and Queuing Theory
Nov	Theory	Basics of statistical inference in order to understand hypothesis testing , compute p-values and confidence intervals, Simple analysis and create and manage statistical analysis projects.	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Practical	Simple statistical analysis using R software, import data, code editing	B.Sc. (Hons.) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
	Theory	Application of simulation, Advantages and disadvantages of simulation, scope of simulation, simulation of languages.	B.A. (Programme)	SEC-3: Simulation Techniques in Statistics
	Practical	Monte Carlo simulation, application of simulation,	B.A. (Programme)	SEC-3: Simulation Techniques in Statistics
	Theory	Gambler's Ruin Problem: Classical ruin problem, expected duration of the game.	B.Sc. (Hons.) Statistics	STAT-501: Stochastic Processes and Queuing Theory

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

Name of the Faculty: Theory: Ms. Kanika Verma

Department: Statistics

Course: B.Sc. (Hons)Statistics

Semester: Odd Semester (Semester-III and V)

Month		Topics	Course	Paper Code/Name
July	Theory	Stationary Time series: Weak stationarity, autocorrelation function and the correlogram.	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis
	Practicals	--	--	--
	Tutorials	--	--	--
	Theory	Introduction and Objective behind building Econometric Models.	B.Sc. (Hons) Statistics	STAT-DSE 2-(B): Econometrics
	Practicals	--	--	--
	Tutorials	--	--	--
August	Theory	Some Special Processes: Moving-average (MA) process and Autoregressive (AR) processes. Estimation of the parameters of AR (1) and AR (2).	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis
	Practicals	Fitting of trend by Moving Average Method for given extent and for estimated extent. Measurement of Seasonal indices	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis
	Tutorials	--	--	--
	Theory	Generalized linear model: Estimation under linear restrictions	B.Sc. (Hons) Statistics	STAT-DSE 2-(B): Econometrics
	Practicals	--	--	--
	Tutorials	--	--	--
	Practical	Based on Some basic concept	B.Sc. (Hons) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
September	Theory	Autocorrelation functions of AR(1) and AR(2) processes. Random Component: Variate difference method, Introduction to methods of Forecasting a time series.	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis
	Practicals	Ratio-to-Trend method, Ratio-to-Moving	B.Sc. (Hons)	STAT-DSE –

		Average method, Link Relative method	Statistics	1 (A): Time Series Analysis
	Tutorials	--	--	--
	Theory	Structural and reduced form models. A regular class test. Multicollinearity: Concepts	B.Sc. (Hons) Statistics	STAT-DSE 2-(B): Econometrics
	Practicals	Problems based on estimation of General linear model. Testing of parameters of General linear model.	B.Sc. (Hons) Statistics	STAT-DSE 2-(B): Econometrics
	Tutorials	--	--	--
	Practical	Practical based on Descriptive Statistics	B.Sc. (Hons) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
October	Theory	Forecasting by the methods of Exponential smoothing. Introduction to ARMA and ARIMA models, Short-term forecasting methods Brown's discounted regression	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis
	Practicals	Forecasting by exponential smoothing, Plotting of Correlogram of moving average.	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis
	Tutorials	--	--	--
	<u>Mid Term Test-Assignment</u>	Cyclic Component: Harmonic Analysis. Random Component: Variate difference method. Estimation of the parameters of AR (1) and AR (2). Autocorrelation functions of AR(1) and AR(2) processes.	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis
	Theory	Detection of multicollinearity, consequences, tests and solutions of multicollinearity.	B.Sc. (Hons) Statistics	STAT-DSE 2-(B): Econometrics
	Practicals	Forecasting of General linear model. Problems related to consequences of Multicollinearity. Diagnostics of Multicollinearity.	B.Sc. (Hons) Statistics	STAT-DSE 2-(B): Econometrics
	Tutorials	--	--	--
	<u>Mid Term Test-Assignment</u>	General linear model. Estimation under linear restrictions. Multicollinearity: Introduction and concepts, detection of multicollinearity, consequences, tests and solutions of multicollinearity	B.Sc. (Hons) Statistics	STAT-DSE 2-(B): Econometrics
	Practical	Correlation, Regression, Q-Q plot,	B.Sc. (Hons) Statistics	STAT-SEC-2: Statistical Data Analysis Using R
November	Theory	Box-Jenkins method and Bayesian forecasting, Revision and doubt classess	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis
	Practicals	Forecasting by exponential smoothing, Revision of Practical	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis

	Tutorials	--	--	--
	Theory	Revision and Doubt classes	B.Sc. (Hons) Statistics	STAT-DSE 2-(B): Econometrics
	Practicals	Diagnostics of Multicollinearity. Revision	B.Sc. (Hons) Statistics	STAT-DSE 2-(B): Econometrics
	Tutorials	--	--	--
	Practical	Simple statistical analysis using R software, import data, code editing	B.Sc. (Hons) Statistics	STAT-SEC-2: Statistical Data Analysis Using R



SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

ODD SEMESTER 2021-22

Name of the Faculty: Dr. Tanuja Sriwastava

Department: Statistics

Semester: I, III, V

Month		Topic	Course	Paper Code/ Name
August	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
		Present official statistical system in India, Methods of collection of official statistics	B.Sc. (H) Statistics, Semester III	STAT-C-302: Survey Sampling and Indian Official Statistics
	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
		Practical based on Sampling distributions: sample mean, sample proportions	B.Sc. (H) Statistics, Semester III	STAT-C-301: Sampling Distributions
September	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
		Methods reliability and limitations. Role of Ministry of Statistics & Program Implementation (MoSPI)	B.Sc. (H) Statistics, Semester III	STAT-C-302: Survey Sampling and Indian Official Statistics
	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
		To test if the population variance has a specific value and its confidence intervals. To test the goodness of fit. To test the independence of attributes. Test based on 2 X 2 contingency table without and with Yates' corrections. To test the homogeneity of independent estimates of population correlation coefficient.	B.Sc. (H) Statistics, Semester III	STAT-C-301: Sampling Distributions

October	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
		Central Statistical Office (CSO), National Sample Survey Office (NSSO)	B.Sc. (H) Statistics, Semester III	STAT-C-302: Survey Sampling and Indian Official Statistics
		Differential Calculus: Limits of function, continuous functions	B.Sc. (H) Statistics, Semester I	STAT-C-102: CALCULUS
	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
		Testing of significance and confidence intervals for single mean and difference of two means and paired t – test. Testing of significance and confidence intervals of an observed sample correlation coefficient.	B.Sc. (H) Statistics, Semester III	STAT-C-301: Sampling Distributions
		1. Presentation of data in: a) Discrete & Continuous frequency table b) Cumulative frequency table 2. Graphical representation of data: a) Frequency curve, frequency polygon and histogram b) Ogives	B.Sc. (H) Statistics, Semester I	STAT-C-101: Descriptive Statistics
November	Theory	Networking: Shortest route and minimal spanning tree problem. 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
		National Statistical Commission. Government of India's Principal publications containing data on the topics such as population, industry and finance.	B.Sc. (H) Statistics, Semester III	STAT-C-302: Survey Sampling and Indian Official Statistics
		properties of continuous functions, partial differentiation and total differentiation.	B.Sc. (H) Statistics, Semester I	STAT-C-102: CALCULUS
	Practical	7. Problems based on game matrix: a) Graphical solution to $m \times n$ rectangular game b) Mixed strategy 8. To find optimal inventory policy for EOQ models and its variations. 9. To solve all-units quantity discounts model.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		Practical based on different types of convergence and Central Limit Theorem (CLT)	B.Sc. (H) Statistics, Semester III	STAT-C-301: Sampling Distributions
		3. Measures of Central tendency: a) Based on Arithmetic mean: Formulae (Direct Method), Change of Origin and Scale b) Based on Median and partition values: Formulae (Direct Method), Graphically c) Based on Mode: Formulae (Direct Method), Graphically , By the method of grouping	B.Sc. (H) Statistics, Semester I	STAT-C-101: Descriptive Statistics

December	Theory	Quantity Discount Model with price breaks.	B.Sc. (H) Statistics, Semester V	STAT-DSE-2(A): Operation Research
		Project work related to Indian official statistics.	B.Sc. (H) Statistics, Semester III	STAT-C-302: Survey Sampling and Indian Official Statistics
		Indeterminate forms: L-Hospital's rule, Leibnitz rule for successive differentiation	B.Sc. (H) Statistics, Semester I	STAT-C-102: CALCULUS
	Practical	4. Measures of Dispersion - a) Quartile deviation using formula and graphically b) Mean Deviation c) Standard deviation and variance: Formulae (direct method), Change of origin & Scale	B.Sc. (H) Statistics, Semester I	STAT-C-101: Descriptive Statistics



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. S. Vivekananthan

Department: Tamil

CBCS Semester: I

2021 ODD Semester

Month	Theory/Practical	Topics	Course	Paper code/Name
November	Theory	<u>History of Indian Language (Tamil)</u> Phonological and Morphological Changes	B.A Prog Tamil Language	62081104
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> <u>Folk songs and Myth</u>	B.A Prog Tamil Discipline	62081108
	Theory	<u>MIL Communications (Tamil)</u> Group Discussion and Conversation	B.A Prog Tamil AECC	72082807

Month	Theory/Practical	Topics	Course	Paper code/Name
December	Theory	<u>History of Indian Language (Tamil)</u> Syntactical Changes	B.A Prog Tamil Language	62081104
	Assignment	History of Tamil Language (I Part)		
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Myth and literature	B.A Prog Tamil Discipline	62081108
	Assignment	<u>Folk Songs and Myth</u>		
	Theory	<u>MIL Communications (Tamil)</u> Letter writing	B.A Prog Tamil AECC	72082807
	Assignment	Interview and Letter writing		
	Theory	<u>History of Indian Language (Tamil)</u>	B.A Prog	62081104

January	Mid-Term Test	History of Scripts <u>History of Tamil Language</u>	Tamil Language	
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u>	B.A Prog	62081108
	Mid-Term Test	<u>Mythology</u> <u>Oral Traditions</u>	Tamil Discipline	
	Theory	<u>MIL Communications (Tamil)</u>	B.A Prog	72082807
	Mid-Term Test	<u>Comprehension</u> <u>Tamil Communications</u>	Tamil AECC	
February	Theory	<u>History of Indian Language (Tamil)</u> History of Tamil Scripts	B.A Prog Tamil Language	62081104
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Growth of literature from Myth	B.A Prog Tamil Discipline	62081108
	Theory	<u>MIL Communications (Tamil)</u> <u>Practical writing of Tamil Communications</u>	B.A Prog Tamil AECC	72082807



**SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. S. Vivekananthan

Department: Tamil

CBCS Semester: III

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



**SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. S. Vivekananthan

Department: Tamil

CBCS Semester: V

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	<u>Selected Texts : Novel & Short Story (Tamil)</u> 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</u> <u>the fictions</u> <u>Short story and Novel</u>	B.A Prog Tamil Discipline	62087504
November		<u>Selected Texts : Novel & Short Story (Tamil)</u> Sociological perspectives in Short stories	B.A Prog Tamil Discipline	62087504



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. S. Seenivasan

Department: Tamil

CBCS Semester: I

Month	Theory/Practical	Topics	Course	Paper code/Name
November	Theory	<u>History of Indian Language (Tamil)</u> Dravidian Languages and Tamil	B.A Prog Tamil Language	62081104
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Definition and Types of Folk Tales	B.A Prog Tamil Discipline	62081108
	Theory	<u>MIL Communications (Tamil)</u> History and Types of Public Speech	B.A Prog Tamil AECC	72082807

Month	Theory/Practical	Topics	Course	Paper code/Name
December	Theory	<u>History of Indian Language (Tamil)</u> Special Features in South Dravidian Languages	B.A Prog Tamil Language	62081104
	Assignment	History of Tamil Language (II Part)		
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Folk-lore and Culture of Tamils	B.A Prog Tamil Discipline	62081108
	Assignment	<u>Folk Tales and Culture of the Tamils</u>		
	Theory	<u>MIL Communications (Tamil)</u> Business Letter writing in Tamil	B.A Prog Tamil AECC	72082807
	Assignment	Public Speech in Tamil		
January	Theory	<u>History of Indian Language (Tamil)</u>	B.A Prog	62081104

	Mid-Term Test	Dialects in Tamil <u>History of Tamil Language</u>	Tamil Language	
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u>	B.A Prog	62081108
	Mid-Term Test	<u>Customs and Culture through Folk Literature</u> <u>Oral Traditions</u>	Tamil Discipline	
	Theory	<u>MIL Communications (Tamil)</u>	B.A Prog	72082807
	Mid-Term Test	<u>Practical Translations</u> <u>Tamil Communications</u>	Tamil AECC	
February	Theory	<u>History of Indian Language (Tamil)</u> Types of Dialects	B.A Prog Tamil Language	62081104
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Analysis of Tamil Literary text through Folk tale	B.A Prog Tamil Discipline	62081108
	Theory	<u>MIL Communications (Tamil)</u> <u>Practical Public Speeches in Tamil</u>	B.A Prog Tamil AECC	72082807



**SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. S. Seenivasan

Department: Tamil

CBCS Semester: III

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



**SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. S. Seenivasan

Department: Tamil

CBCS Semester: V

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	<u>Selected Texts : Novel & Short Story (Tamil)</u> History of Tamil Novel Literature	B.A Prog Tamil Discipline	62087504
August	Theory	<u>Selected Texts : Novel & Short Story (Tamil)</u> Characterization of the Novel THAGANAM	B.A Prog Tamil Discipline	62087504
September	Theory Assignment	<u>Selected Texts : Novel & Short Story (Tamil)</u> 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	<u>Selected Texts : Novel & Short Story (Tamil)</u> <u>Plot of Thaganam Novel</u> <u>Modern Short story and Thaganam Novel</u>	B.A Prog Tamil Discipline	62087504
November		<u>Selected Texts : Novel & Short Story (Tamil)</u> Cultural Reflections of Society in Thaganam Novel	B.A Prog Tamil Discipline	62087504



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

Name of the Faculty: DR. SIRISHA EEDPUGANTI

Department: TELUGU

Semester : III

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

	<u>Assignment :</u>	TWO		
OCTOBER	Theory:	Unit 3 Molla - <i>Ashoka</i> <i>Vanamulo Janaki.</i> Unit 4 Veluri Sivarama Sastry – <i>Nagatichalu</i>		
	Practicals:	-----		
	Tutorials:	FOUR		
	<u>Test</u>	TWO		
NOVEMBER	Theory:	Unit 4 Veluri Sivarama Sastry – <i>Nagatichalu</i> Unit 5 Madhunapantula Satyanarayana Sastry - <i>Kavyahomamu.</i>		
	Practicals:	-----		
	Tutorials:	FOUR		



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

Name of the Faculty: DR. SIRISHA EEDPUGANTI

Department: TELUGU

Semester : III

Month		Topics	Course	Paper Code/Name
AUGUST	Theory	Unit 1 History of Ancient Andhra, Land and People ..	II B.A (PROGRAM) /TELUGU/ Discipline course	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		

	<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		



SEMESTER WISE TEACHING PLAN (2021-2022)
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 <i>1.Kanyaka</i> Gurajada	III B.A (PROGRAM) /TELUGU/ Discipline course	Modern Telugu Poetry and Drama
	Practicals	-----		
	Tutorials	ONE		
AUGUST	Theory:	Unit 1 MODERN POETRY <i>1.Kanyaka</i> Gurajada <i>3.Anugjna</i> –Pingali & Katuri		
	Practicals:	_____		
	Tutorials:	FOUR		

	<u>Assignment :</u>	TWO		
SEPTEMBER	Theory:	Unit 1 MODERN POETRY 5. <i>Daasabodha</i> - Gadiyaram Venkata Sesha Sastry 7.. <i>Sankranti</i> - Tummalaa Sitaramamurthy		
	Practicals:	_____		
	Tutorials:	FOUR		
	<u>Test</u>	TWO		
OCTOBER	Theory:	Unit 2 MODERN DRAMA <i>N.G.O</i> - Acarya Atreya		
	Practicals:	_____		
	Tutorials:	FOUR		

NOVEMBER	Theory:	UNIT 2 MODERN DRAMA <i>N.G.O</i> - Acarya Atreya		
	Practicals:	—		
	Tutorials:	TWO		



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

Name of the Faculty: Dr. Aarti Seherawat

Department: Zoology

Semester : III/V

Month		Topics	Course	Paper Code/Name
July	Theory	Unit 3: Genetically modified organisms Production of cloned and Transgenic animals	BSc. Life Science V Sem	DSE 1 Animal Biotechnology
August	Theory:	Unit 3: Genetically modified organisms Nuclear Transplantation Retroviral Method DNA Microinjection Applications of Transgenic animals	BSc. Life Science V Sem	DSE 1 Animal Biotechnology
		Unit 1: Carbohydrates Structure and Biological importance: with emphasis on aldose, ketose, chiral centre, polarised light and Fischer nomenclature, Cyclization reaction of glucose - pyranose, furanose, glycosidic linkage; - Reducing and non-reducing sugars: monosaccharides, disaccharides, polysaccharides and Glycoconjugates	B.Sc. (Hons.) Zoology Sem III	ZH Core-VII: Fundamentals of Biochemistry
		Unit 5: Cardiovascular system Structure of Heart, Origin and conduction of the cardiac impulse, Cardiac cycle	BSc. Life Science III Sem	CC III Physiology and Biochemistry
	Practicals:	Syllabus overview, general instructions and maintenance of lab record Protochordata: <i>Balanoglossus</i> , <i>Herdmania</i> , <i>Branchiostoma</i> , Colonial Urochordata, - Sections of <i>Balanoglossus</i> through proboscis and branchiogenital regions, - Sections of <i>Amphioxus</i> through pharyngeal, intestinal and caudal regions. - Permanent slide of <i>Herdmania</i> spicules - Study of the specimens - With continuous evaluation Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
	Tutorials:			

	Assignment :	Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Zoology I Sem	ZH-Core-I Non-Chordates-I Protists to Pseudocoelomates
		Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
September	Theory:	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
		Unit 2: Lipids - Structure and Significance: Physiologically important saturated and unsaturated fatty acids,	B.Sc. (Hons.) Zoology Sem III	ZH Core-VII: Fundamentals of Biochemistry
		Unit 3: Genetically modified organisms - Production of pharmaceuticals - Production of Transgenic plants - Agrobacterium mediated transformation -	BSc. Life Science V Sem	DSE 1 Animal Biotechnology
	Practicals	Agnatha: Petromyzon, Myxine - Fishes: Scoliodon, Sphyrna, Pristis, Torpedo, Chimaera, Mystus, Heteropneustes, Labeo, Exocoetus, Echeneis, Anguilla, Hippocampus, Tetodon/ Diodon, Anabas, Flat fish -Study of Weberian ossicles of Mystus, pecten from fowl head and brain of fowl - Amphibia: Ichthyophis/Ureotyphlus, Necturus, Bufo, Hyla, Alytes, Salamandra - Reptilia: Chelone, Trionyx, Hemidactylus, Varanus, Uromastix, Chamaeleon, Ophiosaurus, Draco, Bungarus, Vipera, Naja, Hydrophis, Zamenis, Crocodylus; Key for Identification of poisonous and non-poisonous snakes With continuous evaluation Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
	Tutorials:			
		Text questions in DU exam pattern of covered topics	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates

October	Theory	Unit 2: Lipids Tri-acylglycerols, Phospholipids, Glycolipids,	B.Sc. (Hons.) Zoology Sem III	ZH Core-VII: Fundamentals of Biochemistry
		Unit 3: Genetically modified organisms Applications of Transgenic Plants Insect Resistant Plants	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
	Practicals	Aves: Study of six common birds from different orders. Types of beaks and claws Mammalia: <i>Sorex</i> , Bat (Insectivorous and Frugivorous), <i>Funambulus</i> , <i>Loris</i> , <i>Herpestes</i> , <i>Erinaceus</i> . <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
	Tutorials:			

November	Theory	Unit 2: Lipids - Steroids - Revision	B.Sc. (Hons.) Zoology Sem III	ZH Core-VII: Fundamentals of Biochemistry
		Unit 3: Genetically modified organisms - Edible vaccines - Golden rice	BSc. Life Science V Sem	DSE 1 Animal Biotechnology
		Unit 6: Reproduction and Endocrine Glands thyroid, pancreas and adrenal gland	BSc. Life Science III Sem	CC III Physiology and Biochemistry
	Practicals	- Power point presentation on study of any two animals from two different classes by students -Submission of File -Mock Practical Exam	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
	Tutorials:			
December		- Revision	B.Sc. (Hons.) Zoology Sem III	ZH Core-VII: Fundamentals of Biochemistry
		- Revision	BSc. Life Science III Sem	CC III Physiology and Biochemistry



SEMESTER WISE TEACHING PLAN (2021-22)
July-Nov 2021, SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Amarjeet Singh

Department: Zoology

Semester: Odd (I/III/V)

Month		Topics	Course	Paper Code/Name
JULY	Theory:	Unit 3: Genetically modified organisms: Production of cloned and transgenic animals	B.Sc. (P) Life Sciences Semester V	DSE 1 Animal Biotechnology
AUGUST	Theory:	Unit 3: Genetically modified organisms: Nuclear Transplantation (cloning of dolly as an example), Retroviral method, DNA microinjection	B.Sc. (P) Life Sciences Semester V	DSE 1 Animal Biotechnology
		Unit 5: Enzymes: Nomenclature and classification; Cofactors; Specificity of enzyme action	B.Sc. (Hons) Zoology Semester III	ZH Core-VII: Fundamentals of Biochemistry
SEPTEMBER	Theory:	Unit 3: Genetically modified organisms: Applications of transgenic animals: Production of pharmaceuticals, Production of transgenic plants: <i>Agrobacterium</i> mediated transformation	B.Sc. (P) Life Sciences Semester V	DSE 1 Animal Biotechnology
		Unit 5: Enzymes: Isozymes, Mechanism of enzyme action, Enzyme kinetics, Factors affecting rate of enzyme-catalyzed reactions	B.Sc. (Hons) Zoology Semester III	ZH Core-VII: Fundamentals of Biochemistry
OCTOBER	Theory:	Unit 3: Genetically modified organisms: Applications of transgenic plants: insect resistant plants	B.Sc. (P) Life Sciences Semester V	DSE 1 Animal Biotechnology
		Unit 5: Enzymes: Derivation of Michaelis-Menten equation, Concept of K_m and V_{max} , Lineweaver-Burk plot, Multi-substrate reactions	B.Sc. (Hons) Zoology Semester III	ZH Core-VII: Fundamentals of Biochemistry
NOVEMBER	Theory:	Unit 3: Genetically modified organisms: Applications of transgenic plants	B.Sc. (P) Life Sciences Semester V	DSE 1 Animal Biotechnology
		Unit 5: Enzymes: Enzyme inhibition, Allosteric enzymes and their kinetics	B.Sc. (Hons) Zoology Semester III	ZH Core-VII: Fundamentals of Biochemistry

DECEMBER	Theory:	Unit 3: Genetically modified organisms: Edible vaccines and golden rice	B.Sc. (P) Life Sciences Semester V	DSE 1 Animal Biotechnology
		Unit 5: Enzymes: Regulation of enzyme action	B.Sc. (Hons) Zoology Semester III	ZH Core-VII: Fundamentals of Biochemistry



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Academic Planner: Odd Semester 2021-2022 (July – November)

Name of the Faculty: Dr. Ajaib Singh

Department: Zoology

Semester: I/III/V

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 <i>E.coli</i> . -Genomic DNA isolation from <i>E.coli</i>	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 <i>E.coli</i> -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

		-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

		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



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

Name of the Faculty: Dr. Anita Verma

Department: Zoology

Semester: 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 nerve fibers.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
	Practicals	- 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).	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
		- Syllabus overview, general instructions and maintenance of lab record. - 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 by DLC 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)

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)
	Mid-Term Exam	The entire topics covered so far.	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, Summation and tetanus.	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
DECEMBER	Theory:	Revision.	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
	Practicals:	- Revision and - Final Practical Assessment	B.Sc. (Hons) Zoology, Semester-III	Physiology: Controlling and Coordinating Systems (CC VI)
		Revision and Mock Exam	B.Sc. Life Sciences III Semester	Medical diagnostics, SEC



SEMESTER WISE TEACHING PLAN (2021-2022)
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	- Syllabus overview, general instructions and maintenance of lab record. - Preparation of hemin and hemochromogen crystals. - Continuous evaluation of students through test from the practical exercises done.	B.Sc. Life Sciences III Semester (Batch-III)	Physiology & Biochemistry CC-III
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:	- 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. - Continuous evaluation of students through test from the practical exercises done and evaluation of record file.	B.Sc. Life Sciences III Semester (Batch-III)	Physiology & Biochemistry CC-III
	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,	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III

		basics of ATP synthesis).		
		Unit 6: Reproduction and Endocrine Glands: Physiology of male reproduction: hormonal control of spermatogenesis.		
	Mid-Term Exam	The entire topics covered so far.	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III
	Practicals	- Study of activity of salivary amylase under optimum conditions. - Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland. - Continuous evaluation of students through test from the practical exercises done and evaluation of record file.	B.Sc. Life Sciences III Semester (Batch-III)	Physiology & Biochemistry CC-III
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:	- Study of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage. - Continuous evaluation of students through test from the practical exercises done and evaluation of record file.	B.Sc. Life Sciences III Semester (Batch-III)	Physiology & Biochemistry CC-III
DECEMBER	Theory:	Revision.	B.Sc. Life Sciences III Semester	Physiology & Biochemistry CC-III
	Practicals:	Mock Exam.	B.Sc. Life Sciences III Semester (Batch-III)	Physiology & Biochemistry CC-III



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Planner: (Odd Semester 2021-2022)

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 <i>lac</i> operon and <i>trp</i> 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	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
		1. To detect adulteration in a) Ghee b) Sugars c) Tea leaves and d) Turmeric 2. Estimation of Lactose in milk and diagnosis of lactose intolerance by measuring hydrogen gas during expiration.	GE III	Food, nutrition and Health
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
		MOLECULAR BIOLOGY Silencer elements; Gene silencing and Genetic imprinting.	B.Sc. (Hons.) Zoology Sem V TZH	CCXI

		Cell Biology Unit V: GPCR, protein kinase associated receptors.	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6
	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
		3. Ascorbic acid estimation in food by titrimetry 4. Estimation of Calcium in foods by titrimetry 5. 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. 6. Visit to food testing lab /or any agency of food standards	GE III	Food, nutrition and Health

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
		IMMUNOLOGY Unit9: Immune Dysfunction Hypersensitivity: Gell and Coombs' classification and various types of hypersensitivities	B.Sc. (Hons.) Zoology Sem V TZH	VIII
		MOLECULAR BIOLOGY Unit 7: DNA Repair Mechanisms Pyrimidine dimerization and mismatch repair.	B.Sc. (Hons.) Zoology Sem V TZH	CCXI
		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	8. Undertake computer aided diet analysis and nutrition counselling for different age groups. 9. Identify nutrient rich sources of foods (fruits and vegetables), their seasonal availability and price. 10. Study of nutrition labelling on selected foods Project Work	GE III	Food, Nutrition and Health
		Study of section of chick embryo through selective developmental stages	B.Sc. (H) Biological Science Zoology Sem V TBS	BS-C11

		5. Study of ultrastructure of cell (Plasma membrane, Nucleus, Nuclear Pore Complex, Chloroplast, Mitochondrion, Golgi bodies, Lysosomes)	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6
Mid Term Test	GROWTH AND REPRODUCTION 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
	IMMUNOLOGY Written test on topic covered before the mid semester break	B.Sc. (Hons.) Zoology Sem V TZH	CC-XI	BS-C11
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
		MOLECULAR BIOLOGY Unit 8: Regulatory RNAs Ribo-switches; RNA interference: miRNA and siRNA.	B.Sc. (Hons.) Zoology Sem V TZH	CCXI

December

	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. Salient features of transformed cells. Tumor viruses, oncogenes and suppressor genes	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.	B.Sc (Hons.) Biological Science SBH Sem III	BS C-6
	Submission and evaluation of project work	GE III	Food, Nutrition and Health
	Revision exercises and practical test	GE III	Food, Nutrition and Health
	Revision exercises and test	And SBH	BS C-6



**SEMESTER WISE
TEACHING PLAN
Sri Venkateswara College
August-December, 2021**

Name of the Faculty: Dr. Mrs. Himani Khurana

Department: Zoology

Semester: Odd – I, III

Subjects:

THEORY: B. Sc. (P) Life Sciences, Semester III: **Physiology and Biochemistry**

B.Sc. (H) Biological Sciences, Semester III: **Cell Biology**

PRACTICAL: B. Sc. (P) Life Sciences, Semester III: **Physiology and Biochemistry**

Month		Topics	Course	Paper Code/Name
August	Theory:	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	CC III/ Physiology and Biochemistry
		Unit IV: Endomembrane system and peroxisomes Structure and functions of endoplasmic reticulum and Golgi apparatus	B.Sc. (H) Biological Sciences, Semester III	BS C-6/ Cell Biology
	Practical:	Experiment 1 (a): Preparation of hemin crystals	B. Sc. (P) Life Sciences, Semester III (Batch III)	CC III/ Physiology and Biochemistry
		Experiment 1 (b): Preparation of hemochromogen crystals		
	Continuous Evaluation:	Tests will be taken from the practical exercises in order to make the students understand the concept thoroughly and in the process, they will be able to learn the exercises and get doubts resolved	B. Sc. (P) Life Sciences, Semester III (Batch III)	CC III/ Physiology and Biochemistry
September	Theory:	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	CC III/ Physiology and Biochemistry
		Unit 9: Protein metabolism Structure, classification and properties of amino acids		
		Unit IV: Endomembrane system and peroxisomes Protein trafficking, coated vesicles in cellular transport processes, GERL. Structure, polymorphic form and functions of lysosomes	B.Sc. (H) Biological Sciences, Semester III	BS C-6/ Cell Biology
	Practical:	Experiment 2:	B. Sc. (P) Life Sciences,	CC III/ Physiology and Biochemistry

		Qualitative tests to identify functional groups of carbohydrates in given solutions (Glucose, Fructose, Sucrose, Lactose) Experiment 3: Estimation of total protein in given solutions by Lowry's method Evaluation of record file and discussion in the class	Semester III (Batch III)	
	Continuous Evaluation:	Tests will be taken from the practical exercises in order to make the students understand the concept thoroughly and in the process, they will be able to learn the exercises and get doubts resolved	B. Sc. (P) Life Sciences, Semester III (Batch III)	CC III/ Physiology and Biochemistry
October	Theory:	Unit 9: Protein metabolism Basics of protein structure; Transamination, Deamination, Glutamine formation, Glucose alanine cycle and Urea Cycle Unit 10: Enzymes Introduction (basics of classification, properties and functions) Unit IV: Endomembrane system and peroxisomes Structure and function of peroxisomes Unit V: Signal transduction mechanism Signaling molecules and their receptors, functions	B. Sc. (P) Life Sciences, Semester III	CC III/ Physiology and Biochemistry
	Mid Term Test:	A test will be conducted from the units covered so that the students are able to learn the concepts thoroughly	B. Sc. (P) Life Sciences, Semester III	CC III/ Physiology and Biochemistry
	Assignment:	Students will be asked to make assignment which will allow them to delve deep and understand the topic in detail	B.Sc. (H) Biological Sciences, Semester III	BS C-6/ Cell Biology
	Practical:	Experiment 4: Study of activity of salivary amylase under optimum conditions Experiment 5: Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland Evaluation of record file and discussion in the class	B. Sc. (P) Life Sciences, Semester III (Batch III)	CC III/ Physiology and Biochemistry
	Continuous Evaluation:	Tests will be taken from the practical exercises in order to make the students understand the	B. Sc. (P) Life Sciences,	CC III/ Physiology and Biochemistry

		concept thoroughly and in the process, they will be able to learn the exercises and get doubts resolved	Semester III (Batch III)	
November	Theory:	Unit 10: Enzymes Mechanism of action (understanding of basic concepts, Induced Fit Theory), Enzyme Kinetics (Michaelis Menten equation for single enzyme single substrate reactions, Line Weaver Burke Plot), Inhibition and Regulation (types of Inhibition, allosteric enzymes, covalently regulated enzymes)	B. Sc. (P) Life Sciences, Semester III	CC III/ Physiology and Biochemistry
		Unit V: Signal transduction mechanism Brief introduction of the six types of signaling pathways	B.Sc. (H) Biological Sciences, Semester III	BS C-6/ Cell Biology
		Revision		
December	Practical:	Experiment 6: Study of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage Evaluation of record file and discussion in the class	B. Sc. (P) Life Sciences, Semester III (Batch III)	CC III/ Physiology and Biochemistry
	Theory:	Revision	B. Sc. (P) Life Sciences, Semester III	CC III/ Physiology and Biochemistry
		Revision	B.Sc. (H) Biological Sciences, Semester III	BS C-6/ Cell Biology
	Practical:	Checking of complete practical file	B. Sc. (P) Life Sciences, Semester III (Batch III)	CC III/ Physiology and Biochemistry
	Mock Practical Test:	Mock test will be conducted to make the students well versed with the practical exercises and confident for the final practical examination	B. Sc. (P) Life Sciences, Semester III (Batch III)	CC III/ Physiology and Biochemistry



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

Name of the Faculty: Dr. Mansi Verma

Department: Zoology

Semester: I, III, V (Odd)

Month		Topics	Course	Paper Code/Name
JULY	Theory: (3+2)	Unit 1: Nucleic Acid Salient features of DNA and types of RNA (mRNA, rRNA and tRNA); Watson and Crick model of DNA	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
		Introduction to Biotechnology	B.Sc. Life Sciences 3 rd year Sem V	DSE 3/Animal Biotechnology
	Practicals:	Instructions for maintaining records Exercise No. 3: Pedigree analysis of some human inherited traits.	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
		1. Study of Polytene chromosomes from Chironomous/ Drosophila larvae.	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
AUGUST	Theory: (3+2) periods	Unit 2: DNA Replication DNA replication in prokaryotes and eukaryotes – replication machinery and mechanisms, semi- conservative, bidirectional and semi-discontinuous replication, Replication of circular and linear double stranded DNA, Replication of telomeres. Unit 3: Transcription Machinery and mechanism of transcription in prokaryotes and eukaryotes-RNA polymerases, Transcription unit, Transcription factors, Synthesis of rRNA.	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
		Unit1: Concept and Scope of Biotechnology Unit4: Molecular diagnosis of genetic diseases (Cystic fibrosis, Sickle cell anaemia)	B.Sc. Life Sciences 3 rd year Sem V	DSE 3/Animal Biotechnology
	Practicals:	Exercise No. 2: Verification of Mendelian ratios using Chi-square analysis/test. Revision Exercise No. 6: Linkage maps based on data from <i>Drosophila</i> crosses. Revision Exercise No. 5: Linkage maps based on data from conjugation, transformation and transduction.	B. Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
		2. Preparation of liquid culture medium (LB) and raise culture of <i>E. coli</i> . 3. Preparation of solid culture medium (LB) and growth of <i>E. coli</i> by spreading and streaking. 4. Estimation of the growth kinetics of <i>E. coli</i> by turbidity method.	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
		1. To detect adulteration in a) Ghee b) Sugars c) Tea leaves and d) Turmeric 2. Estimation of Lactose in milk and diagnosis of lactose intolerance by measuring hydrogen gas during expiration.	GE III	Food, nutrition and Health

SEPTEMBER	Theory:	Unit 4: Translation Genetic code, Degeneracy of the genetic code and Wobble hypothesis; Process of protein synthesis in prokaryotes: Ribosome structure, fidelity of protein synthesis, aminoacyl-tRNA synthetases and charging of tRNA; Proteins involved in initiation, elongation and termination of polypeptide chain, Inhibitors of protein synthesis; Difference between prokaryotic and eukaryotic translation.	B.Sc. (H) Zoology 3 rd year Sem V	CC XI /Molecular Biology
		Unit4: Recombinant DNA in medicines: Recombinant insulin and human growth hormone, Gene therapy.	B.Sc. Life Sciences 3 rd year Sem V	DSE 3/Animal Biotechnology
	Practicals	Exercise No. 2: Verification of Mendelian ratios using Chi-square analysis/test. Revision Exercise No. 6: Linkage maps based on data from <i>Drosophila</i> crosses. Revision Exercise No. 5: Linkage maps based on data from conjugation, transformation and transduction.	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
		5. Demonstration of antibiotic sensitivity/resistance of <i>E. coli</i> 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/absence of lactose and/or glucose by using simulations.	B.Sc. (H) Zoology 3 rd year Sem V	CC XI /Molecular Biology
		3. Ascorbic acid estimation in food by titrimetry 4. Estimation of Calcium in foods by titrimetry 5. Study of the stored grain pests from slides/photographs (<i>Sitophilus oryzae</i> , <i>Trogoderma granarium</i> , <i>Callosobruchus chinensis</i> and <i>Tribolium castaneum</i>): their identification, habitat and food sources, damage caused and control. Preparation of temporary mounts of the above stored grain pests. 6. Visit to food testing lab /or any agency of food standards	GE III	Food, Nutrition and Health
	<u>Assignment</u>	Based on last years question papers	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
		Assignment on applications of Biotechnology	B.Sc. Life Sciences 3 rd year Sem V	DSE 3/Animal Biotechnology
OCTOBER	Theory	Unit 5: Post Transcriptional Modifications and Processing of Eukaryotic RNA Split genes: concept of introns and exons, splicing mechanism, alternative splicing, exon shuffling, and RNA editing.	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
		Unit4: Meta-genomics: an introduction	B.Sc. Life Sciences 3 rd year Sem V	DSE 3/Animal Biotechnology
	Practicals:	Exercise 4: Use of probability in solving problems in genetics.	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
		8. Study and interpretation of electron micrographs/ photograph showing: DNA replication, Transcription, Split genes.	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
		8. Undertake computer aided diet analysis and nutrition counselling for different age groups. 9. Identify nutrient rich sources of foods (fruits and	GE III	Food, Nutrition and Health

		vegetables), their seasonal availability and price. 10. Study of nutrition labelling on selected foods Project Work		
	<u>Mid Term Test</u>	Test questions in DU exam pattern of covered topics	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
	Theory:	Test questions in DU exam pattern of covered topics	B.Sc. Life Sciences 3 rd year Sem V	DSE 3/Animal Biotechnology
NOVEMBER	Theory:	Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
		Discussion of Mid-term Test paper and previous year question papers, Parental care in Amphibians	B.Sc. Life Sciences 3 rd year Sem V	DSE 3/Animal Biotechnology
		Discussion of assignment and previous year question papers		
	Practicals:	Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
		Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3 rd year Sem V	CC XI/ Molecular Biology
		Revision exercises and test	GE III	Food, Nutrition and Health



SEMESTER WISE TEACHING PLAN (2021-22)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Namita Nayyar

Department: Zoology

Semester: Odd (I, III, V)

Month		Topics	Course	Paper Code/Name
JULY	Theory	Introduction to Medical Diagnostics	B.Sc (P) Life Science Semester V	Medical Diagnostics SEC
	Practicals	Study of Polytene chromosomes from Chironomous/ Drosophila larvae.	B.Sc. (H) Zoology 3rd year Sem V	CC XI/ Molecular Biology
AUGUST	Theory: 2 periods per week	Unit 7: Reptilia General characteristics and classification up to order; Affinities of <i>Sphenodon</i> ; Poison apparatus and biting mechanism in snakes.	B.Sc. (H) Zoology Semester III	Diversity of Chordata CC V
	Theory 2 periods per week	Unit 1: Introduction to Medical Diagnostics and its Importance	B.Sc (P) Life Science Semester III	Medical Diagnostics SEC
	Theory 1 period per week	Unit 5: Diagnostic Medical Imaging: Principle of Medical imaging techniques like X-Ray of Bone fracture, PET,	B.Sc (P) Life Science Semester V	Medical Diagnostics SEC
	Practicals:	- Haemin and Haemochromogen Crystals - Study of activity of salivary amylase.	B.Sc (P) Life Science Semester III (Batch I, II)	Physiology and Biochemistry CC III
		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 Semester V	Molecular Biology CC XI

SEPTEMBER	Theory:	Unit 8: Aves General characteristics and classification up to order; <i>Archaeopteryx</i> - 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 (P) Life Science Semester III	Medical Diagnostics SEC
		Unit 2: Medical Diagnostics of Body Fluids Blood composition, Blood bank, Transfusion of blood,	B.Sc (P) Life Science Semester V	Medical Diagnostics SEC
	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 Semester III (Batch I, II)	Physiology and Biochemistry CC III
		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/absen	B.Sc. (H) Zoology Semester V	Molecular Biology CC XI
	Assignment	- Diagnostic techniques of Covid, Tuberculosis and HIV AIDS.	B.Sc (P) Life Science Semester III & V	Medical Diagnostics SEC
		- Previous years question papers	B.Sc. (H) Zoology Semester III	Diversity of Chordata CC V
Mid Term Test		Syllabus Covered till September	B.Sc. (H) Zoology Semester III	Diversity of Chordata CC V
		Syllabus Covered till September	B.Sc (P) Life Science Semester III & V	Medical Diagnostics SEC
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

NOVEMBER		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 (P) Life Science Semester III	Medical Diagnostics SEC
		Unit 2: Medical Diagnostics of Body Fluids: 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 V	Medical Diagnostics SEC
	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 Semester III (Batch I, II)	Physiology and Biochemistry CC III
		8. Study and interpretation of electron micrographs/ photograph showing: DNA replication, Transcription, Split genes.	B.Sc. (H) Zoology Semester V	Molecular Biology CC XI
	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 (P) Life Science Semester III	Medical Diagnostics SEC
		Revision of difficult topics Discussion of Assignments	B.Sc (P) Life Science Semester V	Medical Diagnostics SEC
	Practicals:	- Mock exam, evaluating project report.	B.Sc (P) Life Science Semester III (Batch I, II)	Physiology and Biochemistry CCIII
		- Mock exam, Revision of Certain topics.	B.Sc. (H) Zoology Semester V	Molecular Biology CC XI
DECEMBER	Theory	Revision for 2 nd Year for all courses.		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Planner: Odd Semester 2021 (July–November)

Name of the Faculty: Dr. Om Prakash

Department: Zoology

Semester: I/III/V

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 Unit1: Overview of Immune System Historical perspective of Immunology, Early theories of Immunology, Clonal Selection Theory, Cardinal features of vertebrate immune system, Hematopoiesis, Cells and organs of the Immune system.	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 <i>E.coli</i> . -Genomic DNA isolation from <i>E.coli</i>	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	Immunology Unit2: Innate and Adaptive Immunity Anatomical barriers, Inflammation, Cell and molecules involved in innate Immunity, 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

September	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 <i>E.coli</i> -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
	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

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

December	Practicals	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
		Repetition of important Practicals and preparation of students for the final practical Examination.	B.Sc. (Hons.) Zoology Sem III SZH	CC VII/ Fundamentals of Biochemistry



SEMESTER WISE TEACHING PLAN (Odd)

Sri Venkateswara College

July-December, 2021

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)

B.Sc. (H) Zoology Semester I (CC II- Principles of Ecology)

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 <i>E.coli</i> . -Genomic DNA isolation from <i>E.coli</i>	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 <i>E.coli</i> . -Genomic DNA isolation from <i>E.coli</i>	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

September		- Plasmid DNA isolation from <i>E.coli</i> -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 <i>E.coli</i> -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
	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

		phosphate and bicarbonate; Preparation of buffer and determination of pH		
	<u>Assignment</u>	<i>Physiological importance of essential and non-essential α-amino acids.</i>	<i>B.Sc. (H) Zoology Semester III</i>	CC VII/ Fundamentals of Biochemistry
		<i>Social Health problems-Smoking, alcoholism, drug dependence and Acquired Immuno Deficiency Syndrome (AIDS)- their causes, treatment and prevention</i>	<i>B.Sc. Semester III</i>	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 <i>Amino Acids: Structure, Classification and General properties of α-amino acids. Difference between Essential and non-essential α-amino acid</i>	<i>B.Sc. (H) Zoology Semester III</i>	CC VII/ Fundamentals of Biochemistry

	<u>Mid Term Test</u>	<i>Physiological importance of essential and non-essential α-amino acids.</i> <i>Proteins- Bond stabilizing protein structure: levels of organization in proteins, Denaturation</i> Unit 4: Nucleic acids <i>Structure: Purines and Pyrimidines, Nucleosides and Nucleotides.</i>		
		<i>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.</i> <i>Social Health problems-Smoking, alcoholism, drug dependence and Acquired Immuno Deficiency Syndrome (AIDS)- their</i>	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
	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
December	Theory	Revision: Unit 3 and Unit 4	B.Sc. (Hons.) Zoology Sem III SZH	CC VII/ Fundamentals of Biochemistry
		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

	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
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SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

July-December 2021, (Session 2021-22)

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

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:	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
		- 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

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:	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
		- 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

		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
	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 - Revision 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
	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
December	Practicals:	- Revision 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



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

Name of the Faculty: Dr. Richa Misra

Department: Zoology

Semester: I, III, V (Odd)

Month		Topics	Course	Paper Code/Name
JULY	Theory: (2 periods)	Introduction to Mendelian Genetics, Polygenic Inheritance	B.Sc. (H) Zoology 3 rd 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 3 rd year Sem V	CC-XII/Principles of Genetics
AUGUST	Theory: (2+1+2) periods	Unit 5: Introduction to Reproductive Physiology	B. Sc. (H) Zoology 2 nd year Sem III	CC-VI: Physiology
		Unit 5: Introduction to Pisces	B. Sc. (H) Zoology 2 nd year Sem III	CC-V/ Diversity of Chordates
		Unit 2: Linkage, Crossing Over and Chromosomal Mapping	B.Sc. (H) Zoology 3 rd 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 <i>Drosophila</i> crosses.	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
		Preparation of hemin and hemochromogen crystals	B. Sc. Life Sciences 2 nd year Sem III	CC-III/ Physiology & Biochemistry
		Instructions for Maintaining records, ABO blood group typing	B.Sc Zoology 2 nd year Sem III	SEC/ Medical Diagnostics
SEPTEMBER	Theory:	Unit 5: Male and female reproductive system, puberty	B. Sc. (H) Zoology 2 nd year Sem III	CC-VI: Physiology
		Unit 5: Pisces (General characteristics, Migration, Osmoregulation)	B. Sc. (H) Zoology 2 nd year Sem III	CC-V/ Diversity of Chordates
		Unit 8: Transposable Genetic elements	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
	Practicals	Exercise No. 2: Verification of Mendelian ratios using Chi-square analysis/test. Revision Exercise No. 6: Linkage maps based on data from <i>Drosophila</i> crosses. Revision Exercise No. 5: Linkage maps based on data from conjugation, transformation and transduction.	B. Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
		Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland.	B. Sc. Life Sciences 2 nd year Sem III	CC-III/ Physiology & Biochemistry
		Study of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage.		

OCTOBER		Hemoglobin content estimation, Blood pressure measurement, Bleeding time, clotting time	B.Sc Zoology 2 nd year Sem III	SEC/ Medical Diagnostics
	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 2 nd 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 3 rd year Sem V	CC-XII/Principles of Genetics
	Theory	Methods of contraception, Unit 6: Endocrine system	B. Sc. (H) Zoology 2 nd year Sem III	CC-VI: Physiology
		Unit5: Swim bladder in Fish Unit 6: Amphibia (General characteristics, classification)	B. Sc. (H) Zoology 2 nd year Sem III	CC-V/ Diversity of Chordates
		Unit 7: Recombination in Bacteria and viruses	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Exercise 4: Use of probability in solving problems in genetics.	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
		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. Life Sciences 2 nd year Sem III	CC-III/ Physiology & Biochemistry
		Enumerate TLC, Abnormal constituents of urine, Testing of blood glucose, Ishihara charts	B.Sc Zoology 2 nd year Sem III	SEC/ Medical Diagnostics
	Mid Term Test	Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 2 nd year Sem III	CC-VI: Physiology
NOVEMBER		Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 2 nd year Sem III	CC-V/ Diversity of Chordates
		Test questions in DU exam pattern of covered topics	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
	Theory:	Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B. Sc. (H) Zoology 2 nd year Sem III	CC-VI: Physiology
		Discussion of Mid-term Test paper and previous year question papers, Parental care in Amphibians	B. Sc. (H) Zoology 2 nd year Sem III	CC-V/ Diversity of Chordates
		Discussion of assignment and previous year question papers	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3 rd year Sem V	CC-XII/Principles of Genetics
		Study of activity of salivary amylase under optimum conditions	B. Sc. Life Sciences 2 nd year Sem III	CC-III/ Physiology & Biochemistry
		ECG, Medical Imaging- X-ray, CT, MRI	B.Sc Zoology 2 nd year Sem III	SEC/ Medical Diagnostics



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-November, 2021

Name of the Faculty: Dr. Sadqua Shameem

Department: Zoology

Semester: III /V

Month		Topics	Course	Paper Code/Name
AUGUST	Theory:	Unit 1: Introduction to Chordates General characteristics and outline classification Unit 2: Protochordata General characteristics of Hemichordata Urochordata and Cephalochordata; Study of larval forms of protochordates.	B.Sc. (Hons.) Zoology Sem III	Core course-V Diversity of Chordata
	Practicals:	-Syllabus overview, general instructions and maintenance of lab record Protochordata: <i>Balanoglossus</i> , <i>Herdmania</i> , <i>Branchiostoma</i> , Colonial Urochordata. -Sections of <i>Balanoglossus</i> through proboscis and branchiogenital regions, -Sections of <i>Amphioxus</i> through pharyngeal, intestinal and caudal regions. Permanent slide of <i>Herdmania</i> spicules -Study of the following specimens: <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates

SEPTEMBER	Theory:	Unit 2: Protochordata-Retrogressive metamorphosis Unit 3: Origin of Chordata-Dipleurula concept .	B.Sc. (Hons.) Zoology Sem III	Core course-V Diversity of Chordata
	Practicals:	- Agnatha: <i>Petromyzon, Myxine</i> - Fishes: <i>Scoliodon, Sphyrna, Pristis, Torpedo, Chimaera, Mystus, Heteropneustes, Labeo, Exocoetus, Echineis, Anguilla, Hippocampus, Tetradon/ Diodon, Anabas</i> , Flat fish - Study of Weberian ossicles of <i>Mystus</i> , pecten from fowl head and brain of fowl - Amphibia: <i>Ichthyophis/Ureotyphlus, Necturus, Bufo, Hyla, Alytes, Salamandra</i> - Reptilia: <i>Chelone, Trionyx, Hemidactylus, Varanus, Uromastix, Chamaeleon, Ophiosaurus, Draco, Bungarus, Vipera, Naja, Hydrophis, Zamenis, Crocodylus</i> ; Key for Identification of poisonous and non-poisonous snakes <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record.	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
	<u>Assignment</u>	Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
OCTOBER	Theory	Unit 3: Origin of Chordata- The Echinoderm theory of origin of chordates	B.Sc. (Hons.) Zoology Sem III	Core course-V Diversity of Chordata

	Practicals:	Aves: Study of six common birds from different orders. Types of beaks and claws Mammalia: <i>Sorex</i>, Bat (Insectivorous and Frugivorous), <i>Funambulus</i>, <i>Loris</i>, <i>Herpestes</i>, <i>Erinaceus</i>. <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
		Aves: Study of six common birds from different orders. Types of beaks and claws Mammalia: <i>Sorex</i>, Bat (Insectivorous and Frugivorous), <i>Funambulus</i>, <i>Loris</i>, <i>Herpestes</i>, <i>Erinaceus</i>. <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
	<u>Mid Term Test</u>	Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
NOVEMBER	Theory:	Unit 4: Agnatha General characteristics of Agnatha , Classification of cyclostomes up to class.	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
	Practicals:	-Power point presentation on study of any two animals from two different classes by students -Submission of File -Mock Practical Exam	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates
DECEMBER		-Revision	B.Sc. (Hons.) Zoology Sem III	ZH-Core Course-V Diversity of Chordates

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-Nov, 2021-2022
(Odd Semester)

Dr. Riyaz Bakshi
Deptt. of Zoology
Sem-III & IV

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.	B.Sc. 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 diagnostics 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	B.Sc. Sem. III	GE-III, Food Nutrition & health
		Unit 3: Diagnostic Methods Used for Urine Analysis Urine Analysis: Physical characteristics; Abnormal constituents	B.Sc. Life Sc. Sem V	SEC-Medical Diagnostics
		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 III	Medical diagnostics SEC

		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 Diagnost ics
		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
		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 III	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;	B.Sc. 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
		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 III	SEC-Medical Diagnostics
	<u>Assignment</u>	Students will be asked to make assignment which will allow them to understand the topic in detail	B.Sc. 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
	<u>Mid Term Test</u>	Test will include all the topics covered	B.Sc. 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	B.Sc. 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:	B.Sc. Life Sciences Sem V	SEC- Medical Diagnostics
			B.Sc. (Hons.) Zoology Sem III (SZH)	SEC-Medical Diagnostics
			B.Sc. Life Sciences Sem III	SEC-Medical Diagnostics
December	— Theory:	Revision of all covered portion and discussion	B.Sc. Life Sc. & Zoo(H)	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
SRI VENKATESWARA COLLEGE
July-Nov, 2021-2022 (Odd Semester)

Name of the Faculty: Dr. Vartika Mathur
Department: Zoology
Semester: I/III/V

Month		Topics	Course	Paper Code/Name
August	Theory	Introduction to Animal Behaviour Origin and history of Ethology; Brief profiles of Karl Von Frish, Ivan Pavlov, Konrad Lorenz, Niko Tinbergen, 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 Sem V TBS	Animal behavior & chronobiology (DSC-3)
		Introduction to Animal Behaviour Origin and history of Ethology; Brief profiles of Karl Von Frish, Ivan Pavlov, Konrad Lorenz, Niko Tinbergen, Proximate and ultimate causes of behaviour, Methods and recording of a behaviour	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
	Practical	Animal behavior & Chronobiology - To study nests and nesting habits of the birds and social insects. - To study the Geotaxis Behaviour of Earthworm	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
		Animal behavior & Chronobiology - To study nests and nesting habits of the birds and social insects. - To study different types of animal behavior such as habituation, social life, courtship behavior in insects, and parental care from short videos/movies and prepare a short report. - To study the Geotaxis Behaviour of Earthworm	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)

September	Theory	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; taxis-tropotaxis and klinotaxis, menotaxis (light compass orientation). Learning: Associative learning, classical and operant conditioning, Habituation, Imprinting	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
		Social and Sexual Behaviour Social Behaviour: Concept of Society; Communication and the senses; Altruism; Insects' society with Honey bee as example; Foraging in honey bee and advantages of the waggle dance.	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSE 3)
	Practical	Animal behavior & chronobiology - To study the behavioural responses of wood lice to dry and humid conditions. - Study and actogram construction of locomotor activity of suitable animal models.	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
		Animal behavior & chronobiology - To study the behavioural responses of wood lice to dry condition. - To study the behavioural responses of wood lice to humid conditions. - Study and actogram construction of locomotor activity of suitable animal models.	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
October	Theory	Social Behavior Insects' society; Honey bee: Society organization, polyethism, foraging, round dance, waggle dance, Experiments to prove distance and direction component of dance, learning ability in honey bee, formation of new hive/queen	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
		Patterns of Behaviour Stereotyped Behaviours (Orientation, Reflexes); Individual Behavioural patterns; Instinct vs. Learnt Behaviour; Associative learning, classical and operant conditioning, Habituation, Imprinting.	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
	Practical	- Study and actogram construction of locomotor activity of suitable animal models. - To study the phototaxis behaviour in insect larvae. - To study your own Circadian Rhythm	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)

		Animal behavior & Chronobiology - Study and actogram construction of locomotor activity of suitable animal models. - To study the phototaxis behaviour in insect larvae.	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
	<u>Assignment</u>	Animal behavior and chronobiology Topic: PPTs on Animal behavior related concepts	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
		Animal behavior and chronobiology Topic: PPTs on Animal behavior related concepts	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
	<u>Mid Term Test</u>	Animal behavior and chronobiology Test will include all the topics covered	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
		Test will include all the topics covered	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
November	Theory:	To study behavioural activities of animals and prepare a short report.	B.Sc (H) Biological Sciences Sem V	Animal behavior & chronobiology (DSC-3)
		To study behavioural activities of animals and prepare a short report.	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
		Revision/ mock exam	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
		Revision/Mock test	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-Nov, 2021-2022 (Odd Semester)

Name of the Faculty: Dr. Vagisha Rawal
Department: Zoology
Semester: I/III/V

Month		Topics	Course	Paper Code/Name
August	Theory	History Of Chronobiology - Contributions of Scientists - Historic development Biological Rhythm - Types and characteristics of biological rhythms: Short- and Long- term rhythms; - Circannual rhythms; Sleep Disorder Role of melatonin. - Tidal rhythms and Lunar rhythms	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
		Introduction to Chronobiology - Historical developments in chronobiology; - Biological oscillation: the concept of Average, amplitude, phase and period. - Adaptive significance of biological clocks Biological Rhythm - Types and characteristics of biological rhythms: Short- and Long- term rhythms; Circadian rhythms; - Altruism, Reciprocal Altruism, Hamilton's Rule	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
	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 III	Medical diagnostics SEC
		Animal behavior & Chronobiology - To study nests and nesting habits of the birds and social insects. - To study the Geotaxis Behaviour of Earthworm	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)

		Animal behavior & Chronobiology - To study nests and nesting habits of the birds and social insects. - To study different types of animal behavior such as habituation, social life, courtship behavior in insects, and parental care from short videos/movies and prepare a short report. - To study the Geotaxis Behaviour of Earthworm	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
September	Theory	Sexual Behavior - Asymmetry of sex, Sexual dimorphism mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice), Infanticide, Consequences of mate choice for female fitness, - Sexual conflict for male versus female parental care, Courtship behavior in 3-spine stickleback. - Reproductive Behavior Pattern	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
		Biological Rhythm Circadian rhythms; Tidal rhythms and Lunar rhythms; - Concept of synchronization and masking; - Photic and non-photic zeitgebers; Circannual rhythms; Photoperiod and regulation seasonal reproduction of vertebrates; - Role of melatonin. Biological Clocks - Relevance of biological clocks; Chronopharmacology, Chronomedicine, Chronotherapy.	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSE 3)
	Practicals:	Medical Diagnostics - To estimate the blood glucose level by GOD-POD method - To calculate the Blood cells count through TLC method	B.Sc. Life Sciences Sem III	Medical diagnostics SEC
		Animal behavior & chronobiology - To study the behavioural responses of wood lice to dry and humid conditions. - Study and actogram construction of locomotor activity of suitable animal models.	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
		Animal behavior & chronobiology - To study the behavioural responses of wood lice to dry condition. - To study the behavioural responses of wood lice to humid conditions. - Study and actogram construction of locomotor activity of suitable animal models.	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
October	Theory	Altruism - Reciprocal altruism, Hamilton's rule and inclusive fitness with suitable examples Mechanisms of Behavior - Innate behavior, Instinct, Stimulus filtering, - Sign stimuli, Code breakers	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)

		Biological Clocks - Relevance of biological clocks; Chronopharmacology, Chronomedicine, Chronotherapy. Sexual Behaviour: - Asymmetry of sex, - Sexual dimorphism, Mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice), Sexual conflict in parental care.	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
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 III	Medical diagnostics SEC
	- Study and actogram construction of locomotor activity of suitable animal models. - To study the phototaxis behaviour in insect larvae. - To study your own Circadian Rhythm		B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
	Animal behavior & Chronobiology - Study and actogram construction of locomotor activity of suitable animal models. - To study the phototaxis behaviour in insect larvae.		B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
<u>Assignment</u>	Animal behavior and chronobiology Topic: PPTs on Animal behavior related concepts		B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
	Animal behavior and chronobiology Topic: PPTs on Animal behavior related concepts		B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
<u>Mid Term Test</u>	Animal behavior and chronobiology Test will include all the topics covered		B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
	Test will include all the topics covered		B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
November	Theory:	To study behavioural activities of animals and prepare a short report.	B.Sc (H) Biological Sciences Sem V	Animal behavior & chronobiology (DSC-3)

	To study behavioural activities of animals and prepare a short report.	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)
Practicals:	Revision/ mock exam	B.Sc. Life Sciences Sem III	Medical diagnostics SEC
	Revision/ mock exam	B.Sc (H) Biological Sciences Sem V TBS	Animal behavior & chronobiology (DSC-3)
	Revision/Mock test	B.Sc. (Hons.) Zoology Sem V (TZH)	Animal behavior & chronobiology (DSC-I)