SRI VENKATESWARA COLLEGE
(University of Delhi)
Managed by Tirumala Tirupati Devasthanams (TTD)

NAAC Accredited "A+" Grade (2022), DBT Star College Status (2016), NIRF Rank # 14(2022)

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CRITERIA I

SUPPORTING DOCUMENT

1.1.1 Teaching Plans of Sri Venkateswara College for 2021-2022

C. Shula Reddy

PRINCIPAL
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Dhaula Kuan, New Delhi-110021

SRI VENKATESWARA COLLEGE

ODD SEMESTER
2021-2022

TEACHING PLANS

C. Shula Reddy

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Dhaula Kuan, New Delhi-110021

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. HPLC and FPLC. Gel electrophoresis, SDS-PAGE, IEF and 2-D electrophoresis.	**B.Sc(H) Biological sciences - Sem III**	**BS-C5 Proteins and Enzymes**
		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 (λmax) 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

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	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 Km, Vmax, Kcat. 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** PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021	**BCH C-2 CELL BIOLOGY**

	Tutorials:			
JANUARY		• Cell Junctions Cytoskeleton	**B.Sc(H) Biochemistry - Sem I**	**BCH C-2 CELL BIOLOGY**
	Practicals:	• Observation of human cheek cells under microscope using methylene blue stain.	**B.Sc(H) Biochemistry - Sem I**	**BCH C-2 CELL BIOLOGY**
	Tutorials:			
FEBRUARY		Cytoskeleton (continuation…)	**B.Sc(H) Biochemistry - Sem I**	**BCH C-2 CELL BIOLOGY**
	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**
MARCH	**Practicals:**	Mock practical and Final Examinations		
	Tutorials:	Assignments / Tests		

DR. KAMESHWAR SHARMA YVR
Assistant professor
Department of biochemistry

C. Sheela Reddy

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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
	PACTICALS	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

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		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
	PACTICALS	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
SEPTEMEBER-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

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	PACTICALS	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 corelating to caloric consumption calculated through maintenance of dietary record. Biochemical assessment. ROS assessment. Determination of oxidative stress: TBARS, antioxidant enzymes in hemolysate. Calculation of GI and Glycemic load of different foods. 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

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		• Evaluation and Assessment			
	PACTICALS	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
	PACTICALS	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

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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
	PACTICALS	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

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Name of the Faculty : Dr. PILLI RAJESWARI
Department :BIOCHEMISTRY **Semester-V**
Teaching Mode : ONLINE **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)**

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	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)**
October	**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)**
November	**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)**

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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	

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				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:				

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SEMESTER WISE TEACHING PLAN
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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) BIOCHEMSITRY 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) BIOCHEMSITRY Sem V B.SC (H) BIOLOGICAL SCIENCES Sem III	BCH – DSE 2 BS – C5

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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	B.SC. (H) BIOCHEMSITRY Sem V	BCH – DSE 2
		Isoelectric point determination Ammonium sulphate fractionation Acid phosphatase enzyme assay	B.SC (H) BIOLOGICAL SCIENCES Sem III	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, CO2. 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 agglutinatiom by lectin Preparing temporary mount of nerve cell from mammalian spinal cord	B.SC. (H) BIOCHEMSITRY Sem V	BCH – DSE 2
		Acid Phosphatase progress curve Effect of pH on AP activity	B.SC (H) BIOLOGICAL SCIENCES Sem III	BS – C5

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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 examnation	B.SC (H) BIOLOGICAL SCIENCES Sem III	BS – C 5

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SEMESTER WISE
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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

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September	**Theory**	Gene interactions: additive gene effect, recessive and dominant epistasis, duplicate dominant and recessive epistasis, suppressor and modifier gene. Pedigree Analysis. Sex determination: heteromorohic chromosomes , genetic sex determination , temp dependent sex determination. Sex determination in C.elegans, Drosophila and humans. Sex linked , sex influenced inheritance, Drosophila development, maternal effect genes, morphogens and zygotic gene activity in	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 IIYear, Semester III	GE-6	Google meet and Google class room
	Practicals	Evaluation 1 Calculation of BMR and corelating to caloric consumption calculated through maintenance of dietary record. Biochemical assessment. ROS assessment. Determination of oxidative stress: TBARS, antioxidant enzymes in hemolysate. Calculation of GI and Glycemic load of different foods.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE-1 Nutritional biochemistry	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 IIYear, 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 IIYear, 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
		. Evaluation 2 TLC method for differentiation of ink/ drugs Fingerprint development from various surfaces Handwriting identification based on class characteristics and individual characteristics Examination of urine samples: Identification of drugs. .	GE-III IIYear, Semester III	GE -6..	Google meet and Google class room And OFF Line if permitted
	<u>Test</u>	. Test on Extension to Mendalian genetics, Pedigree Analysis and sex determination.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE -1: Nutritional Biochemistry BCH C-11: Concepts In Genetics	Google meet and Google class room
		Test on Cellular signaling and Hypothalmic 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 IIYear, Semester III	GE-6	Google meet and Google class room

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November	**Theory:**	Linkage and crossing over, genetic mapping in eukaryotes, centromere mapping with ordered tetrads, cytogenetic mapping with deletions and duplications in Drosophila, detection of linked loci by pedigree analysis in humans and somatic cell hybridization for positioning genes on	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 IIII	BCH C7: Hormone Biochemistry and Function	Google meet and Google class room
		Narco analysis: theory, forensic significance, future prospect; *Brain mapping:* introduction, EEG, P-3000 wave, forensic applications, limitation of technique; *Polygraph*: Principle and technique, polygraph as forensic investigative tool, use of psychoactive drugs in forensic analysis. NHRC guidelines for polygraph test; *Facial reconstruction*: Method and technique, facial reconstruction in forensic identification	GE-III IIYear, Semester III	GE-6	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
		Virtual trip to a forensic laboratory DNA fingerprinting Case studies Evaluation 3 and VIVA.	GE-III IIYear, Semester III	GE-6	Google meet and Google class room And OFF Line if permitted

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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

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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 *E. coli* • Diauxic Curve for *E. coli*	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

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		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 O_2 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

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		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		

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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'clockplant, Chlamydomonas, mitochondrialmutaions 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

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	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

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		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

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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 20th 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 16th 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_POD 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
	Practical	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 C. Shula Reddy PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021

PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021		**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 7th decenber	**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

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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:			

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	Assignment :	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:			
	Test	Mid term test will be taken		
November	**Theory:**	Trace Elements : Selenium, iodine, fluoride, chromium : Functions & deficiency Assessment of ROS and folate, GTT & aceylated 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

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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,	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

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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**

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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

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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

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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 prokartyotic 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 C. Shela Reddy PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1

		• To study Prokaryotic cells : Bacteria(*E.coli),* 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.) Biologica l 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- historic perspective, Griffith's and Avery's transformation experiments, Hershey-Chase bacteriophage experiment, DNA structure, types of DNA, types of genetic material. DNA replication (Prokaryotes and eukaryotes): bidirectional replication, semi—conservative, semi discontinuous ….	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 *Anabaena* from *Azolla* leaf • Observation of mycorrhizae from roots • Isolation of arbuscular mycorrhizal spores from rhizospheric soil	B.Sc. Life Sciences Semester III	SEC: Biofertilizers LSSE1

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		• Study of Cell Organelles- Golgi Complex, Endoplasmic Reticulum, Lysosomes - **Photomicrograph**s • To study the structure of plant cells (*Allium/Rhoeo/Crinum)* 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 *Rhoeo* 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): 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 Sem III	Cell Biology BS C-6
	Tutorials:			
OCTOBER	**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
		DNA replication: RNA priming, 6 (theta) 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

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		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 *Allium* • 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 ultastructure 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:			

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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

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		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	…….		
SEPTEMBER	**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:	……		

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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 CO2 on photosynthesis and nutritional status of plant and soil, CO2 fertilization effect on plants, effect of climate change induced warming on enzymes of photosynthesis (Rubisco) and respiration, blockers of photosynthetic electron transport as potential herbicides.	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
	Tutorials:	……		
NOVEMBER	**Theory:**	Unit 11: Drug-yielding plants: Therapeutic and habit-forming drugs with special reference to *Cinchona*, *Digitalis*, *Papaver* and *Cannabis*. 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:	……		

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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:	……		

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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 lenticeles.	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.	B.Sc. (H.) Botany, V Sem.	CC-XII: Analytical Techniques in Plant Sciences
		Apical meristem of root, shoot and vascular cambium. Distribution and types of parenchyma, collenchyma and sclerenchyma.	B. Sc. (H.) Botany & III Sem.	CC-V: Anatomy of Angiosperm
	Tutorials:			

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September, 2021	**Theory:**	Unit 3: Electrochemical gradient, ion flux, uniport, co-transport (symport, antiport), role of mycorrhizae. Unit 2: Essential and benefial 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.	B.Sc. (H.) Botany, V Sem.	CC-XII: Analytical Techniques in Plant Sciences
		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 & III Sem**.**	CC-V: Anatomy of Angiosperm
	Tutorials:			
	Assignment:	Assignment topics will be distributed according to the syllabi.		

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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 Modal; Phloem loading and un loading, 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 *Bignonia*, included phloem in *Leptadenia*/ *Salvadora*; 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:			

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November, 2021	**Theory:**	Unit 7: Discovery, Chemical nature, role of phytochrome in photomorphogenesis, low energy responses (LER) and high irradiadiance 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.		

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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. . UNIT-1: Mendelism- History and Principles of Inheritance. UNIT:4- Mychorrhizal association, types of mycorrhizal association, taxonomy and distribution.	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	• ANTHER: Wall and its ontogeny; Tapetum (amoeboid and glandular); MMC, Spore tetrads, uninucleate, bicelled and dehisced 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 B.Sc.(H) BOTANY Sem- III	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS 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	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS GENETICS BIOFERTILIZERS

	Practicals:	• Male Germ Unit (MGU) through photographs and schematic representation. • Pollen grains: Fresh pollen showing ornamentation ana aperture, pseudomonads, polyads, pollinia (slides/photographs, fresh material). • Ultrastructure of pollen wall (micrographs). • Pollen Viability: Tetrazolium test, germination: calculation of percentage germination in different media using hanging drop method.	B.Sc.(H) BOTANY SEM- V	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS
		• To understand the genetic interaction involved using the seed mixture given. Genetic ratio to calculated using Chi square analysis (9:6:1, 12:3:1, 13:3, 9:3:4). • To study male meiosis in *Allium cepa* (two stages to be shown). • Pedigree analysis	B.Sc.(H) BOTANY Sem- III	GENETICS
	Tutorials:			

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	Assignment :			
OCTOBER	**Theory:**	UNIT-10: Polyembryony and apomixis- classification (given by Bhojwani and Bhatnagar), causes and applications. UNIT-11: Germline transformation Introduction.	B.Sc.(H) BOTANY SEM- V	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS
		UNIT-1: Incomplete dominance and co-dominance; Multiple allelism; lethal alleles; Epistasis; Pleiotropy; Penetrance and Expressivity.	B.Sc.(H) BOTANY SEM- III	GENETICS
		UNIT 4: VAM influence on growth and yield of crops plants. UNIT5: Organic farming- Green mauring and organic fertilizers	B.Sc.(P) LIFE SCIENCE-SEC SEM-III	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.	B.Sc.(H) BOTANY SEM- V	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS
		• 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- III	GENETICS

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	Tutorials:			
	<u>Test</u>			
NOVEMBER	**Theory:**	UNIT-11: Germline transformation: Pollen grain and ovules through pollen tube pathway method. Revision and doubt classes. UNIT-1: Polygenic Inheritance; numericals. Basics concept of epigenetics, DNA Methylation and epigenetic code UNIT 5: Recycling of biodegradable municipal, agricultural and industrial wastes-bicompost making methods, types	B.Sc.(H) BOTANY SEM- V B.Sc.(H) BOTANY SEM- III B.Sc.(P) LIFE SCIENCE-SEC	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS GENETICS 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 • To do problems based on Hardy – Weinberg's law. • Xeroderma/ Pigmentatosum/Sickle cell anemia • MOCK TEST AND FINAL ASSESSMENT	B.Sc.(H) BOTANY SEM- V B.Sc.(H) BOTANY Sem- III	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS GENETICS

	Tutorials:			

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DECEMBER	**Theory:**			
	Practicals:			
	Tutorials:			

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

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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(*E.coli),* 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 onohybrid 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.	❖ BSc.Life Sciences (V Sem)	❖ Cell and Molecular Biology
		❖ 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	❖ Generic Elective paper	❖ Plant physioplogy
		❖ Mitochondrial mutations in Neurospora • Types of mutations- somatic, germinal, spontaneous, induced auxotropic, 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. Botany (H) (III Sem)	❖ Concepts of Genetics

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Practicals:	• Study of Cell Organelles- Golgi Complex, Endoplasmic Reticulum, Lysosomes - **Photomicrograph**s • To study the structure of plant cells (*Allium/Rhoeo/Crinum)* 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 *Rhoeo* leaf	BSc.Life Sciences (V Sem)	Cell and Molecular Biology
	• Gene interaction using rajma seeds, complementary genes and dominant epistasis (9:6:1,12:3:1,13:3 and 9:3:4 ratios using Rajmah seeds • Pedigree analysis for dominant and recessive autosomal and sex linked traits. • To study various divisional stages of Meiosis using *Allium cepa* flower buds	BSc. Botany (H) (III Sem)	Concepts of Genetics
Tutorials:			

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October	**Theory:**	• Different types of RNA (mRNA, tRNA rRNA and other types) • Translation in Prokaryotes and Eukaryotes .	❖ BSc.Life Sciences (V Sem)	❖ Cell and molecular biology
		• 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)	❖ GE III Sem	❖ Plant Physiology and Metabolism
		• Numerical changes in chromosomes. • Numerical changes in chromosomes- euploidy, polyploidy- auto and allo polyploidy, mechanism, non-disjunction of chromosomes and examples- *Triticale Gossipium Raphanobrassica* ,wheat and modern bread wheat.	❖ BSc. Botany (H) (III Sem)	❖ 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 *Allium* • 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	BSc.Life Sciences (V Sem)	Cell and Molecular Biology
	• 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, diccentric/inversion bridge	BSc. Botany (H) (III Sem)	Concepts of Genetics
Tutorials:			
<u>Assignment :</u>		Bsc. Botany (H) IIISem	Concepts of Genetics

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November	**Theory:**	• Genetic Code and differences between Prokaryotic and Eukaryotic Translation.Revision	❖ BSc.Life Sciences (V Sem)	❖ Cell and Molecular Biology
		• Phytochrome (discovery and structure), red and far-red light response on photomorphogenesis (general account), florigen (brief account).Revision	❖ Botany GE	❖ Plant physiology and Metabolism
		• Aneuploidy- causes and mechanism, examples *Datura* spp.,Down syndrome, Turner syndrome and klinefelter syndrome. Classical versus molecular concept of gene, complementation test for functional allelism .Revision	❖ BSc. Botany (H) (III Sem)	❖ Concept of genetics
	Practicals:	• Preparation of Karyotype and Idiogram from the given photograph of somatic metaphase chromosome • To study mitosis and meiosis	BSc.Life Sciences (V Sem)	Cell and Molecular Biology
		• 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. Botany (H) (III Sem)	Concepts of Genetics
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	Test		❖ 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**

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	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:			

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	Assignment:	Assignment topics will be distributed according to the syllabi		

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 scared groves of India	**B.Sc. (H) Botany (III)**	**SEC-Ethnobotany**

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		Ethnoecology of India, folk medicine and scared 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		

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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

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		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:	……		
DECEMBER	**Theory:**	Unit 6: Economic importance with special reference to clove and black pepper.	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
	Practicals:	• Revision and test	B.Sc(H) Botany Sem-III	BHCC6 / Economic Botany
	Tutorials:	……		

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

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

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Introduction of Biostatistics.	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 Prenchyma Collenchyma Scherenchyma	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

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		1. Macerated xylary elements and Phloem 2. T.S. Stem: Monocot: *Zea mays*; Dicot: *Helianthus*. 3. T.S. Root: Monocot: *Zea mays*; Dicot: *Helianthus*. 4. Leaf: Dicot and Monocot (only	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 variaance from given data. 2. Calculation of correlation coefficient value by Spearmen's rank method from given data. 3. Question based on Addition and multiple rules of probability.	B.Sc. (H)Botany (Sem: V)	BHDS2, Biostatistics
		1.Adaptive anatomy: Xerophyte (*Nerium* leaf); Hydrophyte (*Hydrilla* stem). 2.Structure of anther (young and mature) 3.Study of Polygonum type of embryo sac by photographs. 4. Types of ovules: anatropous, orthotropous, circinotropous, amphitropous/ campylotropous.	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021
	Tutorials:			
	<u>Test</u>			
NOVEMBER	**Theory:**	Classification of Data Tabulation and Presentaion 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:**	**S**ampling 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:			

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

Semester III

Paper Economic Botany (BHCC6)

Teaching Plan (2021-2022)

Dr. Sunila Khurana

Month	Units (Theory)	Contents
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).
(16th Nov. onwards) November & December	Unit 4 (Fruits)	Mango & Citrus (Origin, Morphology, anatomy & Uses)

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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

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	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

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

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NOVEMBER	**Theory:**	Unit-1: Mechanism of stomatal movement, proton transport theory, blue light stimulated response Revision and test	B.Sc. (H) Botany Semester V	Plant Physiology
		Unit 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:	--------		

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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)*Azardirachta indica*	B.Sc. Botany (Hons) B.Sc. Life Science	SEC - Ethnobotany SEC - Ethnobotany
	Practicals	1.Apical meristem of root, shoot and vascular cambium. 2.Distribution and types of parenchyma, collenchyma and sclerenchyma.	B.Sc. Botany (Hons)	CC – V **(**Anatomy of Angiosperms**)**
		3.Collection, identification and preparation of herbarium of three ethnobotanically important plants with appropriate references.	B.Sc. Botany (Hons) B.Sc. Life Science	SEC – Ethnobotany SEC - Ethnobotany
		4.Study of meristems through permanent slides and photographs 5.Tissues (parenchyma, collenchyma and sclerenchyma), Macerated xylary elements, Phloem (permanent slides, photographs)	B.Sc. Botany (Hons)	CC – III /Plant Anatomy and Embryology
	Tutorials			

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

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OCTOBER	**Theory:**	1.Types of vascular bundles, structure of Dicot and Monocot Stem, Shoot chimeras 2.Leaf : Structure of Dicot and Monocot leaf, Kranz Anatomy, Development of leaf 3.Root : Organisation of Root apex, (Apical cell theory, Histogen theory, Korper-Kappe theory), Quiescencentre, Root cap, Structure of Dicot and Monocot Root, Endodermis, Exodermis, Origin of Lateral root 4.Significance of following plants *g) Cassia auriculata, h) Indigofera tinctoria* 5.Role of Ethnobotany in modern medicine with special example – *Rauvolfia serpentina, Trichopus zeylanicus, Artemesia, Withania*	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 *Bignonia,* included phloem in *Leptadenia / Salvadora;* periderm; lenticels. 2.Leaf: isobilateral, dorsiventral, C4 leaves (Kranz anatomy). 3. Adaptive Anatomy: xerophytes, hydrophytes.	B.Sc. Botany (Hons.)	CC – V / Anatomy of Angiosperms
		4. Project work documentation, literature survey, and collection of information on ethnobotanically useful plants from traditional healers	B.Sc. Life Science B.Sc. Botany(Hon)	SEC Ethnobotany SEC Ethnobotany
		5.Types of ovules : anatropous, orthotropous, circinotropous, amphitropous, campylotropous 6.Female gametophyte: Polygonum nonosporic) type of Embryo sac ermanent slides/ photographs) 7.Pollination types and seed dispersal echanism (including appendages, aril, ıruncle) photographs/ specimens	B.Sc. Life Science	CC – III /Plant Anatomy and Embryology
	Tutorials:			
	<u>Assignment :</u>	Entire syllabus		
NOVEMBER	**Theory:**	1.Vascular Cambium – Strucure (axially and radially oriented elements), Function and Seasonal Activity of Cambium, Secondary growth in root and Stem. Anamolies in secondary growth in stem: included phloem and phloem wedges. 2. Adaptive and Protective Systems: Epidermal tissue systems, cuticle, epicuticular waxes, trichomes (uni and multicellular, glandular and non glandular , stomata(classification), anatomical adaptations of Xerophytes and Hydrophytes	B.Sc. Botany (Hons.)	CC – V / Anatomy of Angiosperms PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021

		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		
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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 *Paeonia*	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

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

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

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: *Zea mays*; Dicot: *Helianthus*. 3. T.S. Root: Monocot: *Zea mays*; Dicot: *Helianthus*. 4. Leaf: Dicot and Monocot (only Permanent slides).	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology

	Tutorials:			
	<u>Assignment:</u>	From the entire syllabus of Biostatistics	B.Sc. (H)Botany (Sem: V)	DHDS2, Biostatistics
		From the entire syllabus of Pant 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 variaance from given data. 2. Calculation of correlation coefficient value by Spearmen's rank method from given data. 3. Question based on Addition and multiple rules of probability.	B.Sc. (H)Botany (Sem: V)	BHDS2, Biostatistics
		1.Adaptive anatomy: Xerophyte (*Nerium* leaf); Hydrophyte (*Hydrilla* stem). 2.Structure of anther (young and mature) 3.Study of Polygonum type of embryo sac by photographs. 4. Types of ovules: anatropous, orthotropous, circinotropous, amphitropous/ campylotropous.	B.Sc.(P) Life Science (Sem: III)B-I&II	LSCL-4/Plant Anatomy & Embryology
	Tutorials:			
	<u>Test</u>			
NOVEMBER	**Theory:**	Statistical inference - hypothesis - simple hypothesis - student 't' test - chi square test, F-test. Basic concept of probability, Introduction to bionomial, 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

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		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:			

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

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Dhaula Kuan, New Delhi-110021

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(*E.coli),* 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 Embrysac 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: *Zea mays* , Dicot : *Helianthus* • Leaf : Dicot and Monocot (only permanent slides) • Adaptive anatomy : Xerophyte (Nerium leaf), Hydrophyte (Hydrilla stem) • Structure of anther (young and mature) • Stem : Monocot: *Zea mays* , Dicot : *Helianthus*	B.Sc.(P) Life Sciences Sem III	Plant Anatomy and Embryology
		• Study of Cell Organelles- Golgi Complex, Endoplasmic Reticulum, Lysosomes - **Photomicrograph**s • To study the structure of plant cells (*Allium/Rhoeo/Crinum)* 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:**	*Polygonum* 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: Polygonum (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

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		• 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 *Allium* • 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:			

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

Name of the Faculty: Dr. Pooja Gokhale Sinha

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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 incompatilbility: 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 *Cucumis* and *Calliandra* • 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

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SEMESTER WISE
TEACHING PLAN
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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-/7Functional 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
	Practical	Analysis of water samples to determine DO and BOD	B.Sc. (H) Bio. Sci.	C7/Functional Ecology
NOVEMBER	**Theory**	Introduction to ecosystem: Structure and function Nutrient cycling and energy flow	B.Sc. (H) Bio. Sci.	C7/Functional Ecology
	Practical	Study of ecological adaptaions: Morphological and anatomical	B.Sc. (H) Bio. Sci.	C7/Functional Ecology

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Name of the Faculty: Dr. Pooja Gokhale Sinha

Department: Botany

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

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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 micropgraphs	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
AUGUST	**Theory:**	• Pollen Biology: Microssporogenesis, 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 incompatilbility: 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

OCTOBER	**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 *Cucumis* and *Calliandra* • Study of seed dispersal	B.Sc. (H) Biological Sciences	C11/Growth and Reproduction
NOVEMBER	**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

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CHEMISTRY TEACHING PLAN

ALL TEACHERS

2021-22 ODD SEMESTER

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

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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 KMnO4 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 I -D box (complete solution), quantization, normalization of wavefunct ions, concept of zero-point energy. Spectroscopy and its importance in chemistry. Wave-particle duality. Link between spectroscopy and quantum chemistry. Electromagnetic radiation and its interaction with matter. Types of spectroscopy. Difference between atomic and molecular spectra. Born-Oppenheimer approximation: Separation of molecular energies into translational, rotational, vibrational and electronic components *Rotational Motion:* Schrodinger equation of a rigid rotator and brief discussion of its results (solution not required). Quantization of rotational energy levels. Microwave (pure rotational) spectra of diatomic molecules. Selection rules. Structural information derived from rotational spectroscopy	B.Sc. (P) Life Sci. Sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY

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	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 CuSO4/KMnO4/K2Cr2O7 in a solution of unknown concentration. 3. Determine the concentrations of KMnO4 and K2Cr2O7 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
		Vibrational Motion: Schrodinger equation of a linear harmonic oscillator and brief discussion of its results (solution not required). Quantization of. vibrational energy levels. Selection rules, IR spectra of diatomic molecules. Structural information derived from vibrational spectra. Vibrations of polyatomic molecules. Group frequencies. Effect of hydrogen bonding (inter- and intramolecular) and substitution on vibrational frequencies.	B.Sc. (P) Life Sci. Sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
	Practicals:	Incorporating tables and graphs	B. Sc. (H)	SEC: IT SKILLS FOR

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		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(dimethylglyoximato) nickel(II) or in a given solution gravitmetrically Study the 200-500 nm absorbance spectra of $KMnO_4$ and $K_2Cr_2O_7$ (in 0.1 M H_2SO_4) and determine the λ_{max} values. Calculate the energies of the two transitions in different	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-componentsystems (water and sulphur)	B.Sc. (P) Life Sciences II year, Semester III	CC-III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		Electronic Spectroscopy: 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 &

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		Colour and constitution, chromophoes, 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 KMnO4 and K2Cr2O7 (in 0.1 M H2SO4) and determine the λmax values. Calculate the energies of the two transitions in different units (kJ molecule-1, kJ mol-1, cm-1, eV). 2. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K2Cr2O7.	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 $CuSO_4/KMnO_4/K_2Cr_2O_7$ 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 (leadsilver, FeCl3-H2O. 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 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,	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 $K_2Cr_2O_7$.	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

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Dr. Mercy Jacob **Department: Chemistry**

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
AUGUST	**Theory**	General Principles of Metallurgy: Chief modes of occurrence of metals based on standard electrode potentials. Ellingham diagrams for reduction of metal oxides using carbon and carbon monoxide as reducing agent.	B.Sc. (H) Chemistry II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals	Inorganic preparations (i) Cuprous Chloride, Cu_2Cl_2	B.Sc. (Hons.) Chemistry II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-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 *s*- and *p*-Block Elements
	Practicals	Preparations: (ii) Aluminium potassium sulphate $KAl(SO_4)_2.12H_2O$ (Potash alum) Estimation of Zn^{2+} Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Synthesis of lead sulphide, zinc sulphide, copper sulphide,manganese sulphide, nickel sulphide, cadmium sulphide	B.Sc. (Hons.) Chemistry III Year	DSE : NOVEL INORGANIC SOLIDS
	Tutorials:			
OCTOBER	**Theory:**	Chemistry of *p*- Block Elements: Electronic configuration, atomic and ionic size, metallic/non-metallic character, melting point, ionization enthalpy, electron gain enthalpy, electronegativity, Catenation, Allotropy of C, P, S; inert pair effect, diagonal relationship between B and Si and anomalous behaviour of first member of each group.	B.Sc. (H) Chemistry II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals	Estimation of Mg^{2+} Complexometric titrations using disodium salt of EDTA Estimation of Ca^{2+} Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements

		Preparation of polyaniline Intercalation of hydrogen in tungsten trioxide Preparation of zeolite	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
	Tutorials:			
	Assignment:	Chemistry of *s* and *p* block elements	B.Sc. (H) Chemistry II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
NOVEMBER	**Theory:**	Structure, bonding and properties: Acidic/basic nature, stability, ionic/covalent nature, oxidation/reduction, hydrolysis, action of heat of the following: • Hydrides: hydrides of Group 13 (only diborane), Group 14, Group 15 (EH3 where E = N, P, As, Sb, Bi), Group 16 and Group 17. • Oxides: oxides of phosphorus, sulphur and chlorine	B.Sc. (H) Chemistry II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals	Synthesis of Inorganic pigments-Prussian blue, malachite green, chrome yellow, chromium oxide,	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
	Tutorials:			
	Test	Chemistry of *s* and *p* block elements	B.Sc. (Hons.) Chemistry II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
DECEMBER	**Theory:**	• Oxoacids: oxoacids of phosphorus and chlorine; peroxoacids of sulphur • Halides: halides of silicon and phosphorus	B.Sc. (H) Chemistry II Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals	Estimation of antimony in tartar-emetic iodimetrically	B.Sc. (Hons.) Chemistry II Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Synthesis of pure ZnO and Cu doped ZnO nanoparticles	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
	Tutorials:			

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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**	*Section A: Inorganic Chemistry-3* (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 (Latimer diagrams)	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

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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 KMnO4 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
	Assignment:	CHEMISTRY OF d-BLOCK ELEMENTS	B.Sc.(P) Life Science III year	**DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCK ELEMENTS,**
OCTOBER **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**
FEBRUARY	**Practicals:**	Synthesis of inorganic pigments (PbCrO4, ZnCrO4, Prussian Blue, Malachite). Synthesis of pure ZnO and	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS

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		(ii) Estimation of oxalic acid and sodium oxalate in a given mixture. (iii) Estimation of Fe(II) with K2Cr2O7 using	B.Sc. (H) Chemistry I Year **SEMESTER I**	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 *Oh* and *Td* complexes, Tetragonal distortion of	B.Sc.(P) Life Science III year	**DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY**
NOVEMBER	**Practicals:**	Preparation of zeolite A and removal of Mg and Ca ions from water samples quantitatively using zeolite.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
			B.Sc. (H) Chemistry I Year **SEMESTER I**	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
	Tutorials:	NA	NA	NA

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SEMESTER WISE TEACHING PLAN

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 CuSO4/KMnO4/K2Cr2O7 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 KMnO4 and K2Cr2O7 in a mixture. Determine the amount of iron present in a sample using 1, 10-phenathroline. 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

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		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. **ASSIGENMNET 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**

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

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Dhaula Kuan, New Delhi-110021

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.) IInd 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. Benzolyation of one of the following amines (aniline, o-, m-, p- toluidines and o-, m, p-anisidine) and one of the following phenols (β -naphthol, resorcinol, p- cresol) by Schotten-Baumann reaction. 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

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

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 PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021
	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-Benzylisothiouronium 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 PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021
	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 PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021
	Practicals:	Mock Practicals Mock Practicals Mock Practicals	B.Sc. CHEMISTRY (Hons.) III Year, Semester V B.Sc. CHEMISTRY (Hons.) III Year, Semester V B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV CHEMISTRY - C VI: ORGANIC CHEMISTRY III CHEMISTRY - C VI: ORGANIC CHEMISTRY III

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

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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.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
		iii) Hydrolysis of amide/Esters iv) Assessment class (v) Iodoform reaction. (vi) Semicarbazone synthesis	B.Sc. (Hons) Chemistry II Year, Semester III	C VI: ORGANIC CHEMISTRY II
		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	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	Assignment :	Assignment-1	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
OCTOBER	**Theory:**	Future Trends in Green Chemistry	B.Sc. CHEM (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	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	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
		vii. Selective Reduction viii. Assessment Class	B.Sc. CHEM (Hons.) II Year, Semester V	C VI: ORGANIC CHEMISTRY II
		9.Study of the titration curve of glycine. 10. Determination of Iodine number of the given oil	B.Sc. (Hons.) CHEM III Year, Sem V	CHEMISTRY - C XI: ORGANIC CHEM IV
	Test	Principles of Green Chemistry Atom economy, green solvents	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
NOVEMBER	**Theory:**	Green chemistry in sustainable development	B.Sc. CHEMISTRY (Hons.) III Year,	CHEMISTRY-DSE: GREEN CHEMISTRY

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	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

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

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

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 solidliquid, liquid-vapour and solid-vapour equilibria, phase diagram for one component systems (H2O and S), with applications. A comparison between the phase diagram of CO2 and H2O.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
	Practicals	Introduction to word processor. Incorporating chemical structures, chemical equations, expressions from chemistry into word processing documents. Incorporating tables and graphs into word processing documents.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		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

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	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

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November	**Theory:**	Application of EMF measurements in determining (i) free energy, enthalpy and entropy of a cell reaction, (ii) equilibrium constants, and (iii) pH values, using hydrogen, quinone-hydroquinone, glass and SbO/Sb2O3 electrodes. Concentration cells with and without transference, liquid junction potential; determination of activity coefficients and transference numbers. Qualitative discussion of potentiometric titrations (acid-base, redox, precipitation).	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
	Practicals:	Statistical analysis: Gaussian distribution and Errors in measurements and their effect on data sets. Descriptive statistics using Excel. Statistical significance testing: The t test. The Ftest.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		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:**			

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	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

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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 titrartion	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) I onic 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

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	Practicals:	Estimation of Fe (II) ions by titrating it with K2Cr2O7 using internal indicator. Estimation of Cu (II) ions iodometrically using Na2S2O3. Purification of OC by crystallisation (from water and alcohol) and distillation. Criteria of purity: Determination of Mpt/Bpt	B.Sc. (P) Life Sciences I Year	Practical CC – I Lab
	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

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	Practicals:	Detection of extra elements (N, S, Cl, Br, I) in organic compounds 4.Separation of mixtures by Chromatography: Measure the Rf 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**

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NOVEMBER	**Theory:**	Resonance and resonance energy, Molecular orbital theory. Molecular orbital diagrams of diatomic and simple polyatomic molecules N2 , O2 , C2 , B2 , F2 , CO, NO, and their ions; HCl (idea of s-p mixing and orbital interaction to be given). Formal charge, Valence shell electron pair repulsion theory (VSEPR), shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons: H2O, NH3, PCl3, PCl5, SF6, ClF3, I3 - , BrF2 + , PCl6 - , ICl2 - ICl4 - and SO4 2- . Multiple bonding (ζ 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.		PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021

	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

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SEMESTER WISE-TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Vinita Kapoor

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

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

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

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Theory	quantum mechanical operators, Free particle. Particle in a I -D box (complete solution), quantization, normalization of wavefunct ions, concept of zero-point energy. Spectroscopy and its importance in chemistry. Wave-particle duality. Link between spectroscopy and quantum chemistry. Electromagnetic radiation and its interaction with matter. Types of spectroscopy. Difference between atomic and molecular spectra. Born- Oppenheimer approximation: Separation of molecular energies into translational, rotational, vibrational and electronic components *Rotational Motion:* Schrodinger equation of a rigid rotator and brief discussion of its results (solution not required). Quantization of rotational energy levels. Microwave (pure rotational) spectra of diatomic molecules. Selection rules. Structural information derived from rotational spectroscopy	B.Sc. (P) Life Sci. sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021
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	*Vibrational Motion:* Schrodinger equation of a linear harmonic oscillator and brief discussion of its results (solution not required). Quantization of. vibrational energy levels. Selection rules, IR spectra of diatomic molecules. Structural information derived from vibrational spectra. Vibrations of polyatomic molecules. Group frequencies. Effect of hydrogen bonding (inter- and intramolecular) and substitution on vibrational frequencies.	B.Sc. (P) Life Sci. sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY

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	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. l l.Perform the following eonductometric 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

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	Theory	*Electronic Spectroscopy:* Electronic excited states. Free Electron model and its application to electronic spectra of polyenes. Colour and constitution, chromophoes, auxochromes, bathochromic and hypsochromic shifts.	B.Sc. (P) Life Sci. sem V	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
	Practicals	Numerical curve fitting, linear regression numerical differentiation integration	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
	Practicals	ii.Weak acid vs. strong base conductometry PotentiometryPerform the following potentiometric titrations:i.SIrong acid vs. strong base Weak acid vs. strong base I Systematic Qualitative Organic Analysis of Organic Compounds posSessing monofunctional groups (amide, nitro, amines, Hydrocorbans, Halo Hydrocorbans) and preparation of one derivative.	BSc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANICCHEMISTRX-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

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	Practicals	Differential calculus: The tangent line and the derivative of a function, numerical differentiation. Numerical integration (Trapezoidal and Simpson's rule, e.g. entropy/enthalpy change from heat capacity data). Computer Programming BASIC language.	B.Sc. (Hons.) Chemistry sem III	SEC: IT SKILLS FOR CHEMISTS
	Practicals	I Systematic Qualitative Organic Analysis of Organic Compounds posSessing monofunctional groups (amide, nitro, amines, Hydrocorbans, Halo Hydrocorbans) 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 nonrcducing 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:** ***PHYSICAL CHEMISTRY III***

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SEMESTER WISE TEACHING PLAN
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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_2O7 using sodium thiosulphate solution (Iodometrically). (ii) Estimation of antimony	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-Block Elements
NOVEMBER	**Practicals**	1. Titrimetric Analysis: (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality.	B.Sc. (H) Chemistry I Year **SEMESTER I**	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 Mg2+,Zn2+ (ii) Estimation of Ca2+ by substitution method (iii) Estimation of Calcium content in milk.	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	Course Code: CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-Block Elements

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

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SEPTEMBER	**Practicals:**	Intercalation of hydrogen in tungsten trioxide and its conductivity measurement using conductometer. Synthesis of metal sulphide	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
OCTOBER	**Practicals:**	**Paper chromatographic separation of following metal ions:** (i) Ni (II) and Co (II) (ii) Cu(II) and Cd(II)	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	**Course Code: CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-Block Elements**
JANUARY	**Practicals**	(iii) Estimation of carbonate and bicarbonate present together in a mixture. (iv) Estimation of free alkali present in different soaps/detergents 3. Oxidation-Reduction Titrimetry: Principles of oxidation-reduction titrations (electrode potentials) to be discussed. (i) Estimation of	B.Sc. (H) Chemistry I Year **SEMESTER I**	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical Bonding
	Tutorials:	NA	NA	NA
	Assignment :	NOVEL INORGANIC SOLIDS	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS

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OCTOBER	**Theory:**	Composite materials: Introduction, limitations of conventional engineering materials, role of matrix in composites, classification, matrix materials, reinforcements, metal-matrix composites, polymer-matrix composites, fibre-reinforced composites, environmental effects on composites, applications of composites. Speciality polymers: Conducting polymers - Introduction, conduction mechanism, polyacetylene, polyparaphenylene and polypyrole,	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
OCTOBER	**Practicals:**	Synthesis of inorganic pigments (PbCrO4, ZnCrO4, Prussian Blue, Malachite). Synthesis of pure ZnO and	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
NOVEMBER		**Inorganic preparations** (i) Cuprous Chloride, Cu2Cl2 (ii) Aluminium potassium sulphate KAl(SO4)2	B.Sc. (Hons.) Chemistry II Year **SEMESTER III**	Course Code: CHEMISTRY - CV: INORGANIC CHEMISTRY - II Course Title: s- and p-
FEBRUARY		(ii) Estimation of oxalic acid and sodium oxalate in a given mixture. (iii) Estimation of Fe(II) with K2Cr2O7 using	B.Sc. (H) Chemistry I Year **SEMESTER I**	CHEMISTRY - C I: INORGANIC CHEMISTRY - I Course Title: Atomic Structure & Chemical
	Tutorials:	NA	NA	NA
	<u>Test</u>	NOVEL INORGANIC SOLIDS	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
NOVEMBER	**Theory:**	Applications of conducting polymers, Ion-exchange resins and their applications. Ceramic & Refractory: Introduction, classification, properties,	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
NOVEMBER	**Practicals:**	Preparation of zeolite A and removal of Mg and Ca ions from water samples quantitatively using zeolite.	B.Sc. (Hons.) Chemistry III Year **SEMESTER V**	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS

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

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE-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

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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 PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021

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	Test	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.	B.Sc. Life Sciences (Prog.) II Year, Semester III	Solutions, Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		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. Bioloical Sciences, I Year, Semester I	BS-C1: CHEMISTRY ORGANIC CHEMISTRY
	Practicals:	Any pending work File submission Practice	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		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. Biological Sciences, I Year, Semester I	CHEMISTRY LAB

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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
	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
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
	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
	<u>Assignment :</u>	Unit 3: Fundamentals of Organic Chemistry: Aromaticity	B.Sc. Biological sciences, I Year, Semester I	BS-C1: CHEMISTRY ORGANIC CHEMISTRY

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

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Deepti Sharma

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

Month		Topics	Course	Paper Code/Name
August	**Theory**	Alkyl Halides: Preparation, properties, nucleophilic substitution reactions – SN1, SN2 and SNi mechanisms.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
	Practicals	1. Preparation and characterization of nanoparticles of gold using tea leaves. 2. 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 (H) Chemistry Semester-V	DSE-8: Green Chemistry
		Systematic qualitative analysis of organic compounds possessing monofunctional groups	B.Sc Life Science Semester-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		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 LiAlH4.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II

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	Practicals:	1.Photoreduction of benzophenone to benzopinacol in the presence of sunlight. 2.Extraction of D-limonene from orange peel using liquid CO2 prepared form dry ice. 3.Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper(II).	B.Sc (H) Chemistry Semester-V	DSE: Green Chemistry
		Discussed –COOH and Carbonyl functional group including derivative preparation	B.Sc Life Science Semester-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		1. 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 Life Science Semester-III (SEC)	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 (H) Chemistry Semester-III	Organic Chemistry-II

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	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.	B.Sc (H) Chemistry Semester-V	DSE: Green Chemistry
		Systematic qualitative analysis alcohols and Phenols including derivative preparation).	B.Sc Life Science Semester-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		1. 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 Life Science Semester-III (SEC)	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
November	**Theory:**	Carboxylic Acid and derivatives completed.	B.Sc (H) Chemistry Semester-III	Organic Chemistry-II
	Practicals:	MOCK TESTS	B.Sc (H) Chemistry Semester-V	DSE: Green Chemistry
		Practices monofuntional organic compounds through ssesments.	B.Sc Life Science Semester-III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		1.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 Life Science Semester-III (SEC)	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
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

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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**	**Conductance**: Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes, Kohlrausch Law of independent migration of ions, transference number	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**	**Conductance**: 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**	**Conductance**: 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, 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

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	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

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		Boyle temperature		
	Practical	1**. <u>Surface tension measurements using Stalagmometer:</u>** Study the variation of surface tension with different concentration of detergent solutions. Determine CMC. **<u>Viscosity measurement using Ostwald's viscometer:</u>** (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

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SEMESTER WISE TEACHING PLAN

(2021-2022) 0dd semester

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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 CuSO4/KMnO4/K2Cr2O7 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 applicaition to solid-liquid, liquid vapour and solid-vapour equilibria. Phase diagram for one component system.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVll:Physical Chemistry lll
	Practicals:	1. Determination of critical solution temperature and composition of phenol water system and study the effect of impurities on it.	B. Sc. (Life Science) III Semester 2nd year	Chemistry- core paper 3, (Solutions, Phase equilibrium, Conductance, Electrochemistry and Functional Group organic Chemistry-2)
		2. Colorimetry: I. Verify Lambert-Beer's law and determine the concentration of CuSO4/KMnO4/K2Cr2O7 in a solution of unknown concentration. 3. UV/Visible spectroscopy:. Study the 200-500 nm absorbance spectra of KMnO4 and K2Cr2O7 (in 0.1 M H2SO4) and determine the λmax values. Calculate the energies of the two transitions in different units (J molecule-1 , kJ mol-1 , cm-1 , eV) 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

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		complexometric titration using EDTA.		
		1. Determine the concentrations of KMnO4 and K2Cr2O7 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-phenathroline.	B. Sc. (H)chemistry 3nd year	CHEMISTRY - C XII: PHYSICAL CHEMISTRY V
	Tutorials:	NA	NA	NA
September	**Theory:**	Phase diagram for H2O and S, with applications. Phase diagram for a system of solid liquid equilibria involving eutectic congruent and incongruent melting point. Three component system: triangular plots, water-chloroform-acitic acid system. Binary solutions: gibbs-duhem margules equation, its derivation and application to fractional distillation of binary miscible liquid (ideal and non ideal), azeotropes, level rule, partial miscibility of liquids, CST, miscible pairs, steam distillation. Nerst distribution law: its derivation and application.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVll:Physical Chemistry lll
		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 K2Cr2O7.	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 compolexometric 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,3nd 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 electrod potential and its application to different kinds of half cells. Application of EMF measurement in determining free energy; enthalpy and entropy of a cell reaction, equilibrium constant, and pH value using hydrogen, quinine-hydroquinone, glass and SbO/Sb2O3 electrodes.	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVll:Physical Chemistry lll
		Calculation of w, q, ΔE, ΔH for process involving chang in physical states. Important principles and definition of thermochemisty. Concept of standard state and standard enthalpies of formation, intregral 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

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		structure on the UV spectra of organic compounds.		
		7. UV/Visible spectroscopy:. Study the 200-500 nm absorbance spectra of KMnO4 and K2Cr2O7 (in 0.1 M H2SO4) and determine the λmax values. Calculate the energies of the two transitions in different units (J molecule-1 , kJ mol-1 , cm-1 , eV) 8. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K2Cr2O7.	B. Sc. (H)chemistry 3nd 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 potentiomentric titrations (acid base redox, precipitation). Surface chemistry: physical adsorption, chemisorptions, adsorption isotherm	B. Sc. (H)chemistry, III semester 2nd year	Chemistry - CVll:Physical Chemistry lll
		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 3nd year	B. Sc. (H)chemistry 3nd year

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		organic compounds.		
		Determiniation of composition of Fe^{3+} - salicylic acid complex/ Fe2+ -phenenthroline 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 - CVll:Physical Chemistry lll
		Calculations of absolute entropy of substances. Disscussion on problems. Problems from last year questions	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2- chemical thermodynamics

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SEMESTER WISE TEACHING PLAN

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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 KMnO4 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 CuSO4/ K2Cr2O7 in a solution of unknown concentration. 3. Determine the concentrations of KMnO4	B. Sc. (H) Chemistry III year, Semester V	CXII: PHYSICAL CHEMISTRY–V Course Title: Quantum Chemistry & Spectroscopy

		and K2Cr2O7 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

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		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 KMnO4 and K2Cr2O7 (in 0.1 M H2SO4) and determine the λmax values. Calculate the energies of the two transitions in different units (kJ molecule-1, kJ mol-1, cm-1, eV). 2. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K2Cr2O7.	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

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		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:

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			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

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		Green synthesis of gold/silver nanoparticles		
	Practicals:	Determination of CST of phenol-water system. Effect of impurities on CST of phenol-water system. Potentiometric titrations ii. Weak acid vs. strong base Systematic qualitative analysis of organic compounds possessing 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 CO2.	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, resona-nce, 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

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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. KMnO4) and trans-addition (bromine), addition of HX (Markownikoff's and anti-Markownikoff's addition), Hydration, Ozonolysis, oxymecuration-	B. Sc. (P) Life Science-I year (FLS-A), Semester-I	Atomic Structure, Bonding, General Organic Chemistry (Section B: Organic Chemistry -1)

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		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 CaC2 and conversion into higher alkynes; by dehaloge-nation of tetrahalides and dehydrohalogenation of vicinal-dihalides. Reactions: formation of metal acetylides and acidity of alkynes, addition of bromine and alkaline KMnO4, ozonolysis and oxidation with hot alk. KMnO4. 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

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

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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 IIIrd Year Sem V	DSE LAB: NOVEL INORGANIC SOLIDS
		Estimation of Zn^{2+} by complexometric titrations using EDTA.	B.Sc. (P) Life Science IIIrd year, Sem V	Chemistry of d-block elements, quantum chemistry & spectroscopy
	Tutorials			
AUGUST				
	Theory:	Chemistry of *s*-Block Elements General characteristics: melting point, flame colour, reducing nature, diagonal relationships and anomalous behavior of first member of each group.	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals:	Preparations: (ii) Cuprous Chloride (iii) Aluminium potassium sulphate $KAl(SO_4)_2.12H_2O$ (Potash alum)	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Preparation of polyaniline Intercalation of hydrogen in tungsten trioxide Preparation of 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 *s* and *p* block elements	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements

SEPTEMBER	**Theory:**	Complex formation tendency of *s*-block elements; structure of the following complexes: crown ethers and cryptates of Group I; basic beryllium acetate, beryllium nitrate, EDTA complexes of calcium and magnesium. Solutions of alkali metals in liquid ammonia and their properties	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements

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	Practicals:	Estimation of 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 IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		Preparation of zeolite	B.Sc. (Hons.) Chemistry III Year	DSE LAB: NOVEL INORGANIC SOLIDS
		Estimation of the amount of nickel present in a given solution as bis(dimethylglyoximato) nickel(II) or in a given solution gravitmetrically Study the 200-500 nm absorbance spectra of $KMnO_4$ and $K_2Cr_2O_7$ (in 0.1 M H_2SO_4) and determine the λ_{max} values. Calculate the energies of the two transitions in different	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 {$(PNCl_2)n$ where n = 3 and 4}	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
	Practicals:	Estimation of Cu(II) and K2Cr2O7 using sodium thiosulphate solution (Iodometrically)	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		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 $CuSO_4$/$KMnO_4$/$K_2Cr_2O_7$ 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 *s* and *p* block elements	B.Sc. (Hons.) Chemistry IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
November	**Theory:**	• Interhalogen and pseudohalogen compounds • Clathrate compounds of noble gases, xenon fluorides (MO treatment of XeF_2)	B.Sc. (H) Chemistry IInd Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-Block Elements
		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 IInd Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II *s*- and *p*-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 $K_2Cr_2O_7$.	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 ψ2 , .	B.Sc. (P) Life Science I year Sem I	Atomic Structure, Bonding and General Organic Chemsitry
January	**Theory:**	Schrodinger equation for hydrogen atom. Radial and angular parts of the hydogenic wavefunctions (atomic orbitals) and their variations for Is, 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 Chemsitry
	Assignment	Atomic Structure	B.Sc. (P) Life Science I year Sem I	Atomic Structure, Bonding and General Organic Chemsitry

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February	**Theory:**	Radial distribution functions and the concept of the most probable distance with special reference to Is and 2s atomic orbitals. Significance of quantum numbers, orbital angular momentum and quantum numbers ml and ms, Shapes of s, p atomic orbitals, nodal planes.	B.Sc. (P) Life Science I year Sem I	Atomic Structure, Bonding and General Organic Chemsitry
March	**Theory:**	Discovery of spin, spin quantum number (s) and magnetic spin quantum number (ms). Rules for tilling 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 Chemsitry

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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 3rdYear, 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 2ndYear, 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 3rdYear, 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 2ndYear, Semester-III – Batch I	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Tutorials:			

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September	**Theory:**	**Aryl halides:** Preparation (including preparation from diazonium salts) and properties, nucleophilic aromatic substitution; SNAr, Benzyne mechanism. Relative reactivity of alkyl, allyl, benzyl, vinyl and aryl halides towards nucleophilic substitution reactions **Alcohols:** preparations, Properties and relative reactivity of 1°, 2°, 3° alcohols, Bouveault–Blanc Reduction; Oxidation of diols by periodic acid and lead tetraacetate, Pinacol-Pinacolone rearrangement. Revision Class **Phenols:** Preparation and properties; Acidity and affecting factors, Ring substitution reactions.	B.Sc. (H) Chemistry 2nd 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 3rd 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 2nd 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 2nd 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 LiAlH4. **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, LiAlH4, NaBH4, MPV, PDC)	B.Sc. (H) Chemistry 2nd 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 3rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Practicals:	7. Selective Reduction 8. Assessment Class	B.Sc. (H) Chemistry 2nd 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 2nd Year, Semester-III	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups

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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 2nd 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 3rd Year, Semester-V	CHEMISTRY - CXI: ORGANIC CHEMISTRY – IV Biomolecules
	Practicals:	9.SBT preparation. 10.Aldol Conde4nsation 11. Functional group Identification 12. Revision and Doubts 13. Final Assessment of Sem III	B.Sc. (H) Chemistry 2nd Year, Semester-III – Batch I	CHEMISTRY - CVI: ORGANIC CHEMISTRY – II Halogenated Hydrocarbons and Oxygen Containing Functional Groups
	Tutorials:			

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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 form 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** **Assessment-1**	B.Sc.(H) Chemistry Sem-III B.Sc.(H) Chemistry Sem-V	CHEMISTRY-CVI: Halogenated Hydrocarbons and Oxygen Containing Functional Groups 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

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		(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 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	(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 KMnO4. (viii) Estimation of Mohr's salt by titrating it with KMnO4	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 KMnO4, ozonolysis and oxidation with hot alk. KMnO4.	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 K2Cr2O7 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

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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 (Ni2+ and Co2+)	B.Sc. Life Science, III Year, V Semester	CHEMISTRY – SEC-2 Basic Analytical Chemistry

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		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 HNO2, 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	1. To study the use of phenolphthalein in trap cases. 2. To analyze arson accelerants. 3. To carry out analysis of gasoline. 4. 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
		1. Determination of equivalent conductant, degree of dissociation and dissociation constant of a weak acid . Perform the following conductometric titrations: 2. 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

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		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

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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)

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SEMESTER WISE TEACHING PLAN 2021-2022 (Odd Sem)
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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 ψ2, Schrödinger equation for hydrogen atom, radial and angular parts of the hydogenic 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

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	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 $Na_2S_2O_3$, Separation of mixtures by chromatography: Measure the Rf 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 $K_2Cr_2O_7$ 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

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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

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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
	Assignment	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

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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 ψ2	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
	Practicals:	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
		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

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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 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).	GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
			B.Sc. Life Sciences-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
		What is Quantum mechanics? Time independent Schrodinger equation and meaning of various terms in it. Significance of ψ and ψ2 , Schrödinger equation for hydrogen atom.	B.Sc. Biological Sciences-I	Chemistry BS C-1
	Practicals:	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 .	B.Sc. Chem (H)-Sem I	C II- Physical Chemsitry Practicals

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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.	GE-I	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons
		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)	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
	Practicals:	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.	B.Sc. Biological Sciences-I	Chemistry BS C-1 Practicals
		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	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

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	Theory:	Covalent bonding: VB Approach: Shapes of some inorganic molecules and ions on the basis of VSEPR (H2O, NH3, PCl5, SF6, ClF3, SF4) 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 Helmoltz 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

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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
Test:	1)Separation of mixtures by chromatography: Measure the Rf 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		

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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

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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

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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**	**Unit <u>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. **Unit 5 <u>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
	Tutorials	• Case studies/ presentations/ management games related to the topics done in theory	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
December	**Theory**	• Revision of topics	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications

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

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
JULY-DEC 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

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		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

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		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

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		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

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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 andcorporate 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 consideratioens in audit in EDP Environment, Relevent 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.

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		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)		
	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.

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		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

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	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 theInternal Examination. 2. Notification of date schedule and conduct of theInternal 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.

		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)

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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

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		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: Fundamental of Financial Management
	Practicals	1. Cost of capital and financing decisions with MS-EXCEL Software	1. B.Com. (H) -V	1. BCH 5.2 DSE: Financial Management

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	Assignment	1. Topics allotted for making the assignments. 2. Topics allotted for making the assignments.	1. B.Com.-V 2. B.Com. -V	1. BC 5.2 (a) DSE :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance
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 :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance 3. BC 5.2 (a) DSE: Fundamental of Financial Management
	Practical	1. Dividend decision with MS-EXCEL Software	1. B.Com. (H) -V	2. BCH 5.2 DSE: Financial Management
	Test	1. Test will be held for internal assessment purpose. 2. Test will be held for internal assessment purpose.	1. B.Com.-V 2. B.Com. -V	1. BC 5.2 (a) DSE :Fundamental of Financial Management 2. BC 5.3 (b) SEC: Personal Finance
NOVEMBER 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 :Fundamental 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 Management
	Practical Examination	1. Working capital management with MS-EXCEL Software	1. B.Com. (H) -V	1. BC 5.2(a) DSE: Financial Management

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SEMESTER WISE
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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 Commer
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

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	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

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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 , payrol B.com (P) semester III BC3.4(a)/Computer Application in Business **Tutorial** Case Study Discussion BCH 3.1/Human Resource Management			
	Assignment :	Unit 1&2 Unit 1&2	B.com(H) semester III (B) B.Com Semester V	BCH 3.1/Human Resource Management BC 5.3(a)/Entrepreneurship Development
November	**Theory:**	Employee Maintenance and Emerging Issues in HRM - Unit -5 Managerial aspects of business Unit-5	B.com(H) semester III (B) B.Com Semester V	BCH 3.1/Human Resource Management 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			
	Test	Unit 3&4 Unit 3&4	B.com(H) semester III (B) B.Com Semester V	BCH 3.1/Human Resource Management BC 5.3(a)/Entrepreneurship Development

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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=F9OzaQPlQvs, Marketing environment. Micro and Macro environmental factors - https://www.youtube.com/watch?v=4vcZWJ-AhLw Buland bharat ki buland tasweer https://theprint.in/features/brandma/liril-and-lalitaji-a-tale-of-two-ads-and-how-they-captured-indias-attention/177169/ Liril https://www.youtube.com/watch?v=IRkXL9rRbmk&feature=emb_rel_end Lalita Ji https://www.youtube.com/watch?v=ALxiXkHxqCc	B.Com V	BC 5.1(b) PRINCIPLES OF MARKETING
		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 H V	BCH 5.3(b)ORGANIZATIONAL BEHAVIOUR
	Tutorials	Case studies and doubts will be taken up		

AUG	**Theory**	Consumer Behavior: An overview, Consumer buying process https://www.bing.com/videos/search?q=consumere+behaviour+decision+process&&view=detail&mid=F26E2085A4F8738F2086F26E2085A4F8738F2086&&FORM=VRDGAR https://www.bing.com/videos/search?q=types+of+buying+decision+behaviour&&view=detail&mid=9F2C913B3F77EEB6E4299F2C913B3F77EEB6E429&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dtypes%2Bof%2Bbuying%2Bdecision%2Bbehaviour%26FORM%3DHDRSC4, Factors influencing Consumer buying decisions https://www.youtube.com/watch?v=ppPzROPWyKU Market Selection: Market Segmentation-concept, importance and bases https://www.youtube.com/watch?v=15zHUfSjLG4. Target market selection, Positioning concept, importance and bases, Product differentiation v market segmentation	B.Com V	BC 5.1(b) PRINCIPLES OF MARKETING
		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**	B.Com H V	BCH 5.3 (b)ORGANIZATIONAL BEHAVIOUR
		Database, Relational Data Base Management	B.Com III	BC 3.4(a) Computer Applications in Business
	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		

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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.	B.Com V	BC 5.1(b) PRINCIPLES OF MARKETING
		Communication and Feedback, Models of Communication. Transactional Analysis https://youtu.be/NfIuXG8AN9Y, 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.	B.Com H V	BCH 5.3 (b)ORGANIZATIONAL BEHAVIOUR
		MS Word	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		

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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		
	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		
NOV	**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.

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

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SEMESTER WISE TEACHING PLAN
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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
	Assignment :	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
	Test	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

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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
	Assignment	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
October	**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

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Sri Venkateswara College
(University of Delhi)

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 :

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				Business Statistics
September	**Theory**	**Business Statistics** 1) Theory of probability, approaches to calculate probability 2) Calculation of event probabilities. Addition & multiplication laws of probability. 3) Condtional 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

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November	**Theory**	**Business Statistics** **a)** Components of time series. Additive & multiplicative models **b)** 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. **c)** 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- **a)** Income from other sources (Including all latest amendments & provisions of Gifts & Black Money) **b)** Income from Agricultural Income **c)** 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

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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 Job Analysis and Role Description, Corporate Objectives & Human Resource Planning	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	Introduction to ITR Introduction, Agricultural income, Exempted income, Residential Status	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
September	**Theory**	Computation of Income under different heads- HP & Salary Recruitment & Selection, Induction	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 questions) Computation of Income under different heads- HP & Salary	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
	Assignment	Introduction and Income under Salaries Concepts & Perspectives on HRM & HR Challenges in a dynamic business environment, Job Analysis and Role Description	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
October	**Theory**	Computation of Income under different heads- PGBP & Other Sources Performance Management, Employee health, safety, welfare and social security (excluding legal provisions)	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 (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 Sourcses, Set off and carry forward of loses, Clubbing of Income, Deductions, Tax liabiiity 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 Sourcses, Set off and carry forward of loses, Clubbing of Income, Deductions, Tax liabiiity 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 liabiiity of Individuals and Firms	B.COM – Sem 3	BC 3.2- Income tax law and Practice
	Tutorials/ Practical	ITR – 2 (Practice full questions) Tax liabiiity 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

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SEMESTER WISE TEACHING PLAN
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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.) 5th 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.) 5th 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.) 5th 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.) 5th Semester CBCS	Paper BCH 5.1 Principles of Marketing
	Tutorials	1. Promotion mix 2. Relationship, green, online and direct marketing.		

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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.		

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	<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 coverd 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		

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SEMESTER WISE TEACHING PLAN

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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. (Hons.) 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	B.A. (Hons.) Economics	227302 Intermediate Macroeconomics- I

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

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

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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 LEGISLATION, AND UNEMPLOYMENT IS GOING 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.		

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

Name of the Faculty: Aruna Rao **Department: Economics**
Semester: I

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
	Assignment :	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

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TEACHING PLAN
SRI VENKATESWARA COLLEGE
2021-22

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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):		
	Test 1 :	Utility, preferences, budget constraint, choice, demand, Slutsky equation		
November	Theory:	Technology, isoquants, production with one and more variable inputs, returns to scale.		
	Test 2:	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		

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Semester: I,
GE- Introductory Microeconomics

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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		
	Test 1 :	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.		
	Test 2:	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		

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Semester III

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.		

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	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 plots, bar plots, box		
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 plots, bar plots, box		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2021-22

Name of the Faculty: Amit Kumar Jha

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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		
	<u>Test 1:</u>	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		

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

Name of the Faculty: Aruna Rao **Department: Economics**
Semester: I

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

	Assignment :	Unit 1&2	BA(P) Sem 1 1	62271101 Principles of Microeconomics

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

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

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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

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	Practicals:			
	Tutorials:	Discussion of Keynes and Great Depression, recession in the current world economy . Numericals on the thiree 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. Assignement on 1. Introduction & Overview 2. Elementary Probability Theory		
SEPTEMBER	**Theory:**	1. Random Variables & Probability Distributions (Discreet & continuous Variables) 2. Random Sampling & Jointly Distributed random variables	B.A (H) Economics	12271303 / Statistical methods for Economics
	Practicals:			

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	Tutorials:	Assignment on : 1. Random Variables & Probability Distributions (Discreet & continuous Variables) 2. Random Sampling & Jointly Distributed random variables		

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	Test :	Internal Assessment 1 on Elementary Probability theory & Probability Distributions (Discreet Variables)		
OCTOBER	**Theory:**	1. Random Sampling & Jointly Distributed random variables 2. Sampling	B.A (H) Economics	12271303 / Statistical methods for Economics
	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		

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

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SEMESTER WISE
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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, 6th ed.		
AUGUST	**Theory**	Matrix approach, Stages in empirical econometric research, Regression Diagnostics-Multicollinearity, Heteroscedasticity, Autocorrealation. 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.		

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SEMESTER WISE TEACHING PLAN (2021-22)
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Name of the Faculty: ANKIT JOSHI **Department: ECONOMICS**

Semester: V (2021-22)

Month		Topics	Course	Paper Code/Name
July – August	**Theory**	Unit 1(a): Deterministic Cash Flow Streams David G Luenberger, Chapter 3 & 4 Brealy, Richard, Myers Chapter 2	B.A. (Hons.) Economics	Financial Economics
	Practicals			
	Tutorials	Suggested problem set of Chapter 2, 3 & 4		
SEPTEMBER	**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. (Hons.) 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. (Hons.) 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. (Hons.) Economics	Financial Economics

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	Practicals:			
	Tutorials:	Discussion of past years		

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SEMESTER WISE
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Name of the Faculty: KRISHNAKUMAR S **Department: ECONOMICS**

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.		

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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 MONEY: Concept, Functions,	B.A. (P)-III DSE Generic Elective III (Honours)	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 DSE Generic Elective III (Honours)	Money & Banking Money & Banking
September	Theory:	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
	TEST: Project Presentation	25th October 27th October to 3rd 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

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	Test Project Presentation	8th November 2021 9th to 13th November 2021	B.A. (P)-III Economics Generic Elective III	Money & Banking Money & Banking

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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.pd	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.pd 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

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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		

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

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

Month		Topics	Course	Paper Code/
November	**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	**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		

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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		

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	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		

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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		

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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		

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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		

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	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		

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SEMESTER WISE TEACHING PLAN (2021-22)
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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		

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	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		

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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 Development
	Tutorials	Discussion and introduction to online resources e.g. World Bank for developing and developed countries comparison.		
AUGUST	**Theory:**	**Development-Capabilities, Human development approach** Todaro and Smith, Ch 1, 2.Amitava Dutt Ch 1, A.Sen Ch 4.		
	Tutorials:	Discussion developing vs developed countries, notion of development		
SEPTEMBER	**Theory:**	**Development- Growth & Inequality, Human development & Sustainable development** Todaro & Smith-Ch 5, Amitava Dutt Ch6, Omkarnath-Ch5, D. Nayyar-Ch 2 & 3. P.Dasgupta-Ch7, Seeta K Prabhu-HDI		
	Tutorials:	Writing assignment, discussion. Internal Test-1		
OCTOBER	**Theory:**	**Development- Growth & Inequality, Human development & Sustainable development contd.** D. Nayyar-Ch 2 & 3. P.Dasgupta-Ch7, Seeta K Prabhu-HDI **Globalisation & Development** D. Rodrik-Ch 1 &7.		
	Tutorials :	Discussion of past papers. Revision		

NOVEMBER	**Theory**	**Globalisation & Development contd.** D. Nayyar in Ha Joon Chang(ed.) & E. Thun in J.Ravenhill(ed.)		
	Tutorials	Discussion on globalization. Revision. Internal Test-2		

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Name of the Faculty: **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	Generic Elective III (Honours)	Money & Banking
	Tutorials	1. Discussion of Chapter end questions and problems 2. Project Discussion		Money & Banking
September	Theory:	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

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	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
	TEST: Project Presentation	25th October 27th October to 3rd 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

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

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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	**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		

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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		

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	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- Understanding 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		

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	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		

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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/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

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	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		

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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		

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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		

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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.		

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September	**Theory:**	Trends and policies in poverty, inequality, employment, international comparisions discussed.		
	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.		

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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:			

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	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		

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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		

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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):		
	Test 1 :	Utility, preferences, budget constraint, choice, demand, Slutsky equation		
November	Theory:	Technology, isoquants, production with one and more variable inputs, returns to scale.		
	Test 2:	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		

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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:			

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	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:			

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

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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.pd 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

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October	Prices and Inflation Chapter 5 vol. 2 https://www.indiabudget.gov.in/economicsurvey/doc/vol2chapter/echap05_vol2.pd 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)

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Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Introduction to microprocessor, Different types, Difference between microprocessor and microcontroller, Introduction to 8085 microprocessors	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	Practical	Sem V: Microprovcessor & 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 Timer8253 & 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

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	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

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWAR A COLLEGE

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Dhaula Kuan, New Delhi-110021

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

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		Sem V:, Stability and causality, frequency domain representations and Fourier transform of DT sequences Z transform and its properties, Inverse Z transform	B. Sc. (H) Electronics	DSE- Digital Signal Processing (DSP)
SEPTEMBER	**Theory**	UNIT-2 Poisson's Equation and Laplace's Equation: Derivation of Poisson's and Laplace's equation,Uniqueness Theorem, Examples of Solution of Laplace's Equation: Cartesian, Cylindrical and Spherical Coordinates. Method of Images. Magnetostatics: Biot Savert's law and Applications, Magnetic dipole, Ampere's Circuital Law, Curl and Stoke's Theorem, Maxwell'sEquation, Magnetic Flux and Magnetic Flux Density, Scalar and Vector Magnetic Potentials,Magnetization in Materials and Permeability, Anisotropic materials, Magnetic Boundary Conditions, Inductors and Inductances, Magnetic Energy, Magnetic Circuits. Inductances and Inductors, Magnetic Energy, Forces and Torques.	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
	Practicals	4. Representation of the Gradient of a scalar field, Divergence and Curl of Vector Fields. 5 Plots of Electric field and Electric Potential due to charge distributions. 6. Plots of Magnetic Flux Density due to current carrying wire.	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
		Sem V: Fourier Transform, Discrete Fourier Transform and Fast Fourier Transform	B.Sc.(Hons) Electronics, Sem V	DSE - DSP Practicals
	<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
	Mid Term Test			
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

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SEMESTER WISE
TEACHING PLAN
SRI
VENKATESWARA COLLEGE
August-December, 2021

PRINCIPAL
Sri Venkateswara College
Dhaula Kuan, New Delhi-110021

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 Ax2 + Bx + C = 0 for non – zero coefficients A, B and C. Else report error. 9. Calculate the value of sin (x) and cos (x) using the series. Also print sin (x) and cos (x) value using library function. 10. Generate and print prime numbers up to an integer N. 11. Sort given N numbers in ascending order.		**CC VI**/ Digital Electronics and VHDL Lab **CCVII**/ C Programming and Data Structures

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		12. Find the sum & difference of two matrices of order MxN and PxQ.		
	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 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		**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. PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021		**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

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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 programing.	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

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DECEMBER	**Practicals**	**Sem I:** Program in python on strings. Programs in python on lists and dictionaries and introduction to object oriented programing.	B.Sc.(H) Electronics, Sem I	GE-1/ Data Science
		Sem III: Case studies and project	B.Sc.(H) Electronics, Sem III	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: Ax2 + Bx + C = 0 for non – zero coefficients A, B and C. Else report error. Calculate the value of sin (x) and cos (x) using the series. Also print sin (x) and cos (x) value using library function. Generate and print prime numbers up to an integer N. Sort given N numbers in ascending order. Find the sum & difference of two matrices of order MxN and PxQ.	B.Sc.(Hons) Electronics, Semester III	Core-Course-VII/ C-Programming and Data Structure Lab
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

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SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Academic Year 2021-2022(Odd Semester)

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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

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	Practicals:	**SEM V :** Program to implement Bisection Method , Secant Method and Regula falsi method. **SEM V:** Microprocessor & Microcontroller. Program for multibyte addition and subtraction, Program for block movement of data, Program for ascending and descending order **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 l **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-Jordon 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-Jordon, Iterative Methods: Gauss-Seidel Iteration, Jacobian Iteration. Matrix Eigenvalue: Power Method	Bsc (Hons) Electronics	**DSE-2** : Numerical Techniques

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	Practicals:	**SEM V :** Program to implement Gauss-Seidel Iteration **SEM V:**Microprocessor & Microcontroller. Program for addition & subtraction using PIC, Multiplication & division using PIC. Block movement of data. Interfacing Input & Output devices. **SEM 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:			
DECEMBER	**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

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

July-December 2021-22

PRINCIPAL
Sri Venkateswara College
Dhaula Kuan, New Delhi-110021

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

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		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

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

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Dhaula Kuan, New Delhi-110021

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 Ax2 + Bx + C = 0 for non – zero coefficients A, B and C. Else report error. 9. Calculate the value of sin (x) and cos (x) using the series. Also print sin (x) and cos (x) value using library function. 10. Generate and print prime numbers up to an integer N. 11. Sort given N numbers in ascending order. 12. Find the sum & difference of two matrices of order MxN and PxQ.	B.Sc.(Hons) Electronics, Sem III	CC-VII/ C Programming and Data Structures Lab

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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		

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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 B.Sc.(H) Electronics, Sem III	GE-1/ Data Science 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 B.Sc.(H) Electronics, Sem III	GE-1/ Data Science 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 B.Sc.(H) Electronics, Sem III	GE-1/ Data Science SEC/Data Science

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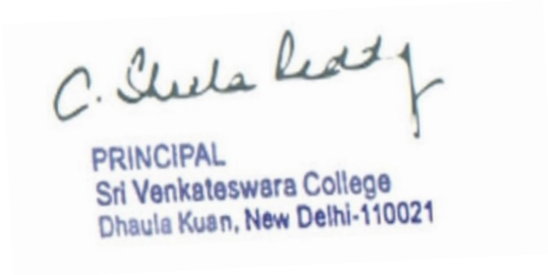
	Practicals	**Sem I:** Program in python on strings. Programs in python on lists and dictionaries and introduction to object oriented programing. **Sem III:** Case studies and project	B.Sc.(H) Electronics, Sem I B.Sc.(H) Electronics, Sem III	GE-1/ Data Science SEC/Data Science
	Tutorials:	NA		
JANUARY	**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



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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 *Kavya* and *Natyashastra.* Analysis of Sudrakas's Mricchatakita 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 IIIyr	British literature: The Earlly 20th Century (Paper 12)
		Introduction to Dharamvir Bharti's Andha Yug	B.A.(H) English IIIyr	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 Sons and Lovers. Leda and the Swan, No Second Troy, The Second Coming.	B.A.(H) English IIIyr	British literature: The Earlly 20th Century (Paper 12)

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		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 Earlly 20th Century (Paper 12)
		Act II	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
	December **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
		Readings 3 & 4 Readings 3 & 4	B.A.(P) Sem I B.A.(P) Sem III	English Discipline English Discipline

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	Assignment	Poems of W.B.Yeats & T.S.Eliot	B.A.(H) English IIIyr	British literature: The Earlly 20th 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 Earlly 20th Century (Paper 12)
		Act III	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
	January **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
	Mid Term Test	Poems of W.B.Yeats & T.S.Eliot	B.A.(H) English IIIyr	British literature: The Earlly 20th 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 Earlly 20th Century (Paper 12)
		Critical analysis of the play.	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)

	February **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
		Revision Revision	B.A.(P) Sem I B.A.(P) Sem III	English Discipline English Discipline
	March	Revision Revision Revision	B.A.(H) English I yr 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	Indian Classical Literature (Paper 1) AECC English Discipline

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

Department: English

SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

2021

Month		Topics	Cour
AUGUST	**Theory**	Introduction to: American Literature Toni Morrison - *Beloved* Women's Writing: Autobiography Alice Walker: *The Color Purple* 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 *Vindications*, Introduction to *Sangati*: reading caste, reading gender. Exploring race, gender, and background: *The Color Purple* 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	-

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

Practicals

-

-

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:			

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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		
	Assignment :	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:			

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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:			

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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		
	Assignment:	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:			

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

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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:			

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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 *Case studies*: 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:			

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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:			

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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 *Case studies*: 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		
	Assignment:	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:			

	Test	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:			

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SRI VENKATESWARA COLLEGE

WORK PLAN (August-November 2021)

PRINCIPAL
Sri Venkateswara College
Dhaula Kuan, New Delhi-110021

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

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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 :स्वरुप और विशेषता
OctoberOctober	9	हिंदी के प्रमुख रेखाचित्र और संस्मरण लेखक
	10	गद्य विधा के रूप में यात्रा वृतांत
	11	हिंदी के प्रमुख यात्रा वृतांत लेखक
	12	डायरी और रिपोर्ताज 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

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Course Name: B. A. (HONS) HINDI

Semester: III

Paper Code

Paper Name: हिंदी साहित्य का इतिहास (आधुनिक काल)

Faculty: डॉ.पुष्पलता भट्ट

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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 स्वरुप दलित, आदिवासी विमर्श
	28	अस्मिता विमर्श का स्वरुप 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

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		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

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Course Name: B. A. (HONSONS) HINDI

Semester: III

Paper Code

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

Faculty: डॉ.पूनम सूद

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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

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		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

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Course Name: B. A. (HONSONS) HINDI

Semester: III

Paper Code

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

Faculty: डॉ.रामकिशोर यादव

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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

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

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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. चन्द्रमोहन सिंह रावत

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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 –I1
	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 –I1
November	25	'दोपहर का भोजन' पाठ और विश्लेषण –I2
	26	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास
	27	ओमप्रकाश बाल्मीकि का साहित्यिक परिचय
	28	दलित कथा साहित्य और ओमप्रकाश बाल्मीकि
	29	'घुसपैठिए' कहानी पाठ विश्लेष्ण 1
	30	'घुसपैठिए' कहानी पाठ विश्लेष्ण 2
	31	'घुसपैठिए' कहानी पाठ और विश्लेषण 3
	32	परीक्षोपयोगी प्रश्नों पर चर्चा, अभ्यास
	सहायक पुस्तकें	
		कहानी: नयी कहानी नामवर सिंह

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		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

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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 'पूस की रात' पाठ और विश्लेषण 1
SEPTEMBER	9	'पूस की रात' पाठ और विश्लेषण 2
	10	'पूस 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 कहानियां
	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

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		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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SRI VENKATESWARA COLLEGE

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

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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,
		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. (Hons.) HINDI

Semester: III HSEC

Paper Code:

Paper Name: विज्ञापन और हिंदी भाषा

Faculty: डॉ. लता

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Month	Lectures	पाठ योजना (यूनिट 1)
AUGUST	1	विज्ञापन : स्वरूप एवं अवधारणा
	2	विज्ञापन की भारतीय अवधारण
	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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SRI VENKATESWARA COLLEGE

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

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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	टेलीविज़न माध्यम के लिए कॉपी लेखन-1
	12	टेलीविज़न माध्यम के लिए कॉपी लेखन-2
	13	टेलीविज़न 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

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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.13th to 15th 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: Brahmans and temples; scared spaces and conflicts; courtly cultures (c) Issue of 'Foreign and Indian' : Arabs and Ghaznavaids in the north-west, Cholas in Southeast Asia	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)

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		III. Foundation, expansion and consolidation of the Mughal state, c. 16th to 17th century: expansion and consolidation; Rajputs; Mansabdari and Jagirdari; imperial ideology: assessing Aurangzeb VII. Economy and integrated patterns of exchange: rural and urban linkages; maritime trade and non-agrarian production	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
	Tutorials:	Discussion with the tutorial groups on the topics already taken up in the lectures		
		Interaction and Queries / Discussion group for Hindi medium students		
OCTOBER	**Theory:**	III. Social and economic processes (a) Agricultural expansion; forest-dwellers, peasants and landlords (b) Expansion of *varna-jati* order and brahmanization (c) Forms of exchange; inter-regional and maritime trade (d) Processes of Urbanization	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)
		II. Regional political formations: Vijayanagara IV. 17th century transitions: Marathas; Sikhs	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
	Tutorials:	Discussion with regard to specific readings given for study		
	<u>Assignment:</u>	Critically analyse the major issues and arguments given by historians in the recent debates about characterising early medieval India.	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)
		1. Describe the relations between the sultan and the nobility in Sultanate period. 2. Critically analyze the evolution of Iqta system during the Delhi Sultanate. 3. Describe the role played by Sufism in the history of Delhi Sultanate. 4. Outline the evolution of Qutub Complex during the sultanate period.	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700

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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: *Chakki-Nama* and *Charkha-Nama*	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
	Tutorials:	Revision of the courses		
		Discussion on previous year's question papers		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
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		
August	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		
September	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**
	Assignment	QUESTION/ ANSWER SESSIONS.		
		Assignment	B.A(P) THIRD YEAR GE HISTORY	

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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		

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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 19th 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	
October	THEORY	Warlordism: May Fourth Movement Nationalism and Communism; 1921-1927,	B.A(HONS) THIRD YEAR HISTORY	DSE-1X HISTORY OF MODERN CHINA (1840-1950s)
	Tutorials:	QUESTION/ ANSWER SESSIONS		

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	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		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
July-November 2021

Name of the Faculty: RAJNI CHANDIWAL

Department: HISTORY

Semester: ODD Semester

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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.13th to 15th 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. 16th to 17th century: expansion and consolidation; Rajputs; Mansabdari and Jagirdari; imperial ideology: assessing Aurangzeb VII. Economy and integrated patterns of exchange: rural and urban linkages; commercial practices (usury and banking); maritime trade and non-agrarian production		
	Assignment. 1 AND 2	1.Will be Given on the themes taught in 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. 17th century transitions: Marathas; Sikhs, Indo-Persian architecture, forts, palaces, mosques: Delhi, V. Art and architecture in medieval India: Qutub complex, Vijayanagara (Hampi);Fatepur Sikri; Mughal miniature painting		
	Tutorial	Questions and Answers /Discussions		
	MID-TERM EXAM	Both Classes will have questions from 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		

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	THEORY 2	VI. Society, culture and religion : Bhakti – Kabir and Mira Bai; Sufism – Nizamuddin Auliya; Sufism in popular literature from the Deccan: *Chakki-Nama* and *Charkha-Nama*		
	Tutorial	Discussion/ Revision		

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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 20thth 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

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		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 20thth 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)

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	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 20thth 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		

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	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 20thth 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

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Name of the Faculty: Professor Vandana Joshi Department: History

Semester: V History of Modern Europe BA Honsand 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 20thth 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 20thth 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 20thth 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 18th century to AD 1914) [a] Process of capitalist development in industry and agriculture: case studies of Britain, France, the German States and Russia. [b] Evolution and differentiation of social classes: bourgeoisie, proletariat, landowning classes and peasantry.	BA HONS	Modern European History

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		[**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 20thth 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 19th and 20th Centuries: [a] The struggle for parliamentary democracy and civil liberties in Britain: popular movements –chartists and suffragettes [b] The making of democratic and constitutional rights	BA HONS	Modern European History
		: Germany and Second World War Japan and second World war (Saurabh)	BAP/DSE	Issues in 20thth century world history
	Practicals:			

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	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 20thth century world history
	Practicals:			
	Tutorials:	Presentations and assignments		
		Presentations and assignments		

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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)

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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 or order-preserving, order-embedding and order-isomorphisms.		
	Practical	N/A		
AUGUST	**Theory**	Sums of ordered sets, Product of ordered sets,Order-preservingmaps,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 exits or not. Find the limit, if it exists	B.Sc.(H) Mathematics III semester	BMATH 307 Multivariate Calculus

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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		
	Mid Term Test	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) Mathmatics 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		

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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		

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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		

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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		

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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		

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE
2021-22 Odd Semester

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

Month		Topics	Course	Paper Code/Name
July	**Theory:**	Metric spaces: definition and examples. Sequences in metric spaces.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related Metric spaces: definition and examples. Sequences in metric spaces.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
August	**Theory:**	Cauchy sequences, Complete Metric Spaces, Open and closed balls, neighbourhood, open set, interior of a set, Limit point of aset, closed set, diameter of a set, Cantor's Theorem.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	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−Raphsonmethod 3. Secant method 4. Regula−Falsi method	B.Sc(H) Maths Sem V	Numerical Analysis

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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.		
	Assignm-ents	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 **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 **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 orderRunge−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 discusslast 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 discusslast previous year questions papers.		
	Practicals:	Revision of Practical	B.Sc.(H) Maths Sem-V	Numerical Analysis

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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

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		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

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Department of Mathematics
Sri Venkateswara College

Odd Semester Teaching Plan (July-November 2021)

Faculty: Dr. Nisha Bohra

Month		Topics	Course	Paper Name and code
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

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	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

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	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

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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		

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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		

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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 1st 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		

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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 2nd 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 irs Applications.	B.SC.(Maths) Sem-III	BMATH305: Theory of Real Functions
	Assignment	Assignments to be given on each course		

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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		

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

PRINCIPAL
Sri Venkateswara College
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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+……+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	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 short 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

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SEMESTER (ODD) WISE TEACHING PLAN 2021-22

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shahna

Department: Mathematics

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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 parallelopiped and solid regions, Volume by triple integrals, Triple integration in cylindrical and spherical coordinates, Change of variables in double and triple integrals	B.Sc(H) Maths Sem-III B	BMATH307-Multivariate Calculus

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	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 exits or not. Find the limit, if it exists. 9. Draw the tangent plane to the given surfaces at the given point.	B.Sc(H) Maths Sem-III B	BMATH307-Multivariate Calculus
	Test	**To take** internal lab test of the above Practicals.		
	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.		

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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
AUGUEST	**Theory**	Introduction of group theory, symmetries of a square, Dihedral groups, definition and examples of groups. Examples of groups including permutation groups and quaternion groups (illustration through matrices), elementary properties of groups.	B.Sc(H) Maths Sem-III A	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

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Septembe r	**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
	Assignm ents	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-III A	C6- Group Theory-I
	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
OCTOBE R	**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

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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

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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

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September	**Theory**	Subgroups and examples of subgroups, centralizer, normalizer, center of a group, product of two subgroups. Properties of cyclic groups, classification of subgroups of cyclic groups. Cycle notation for permutations, properties of permutations, even and odd permutations, alternating group, properties of cosets, Lagrange's theorem and consequences including Fermat's Little theorem.	B.Sc(H) Maths Sem-III B	Group Theory-I
	Tutorial s	To discuss the doubt of students and various exercise questions and examples related to cycle notation for permutations, properties of permutations, even and odd permutations, alternating group, properties of cosets, Lagrange's theorem and consequences including Fermat's Little theorem.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Theory	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

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OCTOBER	**Theory**	External direct product of a finite number of groups, normal subgroups, factor groups.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Tutorial s	To discuss the doubt of students and various exercise questions and examples related External direct product of a finite number of groups, normal subgroups, factor groups,.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Theory	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

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November	**Theory**	Cauchy's theorem for finite abelian groups and group homomorphisms, Cayley's theorem, properties of isomorphism, First, Second and Third isomorphism theorems .	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to Properties of homomorphisms, Cayley's theorem, properties of isomorphisms, First, Second and Third isomorphism theorems.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	Theory	Index theorem, Embedding theorem and applications, 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

PRINCIPAL
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Dhaula Kuan, New Delhi-110021

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**

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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**

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	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**

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SEMESTER WISE TEACHING PLAN- 2021-22

SRI VENKATESWARA COLLEGE

PRINCIPAL
Sri Venkateswara College
Dhaula Kuan, New Delhi-110021

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

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SEMESTER (ODD) WISE TEACHING PLAN 2021-22

SRI VENKATESWARA COLLEGE

Name of the Faculty: Aanchal

Department: Mathematics

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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

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	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		

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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

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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 exits 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

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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 Practicals.		
	Theory	Groups acting on themselves by left multiplication and consequences, conjugacy in Sn, 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

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	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

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

PRINCIPAL
Sri Venkateswara College
Dhaula Kuan, New Delhi-110021

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 Interploation, (10) Newton Interpolation	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis
	Tutorials:			
	Assignment	Assignment to be given related to syllabus.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Analysis

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

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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 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

August	Theory	De Morgans theorm , 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 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

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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. Serila in serial out , serial in parallel out , parallel in serial out anf parallel in paralle out shift register, ring counter, asynchronour counter, decade counter, synchronour counter. Block diagram of CRO, electron gun, deflection systm,time base deflection, sensitivity, application of CRO: styudy 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

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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 AND 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 AND 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 AND 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

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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

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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

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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

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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 (Jo(x) and J1(x)) and Orthogonality.	B.Sc. Physics(H), Sem.-III	PHYSICS-C V: MATHEMATICAL PHYSICS-II

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	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)

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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)

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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

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	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-2021	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 Sellmeir relations. Langevin-Debye equation. Complex Dielectric	B.Sc. (Hons) Physics Sem- V	PHYSICS-C XII: SOLID STATE PHYSICS

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	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

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

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	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

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	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

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	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

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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 Ñ. 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 SRI VENKATESWARA COLLEGE

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

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		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

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	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'sExperiment 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

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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

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		1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde'sExperiment and to verify λ2 – T Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating 13. To determine the Resolving Power of a Plane Diffraction Grating.	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

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	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'sExperiment 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
	<u>Mid Term Test</u>	Topic covered till 15 October 2018	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
NOVEMBER	**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

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 λ^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

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SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA
COLLEGE

August- December, 2021

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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
	Pracicals :	1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify λ2 – T Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating 13. To determine the Resolving Power	B.Sc. (H) GE: Sem III	32225310/ Waves and Optics: GE-LAB

	Pracicals :	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	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

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	Practicals:	1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify λ^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
	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	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/ Practicals:**	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

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	1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify λ2 – T Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating 13. To determine the Resolving Power of a Plane Diffraction Grating.To	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)

	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	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

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Practicals:	1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify λ2 – T Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating 13. To determine the Resolving Power	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

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Dhaula Kuan, New Delhi-110021

SRI VENKATESWARA COLLEGE

SEMESTER WISE TEACHING PLAN

July-November, 2021-22

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

Semester: III/V (Odd Semester)

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)

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	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)

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	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)

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	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)

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	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			

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SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

August-December 2021

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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

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	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 Cp-Cv, (3) Tds Equations, (4) Energy equations. Kinetic Theory of Gases: Distribution of Velocities: Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas and its Experimental Verification. Mean, RMS and Most Probable Speeds. Degrees of Freedom. 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

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	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

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SEMESTER WISE TEACHING PLAN

July-November, 2021-22

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

Semester: I/ III/V (Odd Semester)

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)

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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)

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	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-Hamiliton Theorem (Statement only). Finding inverse of a matrix using Cayley-Hamiltion Theorem. Use of Matrices in Solving ordinary second order differential equations and Coupled Linear Ordinary Differential Equations of first order. Functions of a		DSE: Advanced Mathematical Physics - I (32227502)
	Theory	Stellar Spectra,Atomic Spectra Revisited, Introduction to Boltzman 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)

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	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 ingradient. 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)

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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 Type1a), 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)

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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

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	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

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	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

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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

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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 (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 nationalsm' 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

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		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 nationalsm' in Reading and Reappraising Gandhi • M K Gandhi " Hind Swaraj"	B.A.(P) GE-Political Science, Sem V	Understanding Gandhi

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		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

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		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 Politis 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 III	Legislative Practices and Procedures

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	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 nationalsm' 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 PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021		

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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:	

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

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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			

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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:			

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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:			

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	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:			

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	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

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Month		Topics	Course	Paper Code/Name
JULY	**Theory**	1 Traditions of Pre-colonial Indian PoliticalThought 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		

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

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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

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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 Plato's Philosophy- Theory of Forms, Justice, Philosopher King/ Queen, Communism Plato's Later Political Thought	B.A (Hons) Vth Semester	Paper XI-Classical Political

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	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		

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

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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	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading
		Commentaries on Hind Swaraj and Gandhian thought by A.J.Parel, B.Parekh, and D.Hardiman		
	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)***

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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		

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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		

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	<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		

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OCTOBER	**Theory:**	Origin of Feminist in the West: Women in French Revolution, Suffrage Movement in Britain and West, Feminism in Scoalist 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		

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NOVEMBER	**Theory:**	Tradtional 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		

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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) 3rd 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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	Assignment :			
SEPTEMBER	**Theory:**	Classical Realism & Neo-Realism, Liberalism & Neoliberalism Marxist Approaches- Dependency and World System Approach		
	Practicals:			
	Tutorials:			
	Test	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 Eurocentricism and Perspectives from the Global South		

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

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NOVEMBER	**Theory:**	Tradtional 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

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Month		Topics	Course	Paper Code/Name
JULY	**Theory**	What is Global Vs International Key Concepts of International Relations	B.A (H) 3rd 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:			

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	Assignment :			
SEPTEMBER	**Theory:**	Rise of Fascism & Nazism and its Impact World War-II, Origin, Impact and Role in the Contemporary Era		
	Tutorials:			
	Assignment	Where do you find the WW-1 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		

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NOVEMBER	**Theory:**	Tradtional 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		

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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 Unit-2: Industrial Development in India	BA (P) Political Science 3rd Semester-MIL Course BA (H) Political Science 5th Semester	1.Administrative and Public Policy 2. Development Process and Social Movement in Contemporary India-(12327903)
	Practicals			
	Tutorials			
August	**Theory:**	Unit-2: Decentralization Unit-2: Industrial Development Strategy	BA (P) Political Science 3rd Semester-MIL Course BA (H) Political Science 5th Semester	1.Administrative and Public Policy 2. Development Process and Social Movement in Contemporary India (12327903)
	Practicals:			

Tutorials:			

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	Assignment :			
September	**Theory:**		BA (P) Political Science 3rd Semester-MIL Course BA (H) Political Science 5th Semester	1.Administrative and Public Policy 2. Development Process and Social Movement in Contemporary India-(12327903)
	Practicals:			
	Tutorials:			
	Test			
October	**Theory:**		BA (P) Political Science 3rd Semester-MIL Course BA (H) Political Science 5th Semester BA (H) Political Science 1th Semester BA (prog.) Political Science 1th 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 3rd Semester- MIL Course BA (H) Political Science 5th Semester BA (H) Political Science 1th Semester BA (prog.) Political Science 1th 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:			

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

Name of the Faculty: Dr JITA MISHRA **Department: Political Science**

Semester : V INDIA'S FOREIFN 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 administation		

	Assignment :	Discuss India and Russia relations in the 1990's		
MARCH	**Theory:**	India china relations		
	Practicals:			
	Tutorials:	Border dispute		
	Test	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		

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

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

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

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

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SRI VENKATESWARA COLLEGE

DEPARTMENT OF SOCIOLOGY

FACULTY TEACHING PLANS

(July to December 2021)

PRINCIPAL
Sri Venkateswara College
Dhaula Kuan, New Delhi-110021

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

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	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

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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
	Assignment	Critically examine the theory of post-industrial society.	B.A. (H) Sociology DSE 04	Sociology of Work

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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

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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 II1	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Historical Materialism	B.A.(P) Sociology Core Course II1	Sociological Theories
OCTOBER	**Theory**	1. Historical Materialism	B.A.(P) Sociology Core Course 1II	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Rules of Sociological method and critiques to it	B.A.(P) Sociology Core Course 1II	Sociological Theories

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	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

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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.Budhism 2. Communalism 3.Secularism	B.A. (H) Sociology DSE 01	Religion and Society
	Practical	NA	NA	NA

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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

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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

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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)

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

SEPTEMBER	**Theory**	Max Weber-Methodology - Protestant Ethics and Capitalism	Same	Same
	Practical	NA	NA	NA
	Tutorial	-Social Action and Ideal Types.	Same	Same
	Assignment	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
	Mid-Semester Examination	_ Max Weber and Emile Dirkheim _____	Same	Same

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

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

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: I (July-December, 2021)

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

	Practical	NA	NA	NA
	Tutorial	features and critique of caste; agrarian structure	Core Course-02	Sociology of India I
	Assignment (10 Marks)	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
	Mid-Semester Examination (10 Marks)	Topics: agrarian classes, caste, kinship, village	Core Course-02	Sociology of India I
NOVEMBER	**Theory**	Industry and labor; religion and society in India	Core Course-02	Sociology of India I
	Practical	NA	NA	NA
	Tutorial	Mapping the industrial working class; religious practices of Hindus, Sikhs and Muslims	Core Course-02	Sociology of India I

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

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: III (July-December, 2021)

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Dhaula Kuan, New Delhi-110021

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
	Assignment	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
	Mid-Semester Examination	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

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

Name of the Faculty: Padma Priyadarshini

Department: Sociology

Semester: V (August -December, 2020)

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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

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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	

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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

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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

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	Practical	NA	NA	NA
	Tutorial	-Identifying the basic principles underlying Chicago School and the human ecological approach -recognize the theoretical distinctions between the different perspectives Discussions centering writing the term assignment	B. A. (H) DSE	Urban Sociology
	<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

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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

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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

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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

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Name of the Faculty: Antasa Vairagya **Department: Sociology**

Semester: III BA(Hons)

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

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

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

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Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: III BA (Hons)

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

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

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

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(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

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

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

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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

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SEPTEMBER	**Theory**	Reflexivity Film Making as an ethnographic research	SEC 03	Society through the Visual
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
	<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>**			

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

NOVEMBER	**Theory**			
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA

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(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.		

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	Assignment :	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:			
	Test	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.		

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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?		

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(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:			

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	Assignment :	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?		
	Test	Describe the different kinds rites and rituals Durkheim elaborated on in his text, 'The Elementary Forms of Religious Life'		
NOVEMBER	**Theory:**	Elements of Religion Body Hertz (1909) Time Evans Pritchard (1940)	Core Course 06	Sociology of Religion
	Practicals:			
	Tutorials:	how does body symbolize religious ideals?		

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

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Odd Semester Papers

Teachers Name	Paper Name
Dr. Veena Budhraja	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

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

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

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

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

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

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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

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

Semester I

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

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

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

Name of the Faculty: Akash Varshney

Department: Statistics

Semester: I/III/V

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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
		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
	Practicals:	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

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	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. 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
	Assignment	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
		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
OCTOBER	**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

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		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-eights 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
NOVEMBER	**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
		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

		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
December	**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

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

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

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

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

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		Special cases of L.P.P. Concept of Duality in L.P.P.	B.Sc. (H) Statistics	STAT-DSE-2(A): Operations Research
		Completely randomized design (CRD)	Generic Elective	STAT-GE-3: Basics of Statistical Inference
	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

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Teaching Plan 2021-22

Name of the Faculty: Dr. Alok Kumar Singh

Department: Statistics

Semester: V

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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**

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

Name of the Faculty: Dr. Ramesh Kumar

Department: Statistics

Semester: III, V

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Month		Topics	Course	Paper Code/Name
JULY	**Theory:**	Introduction: Objective behind building econometric models, 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.	**Bachelor of Statistics (Hons.)**	STAT-C-301: Sampling Distributions GE-3: Basics of Statistical Inference
		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		
	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

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		approaches. Exact sampling distribution: Definition and derivation of pdf of $\chi 2$ with n degrees of freedom (d.f.) using mgf, nature of pdf curve for different degrees of freedom, mean, variance, mgf, cumulant generating function, mode, additive property and limiting form of $\chi 2$ distribution. Tests of significance and confidence intervals based on distribution		
		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.,		STAT-C-301: Sampling Distributions
		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).		GE-3: Basics of Statistical Inference
	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 Fdistribution: Derivation of pdf, nature of pdf nature of pdf curve with different degrees of freedom, mean, variance and mode. Distribution of 1/F(n1,n2). Relationship between t, F and $\chi 2$ distributions. Test of significance and confidence Intervals based on t and F 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

Department of Statistics

	Mid Term Test	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	**Bachelor of Statistics (Hons.)**	STAT-C-301: Sampling Distributions
		Categorical data: test of association and goodness-of-fit using Chisquare Test, Yates' correction		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

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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	--	--	--

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Second Year Semester III

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

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Third Year Semester V

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

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

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Dr Chetan
ssistant Professor (Statistics)

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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

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	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

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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	--	--	--
	Mid Term Test-Assignment	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	--	--	--
	Mid Term Test-Assignment	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 Practicals	B.Sc. (Hons) Statistics	STAT-DSE – 1 (A): Time Series Analysis

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	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

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

ODD SEMESTER 2021-22

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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, Smester V	STAT-DSE-2(A): Operation Research
		Present official statistical system in India, Methods of collection of official statistics	B.Sc. (H) Statistics, Smester 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, Smester V	STAT-DSE-2(A): Operation Research
		Practical based on Sampling distributions: sample mean, sample proportions	B.Sc. (H) Statistics, Smester 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, Smester V	STAT-DSE-2(A): Operation Research
		Methods reliability and limitations. Role of Ministry of Statistics & Program Implementation (MoSPI)	B.Sc. (H) Statistics, Smester 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, Smester 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, Smester 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, Smester V	STAT-DSE-2(A): Operation Research
		Central Statistical Office (CSO), National Sample Survey Office (NSSO	B.Sc. (H) Statistics, Smester III	STAT-C-302: Survey Sampling and Indian Official Statistics
		Differential Calculus: Limits of function, continuous functions	B.Sc. (H) Statistics, Smester 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, Smester 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, Smester III	STAT-C-301: Sampling Distributions
		1. Presentation of data in:a) Discrete & Continuous frequency tableb) Cumulative frequency table2. Graphical representation of dataa)Frequency curve, frequency polygon and histogramb) Ogives	B.Sc. (H) Statistics, Smester 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, Smester 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, Smester III	STAT-C-302: Survey Sampling and Indian Official Statistics
		properties of continuous functions, partial differentiation and total differentiation.	B.Sc. (H) Statistics, Smester I	STAT-C-102: CALCULUS
	Practical	7. Problems based on game matrix: a) Graphical solution to mx2 / 2xn rectangular game b) Mixed strategy 8. To find optimal inventory policy for EOQ models and its variations. 9. To solve all-units quantity discounts model.	B.Sc. (H) Statistics, Smester V	STAT-DSE-2(A): Operation Research
		Practical based on different types of convergence and Central Limit Theorem (CLT)	B.Sc. (H) Statistics, Smester 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, Smester I	STAT-C-101: Descriptive Statistics

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December	**Theory**	Quantity Discount Model with price breaks.	B.Sc. (H) Statistics, Smester V	STAT-DSE-2(A): Operation Research
		Project work related to Indian official statistics.	B.Sc. (H) Statistics, Smester 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, Smester 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, Smester I	STAT-C-101: Descriptive Statistics

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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	History of Indian Language (Tamil) Phonological and Morphological Changes	B.A Prog Tamil Language	62081104
	Theory	Oral Traditions : Folk Tales, Songs and Myth Folk songs and Myth	B.A Prog Tamil Discipline	62081108
	Theory	MIL Communications (Tamil) Group Discussion and Conversation	B.A Prog Tamil AECC	72082807

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

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

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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	History of Ancient Tamil Lierature Three Sangams	B.A Prog Tamil Language	62081325
	Theory	Cultural Behavior of the Tamils Cultural Behavior	B.A Prog Tamil Discipline	62081327
August	Theory	History of Ancient Tamil Lierature Ettut-Thokai and Pathuppaattu	B.A Prog Tamil Language	62081325
	Theory	Cultural Behavior of the Tamils Customs and Social aspects of Tamils	B.A Prog Tamil Discipline	62081327
September	Theory Assignment	History of Ancient Tamil Lierature Ettut-Thokai and Pathuppaattu Sangam Literature	B.A Prog Tamil Language	62081325
	Theory Assignment	Cultural Behavior of the Tamils Customs and Social aspects of Tamils Festivals of the Tamils	B.A Prog Tamil Discipline	62081327

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

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

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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	History of Indian Language (Tamil) Dravidian Languages and Tamil	B.A Prog Tamil Language	62081104
	Theory	Oral Traditions : Folk Tales, Songs and Myth Definition and Types of Folk Tales	B.A Prog Tamil Discipline	62081108
	Theory	MIL Communications (Tamil) History and Types of Public Speech	B.A Prog Tamil AECC	72082807

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

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

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

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

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

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

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

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

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

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

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

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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		

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

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

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

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Dhaula Kuan, New Delhi-110021

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	**Unit 1** MODERN POETRY *1.Kanyaka* – Gurajada	**III B.A (PROGRAM) /TELUGU/ Discipline course**	**Modern Telugu Poetry and Drama**
	Practicals	----------		
	Tutorials	ONE		
AUGUST	**Theory:**	**Unit 1** MODERN POETRY *1.Kanyaka* – Gurajada *3.Anugjna* –Pingali & Katuri		
	Practicals:	————————		
	Tutorials:	FOUR		

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

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

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SEMESTER WISE TEACHING PLAN (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:** *Balanoglossus, Herdmania, Branchiostoma*, Colonial Urochordata, - Sections of Balanoglossus through proboscis and branchiogenital regions, - Sections of Amphioxus through pharyngeal, intestinal and caudal regions. - Permanent slide of Herdmania spicules - 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, Tetrodon/ 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

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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:** *Sorex*, Bat (Insectivorous and Frugivorous), *Funambulus, Loris, Herpestes, Erinaceous*. *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:			

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

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Name of the Faculty: Dr. Amarjeet Singh **Department:** Zoology

Semester: Odd (I/III/V)

Month		Topics	Course	Paper Code/Name
JULY	**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: *Agrobacterium* 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 Km and Vmax, 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

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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

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Month		Topics	Course	Paper Code/Name
July	Theory	**Animal Biotechnology** Cloning vectors: plasmids, cosmids, phagemids, phage lambda	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Mendel's laws of inheritance	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Demonstration of lymphoid organs.	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical -Preparation of Liquid culture medium (LB) and raise culture of *E.coli.* -Genomic DNA isolation from *E.coli*	B.Sc. (P) Life Sciences Semester V (Batch II)	**DSE-1/Animal Biotechnology**
August	Theory	**Animal Biotechnology** Cloning vectors: M13, BAC, YAC, MAC and expression vectors.	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Exception to Mendel's law, Co-dominance,Incomplete dominance	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Histological study of spleen,	B.Sc. (Hons.) Zoology Sem	**ZH DSE Course-VIII/**

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		thymus and lymph nodes through slides/ photographs Preparation of stained blood film to study various types of blood cells. Repetition of these experiments	V TZH	**Immunology**
		Animal Biotechnology - Plasmid DNA isolation from *E.coli* -Agarose gel electrophoresis -Restriction digestion of Lambda DNA with EcoRI and HindIII (Demonstration) -Construction of Linear restriction map from the data provided.	B.Sc. (P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
September	Theory	**Animal Biotechnology** Restriction enzymes, nomenclature, type II. Construction of genomic and cDNA library. Screening by colony and plaque hybridization.	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Multiple alleles, lethal alleles, sex lethals	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Ouchterlony's double immuno-diffusion method. ABO blood group determination. Cell counting and viability test from spleenocytes of farm bred animals/cell lines. Repetition of these practicals	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology- DSE - Construction of circular restriction map from the data provided To study following techniques through photographs: -PCR	B.Sc. (P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**

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		-DNA sequencing (Sanger's Method) -Western blotting		
October	Theory	**Animal Biotechnology** DNA modification enzymes, Sequencing techniques, PCR, DNA Microarray **(Internal Assessment – Test and Assignment)**	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Genetic interactions, Epistasis, Pleiotropy **(Internal Assessment – Test and Assignment)**	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Demonstration of: (a) ELISA (b) Immunoelectrophoresis Repetition of Practical from July-September	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology To study following techniques through photographs: -Southern blotting -DNA fingerprinting and case studies (Photographs only to study crime, or paternity cases)	B.Sc.(P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
November	Theory	**Animal Biotechnology** Southern, Northern, Western Blotting, Transformation techniques	B.Sc. (P) Life Sciences Semester V	**DSE-1/Animal Biotechnology**
		Principles of Genetics Extrachromosomal Inheritance	B. Sc Zoology Sem V	**CC-XII/Principles of Genetics**
	Practicals	**Immunology** Detection of complement activity using haemolysis of antibody coated SRBC and standard serum Repetition of these practicals Repetition of all practicals, and finalization of continuous assessment.	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**

		Conduct of Mock examination.		
		Animal Biotechnology Evaluation of Practical File and Practice and repetition of practical; Conduct of mock practical examination	B.Sc.(P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**

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SEMESTER WISE TEACHING PLAN (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

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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

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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 *lac* operon and *trp* operon; Overview of transcription regulation in eukaryotes: Activators, repressors, enhancers,	B.Sc. (Hons.) Zoology Sem V TZH	CCXI
		Cell Biology Unit V: Signal transduction mechanism: intracellular signal transduction pathways,	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6
	Practicals	• **GROWTH AND REPRODUCTION** • Study of whole mounts of frog - early developmental stages	**B.Sc. (H) Biological Science Zoology Sem V**	BS-C11

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		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

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		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 chinensisand 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

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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

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		5. Study of ultastructure of cell (Plasma membrane, Nucleus, Nuclear Pore Complex, • Chloroplast, Mitochondrion, Golgi bodies, Lysosomes)	B.Sc (Hons.) Biological Science SBS Sem III	BS C-6
Mid Term Test	**GROWTH AND REPRODUCTION** • Written test on topic covered before the mid semester break IMMUNOLOGY • Written test on topic covered before the mid semester break	**B.Sc. (H) Biological Science Zoology Sem V** • **TBS**	BS-C11	BS-C11
		B.Sc. (Hons.) Zoology Sem V • TZH	DSE-9	**ZH GE-VI**
	• MOLECULAR BIOLOGY • 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

		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
December		Revision exercises and practical test Revision exercises and test	GE III And SBH	Food, Nutrition and Health BS C-6

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

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Dhaula Kuan, New Delhi-110021

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 **Experiment 1 (b):** Preparation of hemochromogen crystals	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 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) **Unit 9: Protein metabolism** Structure, classification and properties of amino acids	B. Sc. (P) Life Sciences, Semester III	**CC III/ Physiology and Biochemistry**
		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**

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		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)	B. Sc. (P) Life Sciences, Semester III	**CC III/ Physiology and Biochemistry**
		Unit IV: Endomembrane system and peroxisomes Structure and function of peroxisomes **Unit V: Signal transduction mechanism** Signaling molecules and their receptors, functions	B.Sc. (H) Biological Sciences, Semester III	**BS C-6/ Cell Biology**
	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 **Revision**	B.Sc. (H) Biological Sciences, Semester III	**BS C-6/ Cell Biology**
	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**
December	**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**

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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)

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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 3rd year Sem V	CC XI/ Molecular Biology
		Introduction to Biotechnology	B.Sc. Life Sciences 3rd 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 3rd year Sem V	CC-XII/Principles of Genetics
		1. Study of Polytene chromosomes from Chironomous/ Drosophila larvae.	B.Sc. (H) Zoology 3rd 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 3rd 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 3rd 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 *Drosophila* crosses. Revision Exercise No. 5: Linkage maps based on data from conjugation, transformation and transduction.	B. Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		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 3rd 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

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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 3rd year Sem V	CC XI /Molecular Biology
		Unit4: Recombinant DNA in medicines: Recombinant insulin and human growth hormone, Gene therapy.	B.Sc. Life Sciences 3rd 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 *Drosophila* crosses. Revision Exercise No. 5: Linkage maps based on data from conjugation, transformation and transduction.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		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/absence of lactose and/or glucose by using simulations.	B.Sc. (H) Zoology 3rd 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 (Sitophilus oryzae, Trogoderma granarium, Callosobruchus chinensisand 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
	<u>Assignment</u>	Based on last years question papers	B.Sc. (H) Zoology 3rd year Sem V	CC XI/ Molecular Biology
		Assignment on applications of Biotechnology	B.Sc. Life Sciences 3rd 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 3rd year Sem V	CC XI/ Molecular Biology
		Unit4: Meta-genomics: an introduction	B.Sc. Life Sciences 3rd year Sem V	DSE 3/Animal Biotechnology
	Practicals:	Exercise 4: Use of probability in solving problems in genetics.	B.Sc. (H) Zoology 3rd 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 3rd 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		
	Mid Term Test Theory:	Test questions in DU exam pattern of covered topics	B.Sc. (H) Zoology 3rd year Sem V	CC XI/ Molecular Biology
		Test questions in DU exam pattern of covered topics	B.Sc. Life Sciences 3rd 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 3rd year Sem V	CC XI/ Molecular Biology
		Discussion of Mid-term Test paper and previous year question papers, Parental care in Amphibians Discussion of assignment and previous year question papers	B.Sc. Life Sciences 3rd year Sem V	DSE 3/Animal Biotechnology
	Practicals:	Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3rd year Sem V	CC XI/ Molecular Biology
		Revision exercises and test	GE III	Food, Nutrition and Health

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SEMESTER WISE TEACHING PLAN (2021-22)

SRI VENKATESWARA COLLEGE

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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 *Sphenodon*; 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

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SEPTEMBER	**Theory:**	**Unit 8: Aves** General characteristics and classification up to order; *Archaeopteryx*- a connecting link; Flight adaptations and migration in birds	B.Sc. (H) Zoology Semester III	Diversity of Chordata CC V
		Unit 2: Medical Diagnostics of Body Fluids Blood composition, Blood bank, Transfusion of blood, RBC, WBC and platelet count using haemocytometer, Erythrocyte Sedimentary Rate (E.S.R), Packed Cell Volume (P.C.V.), Analysis of urine, sputum, faeces and semen(sperm count)	B.Sc (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, Tubeculosis 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

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		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
NOVEMBER		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 2nd 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

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Theory:
B.Sc. (H) Zoology Semester V (**ZH DSE Course-VIII/ Immunology)**
Practical:
B.Sc. (P) Life Sciences Semester V **(DSE I- Animal Biotechnology) Batch I and Batch II**
B.Sc. (H) Zoology Semester V (**ZH DSE Course-VIII/ Immunology)**
B.Sc. (H) Zoology Semester III (**CC VII- Fundamentals of Biochemistry**)

Month		Topics	Course	Paper Code/Name
July	**Theory**	**Immunology** 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 *E.coli.* -Genomic DNA isolation from *E.coli*	B.Sc. (P) Life Sciences Semester V (Batch II)	**DSE-1/Animal Biotechnology**
		Fundamentals of biochemistry Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical. -Paper chromatography of amino acids -Qualitative tests of functional groups in carbohydrates	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of biochemistry**
August	**Theory**	**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**

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	Practicals	**Immunology** Histological study of spleen, thymus and lymph nodes through slides/ photographs Preparation of stained blood film to study various types of blood cells. Repetition of these experiments	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology - Plasmid DNA isolation from *E.coli* -Agarose gel electrophoresis -Restriction digestion of Lambda DNA with EcoRI and HindIII (Demonstration) -Construction of Linear restriction map from the data provided.	B.Sc. (P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
		Fundamentals of biochemistry Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical. -Paper chromatography of amino acids -Qualitative tests of functional groups in carbohydrates	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of biochemistry**
September	**Theory**	**Immunology** Unit 3: Antigen Antigenicity and immunogenicity, Immunogens, Adjuvants and haptens, Factors influencing immunogenicity, B and T-Cell epitopes	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
	Practicals	**Immunology** Ouchterlony's double immuno-diffusion method. ABO blood group determination. Cell counting and viability test from spleenocytes of farm bred animals/cell lines. Repetition of these practicals	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology- DSE - Construction of circular restriction map from the data provided To study following techniques through photographs: -PCR -DNA sequencing (Sanger's Method) -Western blotting	B.Sc. (P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
		Fundamentals of Biochemistry Qualitative tests of functional groups in proteins Action of salivary amylase under optimum conditions Effect of pH on the action of salivary amylase. Effect of temperature on the action of salivary amylase To understand the preparation and roles of two important biological buffer systems; phosphate and bicarbonate; Preparation of buffer and determination of pH	B.Sc. (Hons.) Zoology Sem III	**CC VII/ Fundamentals of Biochemistry**

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October	**Theory**	**Immunology** **Unit4: Immunoglobulins** Structure and functions of different classes of immunoglobulins, Antigenic determinants on Immunoglobulins, Antigen-antibody interactions (Precipitation reactions, Agglutination reactions, Immunofluorescence and ELISA), Polyclonal sera, Hybridoma technology: Monoclonal antibodies in therapeutics and diagnosis **Unit 5: Major Histocompatibility Complex** Structure and functions of MHC molecules (MHC I and II), Endogenous and exogenous pathways of antigen processing and presentation	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
	Practicals	**Immunology** Demonstration of: (a) ELISA (b) Immunoelectrophoresis Repetition of Practical from July-September	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology To study following techniques through photographs: -Southern blotting -DNA fingerprinting and case studies (Photographs only to study crime, or paternity cases)	B.Sc.(P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**
		Fundamentals of biochemistry Effect of inhibitors on the action of salivary amylase Demonstration of proteins separation by SDS-PAGE	B.Sc. (Hons.) Zoology Sem III	**CC VII/ Fundamentals of biochemistry**
Mid Term Test		**Test of Immunology** From all units taught	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
November	**Theory**	**Immunology** **Unit 9: Vaccines** 5 Various types of vaccines.	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
	Practicals:	**Immunology** Detection of complement activity using haemolysis of antibody coated SRBC and standard serum Repetition of these practicals Repetition of all practicals, and finalization of continuous assessment. Conduct of Mock examination.	B.Sc. (Hons.) Zoology Sem V TZH	**ZH DSE Course-VIII/ Immunology**
		Animal Biotechnology Evaluation of Practical File and Practice and repetition of practical; Conduct of mock practical examination	B.Sc.(P) Life Sciences Sem V (Batch II)	**DSE-1/Animal Biotechnology**

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**

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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 *E.coli.* -Genomic DNA isolation from *E.coli*	B.Sc. (P) Life Sciences Semester V (Batch I)	**DSE-1/Animal Biotechnology**
		Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical -Preparation of Liquid culture medium (LB) and raise culture of *E.coli.* -Genomic DNA isolation from *E.coli*	B.Sc. (P) Life Sciences Semester V (Batch III)	**DSE-1/Animal Biotechnology**
August	**Theory**	**Unit 3- Proteins:** Amino Acids: Structure, Classification and General properties of α-amino acids. Difference between Essential and non-essential α-amino acids.	B.Sc. (H) Zoology Semester III	**CC VII/ Fundamentals of Biochemistry**
		Unit 3: Health Introduction to Health-Definition and concept of health.	B.Sc.(H) Semester III	**GEIII/ Food, Nutrition and Health**
	Practical	Syllabus discussion, how to make and maintain the Practical record. Plan/designing of experiment. Introduction to the Practical. -Paper chromatography of amino acids -Qualitative tests of functional groups in carbohydrates	B.Sc. (Hons.) Zoology Sem III SZH	**CC VII/ Fundamentals of biochemistry**

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		- Plasmid DNA isolation from *E.coli* -Agarose gel electrophoresis -Restriction digestion of Lambda DNA with EcoRI and HindIII (Demonstration) -Construction of Linear restriction map from the data provided.	B.Sc. (P) Life Sciences Sem V (Batch I)	**DSE-1/Animal Biotechnology**
		- Plasmid DNA isolation from *E.coli* -Agarose gel electrophoresis -Restriction digestion of Lambda DNA with EcoRI and HindIII (Demonstration) -Construction of linear restriction map from the data provided	B.Sc. (P) Life Sciences Sem V (Batch III)	**DSE-1/Animal Biotechnology**
September	**Theory**	**Unit 3: Proteins** Introduction to simple and conjugate proteins. General properties of α-amino acid. Physiological importance of essential and non-essential α-amino acids. Proteins:Bonds stabilizing protein structure;	B.Sc. (H) Zoology Semester III	**CC VII/ Fundamentals of Biochemistry**
		Unit 3: Health Major nutritional deficiency diseases – (kwashiorkor and marasmus), deficiency disorders, their causes, symptoms, treatment, prevention and govt. programs if any. Life style related diseases-hypertension, diabetes mellitus and Obesity- their causes and prevention through dietary and lifestyle modifications	B.Sc. Semester III	**GEIII/ Food, Nutrition and Health**
	Practical	- Construction of circular restriction map from the data provided To study following techniques through photographs: -PCR -DNA sequencing (Sanger's Method) -Western blotting	B.Sc. (P) Life Sciences Sem V (Batch I)	**Animal Biotechnology-DSE**
		- Construction of circular restriction map from the data provided To study following techniques through photographs: -PCR -DNA sequencing (Sanger's Method) -Western blotting	B.Sc. (P) Life Sciences Sem V (Batch III)	**Animal Biotechnology-DSE**
		Qualitative tests of functional groups in proteins Action of salivary amylase under optimum conditions Effect of pH on the action of salivary amylase. Effect of temperature on the action of salivary amylase To understand the preparation and roles of two important biological buffer systems;	B.Sc. (Hons.) Zoology Sem III	**CC VII/ Fundamentals of Biochemistry**

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		phosphate and bicarbonate; Preparation of buffer and determination of pH		
	Assignment	*Physiological importance of essential and non-essential α-amino acids.*	*B.Sc. (H) Zoology Semester III*	***CC VII/ Fundamentals of Biochemistry***
		Social Health problems-Smoking, alcoholism, drug dependence and Acquired Immuno Deficiency Syndrome (AIDS)- their causes, treatment and prevention	*B.Sc. Semester III*	***GEIII/ Food, Nutrition and Health***
October	**Theory**	**Unit 3: Proteins** Levels of organization in protein motifs, folds and domains. Immunoglobulins: Basic structure, Classes and function, Antigenic Determinants, **Unit 4: Nucleic acids:** Structure: purines and Pyrimidines, Nucleosides, Nucleotides, Nucleic acids, Cot curves, base pairing	B.Sc. (H) Zoology Semester III	**CC VII/ Fundamentals of Biochemistry**
		Unit 3: Health Social Health Problems- Smoking, alcoholism, Drug dependence and acquired immune deficiency syndrome (AIDS)- their causes, treatment and prevention Common ailments: Cold, cough and fevers, their causes and treatment **Unit 2: Nutritional Biochemistry** Carbohydrates, lipids, proteins- their dietary sources and roles	B.Sc.(Hons) Semester III	**GEIII/ Food, Nutrition and Health**
	Practical	To study following techniques through photographs: -Southern blotting -DNA fingerprinting and case studies (Photographs only to study crime, or paternity cases)	B.Sc.(P) Life Sciences Sem V (Batch I)	**Animal Biotechnology-DSE**
		To study following techniques through photographs: -Southern blotting -DNA fingerprinting and case studies (Photographs only to study crime, or paternity cases)	B.Sc.(P) Life Sciences Sem V (Batch III)	**Animal Biotechnology-DSE**
		Effect of inhibitors on the action of salivary amylase Demonstration of proteins separation by SDS-PAGE	B.Sc. (Hons.) Zoology Sem III	**CC VII/ Fundamentals of biochemistry**
		Unit 3: Proteins *Amino Acids: Structure, Classification and General properties of α-amino acids.* *Difference between Essential and non-essential α-amino acid*	*B.Sc. (H) Zoology Semester III*	***CC VII/ Fundamentals of Biochemistry***

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	Mid Term Test	*Physiological importance of essential and non-essential α-amino acids.* *Proteins- Bond stabilizing protein structure: levels of organization in proteins, Denaturation* ***Unit 4: Nucleic acids*** *Structure: Purines and Pyrimidines, Nucleosides and Nucleotides.*		
		Major nutritional deficiency diseases- Protein Energy Malnutrition (Kwashiorkar and Marasmus), Vitamin A deficiency disorders, Iron deficiency disorders, iodine deficiency disorders-their causes, symptoms, treatment, prevention and government programs, if any. *Social Health problems-Smoking, alcoholism, drug dependence and Acquired Immuno Deficiency Syndrome (AIDS)- their causes, treatment and prevention*	*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

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September	**Theory:**	Absorption of carbohydrates, proteins, lipids	B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry
		carrying capacity, population dynamics (exponential and logistic growth equation and patterns), r and K selection, density-dependent and independent population regulation; Niche concept, Population interactions: Positive and negative interactions; Competition .	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Chromosomal aberrations: Variations in number and structure. Detection of mutations in Drosophila: CLB method, attached X method	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
	Practicals:	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

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October	**Theory:**	Pulmonary ventilation, Respiratory volumes and capacities, Transport of Oxygen and carbon dioxide in blood-	B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry
		Gause‟s Principle for competition with laboratory and field examples, Lotka-Volterra equation for predation Social, reproductive and territorial behavior, Evolution of optimal life history, Tradeoffs, semelparity and iteroparity.	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Basis of sex determination: Genetic and environmental	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
	Practicals:	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

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		reproductive structure and mating system Ecological factors (abiotic and biotic): temperature, light	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Sex determination in Drosophila and Man; Mechanism of dosage compensation.	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
	Practicals:	Revision of all Practicals and Mock Practical exam	B.Sc (P) Life Science SEM III Batch II	CC III: Physiology and Biochemistry
		• Revision of minimal quadrat and determination of density /frequency /abundance of the vegetation by quadrat method • Revision of Dissolved Oxygen • Revisision of Soil Parameters • Mock Practical	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		• Continued: Demonstration of technique of microtomy to have hands-on experience and learning of the technique. • Revision • Evaluation of students on their performance in practical and Record • Mock Practical Test • Submission of practical files • Submission and evaluation of a Project report on methods of contraception in male and female.	BSc (H) Zoology Semester III	Physiology: Controlling And Coordinating Systems CC VI
December	**Theory:**	Revision and FINAL EXAM	B.Sc (P) Life Science SEM III Batch A and B	CC III: Physiology and Biochemistry
		Revision and FINAL EXAM	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		Revision and FINAL EXAM	B.Sc. H . Zoology Sem V	CC XII: Principles of Genetics
	Practicals:	• Revison and • Final Practical Assessment	B.Sc (P) Life Science SEM III Batch II	CC III: Physiology and Biochemistry
		• Revision and • Final Practical assessment	B.Sc. H . Biological Science Sem III	Ecology BS-C7
		• Revision and • Final Practical assessment	BSc (H) Zoology Semester III	Physiology: Controlling And Coordinating Systems CC VI

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)

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Month		Topics	Course	Paper Code/Name
JULY	**Theory: (2 periods)**	Introduction to Mendelian Genetics, Polygenic Inheritance	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Instructions for maintaining records Exercise No. 3: Pedigree analysis of some human inherited traits.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
AUGUST	**Theory: (2+1+2) periods**	Unit 5: Introduction to Reproductive Physiology	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Unit 5: Introduction to Pisces	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
		Unit 2: Linkage, Crossing Over and Chromosomal Mapping	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Exercise No. 7: Study of human karyotype Exercise No. 1: Simulation exercises using beads or seeds to study the Mendel's laws and gene interactions Exercise No. 2: Verification of Mendelian ratios using Chi-square analysis/test. Exercise No. 6: Linkage maps based on data from *Drosophila* crosses.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		Preparation of hemin and hemochromogen crystals	B. Sc. Life Sciences 2nd year Sem III	CC-III/ Physiology & Biochemistry
		Instructions for Maintaining records, ABO blood group typing	B.Sc Zoology 2nd year Sem III	SEC/ Medical Diagnostics
SEPTEMBER	**Theory:**	Unit 5: Male and female reproductive system, puberty	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Unit 5: Pisces (General characteristics, Migration, Osmoregulation)	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
		Unit 8: Transposable Genetic elements	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals	Exercise No. 2: Verification of Mendelian ratios using Chi-square analysis/test. Revision Exercise No. 6: Linkage maps based on data from *Drosophila* crosses. Revision Exercise No. 5: Linkage maps based on data from conjugation, transformation and transduction.	B. Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		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. Life Sciences 2nd year Sem III	CC-III/ Physiology & Biochemistry

		Hemoglobin content estimation, Blood pressure measurement, Bleeding time, clotting time	B.Sc Zoology 2nd 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 2nd year Sem III	CC-VI: Physiology
		1) How Drosophila melanogaster is used as a model organism? 2) Highlight any 1 area of research related to implication of transposons.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
OCTOBER	**Theory**	Methods of contraception, Unit 6: Endocrine system	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Unit5: Swim bladder in Fish Unit 6: Amphibia (General characteristics, classification)	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
		Unit 7: Recombination in Bacteria and viruses	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Exercise 4: Use of probability in solving problems in genetics.	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		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 2nd year Sem III	CC-III/ Physiology & Biochemistry
		Enumerate TLC, Abnormal constituents of urine, Testing of blood glucose, Ishihara charts	B.Sc Zoology 2nd year Sem III	SEC/ Medical Diagnostics
	Mid Term Test	Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
		Test questions in DU exam pattern of covered topics	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
NOVEMBER	**Theory:**	Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B. Sc. (H) Zoology 2nd year Sem III	CC-VI: Physiology
		Discussion of Mid-term Test paper and previous year question papers, Parental care in Amphibians	B. Sc. (H) Zoology 2nd year Sem III	CC-V/ Diversity of Chordates
		Discussion of assignment and previous year question papers	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
	Practicals:	Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3rd year Sem V	CC-XII/Principles of Genetics
		Study of activity of salivary amylase under optimum conditions	B. Sc. Life Sciences 2nd year Sem III	CC-III/ Physiology & Biochemistry
		ECG, Medical Imaging- X-ray, CT, MRI	B.Sc Zoology 2nd year Sem III	SEC/ Medical Diagnostics

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

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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.andCephalochordata; 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:** *Balanoglossus, Herdmania, Branchiostoma*, Colonial Urochordata. -Sections of Balanoglossus through proboscis and branchiogenital regions, -Sections of Amphioxus through pharyngeal, intestinal and caudal regions. Permanent slide of Herdmania spicules -Study of the following 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

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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:** *Petromyzon, Myxine* - **Fishes:** *Scoliodon, Sphyrna, Pristis, Torpedo, Chimaera, Mystus, Heteropneustes, Labeo, Exocoetus, Echeneis, Anguilla, Hippocampus, Tetrodon/ 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
	<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

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	Practicals:	**Aves:** Study of six common birds from different orders. Types of beaks and claws **Mammalia:** *Sorex*, Bat (Insectivorous and Frugivorous), *Funambulus, Loris, Herpestes, Erinaceous*. *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
		Aves: Study of six common birds from different orders. Types of beaks and claws **Mammalia:** *Sorex*, Bat (Insectivorous and Frugivorous), *Funambulus, Loris, Herpestes, Erinaceous*. *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
	<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

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Dhaula Kuan, New Delhi-110021

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
		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
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
		Platelet count using haemocytometer, Erythrocyte Sedimentary Rate (E.S.R), Packed Cell Volume (P.C.V.) Unit 3: Diagnostic Methods Used for Urine Analysis Urine Analysis: Physical characteristics; Abnormal constituents	B.Sc. Life Sc. Sem V	SEC-Medical Diagnostics

		Unit 3:Diagnostic Methods Used for Urine Analysis Urine Analysis: Physical characteristics; Abnormal constituents Unit 4:Non-infectious Diseases Causes, types, symptoms, complications, diagnosis and prevention of Diabetes (Type I and Type II), Hypertension (Primary and secondary), Testing of blood glucose using Glucometer/Kit	B.Sc. (Hons.) Zoo. Sem III	SEC-Medical Diagnostics
	Practicals:	Medical Diagnostics • To estimate the blood glucose level by GOD-POD method • To calculate the Blood cells count throughTLC & DLC method	B.Sc. Life Sciences Sem V	SEC-Medical Diagnostics
		Medical Diagnostics • To estimate the blood glucose level by GOD-POD method To calculate the Blood cells count throughTLC & DLC method	B.Sc. (Hons.) Zoology Sem III (SZH)	SEC-Medical Diagnostics
		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

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		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
	Assignment	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
	Mid Term Test	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:	Interpretation of ECG, Detecting defects of color vision by Ishihara charts	B.Sc. Life Sciences Sem V	SEC-Medical Diagnostics
		Interpretation of ECG, Detecting defects of color vision by Ishihara charts	B.Sc. (Hons.) Zoology Sem III (SZH)	SEC-Medical Diagnostics
		Interpretation of ECG, Detecting defects of color vision by Ishihara charts	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

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	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)

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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)

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		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)
	Assignment	**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)
	Mid Term Test	**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)

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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)

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		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 femalefitness, • Sexual conflict for male verses female parental care, Courtship behavior in 3-spinestickleback. • 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 throughTLC 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)

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		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)

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		• 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)

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SRI VENKATESWARA COLLEGE

EVEN SEMESTER
2021-2022

TEACHING PLANS

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2021-22)

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

Month		Topics	Course	Paper Code/Name
January	Theory	Unit I: Structure of DNA: Building blocks of DNA structure, Watson and Crick model, various forms of DNA, hyperchromicity, melting of DNA, factors affecting Tm of DNA molecules. Supercoiling of DNA, linking number, topoisomerases.	B Sc (H) Biochemistry II Year Semester IV	C-9: Gene Organization, Replication and Repair
		Unit II: Enzyme kinetics: Relationship between initial velocity and substrate concentration, mono-substrate reactions. Michaelis-Menten equation, Lineweaver-Burk plot,Determination of KM and Vmax, Kcat, specificity constant.	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit1:Spectroscopic Techniques: EM radiation, interaction of radiation with biomolecules, principle of UV-visible absorption spectro photometry, Lambert's Law, Beer's Law, working of a spectrophotometer.	B Sc (Hons), I Year Semester II	GE-2 Techniques in Biochemistry
	Practical	Exercise1: Partial purification of acid phosphatase enzyme Exercise2: Assay of enzyme activity and specific activity of acid phosphatase enzyme	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Exercise 8: Verification of Beer's law	B. Sc (H) Biological Sciences, I Year Semester II	BS C-3 Biophysics

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2021-22)

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

Month		Topics	Course	Paper Code/Name
February		Unit IV: Recombination and transposition of DNA: Homologous recombination, biological role and models for homologous recombination, proteins and enzymes in homologous recombination, site-specific recombination, serine and tyrosine recombinases.	B Sc (H) Biochemistry II Year Semester IV	C-9: Gene Organization, Replication and Repair
	Theory	Unit II: Enzyme kinetics: Effect of pH and temperature on the activity of enzymes. Types of bisubstrate reactions, examples. Differentiating bi-substrate mechanisms (diagnostic plots, isotope exchange).	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit1: Spectroscopic Techniques: Applications of UV-visible absorption spectrophotometry in biochemistry. Fluorescence spectrophotometry: Intrinsic and extrinsic fluorescence, applications.	B Sc (Hons), I Year Semester II	GE-2 Techniques in Biochemistry
	Practical	Exercise 3. Progress curve for an enzyme Exerciseb 4. Effect of pH/temperature on enzyme activity	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Exercise 9: Determination of molar extinction coefficient Exercise 10: Estimation of proteins using spectrophotometer	B. Sc (H)Biological Sciences, I Year Semester II	BS C-3 Biophysics

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2021-22)

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

Month		Topics	Course	Paper Code/Name
March	Theory	Unit VI: Transposition, the three classes of transposable elements-DNA transposons, virus-like retrotransposons and poly-A retrotransposons. DNA transposition by cut and paste and replicative mechanism.	B Sc (H) Biochemistry II Year Semester IV	C-9: Gene Organization, Replication and Repair
		Unit III: Enzyme inhibition: Reversible inhibition (competitive, uncompetitive, non-competitive and mixed) and irreversible inhibition. Substrate inhibition. Structural analogs (allopurinol, methotrexate and trimethoprim). Mechanism based inhibitors, clinical importance of enzyme inhibitors.	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit 4: Centrifugation: Principle of centrifugation, basic rules of sedimentation, sedimentation coefficient. Various types of centrifuges, low speed centrifuge, high speed centrifuge and ultracentrifuge, types of rotors.	B Sc (Hons), I Year Semester II	GE-2 Techniques in Biochemistry
	Practical	Exercise 5: . Determination of KM and Vmax of an enzyme using Lineweaver-Burk plot	B. Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Exercise 10: Estimation of nucleic acids using spectrophotometer	B. Sc (H) Biological Sciences, I Year Semester II	BS C-3 Biophysics

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SRI VENKATESWARA COLLEGE
SEMERSTER WISE TEACHING PLAN
Semester II/IV/VI
(2021-22)

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

Month		Topics	Course	Paper Code/Name
April	Theory	Unit VI: Various modes of DNA repair : Replication errors and their repair, mismatch repair system. Repair of DNA damage-direct reversal of DNA damage, BER,NER, recombination repair.	B Sc (H) Biochemistry II Year Semester IV	C-9: Gene Organization, Replication and Repair
		Unit IV: Applications of enzymes: Enzymes as reagents;Marker enzymes in diagnostics Enzyme linked immunoassay (ALP and HRP);Enzymetherapy (streptokinase);Enzymes in research (Taq polymerase, restriction endonucleases). Immobilized enzymes and industrial applications of enzymes.	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit 4: Application of centrifugation, differential centrifugation, density gradient centrifugation- zonal and isopycnic Unit 5: Types of media, selective and enrichment media, sterilization methods, bacterial culturing, growth curve	B Sc (Hons), I Year Semester II	GE-2 Techniques in Biochemistry
	Practical	Exercise 6:Calculation of inhibitory constant (Ki) for an enzyme Exercise 7: Continuous assay of an enzyme	B. Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Exercise 11: Determination of CMC of a detergent	B. Sc (H) Biological Sciences, I Year Semester II	BS C-3 Biophysics

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SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Anju Kaicker **Department: Biochemistry**

Semester : I!/IV/VI Session 2021-2022 FOR TBCH, SBCH

Month		Topics	Course	Paper Code/Name
January	**Theory**	Antigens, Immunogens , Hapten-Carrier , Adjuvants, Different class of antibodies, Structutre and function , Monoclonal Antibodies	TBCH	C 14- Immunology
		Introduction to physiology, Blood, its components, Clotting mechanism, anticoagulants, Different type of anemias, Anatomy of heart	SBCH	C-8, Physiology
	Practicals	Enumeration of blood cells, WBC and RBC, Bleeding time, PCV	SBCH	C-8, Physiology
	Tutorials			
February	**Theory:**	Antibody production , Primary and Secondary immune response, Generation of receptor diversity, Gene arrangement in antibody production, Differential splicing and production of secreted and membrane bound antibody	TBCH	C 14- Immunology
		Circulation of blood, Arteries, veins & capillaries, SA node, AV node, Generation of heart beat, Atherosclerosis, Hypertension	SBCH	C-8, Physiology
	Practicals:	Estimation of hemoglobin, Clotting time, Spirometry, Total iron binding capacity , Blood pressure measurement	SBCH	C-8, Physiology
	Tutorials:			

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	Assignment :	Class assignments given		
March	**Theory:**	Gells and Coombs classification, Hypersensitivity, Type I, II,III, IV, RAST and RIST Respiration, Various volumes, Bohr and Haldane effect, COPD, Asthma, Hypoxia, Emphysema	TBCH SBCH	C-14, Immunology C-8, Physiology
	Practicals:	Separation of LDH isozymes by electrophoresis	SBCH	C-7, Hormone Biochemistry
	Tutorials:			
	Test	Mid term test will be taken		
April	**Theory:**	Vaccines, active and passive immunization Oogenesis, spermatogenesis, blood testis barrier, Implantation, Placentation, parturation	TBCH SBCH	C 14, Immunology C-8, Physiology
	Practicals:	Case studies on renal clearance , ECG, LFT, EEG	SBCH	C-8, Physiology

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

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

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name	Mode of teaching
Jan 2022	**Theory**	Historical Perspective, Innate and Adaptive Immunity, Hematopoiesis, cells of the immune system, primary and secondary lymphoid organs and tissues. Anatomical barriers, cell types of innate immunity, soluble molecules and membrane associated receptors (PRR), connections between innate and adaptive immunity, localized and systemic response.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunolgy	Google meet and Google class room
		Food sources of carbohydrates, Review functions of carbohydrates. Factors affecting Digestion, absorption and utilization. Glycemic index and glycemic load. Dietary fiber and role of fibre in health. Role of Gut microbiome in maintaining health. Role of pre and probiotics in nutritive health.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Google meet and Google class room
		Gastrointestinal and hepatic physiology - Histology of the gastrointestinal tract. Propulsion and motility of food and digested material. Enteric reflexes. Secretory functions of the gastrointestinal tract, digestion and absorption of macronutrients and micronutrients. Peptic ulcer, Sprue, Celiac disease, IBD, regurgitation. Anatomy of the hepatic lobule and blood flow into the liver. Formation and secretion of bile. Enterohepatic cycle, detoxification in liver. Jaundice, liver cirrhosis and fatty liver.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	
	Practicals	Isolation of PBMNC. DID, SRID, Immuno electrophoresis . Evaluation 1.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunology	Google meet and Google class room& Lab when permitted.
		Understanding Anthropometric measurements. Anthropometric assessment of young adults Anthropometric identifications for Kwashiorkor, Marasmus and Obesity in children	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Google meet and Google class room& Lab when permitted
February	**Theory**	Complement activation by classical, alternate and MB lectin pathway, biological consequences of complement activation, regulation and complement deficiencies General organization and inheritance of MHC, structure, distribution and role of MHC class I and class II proteins, pathways of antigen processing and presentation	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunolgy	Google meet and Google class room

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		Essential Fatty Acids; Functions of EFA, RDA, – excess and deficiency of EFA. Dietary implications of fats and oils, Combination ratios of n6 and n3, MUFA, PUFA and SFA Factors affecting Digestion, absorption and utilization. Importance of the following: a) Omega – fatty acids. Omega 3/ omega 6 ratio b) Phospholipids c) Cholesterol in the body d) Mono, Polyunsaturated and Saturated Fatty Acids.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Google meet and Google class room
		Renal physiology - Anatomy of the kidney and the nephron. Regulation of renal blood flow. Cell biology of the Bowmans' capsule. Physiology of glomerular filtration and GFR. Tubular processing of the glomerular filtrate. Micturition. Regulation of ion and water balance. Urine concentration: The counter current multiplier system. Blood buffer systems, renal responses to acidosis and alkalosis. Assessment of kidney function. Glomerular nephritis. Dialysis: Hemodialysis and peritoneal dialysis. Diuretics.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Google meet and Google class room
	Practicals:	Isolation of IgG. Isolation of spleenocytes	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunolgy	Google meet and Google class room
		Evaluation 1 Calculation of BMR and corelating to caloric consumption calculated through maintenance of dietary record. Biochemical assessment. ROS assessment. Determination of oxidative stress: TBARS, antioxidant enzymes in hemolysate. Calculation of GI and Glycemic load of different foods.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Google meet and Google class room
March	**Theory**	Structure and role of T cell receptor (TCR) and co-receptor, T cell development, generation of receptor diversity, selection and differentiation. General properties of effector T cells, cytotoxic T cells (Tc), natural killer cells; NK - T cells and antibody dependent cellular cytotoxicity (ADCC).	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunolgy	Google meet and Google class room
		Calcium, Iron and Phosphorus- Distribution in the body digestion, Absorption, Utilization , Transport, Excretion, Balance, Deficiency, Toxicity, Sources, RDA. Iodine, Fluoride, Mg, Cu, Zn, Se, Manganese, Chromium, Molybdenum Distribution in the human body, Physiology, Function, deficiency, Toxicity and Sources	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Google meet and Google class room

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		Central Nervous system. Peripheral Nervous system. Blood brain barrier and CSF. Structure and maintenance of neurons. Functional classes of neurons. Membrane potentials: Resting Membrane Potential, Graded potentials, Action potential. Synapse: excitatory and inhibitory. Temporal and spatial summation. Neurotransmitters and neuromodulators (definition with examples).	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Google meet and Google class room
	Practicals	Western Blot Passive and Active Agglutinatio Evaluation 2	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunolgy	Google meet and Google class room And OFF Line if permitted
		Biochemical assessment. Nutritional status, Vitamin E Clinical assessment of Nutritional status, Case studies Evaluation 2.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Google meet and Google class room And OFF Line if permitted
April	**Theory**	Self-tolerance and possible mechanisms of induction of autoimmunity, Organ specific and systemic autoimmune diseases Immunological basis of graft rejection, clinical manifestations, immunosuppressive therapy and privileged sites.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunolgy	Google meet and Google class room
		Direct methods of assessment- Anthropometric measurements; Biochemical assessment; clinical signs; dietary records and nutrient intake. ROS assessment, GTT and glycosylated Hb, Differential diagnosis of B12 and folate.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Google meet and Google class room
		Somatic sensation: definition and cellular pathways of pain transmission and modulation. Physiology of EEG, sleep. Structure of Skeletal, smooth and cardiac muscle, Molecular mechanisms of skeletal muscle contraction: role of troponin, tropomyosin, and calcium in contraction, excitation-contraction coupling. Smooth muscle contraction and its control. Excitation-contraction coupling in cardiac muscle.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Google meet and Google class room
	Practicals:	Revision exercises, Evaluation 3 Viva Voce	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunolgy	Google meet and Google class room And OFF Line if permitted
		. Clinical assessment of Nutritional status, Case studies Revision exercises; Evaluation 3 and VIVA	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry	Google meet and Google class room And OFF Line if permitted
	<u>Test</u>	Test on Innate immunity, Inflammation, Cells and organs of immune responses and Cell mediated immunity	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C-14: Immunolgy	Google meet and Google class room
		Test on Carbohydrate, Lipid and Mineral Nutrition	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BS DSE Nutritional Biochemistry.	Google meet and Google class room

		Test on Gastrointestinal, Renal and Neuro Physiology	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C-8: Human Physiology	Google meet and Google class room

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- **SEMESTER WISE TEACHING PLAN**
  - **SRI VENKATESWARA COLLEGE**

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

Semester :II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1.Definition of a gene, organization of genes in viruses, bacteria and eukaryotes, concept of split genes, introns, exons, satellite DNA, highly repetitive DNA, centromere and telomere sequences. Nucleosome structure and packaging of DNA.	BSc.(H) Biochemistry Semester IV	BCH-C9/Gene Organization Replication and Repair
		1.Role of drugs, vaccines, hygiene and sanitation in prevention, transmission control and treatment of infectious diseases. Structure of viruses, Baltimore system for virus classification	BSc.(H) Biochemistry Semester VI	BCH DSE-4 Molecular Basis of Infectious Diseases
	Practicals	1. Estimation of DNA concentration by DPA method. 2. To hydrolyze DNA and separate nucleotide bases by paper chromatography	BSc.(H) Biochemistry Semester IV	BCH-C9/Gene Organization Replication and Repair

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FEBRUARY	**Theory:**	2. Chemistry of DNA synthesis, DNA polymerase, the replication fork, E coli DNA polymerases, stages of replication, origin of replication, end replication problem, telomerase, various modes of replication.	BSc.(H) Biochemistry Semester IV	BCH-C9/Gene Organization Replication and Repair
		2.Overview of viral virulence factors and host pathogen interactions; Detailed study of AIDS: history, causative agent, pathogenesis, diagnostics, drugs	BSc.(H) Biochemistry Semester VI	BCH DSE-4 Molecular Basis of Infectious Diseases
	Practicals:	3. To plot ultraviolet absorption spectrum of DNA 4. Determination of DNA concentration by A260nm	BSc.(H) Biochemistry Semester IV	BCH-C9/Gene Organization Replication and Repair
	Assignment	Based on the syllabus covered.		

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Month		Topics	Course	Paper Code/Name
MARCH	**Theory:**	3.Comparison of replication in prokaryotes and eukaryotes. Inhibitors and applications in medicine. 3.Other viral diseases including hepatitis, Influenza (Antigenic shift and antigenic drift), Rabies, Dengue and Polio; Chicken Pox, Herpes Virus	BSc.(H) Biochemistry Semester IV BSc.(H) Biochemistry Semester VI	BCH-C9/Gene Organization Replication and Repair BCH DSE-4 Molecular Basis of Infectious Diseases
	Practicals:	5.Determination of the melting temperature 6.Isolation of chromosomal DNA from *E coli* cells	BSc.(H) Biochemistry Semester IV	BCH-C9/Gene Organization Replication and Repair
	Mid-term tests	Based on course covered so far		

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APRIL	**Theory:**	4.Mutations in evolution of species. Types - transition, transversion, frame shift mutations. DNA damage by hydrolysis, alkylation, oxidation and radiation. Mutations caused by base analogs and intercalating agents. Ames test.	BSc.(H) Biochemistry Semester IV	BCH-C9/Gene Organization Replication and Repair
		4.Detailed study of Malaria: history, causative agents, vectors, life cycle, Host parasite interactions, diagnostics, drugs, vaccine development Other diseases including Leishmaniasis and Amoebiasis, Giardiasis and Trypanosoma	BSc.(H) Biochemistry Semester VI	BCH DSE-4 Molecular Basis of Infectious Diseases
		1.Expression vectors (lac promoter, tryptophan promoter, Lambda cI promoter, arabinose promoter based) optimization of protein expression(using upstream and downstream signals) Fusion proteins, cell-free translation systems, RNAi vectors. 2.Biolistics, protoplast mediated, electroporation, Agrobacterium mediated transfer virus-mediated transfer (CaMV), in planta transformation, signals for optimization of protein synthesis.	PG Diploma In Molecular &Biochemical Technology	PGDMB 202 Recombinant DNA Technology-II
	Practicals:	Revision Value-added experiments	BSc.(H) Biochemistry Semester IV	BCH-C9/Gene Organization Replication and Repair
		1.Preparation of competent cells of *E.coli* 2.Transformation of competent E.coli cells with plasmid DNA.	PG Diploma In Molecular &Biochemical Technology	PGDMB L205 Recombinant DNA Technology-II

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	Term-end examination	For Semester IV and VI		
MAY	**Theory:**	3.Restriction mapping, DNA sequencing (dideoxy chain termination, chemical degradation, pyrosequencing, shotgun sequencing and contig assembly. 4. Site directed mutagenesis (cassette mutagenesis, primer extension method, overlap extension method, megaprimer method), selection against parental phenotype. Protein engineering	PG Diploma In Molecular &Biochemical Technology	PGDMB 202 Recombinant DNA Technology-II
	Practicals:	3.To study the effect of alkaline phosphatase on plasmid recircularization 4. To amplify a gene using PCR.	PG Diploma In Molecular &Biochemical Technology	PGDMB L205 Recombinant DNA Technology-II
	Assignment			
JUNE	**Theory:**	5.Transgenic plants, Gene therapy	PG Diploma In Molecular &Biochemical Technology	PGDMB 202 Recombinant DNA Technology-II
	Practicals:		PG Diploma In Molecular &Biochemical Technology	PGDMB L205 Recombinant DNA Technology-II

	Student Presentations			
JULY	**Theory:**	RNA expression level profiling with microarrays, MPSS, SAGE	PG Diploma In Molecular &Biochemical Technology	PGDMB 202 Recombinant DNA Technology-II
	Practicals:	Calculation of the phage titre with a phage titration kit. Revision	PG Diploma In Molecular &Biochemical Technology	PGDMB L205 Recombinant DNA Technology-II
	Mid-semester test			
AUGUST	**Theory:**			
	Practicals:			
	Term-end exams			

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SEMESTER WISE TEACHING PLAN (2021-2022)

SRI VENKATESWARA COLLEGE

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Name of the Faculty: Dr. VANDANA MALHOTRA
Department: BIOCHEMISTRY

- **B.Sc (Hons) Biochemistry**
- **PG Diploma in Molecular and Biochemical Technology** **Semester: II/IV/VI**

Teaching Mode: Online (Google Classroom & MS Teams)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit I: Infectious diseases: an Introduction** Classification of infectious diseases, Nosocomial infections; Patterns of Disease; Measuring infectious disease frequency; Past and present emerging and re-emerging infectious diseases and pathogens. Source, reservoir and transmission of pathogens. Safety measure when working with pathogen biosafety levels, infection and evasion **No. of hours: 7**	B.Sc. BIOCHEMISTRY Hons.) III Year, Sem VI	CBCS: BCH DSE 4 Molecular Basis of Infectious Diseases
		UNIT I: The basic principle of gene cloning Restriction and modification systems, restriction endonucleases and other enzymes used in manipulating DNA molecules. Ligation of DNA molecules. DNA ligase, sticky ends, blunt ends, linkers and adapters, homopolymer tailing, Synthetic oligonucleotides. **No of hours: 10**	B.Sc. BIOCHEMISTRY Hons.) III Year, Sem VI	CBCS: BCH C13 Genetic Engineering and Biotechnology
		Unit IV: Biosynthesis, Degradation of Purine and Pyrimidine Nucleotides *De novo* synthesis of purine and pyrimidine nucleotides, regulation and salvage pathways. Digestion of nucleic acids, degradation of purine and pyrimidine nucleotides. Inhibitors of nucleotide metabolism. Disorders of purine and pyrimidine metabolism – Lesch-Nyhan syndrome, Gout, SCID, adenosine deaminase deficiency. **No. of hours: 14**	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C-10: Amino Acid and Nucleotide Metabolism
	Practical	• Gram Staining • Permanent slides of Pathogens. Mycobacterium tuberculosis, Leishmania, Plasmodium falciparum	B.Sc. BIOCHEMISTRY (Hons.) III Year, Sem VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Retrieval of (protein/gene) sequences from NCBI and molecular file formats- FASTA, Genpept/GenBank • Protein Structure Retrieval using PDB and visualization using Jmol	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH SEC 4 Bioinformatics
	Assignments	Related to the topics covered so far.		

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FEBRUARY	**Theory**	**Unit III: Diseases caused by bacteria** Classification of bacterial pathogens based on structure and nutritional requirements; Overview of bacterial virulence factors and host pathogen interactions; detailed study of tuberculosis: History, causative agent, molecular basis of host specificity, infection and pathogenicity, diagnostics, therapeutics and vaccines, drug resistance and implications on public health. Other bacterial diseases - virulence factors, host pathogen interaction, symptoms, diagnosis, vaccines and drugs against - Typhoid, Diphtheria, Pertussis, Tetanus, Botulism Cholera, Anthrax and Pneumonia **No. of hours: 20**	B.Sc. BIOCHEMISTRY Hons.) III Year, SemVI	CBCS: BCH DSE 4 Molecular Basis of Infectious Diseases
		Unit I. The basic principle of gene cloning (Contd.) **Unit III: Introduction of DNA in cells, selection for recombinants and clone identification** Uptake of DNA by cells. Selection and identification for transformed cells, insertional inactivation, blue-white selection. Transfection. Chemical and physical methods of DNA introduction into cells. The problem of selection, direct selection, marker rescue. Identification of recombinant phages, cDNA and Genomic libraries, identification of a clone from gene library, colony and plaque hybridization probing, Southern and Northern hybridization, methods based on detection of the translation product of the cloned gene. **No of hours: 10**	B.Sc. BIOCHEMISTRY Hons.) III Year, SemVI	CBCS: BCH C13 Genetic Engineering and Biotechnology
		Unit IV: Biosynthesis, Degradation of Purine and Pyrimidine Nucleotides (Contd) **UNIT V: Deoxyribonucleotides and Synthesis of Nucleotide Triphosphate and Co-enzymes** Biosynthesis of deoxyribonucleotides and its regulation, conversion to triphosphates, biosynthesis of coenzyme nucleotides. **No. of hours: 6**	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C-10: Metabolism of Amino Acids and Nucleotides
	Practical	• Acid fast staining of non-pathogenic *Mycobacterium* • WIDAL Test for Typhoid • MIC determination using Kirby Bauer / Alamar Blue assay	B.Sc. BIOCHEMISTRY (Hons.) III Year, Sem VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• BLAST Suite of Tools for pairwise alignment • Multiple sequence alignment (Clustal W) and construction	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH SEC 4 Bioinformatics

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		of guide trees • Gene prediction using GeneScan		
	Assignments	• Related to the topics covered		
March	**Theory**	**Unit III. Diseases caused by bacteria (Contd.)**	B.Sc. BIOCHEMISTRY Hons.) III Year, Sem VI	CBCS: BCH DSE 4 Molecular Basis of Infectious Diseases
		Unit III. Introduction of DNA in cells, selection for recombinants and clone identification (Contd.) **Unit V: Polymerase chain reaction and DNA sequencing** Fundamentals of polymerase chain reaction, Types of PCR; hot start, multiplex, reverse transcriptase PCR and Nested PCR, quantitative PCR, Primer, designing for PCR. Cloning PCR products. DNA sequencing by Sanger's method including Automated Sanger's DNA sequencing. Introduction to Next Generation Sequencing. **No of hours: 10**	B.Sc. BIOCHEMISTRY Hons.) III Year, Sem VI	CBCS: BCH C13 Genetic Engineering and Biotechnology
		Unit V: Contd **Unit VI: Integration of Metabolism** Integration of metabolic pathways (carbohydrate, lipid and amino acid metabolic pathways), tissue specific metabolism (brain, muscle, and liver). **No. of hours: 6**	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C-10: Metabolism of Amino Acids and Nucleotides
	Practical	• To prepare temporary mount of fungi and identify through staining • Isolation and enumeration of bacteriophages (PFU) from water/sewage sample	B.Sc. BIOCHEMISTRY (Hons.) III Year, SemVI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Primary sequence analysis (Protparam tool) and secondary Structure prediction (GOR) • Continuous Evaluation	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH SEC 4 Bioinformatics
Mid-term Class Tests and Assignment Submission				
April	**Theory**	**UNIT VI: Diseases caused by fungi** Fungal diseases such as Candidiasis, Sporotrichosis, Aspergillosis and Ring worm: general disease characteristics, medical importance, pathogenesis, diagnosis and treatment **No. of hours: 6**	B.Sc. BIOCHEMISTRY (Hons.) III Year, Sem VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases

		Unit V. Polymerase chain reaction and DNA sequencing (Contd.)	B.Sc. BIOCHEMISTRY Hons.) III Year, Sem VI	CBCS: BCH C13 Genetic Engineering and Biotechnology
		UNIT VI: Integration of Metabolism (Contd)	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH C-10: Metabolism of Amino Acids and Nucleotides
	Practical	• Research and presentation on current trends in infectious diseases • Revision of any previous experiments	B.Sc. BIOCHEMISTRY (Hons.) III Year, SemVI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Tertiary structure prediction and structure evaluation (Ramachandran plot) • Practice	B.Sc. BIOCHEMISTRY Hons.) II Year, Sem IV	CBCS: BCH SEC 4 Bioinformatics
Final Theory and Practical Exams				
April	**Practical (Even semester for PGDMB) Wef April 2022**	• Preparation of competent cells of *E. coli* • Transformation of competent *E. coli* cells with plasmid DNA	PGDMB (Sem II)	Recombinant DNA Technology (RDT 102)
May		• To study the effect of alkaline phosphatase on plasmid recircularization • To amplify a gene using PCR	PGDMB (Sem II)	Recombinant DNA Technology (RDT 102)
June		• Calculation of the phage titre with a phage titration kit. • Practice	PGDMB (Sem II)	Recombinant DNA Technology (RDT 102)
July		• Practice and Continuous Evaluation	PGDMB (Sem II)	Recombinant DNA Technology (RDT 102)
Final Theory and Practical Exams				

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

Name of the Faculty: Dr. Kameshwar Sharma YVR, Assistant Professor (AL-12)
Department: Biochemistry
Semester: II/IV/VI (Even Semester)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Bioinformatics** ✓ Overview of Bioinformatics and its applications in biology. ✓ Databases & types of biological databases. ✓ Structure and Sequence Databases with examples. **Metabolism & Integration** Unit – I Introduction to Metabolism ✓ Principles of bioenergetics, standard free energy change, ✓ metabolic roles of ATP, phosphorylgroup transfer, nucleotidyl group transfer. ✓ Experimental approaches to study of metabolism; primary and secondary metabolism. ✓ Energetics. ✓ Classification of organisms based on utilization of carbon and energy sources.	**B.Sc(H) Biochemistry Sem IV** **B.Sc. Hons Biological Science Sem IV**	**SEC Bioinformatics** **Metabolism & Integration**

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	Practicals	Bioinformatics – Practical • Introduction to Bioinformatics • J mol/Pymol and Java	**B.Sc(H) Biochemistry Sem IV**	SEC Bioinformatics
	Tutorials			
FEBRUARY	**Theory:**	**Bioinformatics** **Sequence alignment & phylogeny** ✓ Similarity, identity and homology. ✓ Concept of Alignment – local and global alignment, pairwise and multiple sequence alignments, ✓ amino acid substitution matrices (PAM and BLOSUM), BLAST and CLUSTALW, ✓ Definition of phylogeny and its importance, ✓ Methods of Phylogenetic tree generation, Phylip	**B.Sc(H) Biochemistry Sem IV**	**SEC Bioinformatics**
		Metabolism & Integration Unit II: Carbohydrate and Lipid Metabolism ✓ **Carbohydrates metabolism –** ✓ Glycolysis, alcoholic and lactic acid fermentation, ✓ Pasteur Effect, ✓ gluconeogenesis, Cori cycle, glucose-alanine cycle, ✓ futile cycle.TCA cycle, ✓ HMP shunt ✓ glycogen metabolism.	**B.Sc. Hons Biological Science Sem IV**	**Metabolism & Integration**

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Practicals:	Bioinformatics – Practical ✓ BLAST suite of tools for pairwise alignment ✓ Multiple sequence alignment (CLUSTALW/TCoffee) and construction of guide trees ✓ Gene prediction using GENSCAN/GLIMMER	**B.Sc(H) Biochemistry Sem IV**	**SEC Bioinformatics**
Tutorials:	**Class Tests / assignments**		

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MARCH	**Theory:**	**Bioinformatics** Genomics ✓ Introduction to genomics, comparative and functional genomics, ✓ gene structure in prokaryotes and eukaryotes, ✓ Genome annotation, gene prediction approaches and tools **Protein sequence, structure prediction and analysis** ✓ Protein Structure - Primary, Secondary and Tertiary structure, ✓ Protein structure prediction methods: Homology modeling, ✓ Fold recognition and ab-initio methods, ✓ Ramachandran plot.	**B.Sc(H) Biochemistry Sem IV**	**SEC Bioinformatics**
		Metabolism & Integration Unit II: Lipid Metabolism ✓ Mobilization of triglycerides, metabolism of glycerol, ✓ β-oxidation of saturated, monounsaturated and poly-unsaturated fatty acids, ✓ even and odd chain fatty acids. ✓ Ketogenesis and significance, ✓ Biosynthesis of C-16 palmitic acid, ✓ brief overview of cholesterol metabolism ✓ lipoprotein cycle	**B.Sc. Hons Biological Science Sem IV**	**Metabolism & Integration**

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	Practical	**Bioinformatics – Practical** ✓ Primary sequence analyses (Protparam) and Secondary structure prediction (GOR, nnPredict). ✓ Tertiary structure prediction (SWISSMODEL) and Protein structure evaluation - Ramachandran map (PROCHECK	**B.Sc(H) Biochemistry Sem IV**	**SEC Bioinformatics**
	Tutorials	Assignments / Tests		
	<u>Test</u>	**MID TERM Exams**		

APRIL	**Theory:**	**BPT (PGD) - Theory** Blotting Techniques Radioactive Materials	**Biophysical Techniques - II**	**PG Diploma in Molecular and Biochemical Technology**
	Practicals:	**BPT (PGD) - Practical** ✓ Southern Blot, ✓ Western Blot **Bioinformatics** ✓ Introduction to Bioinformatics ✓ J mol/Pymol and Java **Enzymes – Practical** ✓ Partial purification of an enzyme using bulk methods or chromatography ✓ Assay to determine activity ✓ specific activity of an enzyme	**Biophysical Techniques - II** **Enzymes**	**PG Diploma in Molecular and Biochemical Technology** **BCH C4 Enzymes Semester – II Year I**

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	Tutorials:			
MAY	**Theory:**	**BPT (PGD) - Theory** ✓ Fermentation Technology Bioinformatics- ✓ Introduction and Database	**Biophysical Techniques - II**	**PG Diploma in Molecular and Biochemical Technology**
	Practicals:	**BPT (PGD) - Practical** ✓ PDB ✓ BLAST ✓ Primary Structure Prediction and Consensus **Enzymes – Practical** ✓ Progress curve for an enzyme ✓ Effect of pH/temperature on enzyme activity ✓ Determination of KM and Vmax of an enzyme using Lineweaver-Burk plot	**Biophysical Techniques - II** **Enzymes**	**PG Diploma in Molecular and Biochemical Technology** **BCH C4 Enzymes Semester – II Year I**
	Test	Assignments / Tests **MID TERM Exams**		

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JUNE	**Theory:**	**BPT (PGD) - Theory** ✓ Phylogenetic analysis ✓ Protein structure prediction ✓ Multiple Sequence Alignment	**Biophysical Techniques - II**	**PG Diploma in Molecular and Biochemical Technology**
	Practicals:	**BPT (PGD) - Practical** ✓ Clustal Omega ✓ Tertiary Structure Prediction ✓ **Evaluation** ✓ Gene Structure Prediction (GENSCAN) ✓ Transmembrane Prediction ✓ Secondary structure prediction - Ramachandran Plots **Enzymes – Practical** ✓ Calculation of inhibitory constant (Ki) for an enzyme ✓ Continuous assay of an enzyme	**Biophysical Techniques - II** **Enzymes**	**PG Diploma in Molecular and Biochemical Technology** **BCH C4 Enzymes Semester – II Year**

JULY	**Theory:**	REVISION CLASSES AND EXAM PREPERATION	**Biophysical Techniques - II**	**PG Diploma in Molecular and Biochemical Technology**

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Practicals:			
	Preparation of Mock Practicals and **Main Practical Examinations**	**Biophysical Techniques - II**	**PG Diploma in Molecular and Biochemical Technology**
	Preparation of Mock Practicals and **Main Practical Examinations**	Enzymes	BCH C4 Enzymes Semester – II Year

DR. KAMESHWAR SHARMA YVR
Assistant Professor (AL-12)
Department of Biochemistry

Dated: 18th January, 2022

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SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
EVEN SEMESTER 2021-22

Name of the Faculty: Dr. NIMISHA SINHA

Department: BIOCHEMISTRY Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	**Unit 3: Respiration:** Overview of glycolysis, Alternative reactions of glycolysis, Regulation of plant glycolysis, Translocation of metabolites across mitochondrial membrane, TCA cycle, Alternative NAD(P)H oxidative pathways; Cyanide resistant respiration. No. of HOURS: 8	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		UNIT II: Cloning vectors for prokaryotes and eukaryotes No of hours: 12 Plasmids and bacteriophages as vectors for gene cloning. Cloning vectors based on *E. coli* plasmids, pBR322, pUC8, pGEM3Z.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS C13 Genetic Engg and Biotechnology
		Unit I: Introduction to Nutrition and Energy Metabolism No. of Hours: 4 Defining nutrition, role of nutrients. Unit of energy, Biological oxidation of foodstuff. Physiological energy value of foods, SDA. Measurement of energy expenditure, BMR and RMR- factors affecting BMR. Recommended Nutrient Intakes (RNI) and Recommended Dietary Allowances for different age groups.	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
	Practical	• Isolation of Plasmid DNA • Restriction enzyme digestion of plasmid DNA and size estimation of fragments. • Isolation of plasmid DNA from *E.coli* and restriction enzyme digestion and molecular weight determination	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS C13 Genetic Engg and Biotechnology
		1. Anthropometric assessment for nutritional status of a healthy individual and in case studies of Kwashiorkor, Marasmus and/or Obesity. 2. Determination of lipid profile.	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
		1. Estimation of Random Blood Glucose – Glucose Oxidase method 2. Estimation of Oral Glucose tolerance test (O-GTT).	B.Sc. BIOLOGICAL SCIENCES Hons.) II Year, Semester IV	CBCS Metabolism and Integration

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	Assignments	Related to the topics covered so far.		
FEBRUARY	Theory	**Unit 3: Biological Nitrogen fixation** by free living and in symbiotic association, structure and function of enzyme Nitrogenase. Nitrate assimilation: Nitrate and Nitrite reductase.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		Cloning vectors based on M13 and λ bacteriophage, and in vitro packaging. Vectors for yeast, Ti-plasmid, and retroviral vectors, high capacity vectors BAC and YAC..	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS C13 Genetic Engg and Biotechnology
		Review of functions of proteins in the body, Digestion and absorption. Essential and Nonessential amino acids. Complete protein, Amino Acid Availability, Antagonism, Toxicity and Imbalance. Amino acid complementation and Supplementation in foods.Effects of deficiency.Food source and Recommended Dietary Allowances for different age group.Amino acid pool.NPU, Biological Value, Nitrogen balance.PEM and Kwashiorkor	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
	Practical	• Designing of primers for any selected genes. • Demonstration of PCR technique.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS C13 Genetic Engg and Biotechnology
		3. Determination of oxidative stress: TBARS, antioxidant enzymes in hemolysate. 4. Estimation of vitamin in drugs/food/serum.	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
		3. Determination of Lipid Profile: Total Cholesterol (TC), High Density Lipoproteins (HDL) and Triglycerides (TG). 4. Estimation of SGPT and SGOT in serum/plasma sample.	B.Sc. BIOLOGICAL SCIENCES Hons.) II Year, Semester IV	CBCS Metabolism and Integration
	Assignments	Related to the topics covered		
	Test	Class Test -1, for all courses will be conducted pertaining to the syllabus done so far.		
MARCH	Theory	Unit 3 (contd) Primary and secondary ammonia assimilation in plants; ammonia assimilation by Glutamine synthetase-glutamine oxoglutarate amino transferase (GS-GOGAT) pathway. Seed storage proteins in legumes and cereals. Unit 6: Cell and tissue culture techniques, types of cultures: organ and explants culture, callus culture, cell suspension culture and protoplast	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry

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		culture.		
		UNIT IV: Expression of cloned genes No of hours: 06 Vectors for expression of foreign genes in *E. coli,* cassettes and gene fusions. Hybrid promoters: trc, tac, pL and T7 promoter based expression vectors. Challenges in producing recombinant protein in *E. coli.* Production of recombinant protein by eukaryotic cells. Fusion tags such as, poly-histidine, glutathione, maltose binding protein and their role in purification of recombinant proteins.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS C13 Genetic Engg and Biotechnology
		Unit III: Micronutrients: Vitamins No. of Hours: 12 Vitamin A, D, E, K Dietary sources, RDA, Adsorption, Distribution, Metabolism and excretion (ADME),Deficiency.Role of Vitamin A as an antioxidant, in Visual cycle, dermatology and immunity.Role of Vitamin K in Gamma carboxylation.Role of Vitamin E as an antioxidant. Extra- skeletal role of Vitamin D and its effect on bone physiology. Hypervitaminosis.Vitamin C- Dietary sources, RDA, Adsorption, Distribution, Metabolism and excretion (ADME); role as cofactor in amino acid modifications. The B Complex vitamins- Dietary sources, RDA, Adsorption, Distribution, Metabolism and excretion (ADME); Thiamine-TPP roe in metabolism and deficiency disease; Niacin- Metabolic interrelation between tryptophan, Niacin and NAD/ NADP; Vitamin B6-conversion to Pyridoxal Phosphate. Role in metabolism, Biochemical basis for deficiency symptoms; Vitamin B12 and folatemetabolic role, homocysteine cycle, Biochemical basis for deficiency symptoms.	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
	Practical	• Preparation of competent cells by calcium chloride method • Transformation of E coli cells with plasmid DNA • Blue white selection • Repeat any previous experiment	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS C13 Genetic Engg and Biotechnology
		5. Estimation of minerals in drugs/food/serum. 6. Estimation of glycosylated haemoglobin. 7. Determination of nutritive value of foods	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry

		5. Estimation of Bilirubin in serum/plasma sample. 6. Estimation of creatinine in serum/plasma sample. 7. Estimation of Urea.	B.Sc. BIOLOGICAL SCIENCES Hons.) II Year, Semester IV	CBCS Metabolism and Integration
	Test	Class Test -2, for all courses will be conducted pertaining to the syllabus done so far. And repeat test for those who fail to score well in class test 1		
APRIL	Theory	**Unit 6: Plant regeneration pathways:** organogenesis and somatic embryogenesis. Applications of cell and tissue culture and somoclonal variation.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		UNIT VI: Applications of genetic engineering in Biotechnology Site–directed mutagenesis, Protein engineering (T4-lysozyme), yeast two hybrid systems, Production of recombinant pharmaceuticals such as insulin, human growth hormone, factor VIII. Recombinant vaccines. Gene therapy (SCID), Applications in agriculture – *Bt* cotton, glyphosate herbicide resistant crops, ethical concerns	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS C13 Genetic Engg and Biotechnology
		Unit VI: Food drug interaction and nutraceuticals No. of Hours: 4 Nutrient interactions affecting ADME of drugs. Drug induced nutrient deficiency: Alcohol, Antibiotics, Antimalarial drugs. Role of microbiome in maintaining Nutritive health. Nutraceuticals and Food as medicine: turmeric, garlic, ginger, cumin, asafoetida.	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
	Practical	Revision and Preparation for Viva Mock Practical Exam	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS C13 Genetic Engg and Biotechnology
		Revision and Preparation for Viva Mock Practical Exam	B.Sc. BIOLOGICAL SCIENCES Hons.) III Year, Semester VI	CBCS DSE 9: Nutritional Biochemistry
		Revision and Preparation for Viva Mock Practical Exam	B.Sc. BIOLOGICAL SCIENCES Hons.) II Year, Semester IV	CBCS Metabolism and Integration

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SEMESTER WISE TEACHING PLAN 2020-21
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr.Ravindra Varma Polisetty
Department: Biochemistry **Even Semester : II/IV/VI**

Month		Topics	Teaching Mode	Course	Paper Code/Name
JANUARY	Theory				
	Practicals	1. Estimation of serum urea. 2. Estimation of serum uric acid.	Online (Microsoft Teams)	SBCH	BCH C-10 Metabolism of Amino Acids and Nucleotides
		1. Transformation of E. coli cells with plasmid DNA. 2. Isolation of plasmid DNA from E. coli cells.	Online (Microsoft Teams)	TBCH	BCH C-13 Genetic Engineering and Biotechnolgy
	Tutorials				
FEBRUARY	Theory:				
	Practicals:	1. Estimation of serum creatinine. 2. Estimation of bilirubin	Online (Microsoft Teams)	SBCH	BCH C-10 Metabolism of Amino Acids and Nucleotides
		1. Digestion of plasmid DNA with restriction enzymes. 2. Amplification of a DNA fragment by PCR.	Online (Microsoft Teams)	TBCH	BCH C-13 Genetic Engineering and Biotechnolgy
	Tutorials:				
MARCH	Theory:				
	Practicals:	1. Assay of glutamate dehydrogenase 2. Assay of serum transaminases – SGOT and SGPT.	Online (Microsoft Teams)	SBCH	BCH C-10 Metabolism of Amino Acids and Nucleotides
		1. Complementation of β−galactosidase for Blue and White selection.	Online (Microsoft Teams)	TBCH	BCH C-13 Genetic Engineering and Biotechnolgy

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	Tutorials:				
	Assignments	Assignment -1	Online (Microsoft Teams)		
APRIL	Theory:	1. Amino acids and their properties - hydrophobic, polar and charged. 2. Multimeric proteins, Conjugated proteins and Metallo-proteins. 3. Diversity of peptide and protein function and their applications. Solid phase peptide synthesis. 1. Amino acids, Amino acid structure, Physical properties: pI of amino acids, amino acids as ampholytes, melting point, optical rotation, UV absorption. peptide bond, peptides and proteins. 2. Nucleic acids, Purine & Pyrimidine bases, Watson-Crick model of DNA & its features, Types of DNA. Physical properties of DNA - Effect of heat on physical properties of DNA (Viscosity, buoyant density), Types of RNA. 3. Classification of carbohydrates (mono, oligo polysaccharides), Physical - isomerism D & L, optical; epimers :anomers. 4. Classification of Lipids, Saturated fatty acids - classification of C2 to C20: even carbon: Common and IUPAC names. Unsaturated fatty acids MUFA, PUFA (2.3.4 double bonds), Omega - 3.6.9 fatty acids.Triacyl glycerol - simple and mixed - names and structure. 1. Theory of polyacrylamide gel electrophoresis:	Online (Microsoft Teams)	FBCH FBS PGD	BCH C-3 Proteins BS C-3 Biophysics BPT-II Biochemical Techniques
	Practicals:	1. Estimation of proteins using UV-absorbance and Biuret method. 2. Estimation of proteins using Lowry/Bradford method.	Online (Microsoft Teams)	FBCH	BCH C-3: Proteins
	Tutorials:				
	Test	Mid-term Test			
MAY	Theory:	1. Denaturation and renaturation of Ribonuclease A – discovery of protein folding. 2. Introduction to thermodynamics of folding and molten globule. 3. Assisted folding by molecular chaperones, chaperonins and PDI. 4. Defects in protein folding. Diseases associated with misfolding – Alzheimer's and Prion based.	Online (Microsoft Teams)	FBCH	BCH C-3: Proteins

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		1. Colloidal solution, Micelles, bilayers, membrane models, liposomes, phase transitions of lipids, 2. Membrane asymmetry, active, passive and facilitated transport of solutes and ions, Fick"s Laws, Nernst Planck Equations, Diffusion, Osmosis, 3. Donnan effect, permeabilily coefficient. Ionophores, transport equation, membrane potential, action potential, neuronal synapse. 1. Blotting Techniques:	Online (Microsoft Teams)	FBS PGD	BS C-3 Biophysics BPT-II Biochemical Techniques
	Practicals:	1. Determination of isoelectric pH of casein. 2. Ammonium sulphate fractionation of proteins.	Online (Microsoft Teams)	FBCH	BCH C-3: Proteins
	Tutorials:				
JUNE	Theory:	1. Solubilization of proteins from their cellular and extracellular locations. 2. Use of mechanical and chemical methods, homogenization, ultrasonication, French press and centrifugation. 3. Ammonium sulphate fractionation, solvent fractionation, dialysis and lyophilization 4. Ion- exchange chromatography, molecular sieve chromatography, hydrophobic interaction/reverse phase chromatography, affinity chromatography, HPLC and FPLC. 1. Mechanobiology:Introduction to mechanobiology, Extracellular matrix, cytoskeleton, Durotaxis, 2. mechanics of cell adhesion and migration, mechanotransduction. 1. Additional methods to identify associated proteins:	Online (Microsoft Teams) Online (Microsoft Teams)	FBCH FBS PGD	BCH C-3: Proteins BS C-3 BPT-II Biochemical Techniques
	Practicals:	1. Separation of proteins using anion-exchange chromatography (demonstration). 2. SDS-PAGE analysis of proteins (demonstration).	Online (Microsoft Teams)	FBCH	BCH C-3: Proteins
	Tutorials:				
JULY	Theory:	1. Determination of purity, molecular weight, extinction coefficient and sedimentation coefficient. 2. IEF, SDS-PAGE and 2-D gel electrophoresis.	Online (Microsoft Teams)	FBCH	BCH C-3: Proteins

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		1. Beer-Lambert law, light absorption and its transmittance.UV and visible and IR spectrophotometry-principles, instrumentation and applications. 2. UV absorption of proteins and N.As - Hypochromism, hyperchromism, denaturation, 3. fluorescence spectroscopy, static & dynamic quenching, fluorescent probes in the study of protein, nucleic acids. 4. Light scattering in biology, optical rotatory dispersion. 1. Proteomics	Online (Microsoft Teams)	FBS PGD	BS C-3 BPT-II Biochemical Techniques
	Practicals:	1. Molecular Visualization Softwares: Pymol and Rasmol for protein structures from PDB	Online (Microsoft Teams)	FBCH	BCH C-3: Proteins
	Tutorials:				

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sarika Yadav **Department: BIOCHEMISTRY** **Semester: IV/VI (2021-2022)**

Month		Topics	Course	Paper Code/Name	Platform used for teaching
January-2022	**Theory**	Digestion and absorption of dietary proteins. Role of essential and non-essential amino acids in growth and development. Metabolic fates of amino groups. Transamination, role of pyridoxal phosphate, glucose-alanine cycle, Kreb's bicycle	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-10: Metabolism of Amino Acids and Nucleotides	Google meet, Google classroom and emails
		Inherited metabolic diseases: Alkaptonuria, Phenylketonuria, Glycogen storage diseases: Von Gierke, Cori and McArdle, Lipid storage diseases: Gauchers diseases, Niemann-Pick disease,	B. Sc. (H) Biochemistry II Yr, Sem IV	BCH GE-4: Biochemical Correlations of Diseases	Google meet, Google classroom and emails
		Practicals			
	Practical	Determination of Packed Cell Volume; Enumeration of Blood cells: RBC and WBC counting	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-8: Human Physiology (PRACTICALS)	Google meet, Google classroom and emails
		Separation of photosynthetic pigments by TLC; Culture of plants (explants)	B. Sc (H) Biochemistry, III Yr, Sem VI	DSE-7: PLANT BIOCHEMISTRY (PRACTICALS)	Google meet, Google classroom and emails

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February 2022	**Theory**	urea cycle, its regulation and inherited defects of urea cycle. Gama-glutamyl cycle; Catabolic pathways of individual amino acids. Glucogenic and ketogenic amino acids. Metabolism of one carbon units.	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-10: Metabolism of Amino Acids and Nucleotides	Google meet, Google classroom and emails
		SCID: Adenosine Deaminase deficiency; Autoimmune diseases: Concepts in immune recognition-self and non-self-discrimination, organ specific autoimmune diseases-Hashimoto's thyroiditis, Graves' disease, Myasthenia Gravis, Diabetes Melitus-I, Systemic diseases: Systemic lupus erythematosus (SLE), Rheumatoid arthritis.	B. Sc. (H) Biochemistry II Yr, Sem IV	BCH GE-4: Biochemical Correlations of Diseases	Google meet, Google classroom and emails
	Practical:	Determination of Bleeding Time and Clotting time; Preparation of blood smear and estimation of differential leucocyte count; Estimation of hemoglobin and Calculation of blood Indices; Plasma protein separation	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-8: Human Physiology (PRACTICALS)	Google meet, Google classroom and emails
		Estimation of carotene/ascorbic acid/phenols/tannins in fruits and vegetables	B. Sc (H) Biochemistry, III Yr, Sem VI	DSE-7: PLANT BIOCHEMISTRY (PRACTICALS)	Google meet, Google classroom and emails AND Performed in the Department Laboratory also
March 2022	**Theory**	Disorders of amino acids metabolism, phenylketonuria, alkaptonuria, maple syrup urine disease, methyl malonic acidemia (MMA), homocystinuria, and Hartnup's disease. Nitrogen cycle, incorporation of ammonia into biomolecules. Overview of amino acid synthesis. • Mid-Sem exam	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-10: Metabolism of Amino Acids and Nucleotides	Google meet, Google classroom and emails

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		Hormonal imbalances: Hormonal imbalances leading to disease: Diabetes Insipidus, Acromegaly, Gigantism, Dwarfism, Goitre, Cretinism • Mid-Sem exam	B. Sc. (H) Biochemistry II Yr, Sem IV	BCH GE-4: Biochemical Correlations of Diseases	Google meet, Google classroom and emails
	Practical	Determination of total iron binding capacity; Pulmonary function tests, spirometry and measurement of blood pressure; Separation of isoenzymes of LDH by electrophoresis.	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-8: Human Physiology (PRACTICALS)	Google meet, Google classroom and emails
		• Extraction and assay of Urease from Jack bean (Performed in the college laboratory also); Induction of hydrolytic enzymes proteinases /amylases/lipase during germination	B. Sc (H) Biochemistry, III Yr, Sem VI	DSE-7: PLANT BIOCHEMISTRY (PRACTICALS)	Performed in Department laboratory as well as online: Google meet, Google classroom and emails
April 2022	**Theory**	Biosynthesis and regulation of non-essential amino acids. Protein calorie malnutrition-Kwashiorkar and Marasmus, N-balance. Integration of metabolic pathways (carbohydrate, lipid and amino acid metabolic pathways), tissue specific metabolism (brain, muscle, and liver).	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-10: Metabolism of Amino Acids and Nucleotides	Google meet, Google classroom and emails
		Cushing and Conn's syndrome, Addison's disease.	B. Sc. (H) Biochemistry II Yr, Sem IV	BCH GE-4: Biochemical Correlations of Diseases	Google meet, Google classroom and emails evaluations
	Practical	• Case studies: Renal clearance, ECG, LFT, EEG • Examination and evaluation	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-8: Human Physiology (PRACTICALS)	Google meet, Google classroom and emails

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		Examination and evaluation	B. Sc (H) Biochemistry, III Yr, Sem VI	DSE-7: PLANT BIOCHEMISTRY (PRACTICALS)	Google meet, Google classroom and emails

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Meeta Bhardwaj **Department: Biochemistry**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	Kwashiorkar, Marasmus, Beri-beri, Scurvy, Pellagra, Anaemia, Night blindness, Rickets, Osteomalacia, Osteoporosis,	BSc. (H) Biochemistry Sem IV	BCH GE 4 - BCD
April		Features of enzyme catalysis, factors affecting the rate of chemical reactions, collision theory, activation energy and transition state theory. Catalysis, reaction rates and thermodynamics of reaction. Catalytic power and specificity of enzymes (concept of active site), Fischer's lock and key hypothesis, Koshland's induced fit hypothesis.	B.Sc (H) Biochemistry Sem II	BCH – C4 - Enzymes
		Heterologous protein expression of cloned DNA in E.coli: Expression vectors (lac promoter, tryptophan promoter, Lambda cI promoter, arabinose promoter based) optimization of protein expression(using upstream and downstream signals) Fusion proteins, cell-free translation systems. RNAi vectors.	PG Diploma Sem II	PGD MB 202 – Recombinant DNA Technology - II
	Practicals	Lipid Profile: Triglyceride, Cholesterol 2. Anthrompometric measurements: BMI, Waist/Hip Ratio, Mid Arm Muscle Area (MAMA), Mid Arm Area (MAA).	BSc. (H) Biochemistry Sem IV	BCH GE 4 - BCD
		Estimation of DNA by DPA method To hydrolyze DNA and separate nucleotide bases by paper chromatography	BSc. (H) Biochemistry Sem IV	BCH C-9 - GORR
		Estimation of Random Blood Glucose – Glucose Oxidase method Estimation of Oral Glucose tolerance test (O-GTT).	BSc. (H) Bioclogical Science Sem IV	BS C 10 - MI

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February May	**Theory:**	Obesity, Cardiovascular diseases, Atherosclerosis, Diabetes Mellitus-II, Inflammatory Bowel Disease (IBD). General features - proximity and orientation, strain and distortion, acid-base and covalent catalysis (chymotrypsin, lysozyme). Gene transfer to animal cells: chemical transfection, lipofection, electroporation, gene-gun, microinjection, transient and stable transformation, optimization of protein synthesis, use of reporter genes. DNA markers: VNTRs and DNA fingerprinting, SNPs, RFLPs.	BSc. (H) Biochemistry Sem IV B.Sc (H) Biochemistry Sem II PG Diploma Sem II	BCH GE 4 - BCD BCH – C4 - Enzymes PGD MB 202 – Recombinant DNA Technology - II
	Practical:	Haemoglobin Estimation Blood pressure measurement To plot ultraviolet absorption spectrum of DNA 3. Determination of DNA concentration by A260nm Determination of Lipid Profile: Total Cholesterol (TC), High Density Lipoproteins (HDL) and Triglycerides (TG). Estimation of SGPT and SGOT in serum/plasma sample. Estimation of Bilirubin in serum/plasma sample.		
MARCH JUNE	**Theory**	Alzheimer's, Huntington's diseases, Kuru, Creutzfeldt-Jakob disease, Sickle Cell anaemia, Thalessemia. Viral infection: Polio, Measles, Mumps, influenza, Metal activated enzymes and metalloenzymes, transition state analogues. Coenzymes in enzyme catalyzed reactions. Structure, vitamin precursors, types of reaction involved in: TPP, FAD, NAD, pyridoxal phosphate,	BSc. (H) Biochemistry Sem IV B.Sc (H) Biochemistry Sem II	BCH GE 4 - BCD BCH – C4 - Enzymes

		DNA transformation in yeast: methods of gene transfer to yeast ,YIp, YEp, YCp, YRp, shuttle vectors), optimization of protein expression. RNAi,	PG Diploma Sem II	PGD MB 202 – Recombinant DNA Technology - II
APRIL JULY	**Practicals** **Theory**	Calcium Estimation VAE Determination of the melting temperature Isolation of chromosomal DNA from E coli cells Estimation of creatinine in serum/plasma sample. Estimation of Urea. PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021 \ Bacterial infections: Tetanus, Diphtheria, Tuberculosis, Typhoid, Cholera. Protozoan: Malaria and Trypanosomiasis. Parasitic infections: Leishmania. Coenzymes contd - biotin, coenzyme A, tetrahydrofolate and	B.Sc (H) Biochemistry Sem II PG Diploma Sem II	BCH – C4 - Enzymes PGD MB 202 – Recombinant DNA Technology - II

	Practicals	Mock Evaluation and Repeat experiments	BSc (H) Biological Sciences Sem IV	SEC – Recombinanat DNA Technology
		Mock Evaluation and Repeat experiments	BSc (H) Biological Sciences Sem VI	BS C13 – Defence Mechanisms
		Mock Evaluation and Repeat experiments	PG Diploma Sem II	PGD MBL 206 – Immunology –II

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Name of the Faculty : Dr. PILLI RAJESWARI
Department :BIOCHEMISTRY **Semester-VI&II**
Teaching Mode : ONLINE **2022**

Month		Topics	Course	Paper Code Name
January	**Theory**	UNIT 1: **Introduction to plant cell structure and carbon fixation No. of Hours: 8** Introduction to Plant cells, Plasma membrane, Vacuole and Tonoplast membrane, Cell wall, Plastids and Peroxisomes. Photosynthesis and Carbon assimilation. Structure of PSI and PSII complexes, Light reaction, Cyclic and non-cyclic photophosphorylation, Calvin cycle and regulation; C4 cycle and Crassulacean acid metabolism (CAM)	**B.SC (Hons) Biochemistry Final year Semester-VI**	**Plant Biochemistry (BCH DSE-5)**
		Unit III: Innate Immunity in animals No. of Hours: 8 Anatomical barriers, soluble molecules and membrane associated receptors (PRR) Complement activation by classical, alternate and MBL pathway, biological consequences of complement activation, regulation and complement deficiencies.Haematopoiesis, cells of the innate immune system, primary lymphoid organs; cell adhesion molecules, chemokines, leukocyte extravasation, and the inflammatory response; connections between innate and adaptive immunity.	**B.SC (Hons) Biological Science Final year Semester-VI**	**Immunobiology** **(BS-C-13)**

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	Practical	1.Agglutination 2.Elisa	**B.SC (Hons) Biological Science Final year Semester-VI**	**Immunology (BS-C-13)**
February	**Theory**	**UNIT 1 &:IV No. of hours: 8** Photorespiration, Photo inhibition of photosynthesis, Photosynthetic carbon reduction (PCR) cycle, Synthesis of polysaccharides in plants. **UNIT IV: Regulation of plant growth and stress** Introduction to plant hormones and their effect on plant growth and development, Regulation of plant morphogenetic processes by light.Plant stress, Plant responses to abiotic and biotic stresses	**BSC (Hons) Biochemistry Final year Semester-VI**	**Plant Biochemistry (BCH DSE-5)**
	Theory	Unit V: Adaptive Immunity in Animals No. of Hours: 8 Antigens and haptens, Factors that dictate immunogenicity, B and T cell epitopes.Structure and distribution of classes and subclasses of immunoglobulins (Ig), Ig fold, effector functions of antibody, antigenic determinants on Ig and Ig super family.Monoclonal antibodies; Immunological methods- Antigen-antibody interactions.Secondary lymphoid organs and	**B.SC (Hons) Biological Science Final year Semester-VI**	**Immunology (BS-C-13)**

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		tissues.B cell maturation and generation of antibody diversity.		
	Practical	.Immuno electrophoresis 2 Countercurrent IEP, 3.Rocket IEP		
March	**Theory**	**UNIT IV &V: Secondary metabolites and toxins No. of hours: 8** Water deficit and drought resistance, Flooding, Temperature stress, Salt stress, Ion toxicity, Pollution stress and potential biotic stress (insects and diseases). Representative alkaloid group and their amino acid precursors, function of alkaloids. Examples of major phenolic groups; simple phenylpropanoids, coumarins, benzoic acid derivatives, flavonoids, tannins and lignin, biological role of plant phenolics,	**B.SC (Hons) Biochemistry Final year Semester-VI**	**Plant Biochemistry (BCH DSE-5)**
	Theory	**Unit: V No of hours 8** Humoral immune response against T-dependent and T-independent antigens.Histocompatibility antigens – structure and function, T cell maturation and differentiation – Positive and Negative selection of thymocytes, Antigen Presentation by the exogenous and endogenous pathways, Activation of T cells and cell mediated immunity; Role of NK cells	**B.SC (Hons) Biological Science Final year Semester-VI**	**Immunology (BS-C-13)**

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		and Antibody dependent cellular cytotoxicity.		
	Practical	Cell isolation and Counting-Spleen/PBMNC		
April	**Theory**	**No of hours : 2** Classification of terpenoids and representative examples from each class, biological functions of terpenoids. **No of hours :2** **Revision of 1 ,1V, &V Units**	**B.SC (Hons) Biochemistry Final year Semester-VI**	**Plant Biochemistry (BCH DSE-5)**
	Theory	**UnitVI No of hours 4** Hypersensitivity and Transplantation Immunology; Vaccines **Revision of hours 2** Revision of III, V, and VI.	**B.SC (Hons) Biochemistry Final year Semester-VI**	**Immunology (BS-C-13)** **Immunology (BS-C-13)**
	Theory	**UNIT II: Chromatography No. of hours: 8** Preparation of sample, different methods of cell lysis, salting out, dialysis. Introduction to chromatography. Different modes of chromatography: paper, thin layer and column. Preparative and analytical applications. Principles and applications of: Paper Chromatography, Thin Layer Chromatography 1.Verification of Beer's Law	**B.SC (Hons) Biochemistry** **SemesterII**	**Techniques in Biochemistry (BCH- GE-2)**

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	Practical	2.Estimation of proteins by Biuret/Lowry method 3.Separation of amino acid acids by TLC/paper chromatography		
	Practical	1.Purification of IgG by ion exchange chromatography 2.Preparation of IgG fraction using Protein A Sepharose column	**SemesterII**	**ImmunologyII PGDMB**
May	**Theory**	**UNIT IV: Centrifugation** **No. of hours: 8** Principle of centrifugation, basic rules of sedimentation, sedimentation coefficient. Various types of centrifuges, low speed centrifuge, high speed centrifuge and ultracentrifuge, types of rotors. Application of centrifugation, differential centrifugation, density gradient centrifugation- zonal and isopycnic	**B.SC (Hons) Biochemistry** **SemesterII**	**Techniques in Biochemistry (BCH- GE-2)**
	Practical	4.To perform agarose gel electrophoresis 5.To isolate mitochondria by differential centrifugation		
	Practical	1.Dot ELISA 2.Determination of antibody titre by indirect ELISA 3.Measurement of antigens by Direct and Competitive ELISA	**SemesterII**	**Immunoloy PGD MB**

June	**Theory**	**UNIT II &VI: Microscopy No. of hours: 8** Ion Exchange Chromatography, Molecular Sieve Chromatography, Affinity Chromatography. Principle of light microscopy, phase contrast microscopy, fluorescence microscopy. Permanent and temporary slide preparation, histology and staining.	**B.SC (Hons) Biochemistry** **SemesterII**	**Techniques in Biochemistry (BCH- GE-2)**
	Practical	1.Visualization of cells by methylene blue		
	Practical	1.Purification of antibodies from serum using salt fractionation and gel filtration 2.Digestion of antibodies with pepsin and preparation of F(ab)2 fragment using Sephadex G-100 chromatography	**Semester II**	**Immunology PGDMB**

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kalyani Krishna **Department: Botany**
Semester : II/IV/VI 2021-22

Month		Topics	Course	Paper Code/Name
January	**Theory**	Introduction to paper and discussion about the paper Photosynthesis Electromagnetic radiations, interaction of radiation with biomolecules, principle of UV visible absorption spectrophotometry, Lambert's law, Beer's law, working of a	B.Sc. (H) Botany Semester VI **B.Sc. (H) Biological Science (IV)**	Plant metabolism **SEC – Biochemical Techniques**
	Practicals	• Chemical separation of photosynthetic pigments • To determine osmotic potential of plant cell sap by plasmolytic method • Protein estimation by Biuret/Lowry's method, separation of amino acids by Thin Layer Chromatography (TLC), Study of Agarose Gel Electrophoresis (AGE)	B.Sc. (H) Botany Semester VI B.Sc. (P) Life Sciences Semester IV **B.Sc. (H) Biological Science (IV)**	Plant metabolism Plant physiology and metabolism **SEC – Biochemical Techniques**
	Tutorials	----------		
February	**Theory:**	Photosynthesis Applications of UV-visible absorption spectrophotometry in biochemistry, fluorescence spectrophotometry and its application in biochemistry	B.Sc. (H) Botany Semester VI **B.Sc. (H) Biological Science (IV)**	Plant metabolism **SEC – Biochemical Techniques**

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	Practicals:	• To study Hill's reaction • To demonstrate and verify law of limiting factors • To compare the rate of respiration in different parts of a plant • To study the activity of catalase and effect of heavy metal and pH on enzyme activity.	B.Sc. (H) Botany Semester VI	Plant metabolism
		• Comparison of the rate of respiration in any two parts of a plant. • To study the effect of two environmental factors (light and wind) on transpiration by excised twig • To demonstrate hill reaction	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Separation of sugars/ nucleic acids by paper chromatography, isolation of mitochondria and assay of its marker enzyme SDH, Study of Agarose Gel Electrophoresis (AGE)	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Tutorials:	----------		
March	**Theory:**	Carbon metabolism Nitrogen metabolism	B.Sc. (H) Botany Semester VI	Plant metabolism
		Introduction to chromatography, principle and applications of paper chromatography, Thin Layer Chromatography	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**

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	Practicals:	• To study the activity of nitrate reductase in leaves of two different plant sources • To study the activity of urease enxyme and effect of substrate concentration on enzyme activity • To demonstrate the activity of lipase in germinating oilseeds • To demonstrate mobilization of lipids during germination	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To study the activity of catalase • To study the effect of pH on catalase • To study the effect of enzyme concentration on catalase	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Verification of Beer's Lambert's law, Separation techniques – Ion exchange and Gel filtration chromatography	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Tutorials:	---------		
	<u>Assignment :</u>	Given to all students for respective papers		
April	**Theory:**	Nitrogen metabolism	B.Sc. (H) Botany Semester VI	Plant metabolism
		Ion exchange chromatography, Gel filtration chromatography, Affinity chromatography and HPLC	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Practicals:	• To demonstrate fluorescence by isolated chlorophyll pigments • To demonstrate absorption spectrum of photosynthetic pigments • To demonstrate respiratory quotient • To study the activity of tyrosinase and peroxidase and effect of inhibitor on any one of the enzymes	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To demonstrate bolting • To demonstrate effect of auxins on rooting • To demonstrate suction due to transpiration	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Verification of Beer's Lambert's law, Protein estimation by Biuret/Lowry's method	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Tutorials:	---------		
	<u>Test</u>	Conducted for all papers		

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	Tutorials:	--------		

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

Paper – Archegoniatae (BHCC4) Credits 6

Month	Topics
April	Introduction to archegoniates, unifying features, APG system of classification. Alternation of Generations.
~~April~~ May	a) General characteristics of Bryophytes, Morphology and anatomy of gametophyte and sporophyte in 1) Riccia 2) Marchantia 3) Pellia 4) Porella 5) Anthoceros 6) Sphagnum & 7) Funaria
June	b) Comparative account of liverworts mosses and hornworts. Progressive sterilization of the sporophyte. Ecological & Economic Importance with special reference to Sphagnum
June	c) Latest research in the field of Bryophytes such as genome sequencing in Marchantia polymorpha to elucidate evolution.
July	Pteridophytes – General characters and early land plants (Cooksonia & Rhynia) Type studies of Psilotum, Selaginella, Equisetum and Pteri

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Internal Assessment Test an

ractical

April & up
o May 15th

Experiments B. Sc(H) Botany Archegon

1) Marchantia: Morphology of thallu
whole mount of rhizoids & scales, ves
section of thallus through Gemma cup
whole mounts of Gemmae (all temp
~~mounts~~ slides) V.S. of Antheridiophore, l.s
of sporophyte, V.S. of Archegoniophe
(all permanent slides)

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2) Riccia — Morphology of thallus (spec
or photograph)

3) Pellia, Porella — Morphology of thal
(through specimens/photographs/permane
slides) Permanent slides or photogr
of WM thallus — vegetative and
V.S. reproductive thallus

4) Anthoceros — Morphology of thallu
dissection of sporophyte (to show
stomata, spores, pseudoelaters, colume
(temporary slides), V.S. thallus (permane
slide).

5. Sphagnum — Morphology of plan
w.m. leaf (temporary or permanents

6. Funaria — Morphology, w.m. lea
rhizoids, Operculum, peristome, anhu
spores (temporary slides).
Permanent slides showing antherid

Practicals Experiment [illegible] Archegonia

May (15th May onwards)

7. Psilotum – study of specimen, t.s. synangium (P.S.)

8. Selaginella – Morphology, w.m. leaf with ligule t.s. stem (permanent slide) w.m. strobilus, w.m. microsporophyll and megasporophyll (temporary slide) l.s. strobilus (permanent slid

9. Equisetum – Morphology, t.s. stem interno de (permanent slide), l.s. strobilus, t.s. stro bilus, w.m. sporangiophore, w.m. spores (we and dry) temporary slides, t.s. rhizome (permanent slide)

June

10. Pteris – Morphology, t.s. rachis, v.s. spo phyll, w.m. sporangium, w.m. spores (tempor slide) t.s. rhizome, w.m. prothallus wit sex organs and young sporophyte (P.S.)

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July

11. Cycas : Morphology (coralloid ~~leaf~~ root, bulbil, w.m. microsporophyll, t.s. coralloid root. t. rachis, v.s. leaflet, v.s. microsporophyll, w.m spores (temporary slides) l.s. ovule, t.s ro (permanent slides)

12. Pinus – Morphology (long & dwarf shoo male & female cones, t.s. needle, t.s. s l.s/t.s. male cone, w.m. microsporoph w.m. microspores (temporary slides) l.s. fema cone (permanent slide)

13. Gnetum : Morphology (stem, male & fem cones), t.s. stem (temporary or permanen V.S. ovule (permanent slide

Assignment + Test

Semester wise Teaching Plan (Sem- II

Sri Venkateswara College

e of the Faculty : Dr. Sunila Khurana Department : B

emester II

Course B.Sc. Life Science Paper Plant Ecol Taxon

acticals Experiments

pril

1. Determination of pH and analysis of soil samples for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency

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2. Study of morphological adaptations of hydrophytes (Hydrilla, Eichhornia, Vallisneria & Nymphaea) and Xerophytes (Opuntia, Ruscus & ~~Asparagus~~ Aloe)

ry

3. Study of Biotic interactions of the following:
Stem Parasite (Cuscuta)
Root Parasite (Orobanche)
Epiphyte (Orchid: Rhynchocystis)
Predator (Insectivorous Plant: Nep

4. Determination of minimum quadrat size for the study of herbaceous vegetation in the college campus by species area curve method.

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me

B.Sc. Life Sciences
Batch I & III

Contd. 2
Plant Ecology & Taxonomy

5. Study of instruments used to measure microclimatic variables : soil thermometer, maximum and minimum thermometer, anemometer, psychrometer, hygrometer, rain gauge and lux meter.

6. Quantitative analysis of herbaceous vegetation in the college campus for frequency distribution law.

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7. Study of vegetative & floral characters of the families:
1. Brassicaceae a) Brassica
b) Iberis
2. Asteraceae a) Sonchus
b) Ageratum

8. Study of vegetative & floral characters of the following families:
3. Solanaceae a) Solanum nigrum
b) Withania
4. Lamiaceae a) Salvia b) Ocimum
5. Liliaceae a) Allium cepa

2021 - 2022

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

Paper - Mycology & Phytopathology (BHCC3)

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Month	Topics
April	General account of Chytridiomycetes
April	Zygomycota, General characteristics Ecology, Thallus organisation Life cycle with reference to Rhizopus
May	Oomycota General characteristics, Ecology, Life cycle & classification with reference to Phytophthora and Albugo.
June & July	Symbiotic Association Lichen - Occurrence, General characteristics, Growth forms & range of thallus organisation, Economic importance of lichens. Mycorrhiza Ectomycorrhiza, Endomycorrhiza and their significance.

Internal Assessment - Assignment & Te

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

Name of the Faculty: Dr. ShuklaSaluja
Department: BotanySemester : I/III/V

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Plant identification, Classification, Nomenclature; Biosystematics. Ecosystems (Structure; Processes; Trophic organisation;)	B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics CC-9: Ecology
	Practicals	Ex.1: Study of vegetative and floral characters terminology for families description. Ex.2: Study of vegetative and floral characters for family-Brassicaceae (description). Ex.3: Study of vegetative and floral characters for family-Solanaceae(description). Ex.4: Study of vegetative and floral characters for family-Lamiaceae (description). 1.Determination of osmotic potential of plant cell sap by plasmolytic method. 2.Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte. 3.To study the effect of the environmental factor light on transpiration by excised twig. Preparation of Murashige and Skoogs Media, Demonstration of *in vitro* sterilization and inoculation methods using leaf and nodal explants, Study of in vitro micropropagation, construction of restriction maps of linear and circular DNA from the data	B.Sc. Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-III) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Tutorials	----------		
FEB	**Theory:**	Field inventory; Functions of Herbarium; Important herbaria and botanical gardens of the world and India; ; Virtual herbarium; E-flora; Documentation: Flora, Monographs, Journals; Keys: Single access and Multi-access Food chains and Food webs; Ecological pyramids.	B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics CC-9: Ecology

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	Practicals:	Ex.5: Study of vegetative and floral characters for family-Asteraceae (description). Ex.6: Study of vegetative and floral characters for family-Euphorbiaceae (description). Ex.7: Study of vegetative and floral characters for family-Liliaceae (description).	B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics
		4. To Study Hill's reaction. 5.To study the activity of catalase. 6. Comparison of the rate of respiration in any two parts of a plant. 7.To study the effect of pH and enzyme concentration.	B.Sc.(P)-Life Science Sem.IV(B-III)	LSCC-1/Plant Physiology & Metabolism
		Study of in vitro organogenesis and in vitro embryogenesis, study of anther, endosperm and embryo culture, study of artificial seeds, isolation of protoplasts, study of methods of gene transfer – Agrobacterium tumefaciens mediated gene transfer, electroporation, microinjection, microprojectile bombardment.	B.Sc. Botany (Sem: VI)	CC-14: Plant Biotechnology
	Assignment	Assignment topics will be distributed according to the syllabi		
MAR	**Theory:**	Principles and rules (ICN); Ranks and names; Typification, author citation, valid publication, rejection of names, principle of priority and its limitations; Names of hybrids.	B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics
		Functional aspects of ecosystem - Principles and models of energy flow; Production and productivity; Ecological efficiencies	B.Sc. Botany (Sem: IV)	CC-9: Ecology

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	Practicals:	Ex.8: Study of vegetative and floral characters for family-Myrtaceae(description). Ex.9: Study of vegetative and floral characters for family-Apiaceae(description). 1.To study the effect of light intensity on O2 evolution in photosynthesis. 2.Setup- Demonstration experiments of Bolting. Study of steps of genetic engineering for production of Bt cotton, Golden rice, FlavrSavr tomato through photographs, isolation of plasmid DNA, Restriction digestion	B.Sc. Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-III) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Tutorials:	---------		
APR	**Theory:**	Major contributions of Theophrastus, Bauhin, Tournefort, Linnaeus, Adanson, de Candolle, Bessey, Hutchinson, Takhtajan and Cronquist Classification systems of Bentham and Hooker (upto series) and Engler and Prantl (upto series); Brief reference of Angiosperm Phylogeny Group (APG III) classification. Biogeochemical cycles; Cycling of Carbon, Nitrogen and Phosphorus. ediblevaccines;Industrial enzymes (Aspergillase, Protease, Lipase); Gentically Engineered Products–Human Growth Hormone; Humulin; Biosafety concerns.	B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics CC-9: Ecology CC-14: Plant Biotechnology
	Practicals:	Ex.10: Study of vegetative and floral characters for family-Ranunculaceae (description). Ex.11: Study of vegetative and floral characters for family-Poaceae(description). 1.Setup- Demonstration experiments of Suction due to transpiration. 2. Effect of auxins on rooting. 3.Hydroponics (using a photograph). 4. To demonstrate the delay of senescence by cytokinins. 5. To study the phenomenon of seed germination (effect of light and darkness) gel electrophoresis of plasmid DNA, Calculate the percentage similarity between different cultivars of a species using RAPD profile. Construct a dendrogram and interpret results.	Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-III) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Tutorials:	---------		
	<u>Test</u>	Practical test will be conducted and evaluated as per the date sheet		

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SEMESTER WISE TEACHING PLAN
(2021-2022)
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Name of the Faculty: Dr. Amit Vashishtha **Department: Botany**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Nam
JANUARY	**Theory**	1. **Unit 1**: Historical perspective; Experiments that established nucleic acids (DNA & RNA) as the carrier of genetic information: Griffith's,Hershey & Chase, Avery, McLeod & McCarty and Fraenkel Conrat 's experiment .**Unit 2:** DNA Structure: Miescher to Watson and Crick- a historic perspective.DNA structure , salient features of double helix	1. B.Sc. Hons. Botany Semester IV	(BHCC8) Molecular Biology
		2. Introduction to biological databases - primary, secondary and composite databases, NCBI, nucleic acid databases (GenBank, EMBL, DDBJ, NDB).	2. B.Sc. Hons. Botany Semester VI	Bioinformatics
		3. Unit 1: History of discovery of DNA, features of the double helix, various forms of DNA. Denaturation and reassociation of DNA, hyperchromicity, melting temperature, factors affecting Tm of DNA molecules.Types of RNA and their structure.Definition of a gene, organization of genes in viruses, bacteria and eukaryotes. Complexity of eukaryotic genes and chromosomes, supercoiling of DNA and its importance, linking number,	3. B.Sc. Hons. Biological Sciences Semester IV	(BS C-9) Molecular Biology
	Practicals	• Preparation of LB medium and raising E. coli • Study of experiments establishing nucleic acid as genetic material (Avery et al, Griffith's, Hershey & Chase's and Fraenkel & Conrat's experiments)through photographs • DNA isolation from cauliflower heads • Quantification of DNA using DPA method.	1. B.Sc. Hons. Botany Semester IV	(BHCC8) Molecular Biology
		• Sequence retrieval (protein and gene) from NCBI. • Structure download (protein and DNA) from PDB. • Molecular file formats - FASTA, GenBank, Genpept, GCG, CLUSTAL, Swiss-Prot, FIR.	2. B.Sc. Hons. Botany Semester VI	Bioinformatics
		• Isolation of chromosomal DNA • To assess the purity by A260/A280 Ratio • Isolation of total RNA from bacteria/yeast	3. B.Sc. Hons. Biological Sciences Semester IV	BS C-9) Molecular Biology

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	Tutorials			
FEBRUARY	**Theory:**	1. **Unit 2** Types of DNA: A,B & Z conformations . Genome complexity: Concept of C-value paradox, denaturation and renaturation, Cot curves; Organization of DNA- in Prokaryotes, Viruses & Eukaryotes. Organelle DNA -- mitochondria and chloroplast DNA; Chromatin structure- Nucleosome, Euchromatin, Heterochromatin- Constitutive and Facultative heterochromatin . RNA : types of RNA molecules , structure and function of mRNA, tRNA and rRNA 2. Generation of data (Gene sequencing, Protein sequencing, Mass spectrometry, Microarray), Sequence submission tools (BankIt, Sequin, Webin); Sequence file format (flat file, FASTA, GCG, EMBL, Clustal, Phylip, Swiss-Prot); Sequence annotation; Data retrieval systems (SRS, Entrez) 3. **Unit 1:** topoisomerases, inhibitors of topoisomerases and their application in medicine, Nucleosome structure and packaging of DNA into higher order structures. **Unit 2:** General features of DNA replication, the chemistry of DNA synthesis, DNA polymerase, the replication fork, enzymes and proteins in DNA replication, E coli DNA polymerases,	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
	Practicals:	• Quantification of unknown DNA by diphenylamine reagent. • Study of DNA replication through photographs: Modes of replication - Rolling circle, Theta and semi-discontinuous ; Semiconservative model of replication (Messelson and Stahl's experiment); Telomerase assisted end-replication of linear DNA • Study of structures of : tRNA (2D and 3D); prokaryotic RNA polymerase and eukaryotic RNA polymerase II through photographs • Molecular viewer by visualization software. • Translate a nucleotide sequence and select the correct reading frame of the polypeptide from the output sequences. • Predict the structure of protein from its amino acid sequence. • Determination of DNA concentration by A260nm • Quantitative estimation of DNA by DPA method	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology

	Tutorials:			

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	Assignment :			
MARCH	**Theory:**	1. **Unit 4:** Mechanism - initiation, elongation and termination, Kornberg's discovery; Enzymes and other proteins involved in DNA replication; General principles – bidirectional, semiconservative and semi discontinuous replication (Replisome), RNA priming (primase & Primosome); Various modes of DNA replication, including rolling circle, θ (theta) mode of replication, replication of linear ds-DNA. Replication of the 5'end of linear chromosome (end replication problem & Telomerase). 2. Similarity, identity and homology. Alignment – local and global alignment, pairwise and multiple sequence alignments, alignment algorithms. Methods of Alignment (Dot matrix, Dynamic Programming, BLAST and FASTA); Scoring Matrices/ Amino acid substitution matrices (PAM and BLOSUM), and CLUSTALW. 3. **Unit 2** Stages of replication-initiation, elongation and termination, origin of replication, replication in eukaryotes, end replication problem, telomerase, various modes of replication. Comparison of replication in prokaryotes and eukaryotes. Inhibitors of replication.	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology

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	Practicals:	• Numericals based on DNA re-association kinetics (melting profiles and Cot curves) • Study of the following through photographs: Assembly of Spliceosome machinery; Splicing mechanism in group I & group II introns; Ribozymes and Alternative splicing • BLAST suite of tools for pairwise alignment. • Sequence homology and Gene annotation. • Generating phylogenetic tree using PHYLIP, and MAGA X, Clustal W etc with PHYLIP. • Quantitative estimation of RNA by orcinol method • Ultraviolet absorption spectrum of DNA/RNA	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
	Tutorials:			
	<u>Test</u>			

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APRIL	**Theory:**	1. **Unit 8 :** Basic principles of transcriptional regulation: Positive & negative; Inducible & Repressible; Activators and Repressors ; Prokaryotes: Operon concept & regulation of lactose metabolism (positive and Negative) and tryptophan synthesis (Repression-Derepression and Attenuation) in E.coli; Eukaryotes: Gene silencing: Methylation, RNAi, Imprinting. 2. Construction of phylogenetic tree, dendrograms, methods of construction of phylogenetic trees - maximum parsimony, maximum likelihood and distance methods. 3. Unit VI: Principles of gene regulation, negative and positive regulation, concept of operons, regulatory proteins, activators, repressors, DNA binding domains. Regulation of gene expression in bacteria, lac operon and trp operon, induction of SOS response, synthesis of ribosomal proteins. Overview of regulation of gene expression in eukaryotes, heterochromatin, euchromatin, chromatin remodeling, DNA binding activators and co activators, regulation of galactose metabolism genes in yeast. Riboswitches, RNA interference, siRNA, miRNA	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
	Practicals:	• Understanding the mechanism of RNAi by photographs. • Understanding the regulation of lactose (lac) operon (positive & negative regulation) and tryptophan (trp) operon (Repression and De-repression & Attenuation) through photographs. • Mock test • Gene prediction using GENSCAN and GLIMMER. • Mock test • Identification of nucleotide bases by paper chromatography • Mock test	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
	Tutorials:			

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

Name of the Faculty: Dr. Aditi Kothari Chhajer **Department:Botany**

Semester : II/IV/VI

Month		Topics	Course	Paper
JANUARY	**Theory**	• Origin of Cultivated Plants: Concept of centres of origin, their importance with reference to Vavilov's work • Cereals-Wheat -Origin, morphology, uses	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Introduction to Intellectual Property • Copyrights Introduction, works protected under copyright law, infringement, transfer of copyright.	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Practicals	Familiarization with basic equipment in tissue culture. Study of economically important plants - Black pepper, Clove and Tea through specimens and sections.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Copyright infringement Plagiarism check Introduction to IPR e-diary	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Tutorials			
FEBRUARY	**Theory:**	• Legumes-General account with special reference to Gram and soybean. • Micropropagation: Introduction	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Trade Marks Introduction, How to obtain, Different types of marks — Collective marks, certification marks, service marks, Trade names, etc. Differences from Designs. Geographical Indications Definition, rules for registration, prevention of illegal exploitation, importance to India.	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Practicals:	Study of economically important plants: Wheat, Gram, Soybean through specimens, sections and microchemical tests.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Trademark Search Patent search Industrial designs	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights

	Tutorials:			
MARCH	**Theory:**	Tissue Culture- direct and indirect organogenesis and embryogenesis, single cell and protoplast culture, Unit 10	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Patents Historical Perspective, Basic and associated right, WIPO, PCT system, Traditional Knowledge, Patents and Healthcare — balancing promoting innovation with public health, Software patents and their importance for India Industrial Designs Definition, How to obtain, features, International design registration.	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Practicals:	Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Geographical Indicators i)food (Basmati rice, Tirupati laddu, etc.) ii)handlooms(kota saree, banarse,etc.) iii)industry (mysore agarbatti, feni, champagne,etc) iv)Natural resources (Makrana marble, etc)	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Tutorials:			
APRIL	**Theory:**	Unit 10	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Layout design of integrated circuits Circuit Boards, Integrated Chips, Importance for electronic industry. Protection of Plant Varieties, Information technology related IPR	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Practicals:	PCR, Blotting Techniques, AGE and PAGE	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology

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		Biopiracy Industrial Designs	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Tutorials:			

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SEMESTER WISE TEACHING PLAN
(Even Sem 2021-22)
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Name of the Faculty: Dr. Pooja Gokhale Sinha

Department: Botany

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

Paper Title: Ecology (BHCC-9)

MONTH		Topics	Course	Paper Code/Name
January	**Theory**	• Brief History, Basic concepts, Levels of organization, • Interrelationships between the living world and the environment, the components and dynamism, homeostasis (with reference to Ecosystem). • Light, Temperature, Wind andFire: Variations; adaptations of plants to their variation.	B.Sc. (H) Botany	BHCC9
	Practicals	• Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer/hygrometer, rain gauge and lux meter. • 2. Determination of pH of various soil and water samples (pH meter, universal indicator/Lovi bond comparator and pH paper) • 3. Analysis for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency from two soil samples by rapid field tests	B. Sc. (H) Botany	BHCC9
February	**Theory:**	• Soil: Importance; Origin; Formation; Composition • Physical, Chemical and Biological components; • Soil profile; Role of climate in soil development. • Water: Importance; States of water in the environment; Atmospheric moisture; Precipitation types (rain, fog, snow, hail, dew); Hydrological Cycle; Water in soil; Water table.	B. Sc. (H) Botany	BHCC9

	Practicals:	• Determination of organic matter of different soil samples by Walkley & Black rapid titration method. • 5. Comparison of bulk density, porosity and rate of infiltration of water in soils of three habitats. • 6. Determination of dissolved oxygen of water samples from polluted and unpolluted sources. • 7. (a). Study of morphological adaptations of hydrophytes and xerophytes (four each). (b). Study of biotic interactions of the following: Stem parasite (Cuscuta), Rootparasite (Orobanche), Epiphytes, Predation (Insectivorous plants).	B. Sc. (H) Botany	BHCC9 PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021
March	**Theory:**	• Plantcommunities: Concept of ecological amplitude; • Habitat (types) and Ecological niche (types); • Community characters (analytical and synthetic); • Ecotone and edge effect; Methods to studying vegetation; Dynamics of communities; • Succession: processes, types (Lithosere, Hydrosere); climax concepts.	B. Sc. (H) Botany	BHCC XI/Reproductive Biology of Angiosperms
	Practicals	• Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus, by species area curve method (species to be listed). • 9. Quantitative analysis of herbaceous vegetation in the college campus for frequency and comparison with Raunkiaer's frequency distribution law. • 10. Quantitative analysis of herbaceous vegetation for density and abundance in the college campus	B. Sc. (H) Botany	BHCC9
April	**Theory:**	• Dynamics of communities; • Succession: processes, types (Lithosere, Hydrosere); climax concepts.	B. Sc. (H) Botany	BHCC9
	Practicals	• Field visit to familiarize students with ecology of different sites. • Mock test	B. Sc. (H) Botany	BHCC9

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Name of the Faculty: Dr. Pooja Gokhale Sinha

Department: Botany

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

Paper Titles: Industrial and Environmental Microbiology

MONTH		Topics	Course	Paper Code/Name
January	**Theory**	• Scope of microbes in industry and environment; institutes of microbial research	B. Sc. (H) Botany	BHDS3
	Practicals	1. Principles and functioning of instruments in microbiology laboratory (autoclave, laminar air flow, incubators, types of fermenters) 2. Preparation of different culture media (Nutrient medium/ Luria Bertani medium/Potato dextrose medium/Czapek Dox medium)	B. Sc. (H) Botany	BHDS3
February	**Theory:**	• Microbial enzymes of industrial interest and enzyme immobilization: Overview of enzymes used for industrial applications • Methods of immobilization, advantages and applications of immobilization, large scale applications of immobilized enzymes: glucose isomerase and penicillin acylase	B. Sc. (H) Botany	BHDS3
	Practicals:	3. Hydrolysis of casein / starch by microorganisms 4. Alcohol production by yeast using sugar/ jaggery 5. Serial dilution method for isolation of microorganisms from water and soil and study of aeromicroflora.	B. Sc. (H) Botany	BHDS3

March	**Theory:**	• Microbes and quality of environment • Distribution of microbes in air, soil and water; isolation of microorganisms from soil, air and water. • Microbial flora of water: Water pollution: various sources and control measures; role of microbes in sewage and domestic waste water treatment systems.	B. Sc. (H) Botany	BHDS3
	Practicals	7. Determination of coliforms in water samples using eosin methylene blue (EMB) medium 8. A visit to any educational institute/ industry to see an industrial fermenter, and other downstream processing operations and a report to be submitted.	B. Sc. (H) Botany	BHDS3
April	**Theory:**	• Microorganisms as indicators of water quality: coliforms and fecal coliforms. •	B. Sc. (H) Botany	BHDS3
	Practicals	6. Determination of BOD, COD, TDS and TOC of water samples Mock test	B. Sc. (H) Botany	BHDS3

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

Name of the Faculty: Neeti Mehla **Department: Botany**

Semester: II/IV/VI

Academic Year – 2021-2022

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	• Spices: General account with special reference to clove and black pepper (Botanical name, family, part used, morphology and uses). General account of Beverages	BSc. Life Sciences VI Sem (Both sections A&B)	Economic Botany and Plant Biotechnology
		• Central Dogma and Genetic Code - Key experiments establishing-The Central Dogma,Genetic code (salient features & experiments that deciphered the correlation between mRNA codon and amino acid).Introduction of Transcription and Transcription in Prokaryotes	Bsc. Botany (H) IV Sem	Molecular Biology
	Practicals	• Familiarization with basic equipment in tissue culture. Study of economically important plants - Black pepper, Clove and Tea through specimens and sections	BSc. Life Sciences VI Sem	Economic Botany and Plant Biotechnology
		• Preparation of LB medium and raising E. coli • Quantification of unknown DNA by diphenylamine reagent. • Study of experiments establishing nucleic acid as genetic material (Avery et al, Griffith's, Hershey & Chase's and Fraenkel & Conrat's experiments) through photographs • DNA isolation from cauliflower heads	Bsc. Botany (H) IV Sem	Molecular Biology
FEBRUARY	**Theory:**	• Beverages- Tea (morphology, processing, uses) • Oils and Fats- General description with special reference to groundnut. • Mechanism of Transcription-	BSc. Life Sciences VI Sem Both sections A&B)	Economic Botany and Plant Biotechnology

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		Transcription in prokaryotes and eukaryotes; • Understanding the steps in process of transcription: Initiation, Elongation and Termination. • Enzymes and factors involved in transcription. .	Bsc. Botany (H) IV Sem	Molecular Biology
	Practicals	• Study of economically important plants: Wheat, Gram, Soybean through specimens, sections and microchemical tests. • Quantification of unknown DNA by diphenylamine reagent. • Study of DNA replication through photographs: Modes of replication - Rolling circle, Theta and semi-discontinuous; Semiconservative model of replication (Messelson and Stahl's experiment); Telomerase assisted end-replication of linear DNA • Study of structures of : tRNA (2D and 3D); prokaryotic RNA polymerase and eukaryotic RNA polymerase II through photographs	BSc. Life Sciences VI Sem Bsc. Botany (H) IV Sem	Economic Botany and Plant Biotechnology Molecular Biology
MARCH	**Theory:**	• Fibre Yielding Plants • General description with special reference to Cotton (Botanical name, family, part used, morphology and uses) • Introduction; nutrient media; aseptic and culture conditions; • Brief account of embryo & endosperm culture with their applications. • Split genes-concept of introns and exons, Splicing pathways, group I & group II intron splicing, • Spliceosome and assembly of the spliceosome machinery, • Alternative splicing, Eukaryotic mRNA processing (5' cap, 3' poly A tail) • Ribozymes, RNA Editing	BSc. Life Sciences VI Sem Both sections A&B) Bsc. Botany (H) IV Sem	Economic Botany and Plant Biotechnology Molecular Biology
	Practicals:	• Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation	BSc. Life Sciences VI Sem	Economic Botany and Plant Biotechnology

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		• Numericals based on DNA re-association kinetics (melting profiles and Cot curves) • Study of the following through photographs: Assembly of Spliceosome machinery; Splicing mechanism in group I & group II introns; Ribozymes and Alternative splicing	Bsc. Botany (H) IV Sem	Molecular Biology
APRIL	**Theory:**	• Methods of gene transfer- Agrobacterium mediated genetic transformation. • Bt Cotton and Golden Rice • Direct gene transfer by Microinjection, and Microprojectile bombardment. • Direct gene transfer by electroporation and Unit 10	BSc. Life Sciences VI Sem (Both sections A&B)	Economic Botany and Plant Biotechnology
		• Translationin prokaryotes and eukaryotes; • Understand the steps in process of translation - Initiation, Elongation and Termination. • Enzymes and factors involved in translation. • Ribosome structure and assembly (in prokaryotes and eukaryotes); • charging of tRNA, aminoacyl tRNA synthetases; Fidelity of translation; Inhibitors of protein synthesis; Post- translational modifications of proteins.	Bsc. Botany (H) IV Sem	Molecular Biology
	Practicals:	• Study of molecular techniques: PCR,Blotting techniques, AGE and PAGE	BSc. Life Sciences VI Sem	Economic Botany and Plant Biotechnology
		• Understanding the mechanism of RNAi by photographs. • Understanding the regulation of lactose (lac) operon (positive & negative regulation) and tryptophan (trp) operon (Repression and De-repression & Attenuation) through photographs. • Mock test	Bsc. Botany (H) IV Sem	Molecular Biology

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

Name of the Faculty: Dr. Yogendra Kumar Gautam **Department: Botany**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Numerical taxonomy: Introduction, Principles, methodology of phenetic approach, (Characters; Variations; OTUs, character weighing and coding; cluster analysis); Phenograms.	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Mineral nutrition : 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.	B.Sc.(P)-Life Science Sem.IV(Sec.-A&B)	LSCC-1/Plant Physiology & Metabolism
	Practicals	Ex.1: Study of vegetative and floral characters terminology for families description. Ex.2: Study of vegetative and floral characters for family-Brassicaceae (description). Ex.3: Study of vegetative and floral characters for family-Solanaceae(description). Ex.4: Study of vegetative and floral characters for family-Lamiaceae (description).	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		1.Determination of osmotic potential of plant cell sap by plasmolytic method. 2. Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte. 3. To study the effect of the environmental factor light on transpiration by excised twig.	B.Sc.(P)-Life Science Sem.IV(B-II&III)	LSCC-1/Plant Physiology & Metabolism
	Tutorials			
FEBRUARY	**Theory:**	Phylogeny of Angiosperms : Cladistics: Terms and concepts (primitive and advanced, homology and analogy, parallelism and convergence, monophyly, Paraphyly, polyphyly and clades). Methodology of Cladistics, Methods of illustrating evolutionary relationships (phylogenetic tree, cladogram) Origin and evolution of angiosperms.	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Translocation in phloem: Composition of phloem sap, girdling experiments, Pressure Flow Model, phloem loading and unloading.	B.Sc.(P)-Life Science Sem.IV(Sec.-A&B)	LSCC-1/Plant Physiology & Metabolism

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	Practicals:	Ex.5: Study of vegetative and floral characters for family-Asteraceae (description). Ex.6: Study of vegetative and floral characters for family-Euphorbiaceae (description). Ex.7: Study of vegetative and floral characters for family-Liliaceae (description).	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		4. To Study Hill's reaction. 5. To study the activity of catalase. 6. Comparison of the rate of respiration in any two parts of a plant. 7. To study the effect of pH and enzyme concentration.	B.Sc.(P)-Life Science Sem.IV(B-II&III)	LSCC-1/Plant Physiology & Metabolism
	Tutorials:			
	Assignment :	Entire syllabus distributed into all students.	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Entire syllabus distributed into all students.	B.Sc.(P)-Life Science Sem.IV(Sec.-B)	LSCC-1/Plant Physiology & Metabolism
MARCH	**Theory:**	Systematics-an interdisciplinary science: Evidence from palynology, cytology, phytochemistry [Alkaloids, Phenolics, Glucosides, terpenes and Semantides (in brief)] and molecular data (cp.DNA, mt-DNA, nuclear DNA, PCR amplification, sequence data analysis)	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Nitrogen metabolism: Biological nitrogen fixation - nodulation in detail, nitrate and ammonia assimilation, dinitrogenase, NR, NiR, transamination.	B.Sc.(P)-Life Science Sem.IV(Sec.-A&B)	LSCC-1/Plant Physiology & Metabolism
	Practicals:	Ex.8: Study of vegetative and floral characters for family-Myrtaceae(description). Ex.9: Study of vegetative and floral characters for family-Apiaceae(description).	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		1.To study the effect of light intensity on O2 evolution in photosynthesis. 2.Setup- Demonstration experiments of Bolting.	B.Sc.(P)-Life Science Sem.IV(B-II&III)	LSCC-1/Plant Physiology & Metabolism
	Tutorials:			
	Test		B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
			B.Sc.(P)-Life Science Sem.IV(Sec.-B)	LSCC-1/Plant Physiology & Metabolism

APRIL	**Theory:**	Taxonomic hierarchy (6 lectures) Concept of taxa (family, genus, species); Categories and taxonomic hierarchy; Species concept (taxonomic, biological, evolutionary)	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Photosynthesis: Historical contribution of Julius von Sachs, Blackman, Emerson, Engelmann, Hill.Arnon;photosynthetic pigments (chlorophyll a and b, xanthophyll, carotene); photosystem I and II, reaction center, antenna molecules; electron transport and mechanism of ATP synthesis. Photosynthesis : C3 pathway; C4 and CAM plants (in brief, no pathways); photorespiration	B.Sc.(P)-Life Science Sem.IV(Sec.-A&B)	LSCC-1/Plant Physiology & Metabolism
	Practicals:	Ex.10: Study of vegetative and floral characters for family-Ranunculaceae (description). Ex.11: Study of vegetative and floral characters for family-Poaceae(description). *Practical Test	B.Sc.(H)-Botany Sem:.IV	BHCC-10/Plant Systematics
		1.Setup- Demonstration experiments of Suction due to transpiration. 2. Effect of auxins on rooting. 3.Hydroponics (using a photograph). 4. To demonstrate the delay of senescence by cytokinins. 5. To study the phenomenon of seed germination (effect of light and darkness)	B.Sc.(P)-Life Science Sem.IV(B-II&III)	LSCC-1/Plant Physiology & Metabolism
	Tutorials:			

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SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Tabassum Afshan **Department: Botany**

Semester : II/IV **Session : 2021-2022**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1.Scope and importance of medicinal plants in the traditional system of medicine and modern medicine. Importance of preventive and holistic healing in the Indian traditional systems of medicine. Ayurveda : History ,origin, fundamental doctrine and concepts of Panchmahabhutas , Saptadhatus and Tridoshas in relation to health and disease. 2. Therapeutic and pharmaceutical uses of important plants used in Ayurveda system of medicine 3. Concept of Rasayana drugs	B.Sc. Botany (Hons) B.Sc. Life Science	BHSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC)
	Practicals	1.Identification and medicinal value of locally available medicinal plants in the field. 2.Study of organoleptic, microscopic and macroscopic parameters of any two plant drugs 3.Sections and powder microscopic evaluations	B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC)
	Tutorials			

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FEBRUARY	**Theory:**	1.Siddha : Origin , concepts, therapeutic and pharmaceutical uses of important plants used in Siddha system of medicine. 3.Unani : History, concept of Umoor-e-Tabiyat (Fundamentals of Physique), therapeutic and pharmaceutical uses of plants used in Unani system of medicine	B.Sc. Botany (Hons) B.Sc. Life Science	BHSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC)
	Practicals:	1.Isolation of bioactive compounds in the lab and phytochemical analysis of the crude extract of various parts of medicinal plants 2. Study of ingredients and medicinal uses of common polyherbal formulations used in the traditional system of medicine	B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC)
	Tutorials:			

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	Assignment :	Entire syllabus		
MARCH	**Theory:**	1.Nutraceuticals and polyherbal formulations 2.Plants used for the treatment of hepatic disorders, cardiac diseases, infertility, diabetes, blood pressure, cancer and skin diseases.	B.Sc. Botany (Hons) B.Sc. Life Science	BHSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC)
	Practicals:	1.E-presentations : traditional system of medicine, contribution of medicinal plants to alternative and modern medicine, conservation strategies of medicinal plants	B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC)
	Tutorials:			
	Test	Entire syllabus		

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APRIL	**Theory:**	1.Role of AYUSH, NMPB, and AIIA in the promotion of medicinal plants	B.Sc. Botany (Hons) B.Sc. Life Science	BHSE2 / Medicinal Botany (SEC) LSSE2, / Medicinal Botany (SEC)
		2.Phytopathology : terms and concepts, General symptoms, Geographical distribution of diseases, Host pathogen relationships ;disease cycle and environmental relation; Methods of control of plant diseases, and role of quarantine. Bacterial diseases – Citrus canker and angular leaf spot disease of Cotton. Viral diseases – Tobacco Mosaic viruses, vein clearing relationships	B.Sc. Botany (Hons)	(BHCC3)/ Mycology and Phytopathology
		3.Plant communities: Characters, ecotone ,edge effect, Succession, Processes and Types(Autogenic, allogenic, autotrophic, heterotrophic, primary, secondary)	B.Sc. Life Science	(LSCC3)/ Plant Ecology and Taxonomy

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	Practicals:	1.E- presentations – Nutraceuticals, Rasayana drugs, Medicinal plants and non-communicable diseases, cultivation , marketing and utilization 2. Introduction to the world of fungi (Unicellular, coenocytic/septate mycelium, ascocarps & basidiocarps). 3. Rhizopus: study of asexual stage from temporary mounts and sexual structures through permanent slides. 4.Aspergillus and Penicillium: study of asexual stage from temporary mounts. Study of Sexual stage from permanent slides/photographs. 5. Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer, hygrometer, rain gauge and lux meter. 6. Determination of pH, and analysis of two soil samples for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency by rapid field test.	B.Sc. Life Science B.Sc. Botany (Hons) B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) (BHCC3)/ Mycology and Phytopathology (LSCC3)/ Plant Ecology and Taxonomy
	Tutorials:			

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Month		Topics	Course	Paper Code/Name
MAY	**Theory**	1.Applied Mycology-Role of fungi in biotechnology, Application of fungi in food industry (Flavour & texture, Fermentation, Baking, Organic acids, Enzymes, Mycoproteins) 2.Oomycota: General characteristics, Ecology, thallus organization, life cycle with reference to Phytopthora and Albugo	B.Sc. Botany (Hons)	(BHCC3)/ Mycology and Phytopathology
		3.Botanical Nomenclature: Principles, rules (ICN),ranks and names ,binomial system, typification, author citation, valid publication, rejection of names, principle of priority and its limitations	B.Sc. Life Science	(LSCC3)/ Plant Ecology and Taxonomy

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	Practicals	1. Peziza: sectioning through ascocarp. 2. Alternaria: Specimens/photographs and temporary mounts. 3. Puccinia: Herbarium specimens of Black Stem Rust of Wheat and infected Barberry leaves; sections/ mounts of spores on wheat and permanent slides of both the hosts. 4. (a) Study of morphological adaptations of hydrophytes and xerophytes (four each). 5. (b)Study of biotic interactions of the following: Stem parasite (Cuscuta), Root parasite (Orobanche), Epiphytes, Predation (Insectivorous plants) 6. Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus by species area curve method. (species to be listed)	B.Sc. Botany (Hons) B.Sc. Life Science	(BHCC3)/ Mycology and Phytopathology (LSCC3)/ Plant Ecology and Taxonomy
	Tutorials			

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JUNE	**Theory:**	1.Secondary metabolites ; Mycotoxins; Biological control (Mycofungicides, Mycoherbicides, Mycoinsecticides, Myconematicides); Medical mycology. 2.Symbiotic associations- Lichen – Occurrence; General characteristics; Growth forms and range of thallus organization; Economic importance of lichens. ; Mycorrhiza- Ectomycorrhiza, Endomycorrhiza and their significance. 3.Identification: Functions of herbarium, important herbaria and botanical gardens of the world and India	B.Sc. Botany (Hons) B.Sc. Life Science	(BHCC3)/ Mycology and Phytopathology (LSCC3)/ Plant Ecology and Taxonomy
	Practicals:	1. Agaricus: Specimens of button stage and full grown mushroom; sectioning of gills of Agaricus, fairy rings and bioluminescent mushrooms to be shown. 2. Albugo: Study of symptoms of plants infected with Albugo; asexual phase study through section/ temporary mounts and sexual structures through permanent slides. 4.Study of phaneroplasmodium from actual specimens and /or photograph. Study of Stemonitis sporangia. 5. Quantitative analysis of herbaceous vegetation in the college campus for frequency and comparison with Raunkiaer's frequency distribution law 6. Study of vegetative and floral characters of the following families: Brassicaceae – *Brassica, Alyssum*	B.Sc. Botany (Hons) B.Sc. Life Science	(BHCC3)/ Mycology and Phytopathology (LSCC3)/ Plant Ecology and Taxonomy
	Test:	Entire syllabus		

JULY	**Theory:**	1.Zygomycota :General characteristics, Ecology, thallus organization, life cycle of Rhizopus 2.Documentation- Flora, Keys, single access and multi access	B.Sc. Botany (Hons) B.Sc. Life Science	(BHCC3)/ Mycology and Phytopathology (LSCC3)/ Plant Ecology and Taxonomy
	Practicals:	1. Lichens: Study of growth forms of lichens (crustose, foliose and fruticose) on different substrates. Study of thallus and reproductive structures (soredia and apothecium) through permanent slides. Mycorrhizae: ectomycorrhiza and endo mycorrhiza (Photographs). 2. Phytopathology: Herbarium specimens of bacterial diseases; Citrus Canker; Angular leaf spot of cotton, Viral diseases: TMV, Vein clearing, Fungal diseases: Early blight of potato, Black stem rust of wheat and White rust of crucifers 3. Study of vegetative and floral characters of the following families (Description, V.S. flower, section of ovary, floral diagram/s, floral formula/e and systematic position according to Bentham & Hooker's system of classification : Asteraceae - *Sonchus/Launaea, Vernonia/Ageratum, Eclipta/Tridax*; Solanaceae - *Solanum nigrum, Withania*; Lamiaceae -*Salvia, Ocimum*; Liliaceae - *Asphodelus / Lilium / Allium.*	B.Sc. Botany (Hons) B.Sc. Life Science	(BHCC3)/ Mycology and Phytopathology LSCC3)/ Plant Ecology and Taxonomy
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pamil Tayal **Department: Botany**

Semester : IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	Introduction to Plant Tissue Culture, Historical Perspective, composition of media, nutrient and hormone requirements, role of vitamins and hormones, plasticity and totipotency, Introduction to recombinant DNA technology, Restriction endonucleases and its types, Restriction mapping of circular and linear DNA, biological role	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		Plant cell, Tissue and Organ culture, Cryopreservation Role of NBPGR, CIMAP, JNTBGR and RRL	**B.Sc. (H) Botany (IV) and B.Sc. Life Science (IV)**	**SEC-Medicinal Botany, SEC – Medicinal Botany**
		Principle of centrifugation, basic rules of sedimentation, sedimentation coefficient, types of centrifuges	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Practical	Preparation of Murashige and Skoogs Media, Demonstration of *in vitro* sterilization and inoculation methods using leaf and nodal explants, Study of in vitro micropropagation, construction of restriction maps of linear and circular DNA from the data provided.	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		1. Identification and medicinal value of locally available medicinal plants in the field. 2. Study of organoleptic, microscopic and macroscopic parameters of any two plant drugs.	**B.Sc. (H) Botany (IV)**	**SEC-Medicinal Botany**
		Protein estimation by Biuret/Lowry's method, separation of amino acids by Thin Layer Chromatography (TLC), Study of Agarose Gel Electrophoresis (AGE)	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Tutorials			

February	**Theory:**	Organogenesis, embryogenesis – somatic and zygotic, Protoplast isolation, culture and fusion, tissue culture applications, micropropagation, androgenesis, virus elimination, secondary metabolite production, haploids, triploids and cybrids, applications of restriction enzymes, plasmids – pUC18 and pUC 19 Conservation of Endangered and Endemic medicinal plants, Red Data List Criteria, In situ conservation: Biosphere reserves, National parks, Sacred groves, Ex situ conservation : Botanic gardens, National gene banks, Types of centrifuge rotors, applications of centrifugation, differential, density gradient, zonal and isopycnic centrifugation	**B.Sc. (H) Botany (VI)** **B.Sc. (H) Botany (IV) and B.Sc. Life Science (IV)** **B.Sc. (H) Biological Science (IV)**	**Plant Biotechnology** **SEC-Medicinal Botany,** **SEC – Medicinal Botany** **SEC – Biochemical Techniques**
	Practical:	Study of in vitro organogenesis and in vitro embryogenesis, study of anther, endosperm and embryo culture, study of artificial seeds, isolation of protoplasts, study of methods of gene transfer – Agrobacterium tumefaciens mediated gene transfer, electroporation, microinjection, microprojectile bombardment. 1. Isolation of bioactive compounds in the lab and phytochemical analysis of the crude extract of various parts of medicinal plants 2. Study of ingredients and medicinal uses of common polyherbal formulations used in the traditional system of medicine Separation of sugars/ nucleic acids by paper chromatography, isolation of mitochondria and assay of its marker enzyme SDH, Study of Agarose Gel Electrophoresis (AGE)	**B.Sc. (H) Botany (VI)** **B.Sc. (H) Botany (IV)** **B.Sc. (H) Biological Science (IV)**	**Plant Biotechnology** **SEC-Medicinal Botany** **SEC – Biochemical Techniques**
	Assignment:	Assignment topics will be distributed according to the syllabi		

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March	**Theory:**	Cryopreservation and germplasm conservation, cloning vectors, pBR322, Ti Plasmid, BAC, Lamda Phage, MI3 phagemids, cosmids, shuttle vectors, eukaryotic vectors, YAC and PAC, gene cloning, Recombinant DNA, Bacterial transformation and selection of recombinant clones, PCR, RT-PCR mediated gene cloning, gene construct, construction of genomic and c DNA libraries	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		General; aspects of cultivation and propagation of medicinal plants, WHO Guidelines of Good Agricultural and Cultivation Practices (GAPC). Adulteration of herbal drugs, evaluation and standardization of crude drugs, Fundamentals of pharmacognosy	**B.Sc. (H) Botany (IV) and B.Sc. Life Science (IV)**	**SEC-Medicinal Botany, SEC – Medicinal Botany**
		Principle of electrophoresis, gel electrophoresis, discontinuous gel electrophoresis, PAGE, SDS-PAGE, Native and denaturing gels	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Practical:	Study of steps of genetic engineering for production of Bt cotton, Golden rice, Flavr Savr tomato through photographs, isolation of plasmid DNA, Restriction digestion.	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		E-presentations : traditional system of medicine, contribution of medicinal plants to alternative and modern medicine, conservation strategies of medicinal plants.	**B.Sc. (H) Botany (IV)**	**SEC-Medicinal Botany**
		Verification of Beer's Lambert's law, Separation techniques – Ion exchange and Gel filtration chromatography	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Technique**
	Tutorials:			

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April	**Theory:**	Genetic selection, complementation, colony hybridization, probe-oligonucleotide heterologs, methods of gene transfer – Agrobacterium tumefaciens mediated gene transfer, electroporation, microinjection, microprojectile bombardment, selection of transgenics- selectable and reporter marker luciferase, GUS, GFP, DNA fingerprinting by RAPD and RFLP	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		Objectives of a nursery, classification and important components of nursery, Greenhouse technology, Propagation through cuttings, layering, grafting and budding. Organoleptic, microscopic and phytochemical evaluation of plant drugs.	**B.Sc. (H) Botany (IV) and B.Sc. Life Science (IV)**	**SEC-Medicinal Botany,** **SEC – Medicinal Botany**
		Buffer system in electrophoresis, Agarose gel electrophoresis, electrophoresis of proteins and nucleic acids, detection and identification, molecular weight determination, isoelectric focusing of proteins	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Practical:	gel electrophoresis of plasmid DNA, Calculate the percentage similarity between different cultivars of a species using RAPD profile. Construct a dendrogram and interpret results.	**B.Sc. (H) Botany (VI)**	**Plant Biotechnology**
		E- presentations – Nutraceuticals, Rasayana drugs, Medicinal plants and non- communicable diseases, cultivation , marketing and utilization of medicinal plants,	**B.Sc. (H) Botany (IV)**	**SEC-Medicinal Botany**
		Verification of Beer's Lambert's law, Protein estimation by Biuret/Lowry's method	**B.Sc. (H) Biological Science (IV)**	**SEC – Biochemical Techniques**
	Practical Test:	Practical test will be conducted and evaluated as per the date sheet		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sunita Yadav **Department: Botany**
Semester : II/IV/VI 2021-22

Month		Topics	Course	Paper Code/Name
January	**Theory**	Introduction to paper and discussion about the paper	B.Sc. (H) Botany Semester VI	Plant metabolism
		Introduction to paper Unit 6: Structure and properties of enzymes, Km, Enzyme catalysis, enzyme inhibition	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
	Practicals	• Chemical separation of photosynthetic pigments	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To determine osmotic potential of plant cell sap by plasmolytic method	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Survey of structural plant defenses-cuticle, wax, lignin, bark • Thorns, prickles, trichomes, armour in different plant species including thigmonasty, camouflage, mimicry •	B.Sc.(H) Biological Sciences	Immunobiology
	Tutorials	----------		
February	**Theory:**	Unit-1 Concept of metabolism: anabolic and catabolic pathways, principles of thermodynamics, coupled reactions Unit-5 carbon oxidation: glycolysis, regulation, fermentation, OPPP, PDH, NADH shuttle, Kreb's cycle	B.Sc. (H) Botany Semester VI	Plant metabolism
		Unit8: Discovery, Physiological roles of auxins, gibberellins, cytokinins and ethylene	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism

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	Practicals:	• To study Hill's reaction • To demonstrate and verify law of limiting factors • To compare the rate of respiration in different parts of a plant • To study the activity of catalase and effect of heavy metal and pH on enzyme activity.	B.Sc. (H) Botany Semester VI	Plant metabolism
		• Comparison of the rate of respiration in any two parts of a plant. • To study the effect of two environmental factors (light and wind) on transpiration by excised twig • To demonstrate hill reaction	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Characterization of disease symptoms and identification of pathogenic organisms-bacterial (*Xanthomonas campestris*) • Viral-TMV • Fungal-*Puccinia graminis tricti* • Pest and nematodes-*Meloidogyne spp*.	B.Sc.(H) Biological Sciences	Immunobiology
	Tutorials:	----------		
March	**Theory:**	Unit-5 carbon oxidation: Mitochondrial ETC, oxidative phosphorylation, CN resistant respiration, factors Unit-2 Enzymes: history, structure, nomenclature, classification, mechanism of action, factors affecting activity, michaelis-menten equation	B.Sc. (H) Botany Semester VI	Plant metabolism
		Unit 5: Glycolysis, anaerobic respiration, TCA cycle	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism

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	Practicals:	• To study the activity of nitrate reductase in leaves of two different plant sources • To study the activity of urease enxyme and effect of substrate concentration on enzyme activity • To demonstrate the activity of lipase in germinating oilseeds • To demonstrate mobilization of lipids during germination	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To study the activity of catalase • To study the effect of pH on catalase • To study the effect of enzyme concentration on catalase	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Precipitation reactions-DID and SRID • Immunoelectrophoresis, • Countercurrent IEP • Rocket IEP	B.Sc.(H) Biological Sciences	Immunobiology
	Tutorials:	---------		
	<u>Assignment :</u>	Given to all students for respective papers		
April	**Theory:**	Unit-2 enzyme inhibition, role of regulatory enzymes, allosteric and covalent modulation, isoenzymes and alloenzymes Unit-7 Lipid metabolism: synthesis and breakdown beta-oxidation, glyoxylate cycle, gluconeogenesis, alpha-oxidation	B.Sc. (H) Botany Semester VI	Plant metabolism
		Unit 5: TCA cycle, oxidative phosphorylation	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
	Practicals:	• To demonstrate fluorescence by isolated chlorophyll pigments • To demonstrate absorption spectrum of photosynthetic pigments • To demonstrate respiratory quotient • To study the activity of tyrosinase and peroxidase and effect of inhibitor on any one of the enzymes	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To demonstrate bolting • To demonstrate effect of auxins on rooting • To demonstrate suction due to transpiration	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
		• Agglutination reaction • ELISA • Cell isolation and counting-Spleen/PBMNC	B.Sc.(H) Biological Sciences	Immunobiology
	Tutorials:	---------		
	<u>Test</u>	Conducted for all papers		

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	Tutorials:	--------		

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SEMESTER WISE TEACHING PLAN (2019-2020)
SRI VENKATESWARA COLLEGE

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

Semesters: IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Unit –III **Amino acid and Nucleotide Metabolism** Protein catabolism- Transamination and deamination, Urea cycle, glycogenic and ketogenic amino acids, secondary metabolites from amino acids, Nucleotide metabolism- *De novo* and salvage pathway, porphyrin catabolism.	B.Sc.(H) Biological science Sem-IV	BS C-10 Metabolism and integration
		Unit -5 APPLICATIONS OF BIOTECHNOLOGY- Engineering plants to overcome abiotic (drought and salt stress) and biotic stress -Pest resistant (Bt-cotton)	B.Sc.(H) Botany Sem-VI	BHCC14 Plant biotechnology
	Practicals			
	Tutorials			
FEBRUARY	**Theory:**	Unit- IV **Oxidative Phosphorylation** Components, properties and functions pf electron transport system, chemiosmotic hypothesis, inhibitors and uncouplers, Shuttle systems.	B.Sc.(H) Biological science Sem-IV	BS C-10 Metabolism and integration
		Herbicide resistant plants (RoundUp, Ready soyabean); Transgenic crops with improved quality traits (FlavrSavr tomato, Golden rice); Improved horticultural varieties (Moondust carnations)	B.Sc.(H) Botany Sem-VI	BHCC14 Plant biotechnology

	Practicals:			
	Tutorials:			

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	<u>Assignment :</u>			
MARCH	**Theory:**	Unit -V **Metabolic Integration** Metabolic changes during starve-feed cycle, exercise, diabetes and alcohol abuse, xenobiotic metabolism. Unit- VI **Metabolic Disorders** Inborn errors of metabolism-Phenylketonuria, Alkaptonuria, Maple syrup and Gauchers.	B.Sc.(H) Biological science Sem-IV	BS C-10 Metabolism and integration
		Role of transgenic in bioremediation (superbug). Molecular farming (plants as bioreactor) edible vaccines and antibodies.	B.Sc.(H) Botany Sem-VI	BHCC14 Plant biotechnology
	Practicals:			
	Tutorials:			
	<u>Test</u>			

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APRIL	**Theory:**	Unit- VI **Metabolic Disorders** Carbohydrate and metabolic disorders- fructose intolerance, lactose intolerance, lactic acidosis, Galactosemia, genetic deficiency of Glucose-6-phosphate dehydrogenase. Lipid and glycogen storage disorders. Lifestyle disorders-Diabetes Mellitus and obesity. Nutritional disorders-Kwashiorkor and Marasmus. Revision and doubt classes.	B.Sc.(H) Biological science Sem-IV	BS C-10 Metabolism and integration
		Molecular farming for polymers, biodegradable plastics (PHA), biomass utilization and industrial enzymes- amylase, phytase, lignocellulose degrading enzymes); Biosafety concerns. Revision and doubt classes.	B.Sc.(H) Botany Sem-VI	BHCC14 Plant biotechnology
	Practicals:			
	Tutorials:			

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MAY	**Theory:**			
	Practicals:			
	Tutorials:			

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SEMESTER WISE
TEACHING PLAN (2022)
SRI VENKATESWARA COLLEGE

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

Semester: IV

Month	Theory/Practical	Topics	Class	Subject/Paper
January	Theory	Unit 1: Plant- water relations Importance of water, water potential and its components, pathway of water movement, ascent of sap, transpiration and its significance.	B.Sc. (P) Life Science Sec-A, Sem IV	Plant Physiology and Metabolism
		Unit 1: Plant- water relations Importance of water, water potential and its components, pathway of water movement, ascent of sap, transpiration and its significance.	B.Sc. (P) Life Science Sec-B, Sem IV	Plant Physiology and Metabolism
	Practical	• Determination of osmotic potential of plant cell sap by plasmolytic method. • To study the effect of the environmental factor light on transpiration by excised twig. • Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte.	B.Sc. (P) Life Science Batch-II, Sem IV	Plant Physiology and Metabolism
February	Theory	Factors affecting transpiration, root pressure and guttation, stomatal movements-ion theory.	B.Sc. (P) Life Science, Sec-A, Sem IV	Plant Physiology and Metabolism
		Factors affecting transpiration, root pressure and guttation, stomatal movements-ion theory.	B.Sc. (P) Life Science, Sec-B, Sem IV	Plant Physiology and Metabolism
	Practical	• To study Hill's reaction. • To study the activity of catalase and study the effect of pH and enzyme concentration. • Comparison of the rate of respiration in any two parts of a plant.	B.Sc. (P) Life Science Batch-II, Sem IV	Plant Physiology and Metabolism
March	Theory	Unit 9: Plant response to light and temperature	B.Sc. (P) Life Science, Sec-A, Sem IV	Plant Physiology and Metabolism

		Photoperiodism-discovery (SDP, LDP, day neutral plants);		
		Unit 9: Plant response to light and temperature Photoperiodism-discovery (SDP, LDP, day neutral plants);	B.Sc. (P) Life Science, Sec-B, Sem IV	Plant Physiology and Metabolism
	Practical	• To study the effect of light intensity on oxygen evolution in photosynthesis. Demonstration experiments: • Bolting	B.Sc. (P) Life Science Batch-II, Sem IV	Plant Physiology and Metabolism
April	Theory	Phytochrome (discovery and structure), red and far-red light response to photomorphogenesis (general account), Florigen (brief account)	B.Sc. (P) Life Science, Sec-A, Sem IV	Plant Physiology and Metabolism
		Phytochrome (discovery and structure), red and far-red light response to photomorphogenesis (general account), Florigen (brief account)	B.Sc. (P) Life Science, Sec-B, Sem IV	Plant Physiology and Metabolism
	Practical	Demonstration experiments: • Effect of auxins on rooting. • Suction due to transpiration. • Hydroponics (using a photograph). • To demonstrate the delay of senescence by cytokinins. • To study the phenomenon of seed germination (effect of light and darkness)	B.Sc. (P) Life Science Batch-II, Sem IV	Plant Physiology and Metabolism

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

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

Semester: Even sem. (IV and VI)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Unit 1: Computer fundamentals-programming languages in bioinformatics, role of supercomputers in biology. Historical background. Scope of bioinformatics-Genomics, Transcriptomics, Proteomics, Metabolomics.	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
		Unit 1: Overview of defense mechanisms in plants and animals Unit 2: Pre-existing structural defenses (first line of defense) - surface structures (waxy coat, cuticle, epidermal layer, hydathodes, thorns, sclereids), mineral crystals (idioblasts,) and cell wall.	B.Sc(H) Biological Science Sem-VI	BS C-13/ Immunobiology
		Unit 3: DNA-dependent RNA polymerase, sigma factor, bacterial promoters, identification of DNA binding sites by DNA footprinting.	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology
	Practicals:	1. Isolation of chromosomal DNA. 2. To assess the purity by A260/A280 Ratio. 3. Isolation of total RNA from bacteria/yeast.	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology
		Familiarization with basic equipment in tissue culture. Study of economically important plants - Black pepper, Clove and Tea through specimens and sections.	B.Sc(P) Life Sciences Sem VI	LSDS1/Economic Botany and Plant Biotechnology
	Tutorials:			

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FEBRUARY	**Theory:**	Unit 1: Molecular Phylogeny, computer aided Drug Design (structure based and ligand based approaches), Systems Biology and Functional Biology. Applications and Limitations of bioinformatics. Unit 2: Protein databases (PIR, Swiss-Prot, TrEMBL, PDB), metabolic pathway database (KEGG, EcoCyc, and MetaCyc), small molecule databases (PubChem, Drug Bank, ZINC, CSD). Structure viewers (Ras Mol, J mol).	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
		Unit 2: Biochemical defenses- secondary metabolites (terpenoids, glycosides, phenolics and alkaloids) Innate Immunity in Plants- Pattern triggered immunity (PTI). Unit 4: Factors causing plant stress- abiotic and biotic. Abiotic- strategies and mechanisms, Physiological and cellular responses to drought stress, salinity stress, temperature stress (freezing and heat).	B.Sc(H) Biological Science Sem-VI	BS C-13/ Immunobiology
		Unit 3: Three stages of RNA synthesis (initiation, elongation and termination), rho-dependent and rho-independent termination, Transcription in eukaryotes.	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology
	Practicals:	1. Determination of DNA concentration by A260nm. 2. Quantitative estimation of DNA by DPA method.	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology
		Study of economically important plants: Wheat, Gram, Soybean through specimens, sections and microchemical tests.	B.Sc(P) Life Sciences Sem VI	LSDS1/Economic Botany and Plant Biotechnology
	Tutorials:			
MARCH	**Theory:**	Unit 6: Functional genomics (genome-wide and high throughput approaches to gene and protein function), Protein structure prediction and analysis- Levels of protein structure. gene prediction methods and tools.	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics

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		Unit 4: Biotic- Classification of biotic stresses, major pests and diseases of economically important crops, interaction in host-pathogen systems, Flor‟s gene for gene concept, R gene mediated resistance, effector trigerred immunity (ETI), receptor-elicitor model, Cytological protection and induced resistance. Concept of signal transduction and other host-defense mechanisms. Heatshock proteins, Basic ROS cycle and adaptation during stress.	B.Sc(H) Biological Science Sem-VI	BS C-13/ Immunobiology
		Unit 3: Transcription factors, inhibitors of transcription and applications as antibiotics.	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology
	Practicals:	1. Quantitative estimation of RNA by orcinol method. 2. Ultraviolet absorption spectrum of DNA/RNA.	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology
		Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation.	B.Sc(P) Life Sciences Sem VI	LSDS1/Economic Botany and Plant Biotechnology
	Tutorials:			
APRIL	**Theory:**	Unit 6: Structural Bioinformatics in Drug Discovery, Quantitative structure-activity relationship (QSAR) techniques in Drug Design, Microbial genome applications, Crop improvement.	B.Sc(H) Botany Sem- VI	BHDS4/Bioinformatics
		Unit 4: Systemic Acquired Resistance (SAR), Phytoalexins Jasmonic acid, MAPKS,SROS,HPL, systemins, mechanism of production and scavenging of NO. Unit 6: Control of plant pathogens and improving plant resistance by genetic engineering.	B.Sc(H) Biological Science Sem-VI	BS C-13/ Immunobiology
		Unit 3: RNA processing, modification of eukaryotic mRNA at the 5‟ and the 3‟ end, splicing introns, alternative splicing, exon shuffling and RNA editing, processing of rRNAs and tRNAs.	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology

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	Practicals:	•Identification of nucleotide bases by paper chromatography •Mock test	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology
		PCR, Blotting Techniques, AGE and PAGE Revision and Mock test	B.Sc(P) Life Sciences Sem VI	LSDS1/Economic Botany and Plant Biotechnology
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (JAN, 2022)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Satish Kumar **Department:** Botany
Semester: IV & VI

Month	Theory/ Practical	Units/ Topics	Course & Semester	Paper Code/Name
January, 2022	**Theory:**	**Unit 8:** Ecosystems: Structure; Types; Processes; Trophic organisation; Food chains and Food webs.	B.Sc. (H.) Botany & IV Sem.	BHCC-IX: Ecology
		Unit 2: Solid-state and liquid-state (stationary and submerged) fermentations; Batch and continuous Fermentations; Components of a typical bioreactor, Types of bioreactors: laboratory, pilotscale and production fermenters.	B. Sc. (H.) Botany & VI Sem.	BHDS-3: Industrial & Environmental Microbiology
		Unit V: Molecular basis of mutations, types of mutations – transition, transversion, frame shift mutations. DNA damage by hydrolysis, alkylation, oxidation and radiation. Mutations caused by base analogs and intercalating agents. Ames test, Replication errors and their repair, mismatch repair system. Repair of DNA damage direct reversal of DNA damage.	B. Sc. (H.) Biological Science & IV Sem.	BS C-9: Molecular Biology
	Practical:	Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer/hygrometer, rain gauge and lux meter. Determination of pH of various soil and water samples (pH meter, universal indicator/Lovi bond comparator and pH paper). Analysis for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency from two soil samples by rapid field tests.	B.Sc. (H.) Botany & IV Sem.	BHCC-IX: Ecology
		Principles and functioning of instruments in microbiology laboratory (autoclave, laminar a flow, incubators, types of fermenters). Preparation of different culture media (Nutrie medium/ Luria Bertani medium/Potato dextro medium/Czapek Dox medium).	B. Sc. (H.) Botany & VI Sem.	BHDS-3: Industrial & Environmental Microbiology
	Tutorials:			

February, 2022	**Theory:**	**Unit 8** Ecosystems**:** Ecological pyramids. **Unit 9** Functional aspects of ecosystem: Principles and models of energy flow; Production and productivity;	B.Sc. (H.) Botany & IV Sem.	BHCC-IX: Ecology
		Unit 2 Constantly stirred tank fermenter, tower fermenter, fixed bed and fluidized bed bioreactors and air-lift fermenter. **Unit 3** Microorganisms involved, microorganisms generally regarded as safe (GRAS), media, fermentation conditions, downstream processing and uses.	B. Sc. (H.) Botany & VI Sem**.**	BHDS-3: Industrial & Environmental Microbiology
		Unit V: Base excision repair, nucleotide excision repair, translesion DNA synthesis. **Unit IV:** Features of the genetic code, triplet nature, degeneracy, wobble hypothesis.	B. Sc. (H.) Biological Science & IV Sem.	BS C-9: Molecular Biology
	Practical:	Determination of organic matter of different soil samples by Walkley & Black rapid titration method. Comparison of bulk density, porosity and rate of infiltration of water in soils of three habitats. Determination of dissolved oxygen of water samples from polluted and unpolluted sources. Study of morphological adaptations of hydrophytes and xerophytes (four each). Study of biotic interactions of the following: Stem parasite (*Cuscuta*), Rootparasite (Orobanche), Epiphytes, Predation (Insectivorous plants).	B.Sc. (H.) Botany & IV Sem.	BHCC-IX: Ecology
		Hydrolysis of casein / starch by microorga Alcohol production by yeast using sugar/ jaggery Serial dilution method for isolation of microorganisms from water and soil and st of aeromicroflora.	B. Sc. (H.) Botany & VI Sem**.**	BHDS-3: Industrial & Environmental Microbiology
	Tutorials:			
	Assignment:	Assignment topics will be distributed according to the syllabi.		

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March, 2022	**Theory:**	**Unit 9**: Measurement of productivity; Ecological efficiencies; Biogeochemical cycles; Cycling of Carbon, Nitrogen and Phosphorus.	B.Sc. (H.) Botany & IV Sem.	BHCC-IX: Ecology
		Unit 3: Filtration, centrifugation, cell disruption, solvent extraction, precipitation and ultrafiltration, lyophilization, spray drying; production of industrially important products: enzyme (amylase).	B. Sc. (H.) Botany & VI Sem.	BHDS-3: Industrial & Environmental Microbiology
		Unit IV: Experimental approaches used to decipher the genetic code. The ribosome as a supermolecular machine, structure of tRNAs. The five stages of protein biosynthesis, charging of tRNAs.	B. Sc. (H.) Biological Science & IV Sem.	BS C-9: Molecular Biology
	Practical:	Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus, by species area curve method (species to be listed). Quantitative analysis of herbaceous vegetation in the college campus for frequency and comparison with Raunkiaer's frequency distribution law. Field visit to familiarize students with ecology of different sites/s.	B.Sc. (H.) Botany & IV Sem.	BHCC-IX: Ecology
		Determination of BOD, COD, TDS and TOC of water samples. A visit to any educational institute/ industry to see an industrial fermenter, and other downstream processing operations and a report to be submitted.	B. Sc. (H.) Botany & VI Sem.	BHDS-3: Industrial & Environmental Microbiology
	Tutorials:			

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April, 2022	**Theory:**	**Unit 5:** Definition; types of biotic interactions. **Unit 3**: Organic acid (citric acid); alcohol (ethanol); antibiotic (penicillin). **Unit IV:** Aminoacyl-tRNAs synthetases, initiation in prokaryotes and in eukaryotes, elongation, termination. Inhibitors of protein synthesis and their application in medicine.	B.Sc. (H.) Botany & IV Sem. B. Sc. (H.) Botany & VI Sem. B. Sc. (H.) Biological Science & IV Sem.	BHCC-IX: Ecology BHDS-3: Industrial & Environmental Microbiology BS C-9: Molecular Biology
	Practical:	Quantitative analysis of herbaceous vegetation for density and abundance in the college campus. Mock test. Determination of coliforms in water samples using eosin methylene blue (EMB) medium. Mock test.	B.Sc. (H.) Botany & IV Sem. B. Sc. (H.) Botany & VI Sem.	BHCC-IX: Ecology BHDS-3: Industrial & Environmental Microbiology
	Practical Test:	Practical test will be conducted and evaluated as per the date sheet.		

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SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE

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

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Coordination Chemistry: IUPAC nomenclature of coordination compounds, isomerism in coordination compounds, stereochemistry of complexes with 4 and 6 coordination numbers. Chelate effect, polynuclear complexes, Labile and inert complexes.	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals	Inorganic Preparations: i. Tetraamminecopper (II) sulphate, ii. Acetylacetonate complexes of Cu^{2+}	B.Sc. (H) Chemistry IInd Year, Semester - IV (Batch A and B)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials			
FEBRUARY	**Theory:**	Werner's theory, valence bond theory (inner and outer orbital complexes), electroneutrality principle and back bonding, Crystal field theory	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals	Preparation of (iv) Potassium tri(oxalato)ferrate(III) Estimation of nickel (II) using Dimethylglyoxime (DMG).	B.Sc. (H) Chemistry IInd Year, Semester - IV (Batch A and B)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry

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		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials:			
	<u>Assignment:</u>	Coordination chemistry and chemistry of s block elements	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
MARCH	**Theory:**	Measurement of 10 Dq (Δ_o). CFSE in weak and strong fields, pairing energies, factors affecting the magnitude of 10 Dq (Δ_o, Δt). Octahedral vs. tetrahedral coordination	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals:	Estimation of copper as CuSCN Preparation of Tetraamminecarbonatocobalt (III) nitrate	B.Sc. (H) Chemistry IInd Year, Semester - IV (Batch A and B)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials:			
	<u>Test</u>	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
APRIL	**Theory:**	Tetragonal distortions from octahedral geometry Jahn-Teller theorem, square planar geometry. Qualitative aspect of Ligand field and MO Theory	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals:	Estimation of iron as Fe_2O_3 by precipitating iron as $Fe(OH)_3$.	B.Sc. (H) Chemistry IInd Year, Semester - IV (Batch A and B)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry

		Mixtures preferably contain one interfering anion and combination of anions	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials:			
MAY	**Theory:**			
	Practicals:			
	Tutorials:			

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Name of the Faculty: Dr. Vibha Saxena **Department: Chemistry**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	General properties of elements of 3d series with special reference to electronic configuration, variable valency, colour,	BSc(P) Life science III year	**DSE1: Chemistry of d-block elements, Quantum chemistry and spectroscopy**
	Practicals	Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	**Chemistry Practical**
	Tutorials	NA	NA	NA
FEBRUARY	**Theory:**	Brief discussion with examples of types of ligands, denticity and concept of chelate. IUPAC system of nomenclature of coordination compounds (mononuclear and	BSc(P) Life science III year	**DSE1: Chemistry of d-block elements, Quantum chemistry and spectroscopy**
	Practicals:	Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the understanding of the chemistry of different	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	**Chemistry Practical**

	Tutorials:	NA	NA	NA

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	Assignment :	**Organometallic Chemistry & Bio-inorganic Chemistry Assignment**	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
MARCH	**Theory:**	**Bonding in coordination compounds** Valence Bond Theory (VBT): Salient features of theory, concept of inner and outer orbital complexes of	BSc(P) Life science III year	**DSE1: Chemistry of d-block elements, Quantum chemistry and spectroscopy**
	Practicals:	Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the understanding of the	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	**Chemistry Practical**
	Tutorials:	NA	NA	NA
	Test	**Chemistry of d-block elements, Quantum chemistry and spectroscopy**	BSc(P) Life science III year	**DSE1: Chemistry of d-block elements, Quantum chemistry and spectroscopy**
APRIL	**Theory:**	**Crystal Field Theory** Splitting of d orbitals in octahedral symmetry. Crystal field effects for weak and strong fields. Crystal field stabilization energy (CFSE), concept of pairing energy. Factors	BSc(P) Life science III year	**DSE1: Chemistry of d-block elements, Quantum chemistry and spectroscopy**
	Practicals:	Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the understanding of the chemistry of different	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	**Chemistry Practical**

	Tutorials:			

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Name of the Faculty: Dr. Sharda Pasricha Department: CHEMISTRY

Semester: VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Organic Spectroscopy** General principles Introduction to absorption and emission spectroscopy. UV Spectroscopy: Types of electronic transitions, λmax, Chromophores and Auxochromes, Bathochromic and Hypsochromic shifts, Intensity of absorption; Application of Woodward Rules for calculation of λmax for the following systems: α,β-unsaturated aldehydes, ketones, carboxylic acids and esters; Conjugated dienes: alicyclic, homoannular and heteroannular; Extended conjugated systems (aldehydes, ketones and dienes); distinction between cis and trans isomers.(6 lectures). **Dyes** Classification, Colour and constitution; Mordant and Vat Dyes; Chemistry of dyeing; Synthesis and applications of: Azo dyes – Methyl orange; Triphenyl methane dyes Malachite green and Rosaniline ; Phthalein Dyes – Phenolphthalein; Natural dyes – structure elucidation and synthesis of Alizarin and Indigotin; Edible Dyes with examples.(4 lectures) **Polymers** Introduction and classification including di-block, tri-block and amphiphilic polymers; Polymerization reactions -Addition and condensation -Mechanism of cationic, anionic and free radical addition polymerization; Metallocene-based Ziegler-Natta polymerization of alkenes; Preparation and applications of plastics – thermosetting (phenol-formaldehyde, Polyurethanes) and thermos softening (PVC, polythene); Fabrics – natural and synthetic (acrylic, polyamido, polyester); Rubbers – natural and synthetic: Buna-S, Chloroprene and Neoprene; Vulcanization; Polymer additives; Introduction to; Biodegradable and conducting polymers with examples. (4 lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V

	Practical	Qualitative analysis of unknown organic compounds containing monofunctional groups (carbohydrates, aryl halides, aromatic hydrocarbons) 1. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters) .	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
February	**Theory:**	**Polymers** Introduction and classification including di-block, tri-block and amphiphilic polymers; Polymerization reactions -Addition and condensation -Mechanism of cationic, anionic and free radical addition polymerization; Metallocene-based Ziegler-Natta polymerization of alkenes; Preparation and applications of plastics – thermosetting (phenol-formaldehyde, Polyurethanes) and thermos softening (PVC, polythene); Fabrics – natural and synthetic (acrylic, polyamido, polyester); Rubbers – natural and synthetic: Buna-S, Chloroprene and Neoprene; Vulcanization; Polymer additives; Introduction to; Biodegradable and conducting polymers with examples. (4 lectures) **Pharmaceutical Compounds** Classification, structure and therapeutic uses of antipyretics - Paracetamol (with synthesis);Analgesics- Ibuprofen (with synthesis); Antimalarials - Chloroquine (with synthesis); Antitubercular drugs - Isoniazid. An elementary treatment of Antibiotics and detailed study of chloramphenicol, Medicinal values of curcumin (haldi), azadirachtin (neem), vitamin C and antacid (ranitidine).(10 Lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V

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	Practical:	Qualitative analysis of unknown organic compounds containing monofunctional groups (nitro compounds, amines and amides) and simple bifunctional groups, e.g. salicylic acid, cinnamic acid, nitrophenols etc.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V
		1.Functional group test for nitro, amine and amide groups. 2. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters)	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
March	**Theory:**	**IR Spectroscopy**: Fundamental and non-fundamental molecular vibrations; IR absorption. Effect of H-bonding, conjugation, resonance and ring size on IR absorptions; Fingerprint region and its significance. IR absorption positions of O, N and S containing functional groups; application in functional group analysis. (8 Lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V
	Internal Exam	Dyes and UV Spectroscopy	B.Sc. CHEMISTRY - C XIV: ORGANIC CHEMISTRY V	

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	Practical:	1.Extraction of caffeine from tea leaves. 2.Preparation of urea formaldehyde resin. 1. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols , carbonyl compounds and esters)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
April	**Theory:**	**NMR Spectroscopy** Basic principles of Proton Magnetic Resonance, chemical shift and factors influencing it; Spin – Spin coupling and coupling constant; Anisotropic effects in alkene, alkyne, aldehydes and aromatics, Interpretation of NMR spectra of simple compounds. Applications of IR, UV and NMR for identification of simple organic molecules. (10 lectures) Any Pending Work from Previous Month Revision and Discussion of Previous year papers. .	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V
	Assignment **Internal Exam II**	**Topics: IR Spectroscopy and Polymers** Topics: Dyes and UV Spectroscopy	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V CHEMISTRY - C XIV: ORGANIC CHEMISTRY V

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	Practical:	1. Preparation of methyl orange 2. Identification of simple organic compounds by IR spectroscopy and NMR spectroscopy (Spectra to be provided). 3. Mock Practical Exam	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V
		1.Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols , carbonyl compounds and esters) 2. Mock Practical Exam	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
		1**. Organic Preparations** (i) Bromination of acetanilide / aniline / phenol (ii) Nitration of nitrobenzene / toluene 1.Purification of organic compounds by crystallization using the following solvents: a. Water b. Alcohol c. Alcohol-Water	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
May		1. Determination of the melting points of unknown organic compounds (Kjeldahl method and electrically heated melting point apparatus) 2. Effect of impurities on the melting point – mixed melting point of two unknown organic compounds 3. Determination of boiling point of liquid compounds. (boiling point lower than and more than 100 °C by distillation and capillary method)	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

June		Chromatography: 1.Separation of a mixture of o- and p-nitrophenol or o-and p-aminophenol by thin layer chromatography (TLC) 2. 1.Detection of extra elements 3. Chromatography a. Separation of a mixture of two amino acids by ascending and horizontal paper chromatography.	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
July		Chromatography 1.Separation of a mixture of two sugars by ascending paper chromatography 2.Mock Practical Exam	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

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Self Attested

Dr. Sharda Pasricha
Associate Professor

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SEMESTER WISE TEACHING PLAN
2021-22 even sem
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shefali Shukla
Department: Chemistry **Semester: II/IV/VI**

Month		Topic	Course	Paper
January	**Practicals:**	Introduction to Systematic analysis Preliminary tests	B. Sc. (H) Chemistry II Yr, Semester IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
		Preparation of liquid shampoo Preparation of talcum powder Preparation of nail paint and nail enamel	B. Sc. (P) Life Sciences III Yr, Semester V	SEC- cosmetic chemistry
	Tutorials:	NA	NA	NA
February	**Theory:**			
	Practicals:	Systematic analysis of carboxylic acids Systematic analysis of phenolic compounds Systematic analysis of functional groups	B. Sc. (H) Chemistry II Yr, Semester IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
		Preparation of face cream Preparation of hand sanitizer Assessment-1	B. Sc. (P) Life Sciences III Yr, Semester V	SEC- cosmetic chemistry
	Tutorials:	NA	NA	NA
March	**Theory:**			
	Practicals:	Systematic analysis of functional groups	B. Sc. (H) Chemistry II Yr, Semester IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
		Preparation of soap Preparation of body lotion Preparation of nail polish remover Assessment -2	B. Sc. (P) Life Sciences III Yr, Semester V	SEC- cosmetic chemistry
	Tutorials:	NA	NA	NA
	Assignment	Assignment -1		
April	**Theory:**	**Fundamental** Concept of Hybridisation, Electronic displacements and their applications, Homolytic and	B. Sc. (H) Chemistry I year,	Organic Chemistry I:Basics and Hydrocarbons

		heterolytic fissions. Types, shape and relative stability of reaction intermediates. Weaker forces like van der Waals forces and hydrogen bonding, Electrophiles and nucleophiles, and introduction to types of organic reactions. **Stereoisomerism:** Optical activity and optical isomerism, asymmetry, chirality, Properties with reference to electrophilic and nucleophilic substitution: Heterocyclic compounds- Pyrrole, Pyridine	Semester II B. Sc. (P) Life Sciences III Yr, Semester V	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and spectroscopy
	Practicals:	Estimation of aniline by any one of thefollowing methods:a) Acetylation b) Bromate-bromide method Isolation of caffeine from tea leaves Preparation of Tooth powder and toothpaste Organic Preparation a. Bromination of acetanilide/aniline (Green method) b. Nitration of nitrobenzene/toluene	B. Sc. (H) Chemistry II Yr, Semester IV B. Sc. (P) Life Sciences III Yr, Semester V B. Sc. (H) Chemistry I year, Semester II	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III SEC- cosmetic chemistry Organic Chemistry I:Basics and Hydrocarbons
	Tutorials:	NA	NA	NA
	Test	Mid term test	B. Sc. (P) Life Sciences III Yr, Semester V	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and spectroscopy

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May	**Theory**	Stereochemistry; enantiomers, diastereomers. specific rotation; Configuration and projection formulae: Newmann, Sawhorse, Fischer and their interconversion. Conformational analysis of alkanes (Conformations, relative stability and energy diagrams of Ethane, Propane and butane). General molecular formulae of cycloalkanes and relative stability, Baeyer strain theory, Cyclohexane conformations with energy diagram, Axial and equatorial positions. Conformations of monosubstituted cyclohexanes.	B. Sc. (H) Chemistry I year, Semester II	Organic Chemistry I:Basics and Hydrocarbons
	Practical	Preparation of tri bromo aniline by conventional method Purification of organic compounds by crystallization using the following solvents: a. Water b. Alcohol c. Alcohol-Water Determination of the melting points of prepared organic compounds	B. Sc. (H) Chemistry I year, Semester II	Organic Chemistry I:Basics and Hydrocarbons
	Internal assessment	**Internal assessment-1**		
June	**Theory**	Chirality in molecules with one and two stereocentres; meso configuration. Racemic mixture and their resolution. Relative and absolute configuration: D/L and R/S designations. Geometrical isomerism: cis-trans, syn-anti and E/Z notations using CIP rules. Structure and isomerism.General methods of preparation, physical and chemical properties. Mechanism, of E1, E2, E1cb reactions, Saytzeff and Hoffmann eliminations, Electrophilic Additions, mechanism with suitable examples, (Markownikoff/Antimarkownikoff addition), *syn* and *anti*-addition; addition of H2, X2, oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, hydroxylation, Diels Alder reaction		

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	Practical	Determination of boiling point of liquid compounds Chromatography a. Separation of a mixture of two amino acids by ascending and radial paper chromatography b. Separation of a mixture of two sugars by ascending paper chromatography	B. Sc. (H) Chemistry I year, Semester II	Organic Chemistry I:Basics and Hydrocarbons
	Tutorial	NA	NA	NA
	ASSESSMENT	**Internal assessment Test-2** **FCH Assignment-1**		
July	**Theory**	Alkenes contd-1,2-and 1,4-addition reactions in conjugated dienes. Mechanism of allylic and benzylic bromination in propene, 1-butene, toluene,ethyl benzene. Reactions of alkynes; acidity, electrophilic and nucleophilic additions, hydration to form carbonylcompounds, Alkylation of terminal alkynes Concept of Aromaticity, Huckel's rule, aromatic character of arenes, cyclic carbocations and carbanions with suitable examplesand heterocyclic compoundswith suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation, Friedel Crafts alkylation/ acylation with their mechanism. Directing effects of groups in electrophilic substitution.	B. Sc. (H) Chemistry I year, Semester II	Organic Chemistry I:Basics and Hydrocarbons
	Practical	Detection of extra elements Effect of impurities on the melting point – mixed melting point of two unknown organic compounds. Separation of a mixture of o-and p-nitrophenol or o-and p-aminophenol by thin layer chromatography (TLC)		
	ASSESSMENT	**Internal Assessment Test-3**		

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

Name of the Faculty: Dr. PRAGYA GAHLOT **Department: CHEMISTRY**
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Programming Language – QBASIC; Commands:** INPUT and PRINT Commands; GOTO, If, ELSEIF, THEN and END IF Commands; FOR and NEXT Commands; Library Functions (ABS, ASC, CHR$, EXP,INT, LOG, RND, SQR, TAB and trigonometric Functions), DIM, READ, DATA, REM, RESTORE, DEF FNR, GOSUB, RETURN, SCREEN, VIEW, WINDOW, LINE, CIRCLE.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
		Solids Forms of solids. Symmetry elements, unit cells, crystal systems, Bravais lattice types and identification of lattice planes. Laws of Crystallography - Law of constancy of interfacial angles, Law of rational indices. Miller indices. X–Ray diffraction by crystals, Bragg's law. Structures of NaCl, KCl and CsCl (qualitative treatment only). Defects in crystals. Glasses and liquid crystals.	B. Sc. (H) GE	GE Chemistry
	Practicals	Small programs for mathematical computations in BASIC language. Roots of equations: (e.g. volume of gas using van der Waals equation and comparison with ideal gas, pH of a weak acid).	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY

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		(I)Surface tension measurement (use of organic solvents excluded). a)Determination of the surface tension of a liquid or a dilute solution using a stalagmometer. b)Study of the variation of surface tension of a detergent solution with concentration. (II)Viscosity measurement (use of organic solvents excluded). a)Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald's viscometer. b)Study of the variation of viscosity of an aqueous solution with concentration of solute.	B. SC. Life Sciences Sem IV	Chemistry core IV
February	**Theory:**	QBASIC programs for Chemistry problems - Example: plotting van der Waal Isotherms (Simple Problem, available in general text books) and observe whether van der Waal gas equation is valid at temperatures lower than critical	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
		Chemical Kinetics The concept of reaction rates. Effect of temperature, pressure, catalyst and other factors on reaction rates. Order and molecularity of a reaction. Derivation of integrated rate equations for zero, first and second order reactions (both for equal and unequal concentrations of reactants). Half–life of a reaction.	B. Sc. (H) GE	GE Chemistry
	Practicals:	Probability distributions (gas kinetic theory) and mean values. Matrix operations.	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS
		(III) Chemical Kinetics Study the kinetics of the following reactions. 1.Initial rate method: Iodide-persulphate reaction	B. SC. Life Sciences Sem IV	Chemistry core IV
March	**Theory:**	Solution of quadratic equation, polynomial equations (formula, iteration and Newton – Raphson methods, binary bisection and Regula Falsi); Numerical differential, Numerical integration (Trapezoidal rule), Simultaneous equations, Matrix addition and multiplication, Statistical analysis.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry

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		General methods for determination of order of a reaction. Concept of activation energy and its calculation from Arrhenius equation.	B. Sc. (H) GE	GE Chemistry
	Practicals:	Numerical differentiation (e.g., change in pressure for small change in volume of a van der Waals gas, potentiometric titrations). 3. Numerical integration (e.g. entropy/ enthalpy change from heat capacity data)	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		Semi-micro qualitative analysis of mixtures	B. SC. Life Sciences Sem IV	Chemistry core IV
	<u>Assignment:</u>		B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
			B. Sc. (H) GE	GE Chemistry
	<u>Test</u>		B.Sc. CHEMISTRY (Hons.) III Year,	DSE: Applications of computers in Chemistry
			B. Sc. (H) GE	GE Chemistry
April	**Theory**	**Basic Computer system (in brief)-** Hardware and Software; Input devices, Storage devices, Output devices, Central Processing Unit (Control Unit and Arithmetic Logic Unit); Number system (Binary, Octal and Hexadecimal Operating System); Computer Codes (BCD and ASCII)**;** Numeric/String constants and variables. Operating Systems (DOS, WINDOWS, and Linux); Software languages: Low level and High Level languages (Machine language, Assembly language; QBASIC, FORTRAN and C++); Software Products (Office, chemsketch, scilab, matlab, hyperchem, etc.), internet application.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
		Theories of Reaction Rates: Collision theory and Activated Complex theory of bimolecular reactions. Comparison of the two theories (qualitative treatment only).	B. Sc. (H) GE	GE Chemistry
	Practical	Practice programs		

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		Semi-micro qualitative analysis of mixtures	B. SC. Life Sciences Sem IV	Chemistry core IV
		(a) Determination of heat capacity of a calorimeter for different volumes using (i) change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution of sulphuric acid or enthalpy of neutralization), and (ii) heat gained equal to heat lost by cold water and hot water respectively	B.Sc.(H) Chemistry I year, Semester II	Lab C-IV: Physical chemistry-II
May				
	Practical	(f) Determination of enthalpy of hydration of salt. G) Determination of integral enthalpy (endothermic and exothermic) solution of salts.	B.Sc.(H) Chemistry I year, Semester II	Lab CC-IV: Physical chemistry-II
June				
	Practical	(d) Determination of integral enthalpy (endothermic and exothermic) solution of salts. (e) Determination of basicity of a diprotic acid by the thermochemical method in terms of the changes of temperatures observed in the	B.Sc.(H) Chemistry I year, Semester II	Lab C-IV: Physical chemistry-II
July				
	Practical	Determination of enthalpy of hydration of salt. Determination of integral enthalpy (endothermic and exothermic) solution of salts.	B.Sc.(H) Chemistry I year, Semester II	Lab CC-IV: Physical chemistry-II

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SEMESTER WISE TEACHING PLAN

Name of the Faculty: HARSHVARDHAN MEENA

Department: Chemistry **Semester: VI**

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Qualitative and quantitative aspects of analysis: Sampling, evaluation of analytical data, errors, accuracy and precision, methods of their expression. Normal law of distribution of indeterminate errors, statistical test of data; F, Q and t test, rejection of data, and confidence intervals.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
	Practicals	1. Separation of mixtures by paper chromatography and reporting the Rf values: (i) Co2+ and Ni2+ . (ii) Amino acids present in the given mixture.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
		1. Determination of pH of soil samples.	B.Sc. (P) Life Science II year	CHEMISTRY LAB
		2. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	B.Sc. (P) Life Science IIyear	Chemistry Lab
	Tutorials	NA	NA	NA
FEB	**Theory:**	Optical methods of analysis Origin of spectra, interaction of radiation with matter, fundamental laws of spectroscopy and selection rules UV-Visible	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
	Practicals:	2. Solvent Extractions (i) To separate a mixture of Ni2+ & Fe2+ by complexation with DMG and extracting the Ni2+ DMG complex in	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS

		3. Determination of pH, acidity and alkalinity of a water sample.	B.Sc. (P) Life Science II year	CHEMISTRY LAB
		4. Determination of dissolved oxygen (DO) of a water sample. .	B.Sc. (P) Life Science II year	CHEMISTRY LAB
	Tutorials:	NA	NA	NA
MAR	**Theory:**	Thermal methods of analysis: Theory of thermogravimetry (TG) and basic principle of instrumentation of thermal analyser. Techniques for quantitative estimation of Ca and Mg from their mixture.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry

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Practicals:	3. Analysis of soil: (i) Determination of pH of soil. (ii) Total soluble salt (iii) Estimation of calcium and magnesium (iv) Qualitative	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
	5. Paper chromatographic separation of mixture of metal ion (Ni2+ and Co2+).	B.Sc. (P) Life Science II year	Chemistry Lab
	6. To study the use of phenolphthalein in trap cases.	B.Sc. (P) Life Science II year	Chemistry Lab
Tutorials:	NA	NA	NA
<u>Assignment :</u>	CHEMISTRY-DSE 4: Analytical methods in chemistry	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry

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APRIL	**Theory:**	Electroanalytical methods Classification of electroanalytical methods, basic principle of pH metric, potentiometric and conductometric titrations.Techniques used for the determination of equivalence points. Techniques used for the determination of pKa values.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
	Practicals:	4. Ion exchange: (i) Determination of exchange capacity of cation exchange resins and anion exchange resins. (ii) Separation of	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
		7. To analyze arson accelerants.	B.Sc. (P) Life Science II year	Chemistry Lab
		9. Estimation of macro-nutrients: Potassium, calcium and magnesium in soil samples by flame photometry.	B.Sc. (P) Life Science II year	Chemistry Lab
	Tutorials:	NA	NA	NA
	<u>Test</u>	CHEMISTRY-DSE 4: Analytical methods in chemistry	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
MAY	**Theory:**	Separation techniques Solvent extraction: Classification, principle and efficiency of the technique. Chromatography: Classification, principle and	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry

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	Practicals:	5. Spectrophotometry (i) Verification of Lambert-Beer's law and determination of concentration of a coloured species ($CuSO_4$, $KMnO_4$, $CoCl_2$, $CoSO_4$) (ii)	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 4: Analytical methods in chemistry
		9. Spectrophotometric determination of Iron in vitamin / dietary tablets.	B.Sc. (P) Life Science II year	Chemistry Lab
		11. Spectrophotometric identification and determination of caffeine and benzoic acid in soft drink.	B.Sc. (P) Life Science II year	Chemistry Lab
	Tutorials:	NA	NA	NA

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Name of the Faculty: **Dr. Vinita Kapoor** **Department:** **Chemistry**

Month		Topics	Course	Paper Code/Name
JAN	**Practicals**	1. Semi-micro qualitative analysis of mixtures 2. Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.	BSc (P) Life Sci. Semester IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals	Small programs for mathematical computations in BASIC language. Roots of equations: (e.g. volume of gas using van der Waals equation and comparison with ideal gas, pH of a weak acid).	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**
Month		Topics	Course	Paper Code/Name
FEB	**Practicals**	3. Semi-micro qualitative analysis of mixtures 4. Study of the variation of surface tension of a detergent solution with concentration. 5. Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald's viscometer.	BSc (P) Life Sci. Semester IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals	Probability distributions (gas kinetic theory) and mean values. Matrix operations.	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**
Month		Topics	Course	Paper Code/Name

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MARCH	**Practicals**	6. Semi-micro qualitative analysis of mixtures 7. Study of the variation of viscosity of an aqueous solution with concentration of solute	BSc (P) Life Sci. Semester IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals	Numerical differentiation (e.g., change in pressure for small change in volume of a van der Waals gas, potentiometric titrations). 3. Numerical integration (e.g. entropy/ enthalpy change from heat capacity data).	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**
Month			Course	Paper Code/Name
APRIL	**Theory**	**Chemical Thermodynamics:** Intensive and extensive variables; state and path functions; isolated, closed and open systems. Mathematical treatment - Exact and inexact differential, Partial derivatives, Euler's reciprocity rule, cyclic rule. **First law:** Concept of heat, Q, work, W, internal energy, U, and statement of first law; enthalpy, H, relation between heat capacities, Joule Thompson Porous Plug experiment, Nature of Joule Thompson coefficient, calculations of Q, W, ΔU and ΔH for reversible, irreversible and free expansion of gases (ideal	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY – II**
	Practicals	(a) Determination of heat capacity of a calorimeter for different volumes using (i) change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution of sulphuric acid or enthalpy of neutralization), and (ii) heat gained equal to heat lost by cold water and hot water respectively (b) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. (c) Determination of the enthalpy of ionization of ethanoic acid.	B.Sc. (Hons.) Chemistry sem II	CC-IV: Physical chemistry-II

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	Practicals	8. Semi-micro qualitative analysis of mixtures 9. Semi-micro qualitative analysis of mixtures	BSc (P) Life Sci. Semester IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals	Graphic programs related to Chemistry problems. *e.g.* van der Waals isotherm, Compressibilty versus pressure curves, Maxwell distribution curves, concentration-time Graph, pH metric titration curve, conductometric titration curves, Lambert Beer's law graph, s, p, d orbital shapes, radial distribution curves, etc.	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**

Month		Topics	Course	Paper Code/Name
MAY	**Theory**	**Thermochemistry**: Enthalpy of reactions: standard states; enthalpy of neutralization, enthalpy of hydration, enthalpy of formation and enthalpy of combustion and its applications, bond dissociation energy and bond enthalpy; effect of temperature (Kirchhoff's equations) on enthalpy of reactions. **Second Law:** Concept of entropy; statement of the second law of thermodynamics, Carnot cycle. Calculation of entropy change for reversible and irreversible processes (for ideal gases). Free Energy Functions: Gibbs and Helmholtz energy; variation of S, G, A with T, V, P; Free energy change and spontaneity (for ideal gases). Relation between Joule-Thomson coefficient and other thermodynamic parameters; inversion temperature; Gibbs-Helmholtz equation; Maxwell relations; thermodynamic equation of state.	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY - II**

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	Practicals	(d) Determination of integral enthalpy (endothermic and exothermic) solution of salts. (e) 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. (Hons.) Chemistry sem II	C-IV: Physical chemistry-II
Month		Topics	Course	Paper Code/Name
JUNE	**Theory**	**Third Law:** Statement of third law, unattainability of absolute zero, calculation of absolute entropy of molecules, concept of residual entropy, calculation of absolute entropy of solid, liquid and gases. **Systems of Variable Composition:** Partial molar quantities, dependence of thermodynamic parameters on composition; Gibbs Duhem equation, chemical potential of ideal mixtures, Change in thermodynamic functions on mixing of ideal gases. **Chemical Equilibrium:** Criteria of thermodynamic equilibrium, degree of advancement of reaction, Chemical equilibria in ideal gases, Thermodynamic derivation of relation between Gibbs free energy of a reaction and reaction quotient, Equilibrium constants and their dependence on temperature, pressure and concentration, Le Chatelier's Principle (Quantitative treatment), Free energy of mixing and spontaneity, Equilibrium between ideal gases and a pure condensed phase.	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY - II**

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	Practicals	(f) Determination of enthalpy of hydration of salt. G) Determination of integral enthalpy (endothermic and exothermic) solution of salts.	B.Sc. (Hons.) Chemistry sem II	CC-IV: Physical chemistry-II
Month		Topics	Course	Paper Code/Name
JULY	**Theory**	**Solutions and Colligative Properties:** Dilute solutions; lowering of vapour pressure, Raoult's law, Henry's law. Thermodynamic basis of the colligative properties - lowering of vapour pressure, elevation of Boiling Point, Depression of Freezing point and Osmotic pressure and derivation of expressions for these using chemical potential. Application of colligative properties in calculating molar masses of normal,	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY - II**
	Practicals	Determination of enthalpy of hydration of salt. Determination of integral enthalpy (endothermic and exothermic) solution of salts. MOCK VIVA	B.Sc. (Hons.) Chemistry sem II	CC-IV: Physical chemistry-II
Month			Course	Paper Code/Name

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shikha Gulati Department: Chemistry

Semester: VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Organometallic Compounds** Definition and classification of organometallic compounds on the basis of bond type. Concept of hapticity of organic ligands. Metal carbonyls: 18 electron rule, electron count of mononuclear, polynuclear and substituted metal carbonyls of 3d series. General methods of preparation (direct combination, reductive carbonylation, thermal and photochemical decomposition) of mono and binuclear carbonyls of 3d series.	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
	Practicals			

		(i) Paper chromatographic separation of Co2+ and Ni2+. (ii) Separation and identification of the amino acids present in the given mixture by paper chromatography. Reporting the Rf values.	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
		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	BSc (P) Life Science II year	Basic Analytical Chemistry
	Tutorials	NA	NA	NA

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FEBRUARY	**Theory:**	Structures of mononuclear and binuclear carbonyls of Cr, Mn, Fe, Co and Ni using VBT. π-acceptor behaviour of CO (MO diagram of CO to be discussed), synergic effect and use of IR data to explain extent of back bonding. Zeise's salt: Preparation and structure, evidences of synergic effect and comparison of synergic effect with that in carbonyls. Metal Alkyls: Important structural features of methyl lithium (tetramer) and trialkyl aluminium (dimer), concept of multicentre bonding in these compounds. Ferrocene: Preparation and reactions (acetylation, alkylation, metallation, Mannich Condensation). Structure and aromaticity. Comparison of aromaticity and reactivity with that of benzene. **Catalysis by Organometallic Compounds** Study of the following industrial processes and their mechanism: 1. Alkene hydrogenation (Wilkinson's Catalyst) 2. Synthetic gasoline (Fischer Tropsch reaction) 3. Polymerisation of ethene using Ziegler-Natta catalyst	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV

	Practicals:	4. Determination of dissolved oxygen (DO) of a water sample. 5. Paper chromatographic separation of mixture of metal ion (Ni^{2+} and Co^{2+}). 6. To study the use of phenolphthalein in trap cases.	BSc (P) Life Science II year	Basic Analytical Chemistry
		(i) To separate a mixture of Ni 2+ & Fe 2+ by complexation with DMG and extracting the Ni 2+ - DMG complex in chloroform, and determine its concentration by	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
	Tutorials:	NA	NA	NA

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	Assignment :	Organometallics and Bioinorganic Chemistry	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
MARCH	**Theory:**	**Bioinorganic Chemistry:** Metal ions present in biological systems, classification of elements according to their action in biological system. Geochemical effect on the distribution of metals. Sodium / K-pump, carbonic anhydrase and carboxypeptidase. Excess and deficiency of some trace metals. Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity, Use of chelating agents in medicine, Cisplatin as an anti-cancer drug. Iron and its application in bio-systems, Haemoglobin, Myoglobin; Storage and transfer of iron.	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
	Practicals:	. To analyze arson accelerants. 8. To carry out analysis of gasoline.	BSc (P) Life Science II year	Basic Analytical Chemistry
		(iii) Estimation of calcium, magnesium (iv) Qualitative detection of nitrate, phosphate	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY

	Tutorials:	NA	NA	NA
	<u>Test</u>	Organometallics and Bioinorganic Chemistry	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
APRIL	**Theory:**	**Catalysis by Organometallic Compounds** Study of the following industrial processes and their mechanism: 1. Alkene hydrogenation (Wilkinson's Catalyst) 2. Synthetic gasoline (Fischer Tropsch reaction) 3. Polymerisation of ethene using Ziegler-Natta catalyst	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
	Practicals:	9. Estimation of macro-nutrients: Potassium, calcium and magnesium in soil samples by flame photometry. Spectrophotometric determination of Iron in vitamin / dietary tablets. 11. Spectrophotometric	BSc (P) Life Science II year	Basic Analytical Chemistry

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		Spectrophotometry Verification of Lambert-Beer's law and determination of concentration of a coloured species ($CuSO_4$, $KMnO_4$)	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
	Tutorials:	NA	NA	NA

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

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

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	General introduction to pesticides (natural and synthetic), benefits and adverse effects, changing concepts of pesticides, structure activity relationship	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
	Practicals	To calculate acidity in given sample of pesticide formulations as per BIS specifications.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
FEBRUARY	**Theory:**	synthesis and technical manufacture and uses of representative pesticides in the following classes: Organochlorines (DDT, Gammexene).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
	Practicals:	To calculate alkalinity in given sample of pesticide formulations as per BIS specifications.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
MARCH	**Theory:**	synthesis and technical manufacture and uses of representative pesticides in the following classes: Organophosphates (Malathion, Parathion), Carbamates (Carbofuran and carbaryl).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
	Practicals:	Preparation of phenylethylamine thiocarbamate as organic pesticide.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
	Assignment	To solve last 4 semesters Pesticides chemistry question papers.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY

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APRIL	**Theory:**	Synthesis and technical manufacture and uses of representative pesticides in the following classes: Quinones (Chloranil), Anilides (Alachlor and Butachlor).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Concept of Aromaticity, Huckel's rule, aromatic character of arenes, cyclic carbocations and	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – CIII: ORGANIC CHEMISTRY - I
	Practicals:	Practice exercise.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
		Organic Preparations (i) Bromination of acetanilide use green method (ii) Nitration of nitrobenzene use green method.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	ORGANIC CHEMISTRY PRACTICALS
		(i)Bromination of aniline and acetanilide (ii) Benzoylation of amines/phenols	Generic Elective-II, II Year, Semester II	CHEMISTRY –GE-II Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I: Practical
	<u>Test</u>	Upto organophosphates as pesticides.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Aromatic Hydrocarbon	B.Sc. CHEMISTRY (Hons.) I Year,	CHEMISTRY – CIII: ORGANIC CHEMISTRY
MAY	**Theory:**	Electrophilic aromatic substitution: halogenation, nitration, sulphonation, Friedel Crafts alkylation/ acylation with their mechanism.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – CIII: ORGANIC CHEMISTRY - I Basics and Hydrocarbons
	Practicals:	Purification of organic compounds by crystallization using the following solvents: (a) Water (b) Alcohol (c) Alcohol-Water Detection of extra elements.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	ORGANIC CHEMISTRY PRACTICALS
		(iii) Oxime of aldehydes and ketones (iv) 2,4-dinitrophenylhydrazone of aldehydes and ketones	Generic Elective-II, II Year, Semester II	CHEMISTRY-GE-II Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I: Practical

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JUNE	**Theory:**	Directing effects of groups in electrophilic substitution. General methods of preparation-Wurtz and Wurtz Fittig reaction, Corey House synthesis	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – CIII: ORGANIC CHEMISTRY - I Basics and Hydrocarbons
	Practicals:	Determination of the melting points of unknown organic compounds (Kjeldahl method and BODMel method) Effect of impurities on the melting point-mixed melting point of two unknown organic compounds Determination of boiling point of liquid compounds. (boiling point lower than and more than 100 °C by distillation and capillary method) Chromatographic Separation of a mixture of two amino acids by ascending and horizontal paper chromatography	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	ORGANIC CHEMISTRY PRACTICALS
		(v) 2,4-dinitrophenylhydrazone of aldehydes and ketones (vi) Semicarbazone of aldehydes and ketones	Generic Elective-II, II Year, Semester II	CHEMISTRY –GE-II Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I: Practical
JULY	**Theory:**	Physical and chemical properties of alkanes, Free radical substitutions; Halogenation, concept of relative reactivity v/s selectivity.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – CIII: ORGANIC CHEMISTRY - I Basics and Hydrocarbons
	Practicals:	Practice exercise	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	ORGANIC CHEMISTRY PRACTICALS
		Practice Exercise	Generic Elective-II, II Year, Semester II	CHEMISTRY –GE-II Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I: Practical

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Deepti Sharma **Department:Chemistry**

Semester : IV/ V

Month		Topics	Course	Paper Code/Na
JANUARY	**Theory**	Nitrogen Containing Functional Groups	**B.Sc.(H) Chemistry Semester IV**	**Organic Chemistry III**
	Practicals	1. Functional group test for nitro, amine and amide groups 2. Qualitative analysis of unknown organic compounds containing simple functional groups	**B.Sc.(H) Chemistry Second Year Semester IV**	**Organic Chemistry III**
		1. Qualitative analysis of unknown organic compounds containing monofunctional groups	**B.Sc.(H) Chemistry Third Year Semester VI**	**Organic Chemistry V**
		1. To calculate acidity/alkalinity in given sample of pesticide formulations as per BIS specifications.	**B.Sc.(H) Chemistry Second Year Semester IV**	**Pesticide Chemistry**
FEBRUARY	**Theory**	Nitrogen Containing Functional Groups cont. Polynuclear Hydrocarbons.	**B.Sc.(H) Chemistry Semester IV**	**Organic Chemistry III**

Practicals:	1. Practiced qualitative analysis of unknown organic compounds containing simple functional groups	**B.Sc.(H) Chemistry Second Year Semester IV**	**Organic Chemistry III**
	1. Practiced qualitative analysis of unknown organic compounds containing monofunctional groups	**B.Sc.(H) Chemistry Third Year Semester VI**	**Organic Chemistry V**
	1. Students did market survey of different pesticides	**B.Sc.(H) Chemistry Second Year Semester IV**	**Pesticide Chemistry**

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	Assignment:	Given Assignment for Nitrogen containing functional group and polynuclear hardycarbons		
MARCH	**Theory:**	Heterocyclic Compounds, Terpenes	**B.Sc.(H) Chemistry Semester IV**	**Organic Chemistry III**
	Practicals:	1. Practiced qualitative analysis of unknown organic compounds containing simple functional groups	**B.Sc.(H) Chemistry Second Year Semester IV**	**Organic Chemistry III**
		1. Practiced qualitative analysis of unknown organic compounds containing monofunctional groups	**B.Sc.(H) Chemistry Third Year Semester VI**	**Organic Chemistry V**
		2. Students did market survey of different pesticides	**B.Sc.(H) Chemistry Second Year Semester IV**	**Pesticide Chemistry**
	Test	Syllabus included Nitrogen containing compounds, poylnuclear hydrocarbons.		
APRIL	**Theory:**	Alkaloids	**B.Sc.(H) Chemistry Semester IV**	**Organic Chemistry III**
	Practicals:	1. Practiced qualitative analysis of unknown organic compounds containing simple functional groups. 2. Mock Test	**B.Sc.(H) Chemistry Second Year Semester IV**	**Organic Chemistry III**
		1. Practiced qualitative analysis of unknown organic compounds containing monofunctional groups. 2. Mock Test	**B.Sc.(H) Chemistry Third Year Semester VI**	**Organic Chemistry V**
		1. Final Practical Examination.	**B.Sc.(H) Chemistry Second Year**	**Pesticide Chemistry**

MAY	**Theory:**			
	Practicals:			
	Tutorials:			

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SEMESTER WISE TEACHING PLAN

Academic year 2021-2022 (Even Semester)

SRI VENKATESWARA COLLEGE

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

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**CONDUCTANCE:** Quantitative aspects of Faraday's laws of electrolysis Arrhenius theory of electrolytic dissociation. Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes. Molar conductivity at infinite dilution. Kohlrausch law of independent migration of ions. Debye-Hückel-Onsager equation, Wien effect, Debye-Falkenhagen effect. Walden's rules. Ionic velocities, mobilities and their determinations, transference numbers and their relation to ionic mobilities	B.Sc.(H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV
	Practical	Determination of cell constant Determination of conductivity, molar conductivity, degree of dissociation and dissociation constant of a weak acid. Perform the following conductometric titrations: (I) Strong acid vs. strong base	B.Sc. (H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV **LAB**
FEBRUARY	**Theory**	**CONDUCTANCE:** Ddetermination of transference numbers using Hittorf and Moving Boundary methods. Applications of conductance measurement: (i) degree of dissociation of weak electrolytes, (ii) ionic product of water (iii) solubility and solubility product of sparingly soluble salts, (iv) conductometric titrations, and (v) hydrolysis constants of salts **PHOTOCHEMISTRY:** Characteristics of electromagnetic radiation, Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws, of photochemistry, quantum yield, actinometry.	B.Sc.(H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV
	Practical	**Conductometric titrations:** (I)Weak acid vs. strong base (II)Mixture of strong acid and weak acid vs. strong base Study of kinetics of Acid hydrolysis of methyl acetate with hydrochloric acid. Saponification of ethyl acetate	B.Sc. (H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV **LAB**
MARCH	**Theory**	**Chemical Kinetics:** Order and molecularity of a reaction, rate laws in terms of the advancement of a reaction, differential and integrated form of rate expressions up to	B.Sc.(H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV

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		second order reactions, experimental methods for determination of rate laws.		
	Practical	Comparison of the strengths of HCl and H_2 SO4 by studying kinetics of hydrolysis of methyl acetate.	B.Sc. (H) CHEMISTRY Semester IV (SECTION B)	C X: PHYSICAL CHEMISTRY IV **LAB**
APRIL	**Theory**	**Chemical Kinetics:** Kinetics of complex reactions (integrated rate expressions up to first order only): (i) Opposing reactions (ii) parallel reactions and (iii) consecutive reactions and their differential rate equations (steady-state approximation in reaction mechanisms) (iv) chain reactions. Temperature dependence of reaction rates; Arrhenius equation; activation energy. Collision theory of reaction rates, Lindemann mechanism, qualitative treatment of the theory of absolute reaction rates. **Chemical Equilibrium**: Free energy change in a chemical reaction, Thermodynamic derivation of the law of chemical equilibrium, distinction between G and Go, Le Chatelier's principle, relationships between Kp, Kc and Kx for reactions involving ideal gases.	B.Sc.(H) CHEMISTRY Semester IV (SECTION B) **GE II**	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
	Practical	Study the kinetics of Iodide-persulphate reaction using (i) Initial rate method (ii) (ii)Integrated rate method Organic synthesis: (i) Bromination of aniline (ii) Benzoylation of aniline and B-naphthol (iii) Semicarbazone of carbonyl compound **Thermochemistry**: 1. Determination of heat capacity of a calorimeter for different volumes using (i) change of enthalpy data of a known system and (ii) heat gained equal to heat lost by cold water and hot water respectively 2. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	B.Sc. (H) CHEMISTRY Semester IV (SECTION B) B.Sc. (Prog) Life Sceinces Semester II (Batch 3) B.Sc.(H) CHEMISTRY I year Semester II (Batch 2)	C X: PHYSICAL CHEMISTRY IV **LAB** CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I C IV: PHYSICAL CHEMISTRY II **LAB**
MAY	**Theory**	**Catalysis**: Types of catalyst, specificity and selectivity, mechanisms of catalyzed reactions at solid surfaces. Enzyme catalysis, Michaelis-Menten mechanism, acid-base catalysis. **Ionic Equilibria:**	B.Sc.(H) CHEMISTRY Semester IV (SECTION B) GE II	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS,

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		Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, Ostwald's dilution law, ionization constant and ionic product of water, ionization of weak acids and bases, pH scale, common ion effect.		CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
	Practical	Thermochemistry: (1). Determination of heat capacity of calorimeter using different volumes. (2). Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. (3). Determination of integral enthalpy of solution of salts (KNO_3, NH_4 C1). Organic preparation: (i) Oxime formation of cyclohexanone 3. Determination of the enthalpy of ionization of ethanoic acid. 4. Determination of integral enthalpy (endothermic and exothermic) solution of salts. 5. Determination of basicity of a diprotic acid by the thermochemical method for different additions of a base.	B.Sc. (Prog) Life Sceinces Semester II (Batch 3) B.Sc.(H) CHEMISTRY I year Semester II (Batch 2)	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I C IV: PHYSICAL CHEMISTRY II **LAB**
JUNE	**Theory**	**Ionic Equilibria:** Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions, Henderson-Hasselbach equation.Solubility and solubility product of sparingly soluble salts – applications of solubility product principle	GE II	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
	Practical	Determination of enthalpy of hydration of copper sulphate. Preparation of buffer solutions: (i)Sodium acetate-acetic acid (ii)Ammonium chloride-ammonium hydroxide Measurement of the pH of buffer solutions and comparison of the values with theoretical values. Organic preparation: (i) 2,4 DNP derivative preparation of Benzaldehyde 6. Determination of enthalpy of hydration of salt. 7. To study the effect of concentration of solute on elevation of boiling point of water. 8. To study the elevation in boiling point on adding same concentrations of electrolyte and non-electrolyte to a specific volume of water.	B.Sc. (Prog) Life Sceinces Semester II (Batch 3) B.Sc.(H) CHEMISTRY I year Semester II (Batch 2)	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I C IV: PHYSICAL CHEMISTRY II **LAB**
JULY	**Theory**	**REVISION AND DISCUSSION OF NUMERCICALS**	GE II	CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I

	Practical	**REVISION EXERCISES ALONG WITH VIVA** **REVISION EXERCISES ALONG WITH VIVA**	B.Sc. (Prog) Life Sceinces Semester II (Batch 3) B.Sc.(H) CHEMISTRY I year (Batch 2)	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I C IV: PHYSICAL CHEMISTRY II **LAB**
AUGUST	**Theory**	**REVISION AND PREVIOUS YEARS QUESTION PAPERS DISCUSSION**	GE II	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
	Practical			

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Year 2021-2022 (Even)
Name of the Faculty: Dr. Rekha Yadav
Department: Chemistry **Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY		Kinetic Theory of Gases Postulates of kinetic theory of gases and derivation of the kinetic gas equation, deviation of real gases from ideal behaviour, compressibility factor, causes of deviation, van der Waals equation of state for real gases. Boyle temperature (derivation not required), critical phenomena, critical constants and their calculation from van der Waals equation, Andrews isotherms of CO_2, Maxwell Boltzmann distribution laws of molecular velocities and molecular energies (graphic representation – derivation not required) and their importance.	GE-IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practical	1. Determination of cell constant 2. Determination of conductivity, molar conductivity, degree of dissociation and dissociation constant of a weak acid. 3. Perform the following conductometric titrations: i. Strong acid vs. strong base, ii. Weak acid vs. strong base, iii. Mixture of strong acid and weak acid vs. strong base, iv. strong acid vs. weak base. Determination of cell constant 2. Determination of conductivity, molar conductivity, degree of dissociation and dissociation constant of a weak acid. 3. Perform the following conductometric titrations: i. Strong acid vs. strong base, ii. Weak acid vs. strong base, iii. Mixture of strong acid and weak acid vs. strong base, iv. strong acid vs. weak base.	B.Sc. (Hons.) Chemistry II year, Semester IV	CX: PHYSICAL CHEMISTRY–IV Course Title: Conductance & Chemical Kinetics
		Surface tension measurement (use of organic solvents excluded): Determination of the surface tension of a liquid or a dilute solution using a stalagmometer. Viscosity measurement (use of organic solvents excluded):	B.Sc. (P) Life Sciences II year, Semester IV	Core Paper-4 Course Title: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

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		a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald viscometer.		
FEBRUARY	**Theory**	Temperature dependence of these distributions, most probable, average and root mean square velocities (no derivation), collision cross section, collision number, collision frequency, collision diameter and mean free path of molecules, viscosity of gases and effect of temperature and pressure on coefficient of viscosity (qualitative treatment only).	GE-IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practical	Chemical Kinetics: 1. To study the kinetics of Acid hydrolysis of methyl acetate with hydrochloric acid using integrated rate law method. 2. To study the kinetics of Iodide-persulphate reaction by Initial rate method. 3. To study the kinetics of iodine-persulphate reaction using integrated rate law method.	B.Sc. (Hons.) Chemistry II year, Semester IV	CX: PHYSICAL CHEMISTRY–IV Course Title: Conductance & Chemical Kinetics
		Study of the variation of viscosity of an aqueous solution with concentration of solute. Study the kinetics of the following reactions by integrated rate method: a) Acid hydrolysis of methyl acetate with hydrochloric acid.	B.Sc. (P) Life Sciences II year, Semester IV	Core Paper-4 Course Title: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
MARCH	**Theory**	Liquids Surface tension and its determination using stalagmometer, Viscosity of a liquid and determination of coefficient of viscosity using Ostwald viscometer, effect of temperature on surface tension and coefficient of viscosity of a liquid (qualitative treatment only).	GE-IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practical	To study the kinetics of iodine clock reaction. 5. To study the kinetics of Saponification of ethyl acetate.	B.Sc. (Hons.) Chemistry II year, Semester IV	CX: PHYSICAL CHEMISTRY–IV Course Title: Conductance & Chemical Kinetics
		Compare the strength of HCl and H2SO4 by studying the kinetics of hydrolysis methyl acetate. Semi-micro qualitative analysis of mixtures using H2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts)	B.Sc. (P) Life Sciences II year, Semester IV	Core Paper-4 Course Title: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
APRIL	**Theory**	SYSTEMS OF VARIABLE COMPOSITION Partial molar quantities, dependence of thermodynamic parameters on composition; Gibbs Duhem equation, chemical potential of ideal	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II

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		mixtures, Change in thermodynamic functions on mixing of ideal gases.		
		Solids Forms of solids, symmetry elements, unit cells, crystal systems, Bravais lattice types and identification of lattice planes. Laws of crystallography - law of constancy of interfacial angles.	GE-IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Chemical Energetics Review of thermodynamics and the laws of thermodynamics, important principles and definitions of thermochemistry, concept of standard state and standard enthalpies of formations, integral and differential enthalpies of solution and dilution, calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data, variation of enthalpy of a reaction with temperature – Kirchhoff's equation., statement of third law of thermodynamics and calculation of absolute entropies of substances.	B.Sc. (P) Life Sciences I year, Semester II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practical	6. Comparison of the strengths of HCl and H_2SO_4 by studying the kinetics of hydrolysis of methyl acetate. 7. To determine the degree of hydrolysis and hydrolysis constant of aniline hydrochloride in aqueous solution. 8. To relate the rate of the reaction between Calcium carbonate and Hydrochloric acid to the amount of carbon dioxide formed and study the effect of change in concentration of reactants and the temperature on rate of the reaction.	B.Sc. (Hons.) Chemistry II year, Semester IV	CX: PHYSICAL CHEMISTRY–IV Course Title: Conductance & Chemical Kinetics
		1. Determination of heat capacity of a calorimeter for different volumes using (i) change of enthalpy data of a known system and (ii) heat gained equal to heat lost by cold water and hot water respectively 2. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	B.Sc. (Hons.) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY - II Course Title: Chemical Thermodynamics and its Applications
		Semi-micro qualitative analysis of mixtures using H2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts)	B.Sc. (P) Life Sciences II year, Semester IV	Core Paper-4 Course Title: Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

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MAY	**Theory**	CHEMICAL EQUILIBRIUM: Criteria of thermodynamic equilibrium, degree of advancement of reaction, Chemical equilibria in ideal gases, Thermodynamic derivation of relation between Gibbs free energy of a reaction and reaction quotient, Equilibrium constants and their dependence on temperature, pressure and concentration, Le Chatelier's Principle (Quantitative treatment), Free energy of mixing and spontaneity, Equilibrium between ideal gases and a pure condensed phase.	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II
		Chemical Equilibrium Free energy change in a chemical reaction, Thermodynamic derivation of the law of chemical equilibrium, distinction between G and Go, Le Chatelier's principle, relationships between Kp, Kc and Kx for reactions involving ideal gases.	B.Sc. (P) Life Sciences I year, Semester II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practical	3. Determination of the enthalpy of ionization of ethanoic acid. 4. Determination of integral enthalpy (endothermic and exothermic) solution of salts. 5. Determination of basicity of a diprotic acid by the thermochemical method for different additions of a base.	B.Sc. (Hons.) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY - II Course Title: Chemical Thermodynamics and its Applications
JUNE	**Theory**	CHEMICAL EQUILIBRIUM: Free energy of mixing and spontaneity, Equilibrium between ideal gases and a pure condensed phase. SOLUTIONS AND COLLIGATIVE PROPERTIES: Dilute solutions; lowering of vapour pressure, Raoult's law, Henry's law. Thermodynamic basis of the colligative properties - lowering of vapour pressure, elevation of Boiling Point, Depression of Freezing point and Osmotic pressure and derivation of expressions for these using chemical potential.	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II
		Ionic Equilibria Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, Ostwald's dilution law, ionization constant and ionic product of water, ionization of weak acids and bases, pH scale, common ion effect, salt hydrolysis-calculation of hydrolysis constant	B.Sc. (P) Life Sciences I year, Semester II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practical	6. Determination of enthalpy of hydration of salt. 7. To study the effect of concentration of solute on elevation of boiling point of water.	B.Sc. (Hons.) Chemistry I year, Semester II	Lab CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
JULY	**Theory**	SOLUTIONS AND COLLIGATIVE PROPERTIES: Application of colligative properties in calculating molar masses of normal, dissociated and associated solutes in solutions. Concept of activity and activity coefficients.	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II

		THIRD LAW OF THERMODYNAMICS: Statement of third law, unattainability of absolute zero, calculation of absolute entropy of molecules, concept of residual entropy, calculation of absolute entropy of solid, liquid and gases. MAXWELL RELATIONS		
		degree of hydrolysis and pH for different salts. Buffer solutions, Henderson-Hasselbach equation.Solubility and solubility product of sparingly soluble salts – applications of solubility product principle	B.Sc. (P) Life Sciences I year, Semester II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practical	To study the elevation in boiling point on adding same concentrations of electrolyte and nonelectrolyte to a specific volume of water.	B.Sc. (Hons.) Chemistry I year, Semester II	Lab CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
AUGUST	**Theory**	REVISION AND PREVIOUS YEARS QUESTION PAPERS DISCUSSION	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II
	Practical	Revision	B.Sc. (Hons.) Chemistry I year Semester II	Lab CC-IV: Physical chemistry-II

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SEMESTER WISE
TEACHING PLAN 2021-2022
EVEN SEMESTER
SRI VENKATESWARA COLLEGE

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

Department: Chemistry **Semester: II /IV/VI**

Month		Topic	Course	Paper
January	**Theory:**	Introduction, Classification, Structure, Nomenclature and uses. Aromaticity of polynuclear hydrocarbons, structure elucidation of Naphthalene and general methods of preparation of naphthalene, phenanthrene and anthracene (including Haworth method,Friedel Craft acylation, Diels Alder reaction,Elbs reaction and Pschorr Synthesis).	B. Sc. (H) Chemistry-II year (SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III
		Aromatic Hydrocarbons Structure and aromatic character of benzene. Preparation: methods of preparation of benzene from phenol, benzoic acid, acetylene and benzene sulphonic acid. Reactions: electrophilic substitution reactions in benzene citing examples of nitration, halogenation, sulphonation and Friedel-Craft's alkylation and acylation with emphasis on carbocationic rearrangement, side chain oxidation of alkyl benzenes. Williamson's ether synthesis, Cleavage of ethers with HI, Aldehydes and ketones (Aliphatic and Aromatic): Preparation: from acid chlorides and from nitriles.	B. Sc. (P) Life Science-B, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
		Structure and aromatic character of benzene. Preparation: methods of preparation of benzene from phenol, benzoic acid, acetylene and benzene sulphonic acid.	B. Sc. (P) Life Science-A, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

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		Reactions: electrophilic substitution reactions in benzene citing examples of nitration, halogenation.		
	Practicals:	Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters).	B. Sc. (H) Chemistry-II year (SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III
	Practicals:	Preparation of any two of the following complexes and measurement of their conductivity: (i) tetraamminecarbonatocobalt (III) nitrate Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, alcoholic) and preparation of one derivative.	B. Sc. (P) Life Science, III year (TLS), Sem-VI	DSE-Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And UV, IR Spectroscopy
	Practicals:	Determination of heat capacity of calorimeter and Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Oxime of cycloxanone preparation.	B. Sc. (P) Life Science, I year (FLS), Sem- II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practical)
	Tutorials:	NA	NA	NA
February	**Theory:**	Relative reactivity of naphthalene, phenanthrene and anthracene in comparison to benzene. Alkaloids Introduction, Natural occurrence, Classification, Uses, general structural features, general methods for structure elucidation including Hoffmann's exhaustive methylation and Emde's method. Structure elucidation, synthesis and physiological action of Nicotine.	B. Sc. (H) Chemistry-II year (SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III
		Reactions: Nucleophilic addition, nucleophilic addition – elimination reaction including reaction with HCN, ROH, NaHSO3,	B. Sc. (P) Life Science-B, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

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		NH2-G derivatives. Iodoform test, Aldol Condensation, Cannizzaro's reaction, Wittig Reaction. Benzoin condensation. Clemmensen reduction, Wolff Kishner reduction, Meerwein-Pondorff Verley reduction. Structure and classification of alcohols as 1º, 2º & 3º. Preparation: Methods of preparation of 1º, 2º & 3º by using Grignard reagent, ester hydrolysis and reduction of aldehydes, ketones, carboxylic acids and esters. Reactions: Acidic character of alcohols and reaction with sodium, with HX (Lucas Test), esterification,		
		sulphonation and Friedel-Craft's alkylation and acylation with emphasis on carbocationic rearrangement, side chain oxidation of alkyl benzenes. Aldehydes and ketones (Aliphatic and Aromatic): Preparation: from acid chlorides and from nitriles. Reactions: Nucleophilic addition, nucleophilic addition – elimination reaction including reaction with HCN,	B. Sc. (P) Life Science-A, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals:	1. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters). 2. Isolation of caffeine from tea leaves.	B. Sc. (H) Chemistry-II year (SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III
	Practicals:	Tetraamminecopper (II) sulphate Potassium trioxalatoferrate (III) trihydrate Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (phenolic, aldehydic)	B. Sc. (P) Life Science, III year (TLS), Sem-VI	DSE-Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And UV, IR Spectroscopy

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		and preparation of one derivative.		
	Practicals:	Determination of integral enthalpy of solution of salts (KNO3, NH4Cl). Benzoylation of amines/phenols	B. Sc. (P) Life Science, I year (FLS), Sem- II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practical)
	Tutorials:	NA	NA	NA
March	**Theory:**	Terpenes Introduction, Occurrence, Uses, classification, isoprene and special isoprene rule; general methods of structure elucidation including distinction between isopropylidene and isopropenyl group, Elucidation of structure, synthesis and industrial applicationof Citral.	B. Sc. (H) Chemistry-II year (SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III
		Oxidation (with PCC, alkaline KMnO4, acidic K2Cr2O7 and conc. HNO3), Oppeneauer Oxidation. B) Diols (upto 6 Carbons): Oxidation and Pinacol-Pinacolone rearrangement. Phenols: acidity of phenols and factors affecting their acidity. Preparation: Methods of preparation from cumene, diazonium salts and benzene sulphonic acid. Reactions: Directive influence of OH group and Electrophilic substitution reactions, viz. nitration, halogenation, sulphonation, Reimer-Tiemann reaction, Gattermann–Koch reaction, Houben-Hoesch condensation, reaction due to OH group: Schotten-Baumann reaction	B. Sc. (P) Life Science-B, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
		ROH, NaHSO3, NH2-G derivatives. Iodoform test, Aldol Condensation, Cannizzaro's reaction, Wittig reaction, Benzoin condensation. Clemmensen reduction, Wolff Kishner reduction, Meerwein-Pondorff	B. Sc. (P) Life Science-A, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

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		Verley reduction.		
	Practicals:	1. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters). 2. Estimation of aniline by any one of thefollowing methods:a) Acetylation b) Bromate-bromide method	B. Sc. (H) Chemistry-II year (SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III
	Practicals:	Separation of mixtures by chromatography: Measure the Rf values of each. Paper chromatographic separation of Fe3+, Al3+, and Cr3+. Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (carbohydrates, ketonic) and preparation of one derivative.	B. Sc. (P) Life Science, III year (TLS), Sem-VI	DSE-Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And UV, IR Spectroscopy
	Practicals:	Determination of enthalpy of hydration of copper sulphate. 2,4-dinitrophenylhydrazone of aldehydes and ketones Semicarbazone of aldehydes and ketones	B. Sc. (P) Life Science, I year (FLS), Sem- II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practical)
	Tutorials:	NA	NA	NA
	Assignment	**Assignment-I**	B. Sc. (H) Chemistry-II year (SCH): Sem-IV B. Sc. (P) Life Science-B, I year (FLS)-Sem-II	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
Apirl	**Theory:**	Quinoline and isoquinoline, (Skraup synthesis, Friedlander's synthesis, Knorr quinoline synthesis, Doebner-Miller synthesis, Bischler-Napieralski reaction, Pictet-Spengler reaction, Pomeranz-Fritsch reaction)	B. Sc. (H) Chemistry-II year (SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III
		Structure of haloalkanes Preparationand alkenes with mechanisms.	B. Sc. (P) Life	Chemical Energetics, Equilibria and Functional

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		Reactions: Nucleophilic substitution reactions with mechanism and their types (SN1, SN2 and SNi), competition with elimination reactions (elimination vs substitution), nucleophilic substitution reactions with specific examples from: hydrolysis, nitrite & nitro formation, nitrile & isonitrile formation. Haloarenes: Structure and resonance Preparation: Reaction: Nucleophilic aromatic substitution by OH group (Bimolecular Displacement Mechanism), Effect of nitro substituent on reactivity of haloarenes, Reaction with strong bases NaNH2/NH3 (elimination addition mechanism involving benzyne intermediate), relative reactivity and strength of C-X bond in alkyl, allyl, benzyl, vinyl and aryl halides.	Science-B, I year (FLS)-Sem-II	Group Organic Chemistry-I
		Ethers (Aliphatic & Aromatic): Williamson's ether synthesis, Cleavage of ethers with HI	B. Sc. (P) Life Science-A, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals:	Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters).	B. Sc. (H) Chemistry-II year (SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III
		Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines) preparation of one derivative.	B. Sc. (P) Life Science, III year (TLS), Sem-VI	DSE-Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And UV, IR Spectroscopy
		Preparation of buffer	B. Sc. (P) Life	Chemical Energetics,

		solutions: (i) Sodium acetate-acetic acid or (ii) Ammonium chloride-ammonium acetate. Measurement of the pH of buffer solutions and comparison of the values with theoretical values. Bromination of phenol-aniline	Science, I year (FLS), Sem- II	Equilibria and Functional Group Organic Chemistry-I (Practical)
	Tutorials:	NA	NA	NA
	Test			

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

Name of the Faculty: Dr Devendra Kumar Verma
Department: Chemistry **Semester: II/IV**

Month		Topic	Course	Paper
03 January 2022	**Theory:**	Chemical energetics review of Thermodynamics and laws of Thermodynamics. Important principles and definitions of thermochemistry. Concept of standard state and standard enthalpy of formation, integral and differential enthalpy of solution.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1
		Chemical energetics review of Thermodynamics and laws of Thermodynamics. Important principles and definitions of thermochemistry. Concept of standard state and standard enthalpy of formation, integral and differential enthalpy of solution.	B.Sc. (H) II semester GE II	Chemical energetic, equilibria and functional organic chemistry 1
		Unit 1. Chemical thermodynamics: Intensive and extensive variable: stat and path function, isolated close ad open system. Mathematical treatment- Exact and inexact differential, partial derivatives.Euler`s Reciprocal rule, cyclic rule.	B.Sc (H) Chemistry II Semester	CHEMISTRY - C IV: PHYSICAL CHEMISTRY II
	Practicals:	Section B: Physical Chemistry (I)Surface tension measurement (use of organic solvents excluded). a)Determination of the surface tension of a liquid or a dilute solution using a stalagmometer	GE 4 Chemistry	Matter, kinetics theory of gas, chemical kinetics.
		Thermochemistry 1. Determination of heat capacity of calorimeter for different volumes. 2. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide	B.Sc Life Science II Semester	CHPP 202-Chemistry-2 (Thermodynamics, Equilibria & Functional Group Organic Chemistry-1)
		Section A: Physical Chemistry Thermochemistry 1.Determination of heat capacity of calorimeter for different volumes. 2.Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	GE II	CHEMISTRY LAB: CHEMICAL ENERGETICS, EQUILIBRIA & FUNCTIONAL ORGANIC CHEMISTRY

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	Tutorials:	NA	NA	NA
February	**Theory:**	Calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data. Variations of enthalpy of reaction with temperature - Kirchhoff's equation.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1
		Calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data. Variations of enthalpy of reaction with temperature - Kirchhoff's equation.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1
		Unit 2 cocept of heat work, internal energy, and statement of first law, enthalpy. Relation between heat capacity. Joule Thompson porous plug experiment. Nature of Joule Thompson coefficient, calculation of Q W ΔU and ΔH for reversible and irreversible and free expansion of gases (Ideal and vander waals) under isothermal and adiabatic conditions.	B.Sc (H) Chemistry II Semester	CHEMISTRY - C IV: PHYSICAL CHEMISTRY II
	Practicals:	b)Study of the variation of surface tension of a detergent solution with concentration. (II)Viscosity measurement (use of organic solvents excluded). a)Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald's viscometer. b)Study of the variation of viscosity of an aqueous solution with concentration of solute.	GE 4 Chemistry	Matter, kinetics theory of gas, chemical kinetics.
		Determination of enthalpy of ionization of acetic acid.	B.Sc Life Science II Semester	CHPP 202-Chemistry-2 (Thermodynamics, Equilibria & Functional Group Organic Chemistry-1)
		3.Determination of enthalpy of ionization of acetic acid.	GE II	CHEMISTRY LAB: CHEMICAL ENERGETICS, EQUILIBRIA & FUNCTIONAL ORGANIC CHEMISTRY
	Tutorials:	NA	NA	NA

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		Statement of third law of Thermodynamics and calculation of absolute entropies of substance. Statement of third law of Thermodynamics and calculation of absolute entropies of substance. Chemical equilibrium:- free energy change in a chemical reaction. Thermodynamic derivation of law of chemical equilibrium. Distinction between G and G^O.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1
		Statement of third law of Thermodynamics and calculation of absolute entropies of substance. Statement of third law of Thermodynamics and calculation of absolute entropies of substance. Chemical equilibrium:- free energy change in a chemical reaction. Thermodynamic derivation of law of chemical equilibrium. Distinction between G and G^O.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1
		Thermochemistry: enthalpy of reactions: standard states: enthalpy of neutralization, enthalpy of hydration, enthalpy of formation ad enthalpy of combustion, and its applications, bond dissociation energy and bond enthalpy: effect of temperature(Kirchhoff`s equation) on enthalpy of reactions.	B.Sc (H) Chemistry II Semester	CHEMISTRY - C IV: PHYSICAL CHEMISTRY II
	Practicals:	Study the kinetics of the following reactions. 1.Initial rate method: Iodide-persulphate reaction 2.Integrated rate method: a.Acid hydrolysis of methyl acetate with hydrochloric acid.	GE 4 Chemistry	Matter, kinetics theory of gas, chemical kinetics.
		Determination of integral enthalpy of solution of salts (KNO3, NH4Cl). 5. Determination of enthalpy of hydration of copper sulphate.	B.Sc Life Science II Semester	CHPP 202-Chemistry-2 (Thermodynamics, Equilibria & Functional Group Organic Chemistry-1)
		3.Determination of enthalpy of ionization of acetic acid.	GE II	CHEMISTRY LAB: CHEMICAL ENERGETICS, EQUILIBRIA & FUNCTIONAL

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				ORGANIC CHEMISTRY
	Tutorials:			
	Assignment			
28 April 2022	**Theory:**	Le Chatelier's principles. Relationships between Kp, Kc and Kx, for reaction involving ideal gases.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1
		Le Chatelier's principles. Relationships between Kp, Kc and Kx, for reaction involving ideal gases.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1
		Second Law : concept of entropy: statement of the second law of thermodynamics. Carnot cycle, calculation of entropy change for reversible and irreversible process for ideal gases. Free energy functions: gibbs and Helmholtz enrgy: variation o S G,A with T, V,P; free energy change and spontaneity or idal gases. Relation between joule Thomson coefficient and other thermodynamically parameters; inversion temperature; Gibbs-Helmholtz equation; Maxwell relation; thermodynamic equation of state. Unit 4 Statement o third law, unattainability of absolute zero, calculation of absolute entropy of molecules, concept of residual entropy. Calculation of absolute entropy of solid, liquid and gases.	B.Sc (H) Chemistry II Semester	CHEMISTRY - C IV: PHYSICAL CHEMISTRY II
	Practicals:	b.Saponification of ethyl acetate. c.Compare the strengths of HCl and H2SO4 by studying kinetics of hydrolysis of methyl acetate	GE 4 Chemistry	Matter, kinetics theory of gas, chemical kinetics.
		6. Study of the solubility of benzoic acid in water and determination of ΔH.	B.Sc (Life Science) II Semester	CHPP 202-Chemistry-2 (Thermodynamics, Equilibria & Functional Group Organic Chemistry-1)
		4.Determination of integral enthalpy of solution of salts (KNO3, NH4Cl). Ionic equilibriapH measurements a)Measurement of pH of different solutions like aerated drinks, fruit juices, shampoos	GE II	CHEMISTRY LAB: CHEMICAL ENERGETICS, EQUILIBRIA & FUNCTIONAL ORGANIC

		and soaps (use dilute solutions of soaps and shampoos to prevent damage to the glass electrode) using pH-meter. b)Preparation of buffer solutions: (i)Sodium acetate-acetic acid (ii)Ammonium chloride-ammonium hydroxide5.Determination of enthalpy of hydration of copper sulphate.		CHEMISTRY
	Tutorials:	NA	NA	NA
	Test			

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

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

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Transition Elements: General group trends with special reference to electronic configuration, colour, variable valency, magnetic properties (no temperature dependence), catalytic properties, and ability to form complexes. Latimer diagrams of Mn, Fe and Cu in acidic and basic media, differences between the first, second and third transition series.	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Periodicity in s- and p-block elements with respect to electronic configuration, atomic and ionic size,	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Practicals	Inorganic Preparations: i. Tetraamminecopper (II) sulphate, ii. Acetylacetonate complexes of Cu^{2+}	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
		Semi-micro qualitative analysis of mixtures using H2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts) out of the following: Cations: NH4 + , Pb2+, Bi3+, Fe3+, Al3+, Co2+, Ni2+, Ba2+, Anions: CO3 2-, S2- , SO3 - , NO2 - , CH3COO- , Cl- , , BO3 3- , C2O4 2-, F- .	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics

	Tutorials			
FEBRUARY	**Theory:**	Chemistry of Cr, Mn, Fe and Co in various oxidation states with special reference to following compounds Potassium dichromate, potassium permanganate, potassium ferrocyanide, potassium ferricyanide, sodium nitroprusside and sodium cobaltinitrite.	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		ionization enthalpy, electronegativity (Pauling, Muliken, and Allred-Rochow scales). Allotropy in C, S, and P.	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Practicals:	(iv) Potassium tri(oxalato)ferrate(III) Estimation of nickel (II) using Dimethylglyoxime (DMG).	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
		Semi-micro qualitative analysis of mixtures using H2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts) out of the following: Cations: NH4 + , Pb2+, Bi3+, Cu2+, Cd2+, Fe3+, Al3+, Co2+, Zn2+, Ba2+, Sr2+, Ca2+, K+ Anions: CO3 2-, SO3 - , NO2 - , CH3COO- , Cl- , Br- , I- , NO3 - ,SO4 2- , PO4 3- , BO3 3- , C2O4 2-, F- . 1. Surface tension measurement Determination of the surface tension of a liquid or a dilute solution using a stalagmometer. 2. Viscosity measurement (use of organic solvents excluded): a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald viscometer.	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Tutorials:			

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	Assignment :	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Chemistry of s and p block elements	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
MARCH	**Theory:**	Lanthanoids and Actinoids electronic configuration, oxidation states, colour, spectral and magnetic properties. Lanthanoid contraction (causes and effects) separation of lanthanoids by ion exchange method. Inorganic Reaction Mechanism: Introduction to inorganic reaction mechanisms	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides), inert pair effect, diagonal relationship and anomalous behaviour of first member of each group.	B.Sc. Life Sciences IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Practicals:	Estimation of copper as CuSCN Preparation of Tetraamminecarbonatocobalt (III) nitrate	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
		Study of the variation of viscosity of an aqueous solution with concentration of solute. 3. Chemical Kinetics Study the kinetics of the following reactions by integrated rate method: a) Acid hydrolysis of methyl acetate with hydrochloric acid. b) Compare the strength of HCl and H2SO4 by studying the kinetics of hydrolysis methyl	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics

	Tutorials:			
	<u>Test</u>	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	<u>Test</u>	Chemistry of s and p block elements	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
APRIL	**Theory:**	Substitution reactions in square planar complexes, Trans- effect, theories of trans-effect. Thermodynamic and Kinetic stability	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		compounds of s- and p-block elements , diborane and concept of multicentre bonding	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Practicals:	Estimation of iron as Fe_2O_3 by precipitating iron as $Fe(OH)_3$.	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Mixtures preferably contain one interfering anion and combination of anions	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV

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		Semi-micro qualitative analysis of mixtures using H2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts) out of the following: Cations: NH4 + , Pb2+, Bi3+, Cu2+, Cd2+, Fe3+, Al3+, Co2+, Ni2+, Mn2+, Zn2+, Ba2+, Sr2+, Ca2+, K+ Anions: CO3 2-, S2- , SO3 - , NO2 - , CH3COO- , Cl- , Br- , I- , NO3 - ,SO4 2- , PO4 3- , BO3 3- , C2O4 2-, F- .	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Tutorials:			

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SEMESTER WISE TEACHING PLAN
Academic year 2020-2021 (Even Semester)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Balendra **Department: Chemistry**
Semester: II/IV/VI

Month		Topic	Course	Paper Code/Name
January	**Theory**	1) synthesis, structure activity relationship (SAR), mode of action, uses and adverse effects of representative pesticides in the following classes: Organochlorines (DDT, Gammaxene); Organophosphates (Malathion, Parathion); Carbamates (Carbofuran and Carbaryl); Quinones (Chloranil), Anilides (Alachlor and Butachlor). 2) Hair preparation: Structure of hair, classification of hair, Hair dye- classification – temporary, semipermanent,	B.Sc.(H) Chemistry Sem-II B. Sc. (P) Life Sciences III Year, Semester VI	CHEMISTRY –SEC-11 Course Title: Pesticide Chemistry SEC: Chemistry of Cosmetics and Perfumes
	Practical			
February	**Theory**	Botanical insecticides [No structure elucidation or synthesis is required for the following compounds:]Alkaloids(Nicotine); Pyrethrum (natural and synthetic pyrethroids); Azadirachtin; Rotenone and Limonene. Demi permanent, permanent, formulation, hair sprays, shampoo-types of shampoo, conditioners	B.Sc.(H) Chemistry Sem-II B.Sc.(P) Life Sciences Sem-VI	CHEMISTRY –SEC-11 Course Title: Pesticide Chemistry SEC: Chemistry of Cosmetics and Perfumes
	Practical			
	Assessment	**Assignment-1**	B.Sc.(P) Life Sciences Sem-VI SEC: Chemistry of Cosmetics and Perfumes	
March	**Theory**	Pesticide formulations: Wettable powders, Surfactants, Emulsifiable concentrates, Aerosols, Dust and	B.Sc. (H) Chemistry	SEC-11: PESTICIDE

		Granules, Controlled Release Formulations. Colored preparation: Nail preparation Structure of nail, Nail lacquers, Nail polish remover Lipsticks	Sem-IV B.Sc.(P) Life Sciences Sem-VI	CHEMISTRY PRACTICALS SEC: Chemistry of Cosmetics and Perfumes
	Practical			
April	**Theory:** .	Repellants, Chemosterilants, Antifeedants, Sex attractants Personal hygiene products: Antiperspirants and deodorants, oral hygiene products, flavours and essential oils Structure and aromatic character of benzene. Preparation**:** methods of preparation of benzene from phenol, benzoic acid, acetylene and benzene sulphonic acid.	B.Sc. (H) Chemistry Sem-IV B.Sc.(P) Life Sciences Sem-VI GE-II	SEC-11: PESTICIDE CHEMISTRY PRACTICALS SEC: Chemistry of Cosmetics and Perfumes CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
	Practicals:	1. Organic Preparations (i) Bromination of acetanilide / aniline / phenol (ii) Nitration of nitrobenzene / toluene 1.Purification of organic compounds by crystallization using the following solvents: a. Water b. Alcohol c. Alcohol-Water	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
May	**Theory:**	Reaction of alkyl halides (SN1, SN2 and SNi), Nucleophile substitution reaction: Hydrolysis, nitrite and nitro formation, nitrile, isonitrile and Williamson ether synthesis	GE-II	GE-2: Chemical Energetics, Equilibria and Functional Group Organic Chemsirty-1

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	Practicals:	Thermochemistry: (1). Determination of heat capacity of calorimeter using different volumes. (2). Determination of enthalpy of neutralization of' hydrochloric acid with sodium hydroxide. (3). Determination of integral enthalpy of solution of salts (KNO3, NH4 C1). Organic preparation: (i) Oxime formation of cyclohexanone 1. Determination of the melting points of unknown organic compounds (Kjeldahl method and electrically heated melting point apparatus) 2. Effect of impurities on the melting point – mixed melting point of two unknown organic compounds 3. Determination of boiling point of liquid compounds. (boiling point lower than and more than 100 °C by distillation and capillary method)	B.Sc. (Prog) Life Sceinces Semester II Batch III and Batch I B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
	Tutorials:	Assessment-1	B.Sc.(H) Chemistry Sem-I	
June	**Theory:**			
		Haloarenes: their structure, preparation, sandmeyer and gattermann reactions) Nucleophilic aromatic substitution by OH, effect of nitrogroup.	GE-II	GE-2: Chemical Energetics, Equilibria and Functional Group Organic Chemsirty-1

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	Practicals:	Determination of enthalpy of hydration of copper sulphate. Preparation of buffer solutions: (i)Sodium acetate-acetic acid (ii)Ammonium chloride-ammonium hydroxide Measurement of the pH of buffer solutions and comparison of the values with theoretical values. Organic preparation: (i) 2,4 DNP derivative preparation of Benzaldehyde Chromatography: 1.Separation of a mixture of o-and p-nitrophenol or o-and p-aminophenol by thin layer chromatography (TLC) 2. 1.Detection of extra elements 3. Chromatography a. Separation of a mixture of two amino acids by ascending and horizontal paper chromatography.	B.Sc. (Prog) Life Sceinces Semester II Batch III and Batch I B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
	Tutorials:			
	Assessment	Assessment-2	GE-II	GE-2: Chemical Energetics, Equilibria and Functional Group Organic Chemsirty-1
July	**Theory:**	Reaction with strong bases NaNH2/NH3 (eliminationaddition mechanism involving benzyne intermediate), relative reactivity and strength of C-X bond in alkyl, allyl, benzyl, vinyl and aryl halides	GE-II	GE-2: Chemical Energetics, Equilibria and Functional Group Organic Chemsirty-1
	Practicals:	**REVISION EXERCISES ALONG WITH VIVA** Chromatography 1.Separation of a mixture of two sugars by ascending paper chromatography 2.Mock Practical Exam	B.Sc. (Prog) Life Sceinces Semester II Batch III and Batch I B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-1 CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
	Tutorials:			
AUGUST	**Theory**	**REVISION AND PREVIOUS YEARS QUESTION PAPERS DISCUSSION**	GE II	CHEMICAL ENERGETICS, CHEMICAL

				EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I

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

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

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Nitrogen Containing Functional Groups :** Preparation, properties and important reactions of amines and diazonium salts, nitro compounds, nitriles and isonitriles. A) **Amines:** Introduction, classification, chirality in amines (pyramidal inversion), importance and general methods of preparation. **Properties:** Physical properties, Basicity of amines: Effect of substituents, solvent and steric effects. Distinction between Primary, secondary and tertiary amines using Hinsberg's method and nitrous acid. Discussion of the following reactions with emphasis on the mechanistic pathway: Gabriel Phthalimide synthesis, Hoffmann- Bromamide reaction, Carbylamine reaction, Mannich reaction, Hoffmann's exhaustive methylation, Hofmann-elimination reaction and Cope elimination.	B.Sc. (H) Chemistry IIndYear, Semester-IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III **Course Title:** Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Practical	Systematic qualitative analysis of organic compounds possessing monofunctional groups. carbohydrates, nitro compounds, amines, amides	B.Sc. (H) Chemistry IIIrdYear, Semester-VI	CHEMISTRY - CXIV: ORGANIC CHEMISTRY - V **Course Title:** Spectroscopy and Applied Organic Chemistry
	Practical	To calculate acidity in given sample of pesticide formulations as per BIS specifications. To calculate alkalinity in given sample of pesticide formulations as per BIS specifications.	B.Sc. (H) Chemistry IIndYear, Semester-IV	**CHEMISTRY-SEC-11** Pesticide Chemistry
	Tutorials			

FEBRUARY	**Theory**	**Diazonium Salts:** Preparation and synthetic applications of diazonium salts including preparation of arenes, haloarenes, phenols, cyano and nitro compounds. Coupling reactions of diazonium salts(preparation of azo dyes). **Heterocyclic Compounds** Introduction, importance, classification and nomenclature of heterocyclic compounds (containing only one hetero atom). General discussion on the following aspects of heterocyclic compounds: Structure, aromaticity in 5-membered and 6-membered rings containing one heteroatom; Basicity and relative reactivity towards electrophilic substitution reactions(amongst five membered and six membered rings) General methods of synthesis for: Furan, Pyrrole (Paal-Knorr synthesis, Knorr pyrrole synthesis, Hantzsch synthesis), Thiophene, Pyridine (Hantzsch synthesis), Indole(Fischer indole synthesis and Madelung synthesis, reduction of o-nitrobenzaldehyde),	B.Sc. (H) Chemistry IIndYear, Semester-IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III **Course Title:** Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Practical	Systematic qualitative analysis of organic compounds possessing monofunctional groups. simple compounds containing bifunctional groups, e.g. salicylic acid, cinnamic acid, nitrophenols.	B.Sc. (H) Chemistry IIIrdYear, Semester-VI	CHEMISTRY - CXIV: ORGANIC CHEMISTRY - V **Course Title:** Spectroscopy and Applied Organic Chemistry
	Practical	To carryout market survey of potent pesticides with details as follows:	B.Sc. (H) Chemistry IIndYear, Semester-IV	CHEMISTRY-SEC-11 Pesticide Chemistry
	Tutorials:			
	Assignment:			

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MARCH	**Theory:**	**Properties:** Physical properties, discussion on the following reaction (with mechanism) for Furan, Pyrrole, thiophene, Pyridine, Indole, : Electrophilic substitution- Nitration, sulphonation, halogenation, Formylation, acylation, mercuration and carboxylation. Oxidation,Reduction, Addition, Reactions showing acidic /basic character.Reaction with diazonium salts, Ring opening, Ring expansion and Nucleophilic substitution reaction wherever applicable should be discussed Nitro compounds (Aliphatic and Aromatic):Nomenclature, classification and general methods of preparation: from alkyl halides, alkanes, oxidation of amines and oximes and diazonium salts. Properties: Physical properties, discussion on the following reactions with mechanism: Reaction with alkali and its	B.Sc. (H) Chemistry IIndYear, Semester-IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III **Course Title:** Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
	Practical	Systematic qualitative analysis of organic compounds possessing monofunctional groups.	B.Sc. (H) Chemistry IIIrdYear, Semester-VI	CHEMISTRY - CXIV: ORGANIC CHEMISTRY - V **Course Title:** Spectroscopy and Applied Organic Chemistry
	Practical	Preparation of simple Organochlorine pesticides.	B.Sc. (H) Chemistry IIndYear, Semester-IV	CHEMISTRY-SEC-11 Pesticide Chemistry
	Test	Nitrogen contaning Compounds	B.Sc. (H) Chemistry IIndYear, Semester-IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III **Course Title:** Nitrogen containing functional
	Assign ment:	Nitrogen contaning Compounds	B.Sc. (H) Chemistry IIndYear, Semester-IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III **Course Title:** Nitrogen containing functional groups, Polynuclear Hydrocarbons, Heterocyclic Chemistry, Alkaloids and Terpenes.
APRIL		**Maternity Leave**		
MAY		Join on 28 May 2022		

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JUNE	**Theory**	**Stereochemistry** Stereoisomerism: Optical activity and optical isomerism, asymmetry, chirality, enantiomers, diastereomers. specific rotation; Configuration and projection formulae: Newmann, Sawhorse, Fischer and their interconversion. Chirality in molecules with one and two stereocentres; meso configuration. Racemic mixture and their	B.Sc. (H) Chemistry IstYear, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons
	Practical	2,4-dinitrophenylhydrazone of aldehydes and ketones. Semicarbazone of aldehydes and ketones	B.Sc.(P) Life Sciences Ist year, Semester-II	CHEMISTRY –CORE PAPER 2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Assignment	Stereochemistry Part 2	B.Sc. (H) Chemistry IstYear, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons
JULY	**Theory**	Carbon-Carbon sigma bonds (Alkanes and Cycloalkanes) General methods of preparation- Wurtz and Wurtz Fittig reaction, Corey House synthesis, physical and chemical properties of alkanes, Free radical substitutions; Halogenation, concept of relative reactivity v/s selectivity.	B.Sc. (H) Chemistry IstYear, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons
	Practical	Preparations	B.Sc.(P) Life Sciences Ist year, Semester-II	CHEMISTRY –CORE PAPER 2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Assignment	Alkenes and Alkynes	B.Sc. (H) Chemistry IstYear, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons
	Test	Fundamentals, Stereochemistry and Alkenes		

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SEMESTER WISE TEACHING PLAN 2021-2022 (Even Sem)

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

Semester: IV& VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	A general study including preparation and uses of the following; Hair dye, hair spray, shampoo, suntan lotions, face powder.	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
		Structure elucidation of naphthalene, preparation and properties of naphthalene and anthracene. Preparation and Properties of the following compounds with reference to electrophilic and nucleophilic substitution: furan, pyrrole, thiophene, and pyridine.	B. Sc. (P) Life Sciences III Year, Semester VI	: CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practicals	Preparation of talcum powder Preparation of liquid shampoo	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
		Extraction of caffeine from tea leaves, Preparation of urea formaldehyde resin, Preparation of methyl orange dye	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: Organic Chemistry V
		To calculate acidity in given sample of pesticide formulations as per BIS specifications.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
	Assignment	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes

February	**Theory**	lipsticks, talcum powder, nail enamel, creams (cold, vanishing and shaving creams), antiperspirants and artificial flavours	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
		Preparation: Claisen ester condensation, Keto-enol tautomerism. Reactions: Synthetic uses of ethylacetoacetate (preparation of non-heteromolecules having up to 6 carbons) UV-Visible and infrared spectroscopy and their application to simple organic molecules. Electromagnetic radiations and their properties; double bond equivalence and hydrogen deficiency.	B. Sc. (P) Life Sciences III Year, Semester VI	: CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practicals	Preparation of face cream Preparation of nail paint and remover Preparation of hair remover	B. Sc. (P) Life Sciences III Year, Semester VI	B. Sc. (P) Life Sciences III Year, Semester VI
		Qualitative analysis of unknown organic compounds containing monofunctional groups	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: Organic Chemistry V
		To calculate alkalinity in given sample of pesticide formulations as per BIS specifications.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
	Assignment	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
March	**Theory**	Essential oils and their importance in cosmetic industries with reference to Eugenol, Geraniol, sandalwood oil	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes

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		double bond equivalence and hydrogen deficiency. UV-Visible spectroscopy (electronic spectroscopy): General electronic transitions, λmax &εmax, chromophores & auxochromes, bathochromic & hypsochromic shifts. Application of Woodward rules for calculation of λmax for the following systems: conjugated dienes - alicyclic, homoannular and heteroannular; α,β-unsaturated aldehydes and ketones, charge transfer complex	B. Sc. (P) Life Sciences III Year, Semester VI	: CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practicals	Preparation of powder shampoo	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
		Practiced qualitative analysis of unknown organic compounds containing monofunctional groups	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: Organic Chemistry V
		Preparation of phenylethylamine thiocarbamate as organic pesticide.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
	Assignment		B.Sc. Life Science, I Year, I Semester	Chemistry-Core Paper-1
April	**<u>Assignment :</u>**	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
	Theory	Eucalyptus, rose oil, 2-phenyl ethyl alchol, Jasmone, Civetone, Muscone.	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
		Infrared (IR) Spectroscopy: Infrared radiation and types of molecular vibrations, significance of functional group & fingerprint region. IR spectra of alkanes, alkenes, aromatic hydrocarbons (effect of conjugation and	B. Sc. (P) Life Sciences III Year, Semester VI	: CHEMISTRY –DSE-12 Course Title: Organometallics, Bioinorganic

		resonance on IR absorptions), simple alcohols (inter and intramolecular hydrogen bonding and IR absorptions),		Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practicals	Preparation of enamels	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
		(i)Practiced qualitative analysis of unknown organic compounds containing monofunctional groups. (ii)Mock Test	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: Organic Chemistry V
		Practice exercise.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS

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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
JANUARY	**Theory**	Quantitative aspects of Faraday's laws of electrolysis, Arrhenius theory of electrolytic dissociation. Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes. Numericals.	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		Introduction to analytical chemistry and its interdisciplinary nature, Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Significant figures.	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry
		Chief modes of occurrence of metals based on standard electrode potentials.	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals	1. Introduction 2. Determination of cell constant 3. Determination of conductivity, molar conductivity, degree of dissociation and dissociation constant of a weak acid.	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		Separation of mixtures of two ions by paper chromatography and measurement of Rf value in each case: 1) (Fe3+, Al3+ and Cr3+) 2) (Ni2+, Co2+, Mn2+ and Zn2+)	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		Surface tension measurement: Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

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FEBRURAY	**Theory:**	Molar conductivity at infinite dilution. Kohlrausch's law of independent migration of ions. Debye-Huckel-Onsager equation, Wien effect, Debye-Falkenhagen effect, Walden's rule. Ionic velocity, mobility and their determination, transference number and its relation to ionic mobility, determination of transference number using Hittorf and Moving Boundary methods. Numericals	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		Presentation of experimental data and results. Composition of soil, concept of pH and its measurement, complexometric titrations	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry
		Ellingham diagrams for reduction of metal oxides using carbon as reducing agent.	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals:	Conductometric titrations: i. Strong acid vs. strong base, ii. Weak acid vs. strong base, iii. Mixture of strong acid and weak acid vs. strong base, iv. strong acid vs. weak base.	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		Preparation of any two of the following complexes and measurement of their conductivity: (i) tetraamminecopper (II) sulphate (ii) potassium trioxalatoferrate (III) trihydrate. Compare the conductance of the complexes with that of M/1000 solution of NaCl, MgCl2 and LiCl3.	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		1) Viscosity measurement (use of organic solvents excluded): a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald viscometer. b) Study of the variation of viscosity of an aqueous solution with concentration of solute. 2) Study the kinetics of the following reactions by integrated rate method: a) Acid hydrolysis of methyl acetate with hydrochloric acid.	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

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MARCH	**Theory:**	Applications of conductance measurement: (i) degree of dissociation of weak electrolytes, (ii) ionic product of water (iii) solubility and solubility product of sparingly soluble salts, (iv) conductometric titrations,(v) hydrolysis constants of salts. Numericals Characteristics of electromagnetic radiation, Jablonski Diagram	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		Chelation, chelating agents, use of indicators. Definition of pure water, sources responsible for contaminating water, water sampling methods	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry
		Hydrometallurgy with reference to cyanide process for silver and gold, Methods of purification of metals (Al, Pb, Ti, Fe, Cu, Ni, Zn):	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Assignment	Numericals and practice questions	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
	Test	Conductance and kinetics	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		Accuracy, Precision, Significant figures, soil analysis	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry
		Metallurgy	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals:	1) Conductometric titration of strong acid vs. weak base. 2) To study the kinetics of Acid hydrolysis of methyl acetate with hydrochloric acid using integrated rate law method.	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		1) Detection of extra elements 2) Quiz	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		1)Study the kinetics of the following reactions by integrated rate method: Compare the strength of HCl and H2SO4 by studying the kinetics of hydrolysis methyl acetate. 2) Semi-micro qualitative analysis of mixtures using H2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts) – For anions 3) Quiz	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

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APRIL	**Theory:**	Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws of photochemistry, quantum yield, actinometry, examples of low and high quantum yields, photochemical equilibrium and the differential rate of photochemical reactions, photosensitized reactions, quenching. Role of photochemical reactions in biochemical processes, photostationary states, chemiluminesce.	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		Water purification methods. Definition and general introduction on principles of chromatography. Paper chromatography, thin layer Chromatography.	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry
		Electrolytic, oxidative refining, van Arkel-De Boer process, Mond's process and Zone Refining.	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals:	1) To study the kinetics of Acid hydrolysis of methyl acetate with hydrochloric acid using integrated rate law method. 2) To study the kinetics of iodine-persulphate reaction using integrated rate law method.	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		1)Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation) 2) Identification of simple organic compounds containing the above functional groups by IR spectroscopy through examination of spectra (spectra to be provided).	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		Semi-micro qualitative analysis of mixtures using H2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts) – For anions and cations	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

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MAY	**Theory:**	Numericals practise Practise questions, previous year question papers	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		Column chromatography, Ion-exchange chromatography. Practise questions, previous year question papers	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry
		Practise questions, previous year question papers	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	Practicals:	Mock test and Exam	B.Sc. Chem (H)-Sem IV	CX: PHYSICAL CHEMISTRY–IV: Conductance & Chemical Kinetics
		Mock test and Exam	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		Mock test and Exam	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

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FEBRUARY				

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

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

Semester: I/II

Month		Topics	Course	Paper Code/Name
December	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 ψ2, Schrödinger equation for hydrogen atom, radial and angular parts of the hydogenic 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. Life Science, I Year, I Semester	Chemistry-Core Paper-1
	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 ψ2, Schrödinger equation for hydrogen atom, radial and angular parts of the hydogenic 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.(H) Chemistry, I Year, I Semester	Chemistry- C I: Inorganic Chemistry- I
	Practicals	Basics of Volumetric Analysis, Estimation of oxalic acid by titrating it with KMnO4, Estimation of Mohr's salt by titrating it with KMnO4, Purification of organic compound by crystallisation (from water and alcohol) and distillation.	B.Sc. Life Science, I Year, I Semester	Chemistry-Core Paper-1
	Practicals	Acid-Base Titrations (i) Estimation of sodium carbonate using	B.Sc.(H) Chemistry, I Year, I Semester	Chemistry- C I:

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		standardized HCl. (ii) Estimation of carbonate and hydroxide present together in a mixture.		Inorganic Chemistry- I
January	Theory	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). 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.	B.Sc. Life Science, I Year, I Semester	Chemistry-Core Paper-1
	Theory	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). 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.	B.Sc.(H) Chemistry, I Year, I Semester	Chemistry- C I: Inorganic Chemistry- I
	Practicals	Estimation of water of crystallization in Mohr's salt by titrating with KMnO4, Estimation of Fe (II) ions by titrating it with K2Cr2O7 using internal indicator, Criteria of purity: Determination of M.P./B.P	B.Sc. Life Science, I Year, I Semester	Chemistry-Core Paper-1
	Practicals	(iii) Estimation of carbonate and bicarbonate present together in a mixture. (iv) Estimation of free alkali present in different soaps/detergents	B.Sc.(H) Chemistry, I Year, I Semester	Chemistry- C I: Inorganic Chemistry- I
February	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 (H2O, NH3, PCl5, SF6, ClF3, SF4) and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and	B.Sc. Life Science, I Year, I Semester	Chemistry-Core Paper-1

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		octahedral arrangements. Concept of resonance and resonating structures in various inorganic and organic compounds. 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+.		
	Theory	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 onization 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.(H) Chemistry, I Year, I Semester	Chemistry- C I: Inorganic Chemistry- I
	Practicals	Estimation of Cu(II) ions iodometrically using $Na_2S_2O_3$, Separation of mixtures by chromatography: Measure the Rf 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. Identify and separate the sugars present in the given mixture by radial/ascending paper chromatography.	B.Sc. Life Science, I Year, I Semester	Chemistry-Core Paper-1
	Practicals	Oxidation-Reduction Titrimetry: Principles of oxidation-reduction titrations Estimation of Fe(II) and oxalic acid using standardized $KMnO_4$ solution	B.Sc.(H) Chemistry, I Year, I Semester	Chemistry- C I: Inorganic Chemistry- I
March	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	B.Sc.(H) Chemistry, I Year, I Semester	Chemistry- C I: Inorganic Chemistry- I

		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.		
April	Theory	Concept of resonance and resonating structures in various inorganic and organic compounds. 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+.	B.Sc.(H) Chemistry, I Year, I Semester	Chemistry- C I: Inorganic Chemistry- I
	Practicals	(ii) Estimation of oxalic acid and sodium oxalate in a given mixture. (iii) Estimation of Fe(II) with $K_2Cr_2O_7$ using internal indicator (diphenylamine, N-phenylanthranilic acid) and discussion of external indicator.	B.Sc.(H) Chemistry, I Year, I Semester	Chemistry- C I: Inorganic Chemistry- I

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

Name of the Faculty: Dr. S. Venkata Kumar

Department: Commerce

Semester: VI

Name of the course: B.Com (Hons.)

Subject: International Business

Paper code: DSE BCH – 6.4 (c)

Unique Paper Code: 22417604

Month	Type of Class	Topics	Course	Paper Code/Name
January 2021	**Theory**	1. An introduction to international business: Globalisation and its growing importance in world economy; Impact of globalization; international business contrasted with domestic business – complexities of international business; Modes of entry into international business; 2. International business environment: National and foreign environments and their components - economic, cultural, and political-legal environments; Global trading environment – recent trends in world trade in goods and services; trends in India's foreign trade (volume, composition and direction of trade from 2005 to 2016).	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
January 2021	**Tutorials**	Unit -1 (Entire)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
February	**Theory**	1. International trade: Theories of international trade (mercantilist,	B.Com.	DSE BCH 6.4 (c):

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2021		classical, factor proportion, Leontief paradox, Linder's income preference, PLC, National Competitive advantage theories); tariff and non-tariff measures (diagrammatic explanation); Balance of payment account (as per latest IMF standards) and its components (structure, components, equilibrium and disequilibrium). 2. International and economic organisations: WTO (also WTO and India), UNCTAD, World Bank and IMF (only short notes). 3. Exchange rate determination: factors affecting exchange rate – relative inflation rates, relative interest rates, relative income levels, government controls (only overview), expectations (only overview) etc. Government intervention and government influence on exchange rates (only fixed and floating exchange rates and convertibility). Theories of exchange rate – purchasing power parity, interest rate parity and Fisher's effect.	(Hons) - VI	International Business
February 2021	**Tutorials**	Unit –II (Entire)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
March 2021	**Theory**	1. Regional economic integration: forms of regional integration; integration efforts among countries in Europe (EU), North America (NAFTA) and Asia (SAARC and ASEAN); cost and benefit of regional economic integration. 2. Special Economic Zones and 100% export-oriented units (EOUs)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
March 2021	**Tutorials**	Unit –III (Entire)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
	Assignment	Assignment will be issued to students.	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
	Test	Test would be conducted on the concerned subject after mid-semester	B.Com.	DSE BCH 6.4 (c):

		break.	(Hons) - VI	International Business
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
April 2021	**Theory**	1. International Financial environment: International financial system and institutions; foreign investment in Indian perspective. 2. Measures for promoting foreign investments into and from India, Indian joint ventures and acquisitions abroad.	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
April 2021	**Tutorials**	Unit –IV & V (Entire)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business

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

Name of the Faculty: Ms. Sunita Chhabra **Department: Commerce** **Semester: VI**

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY 2021	**Theory**	1. Conceptual framework: Concept of consumers, Nature of markets, concept of price in retail and wholesale, MRP and local taxes, fair price, misleading advertisements and deceptive packaging. Experiencing dissatisfaction, form of complaint to a business, making a complaint heard by the business, corporate redress system, conciliation and intermediation for out of court redressal. National standards, BIS Act, 1986, ISO 10000. 2. Nature and importance of personal selling, difference between personal selling, salesmanship and sales management, myths of selling, relationship marketing and role of personal selling, features of a good salesman, types of selling situations, types of salespersons, career opportunities in selling, measures for making selling an attractive career.	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
FEBURARY 2021	**Theory**	1. The Consumer Protection Act, 1986: objectives and basic concepts, consumer rights, adjudicatory bodies, role of Supreme Court under the CPA. 2. Theories of selling: traditional and modern, AIDAS Model of selling, problem solving approach, right set of circumstances theory and modern sales approaches.	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship

Month	Type of Class	Topics	Course	Paper Code/Name
MARCH 2021	**Theory**	1. Grievance redress mechanism under the CPA 1986 and leading cases decided under the CPA related to medical negligence, banking and financial service,	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care

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		housing and real estate, electricity, water and telecom service, education, defective product and unfair trade practice. 2. Buying motives, concept of motivation, Maslow need theory, dynamic nature of motivation, buying motives and their uses in personal selling; selling process- prospecting and qualifying; pre-approach, presentation and demonstration; handling of objections and complaints, closing the sale, follow up and dealing customer concerns and complaints.		2. BC 6.3(A) SEC: Personal Selling and Salesmanship
	Assignment	1. Topics allotment for making the assignments. 2. Topics allotment for making the assignments.	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship
	Test	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 (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
APRIL 2021	**Theory**	1. Consumer protection in India and industry regulators and consumer complaint redressal mechanism. Competition Law 2002: objective, purpose and salient features, concept of agreements having adverse impact on competition, abuse of dominant position, regulation of combination, criteria for determining appreciable adverse effect on competition and dominant position, relevant geographic market forces and complaints and procedures. 2. Sales reports and documents, sales manual, order book, cash memo, tour diary, daily and periodical reports and ethical aspects of selling.	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA
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Name of the Faculty: Dr. Mamta Arora **Department: Commerce**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Unit 1: Matrices & Determinants	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
FEBRUARY	**Theory**	Unit 2: Basic calculus – Application of differentiation Unit 4: Mathematics of Finance	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
	Assignment	Unit 1 and 4	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
MARCH	**Theory**	Unit 3: Advance Calculus – Application of partial differentiation	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
	Test	Unit 1, 2 and 3 (application of partial differentiation)	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
APRIL	**Theory**	Unit 3: Advance Calculus – Application of integration Unit 5: LPP	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shruti Mathur **Department: Commerce**

Semester : VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit 1: The Investment Environment -** Theinvestment decisionprocess, Types of Investments – Commodities, Real Estate and FinancialAssets, the Indian securities market, the market participants and tradingof securities, security market indices, sources of financial information, Concept ofreturn and risk, Impact of Taxes and Inflation on return	B.Com H Sem VI	DSE- Fundamentals of Investment
	Tutorials	1). Discussion on IPO/FPO, Book building. Understanding SENSEX, NIFTY. Practice numerical on calculation of risk andreturn	B.Com (H) Sem VI	DSE: Fundamentals of Investment

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FEBRUARY	**Theory:**	**Unit 2: Fixed Income Securities** - Bond features, types of bonds, estimating bond yields, Bond Valuation, types of bond risks, default risk and creditrating. **Unit 3: Approaches to Equity Analysis:** Valuation of Equity Shares using various models. Introductions to Fundamental Analysis	BCom H Sem VI	DSE: Fundamentals of Investment

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	Tutorials:	Numerical and Presentations: Calculating Bond Yields analyzing the company's performances using various ratios and historical records.	BCom H Sem VI	DSE: Fundamentals of Investment

	Assignment:	Assignment & presentation on any topic selected by the student from the syllabus	BCom H Sem VI	DSE: Fundamentalsof Investment
MARCH	**Theory:**	**Unit 3: Approaches to Equity Analysis**: Technical Analysis and Efficient Market Hypothesis, **Unit 4: Portfolio Analysis and Financial Derivatives:** Portfolio and Diversification, Portfolio Risk and Return	BCom H Sem VI	DSE: Fundamentalsof Investment
	Tutorials:	Presentations and Numericals on : EquityValuation and PortfolioRisk and Return. Including Markowitz model, CAPM etc	BCom H Sem VI	DSE: Fundamentalsof Investment
	Test	Fixed Income Securities ; Approaches to EquityAnalysis; The Investment Environment	BCom H Sem VI	DSE: Fundamentalsof Investment

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APRIL	**Theory:**	**Unit 4: MF & Financial Derivatives:** Mutual funds. Introducti onto Financial Derivatives-Forward,Futures & Options, Financial Derivatives Markets in India. **Unit 5: Investor Protection** – Role of SEBI & stock exchanges in investor protection, investor grievances andtheir redressal system, insider trading, investors' awarenessand activism.	BCom H Sem VI	DSE: Fundamentalsof Investment
	Tutorials:	1) Presentation, and Discussion on MFs, Derivatives and InvestorProtection.	BCom H Sem VI	DSE: Fundamentals ofInvestment

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shruti Mathur **Department: Commerce**

Semester : VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit 1: The Investment Environment -** Theinvestment decisionprocess, Types of Investments – Commodities, Real Estate and FinancialAssets, the Indian securities market, the market participants and tradingof securities, security market indices, Concept of return and risk	B.Com Sem VI	DSE- Fundamentals of Investment
	Tutorials	Discussion on IPO/FPO,Book building. Understanding SENSEX, NIFTY. Practice numerical on calculation of risk andreturn	B.Com Sem VI	DSE: Fundamentals of Investment
FEBRUARY	**Theory:**	**Unit 1** : Impact of Taxes and Inflation onreturn**,** speculation gambling and investment**,** sources of financial information, **Unit 2: Fixed Income Securities** - Bond features, types of bonds, estimating bond	B.Com Sem VI	DSE: Fundamentals of Investment

		yields, Bond Valuation, types of bond risks, default risk and creditrating.		

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	Tutorials:	Numerical and Presentations: Calculating Bond Yields analyzing the company's performances using various ratios and historical records.	B.Com Sem VI	DSE: Fundamentals of Investment

	<u>Assignment:</u>	Assignment & presentation on any topic selected by the student from the syllabus	B.Com Sem VI	DSE: Fundamentalsof Investment
MARCH	**Theory:**	**Unit 4: Portfolio Analysis and Financial Derivatives:** Portfolio and Diversification, Portfolio Risk and Return Mutual funds. Types . Calculation of NAV, Return. Expenses	B.Com Sem VI	DSE: Fundamentalsof Investment
	Tutorials:	Presentations and Numericals on : Portfolio Risk and Return. Including Markowitz model, CAPM etc Discussionon MFs	BCom Sem VI	DSE: Fundamentalsof Investment
	<u>Test</u>	Fixed Income Securities ; Approaches to EquityAnalysis; The Investment Environment	B.Com Sem VI	DSE: Fundamentalsof Investment

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APRIL	**Theory:**	**Unit 4: Financial Derivatives:** Introducti onto Financial Derivatives-Forward,Futures & Options, Financial Derivatives Markets in India.	B.Com Sem VI	DSE: Fundamentalsof Investment
	Tutorials:	1) Presentation, anddiscussion on Derivatives Revision of all concepts	BCom Sem VI	DSE: Fundamentals ofInvestment

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms Pooja Jain **Department: Commerce** **Semester: II/IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY	**Theory**	**1.Unit I**:Nature and Scope, Difference between costaccounting and management accounting, cost control,cost reduction, cost management, difference between cost control, cost reduction and cost management. **Unit IV:** a. Absorption versus variable costing:Distinctive features and income determination. b. Cost-Volume-Profit Analysis: Break-even analysis- algebraic and graphic methods. Contribution / sales ratio, key factor. Margin of safety. Angle of incidence.Determination of cost indifference point. **Unit 1: Introduction** Meaning, scope, objectives and advantages of cost accounting; Difference between financial and cost accounting. Cost concepts and classifications, Overview of elements of cost and Cost sheet. Role of a cost accountant in an organisation. Introduction to Cost Accounting Standards & Cost Accounting Records and Audit Rules **Unit II: Elements of Cost: Material and Labour** *Materials*: Material/inventory control techniques.Accounting and control of purchases, storage andissue of materials.	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accountin g**

		Inventory systems, Methods ofpricing of materials issues — FIFO, LIFO, Simple Average, Weighted Average, Replacement, StandardCost.		
	Practicals	Introduction to excel and Mathematics of Finance	**B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**
	Tutorials	1. Basics and significance of Management Accounting	**1. B.Com. VI**	**1. BC 6.1**

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		will be discussed. Practical problems will be discussed related tofollowing topics: a. Absorption versus variable costing: Distinctivefeatures and income determination. 2. Practical problems on Material Costing will bediscussed	**2. B.Com. IV**	**Management Accounting** **2. BC 4.1 Cost Accounting**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
FEBRUARY	**Theory**	1.**Unit II**: Budgeting and budgetary control: Concept of budget and budgetary control, objectives, merits, and limitations, Budget administration, Functional budgets, Fixed and flexible budgets, Zero base budget,Programme and performance budgets. **Unit VI**: Responsibility Accounting: Concept, Significance, Different Responsibility Centers, Divisional Performance Measurement – Financial Measures. **Unit II: Elements of Cost: Material and Labour** ***(a)*** *Materials*:Physical Verification, Accounting treatment and control of losses—Wastage, scrap, spoilage and defectives ***(b)*** *Labour*: Accounting and Control of labour cost. Time-keeping and time-booking. Concept and treatment of idle time, over time, labour turnover and fringe benefits. Methods of wage payment and Incentive schemes- Halsey, Rowan, Taylor's differential piece wage. **Unit III: Elements of Cost: Overheads** Classification, allocation, apportionment and absorption of overheads, Under- and over-absorption; Capacity Levels and Costs; Treatments of certain items in costing like	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**

		interest on capital, packing expenses, bad debts, research and development expenses. Activity based costing.		
	Practicals	Excel projects of Mathematics of finance-FV-annuity& Lump sum, PV-annuity & Lump sum	**B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**

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		Excel project: Graphical solutions of LPPProblems on Mathematics of Finance		
	Tutorials	1.Practical problems will be discussed related tofollowing topics: a. Cost-Volume-Profit Analysis: Break-even analysis- algebraic and graphic methods. Contribution / sales ratio, key factor. Margin of safety. Angle of incidence.Determination of cost indifference point. b. Budgeting and budgetary control: Budget administration, Functional budgets, Fixedand flexible budgets 2. Practical problems will be discussed related toMaterial and labour	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
	Assignment	1.Assignment will be given from the topic: Absorption and variable Costing and CVP analysis. 2. Assignment from Unit I and II	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
MARCH	**Theory**	**1.Unit V:** Decision making: Costs for decision making, variable costing and differential analysis asaids in making decisions – fixation of selling price, exploring new markets, make or buy, product mix,operate or shut down, sell or process further **Unit IV: Methods of Costing** Unit costing, Job costing, Contract costing, Processcosting (including process losses, valuation of work-in-progress)	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
	Practicals	Excel Projects :LLP graphical solution andsimplex using 'solver-in' in excel Problems on Mathematics of Finance	**B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**

	Tutorials	Practical questions and Presentation will be taken from the following topics:	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1** **Management**

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		1. Decision making: Costs for decision making, variable costing and differential analysis as aids in making decisions – fixation of selling price, exploringnew market 2. Practical problems will be taken from Overheads		**Accounting** **2. BC 4.1 Cost Accountin g**
	Test	Class Test will be conducted in the middle of themonth from these topics: 1.Nature and scope of management accountingAbsorption and variable costing C-V-P Analysis Budgetary Control 2. Unit I and II **Practical exam in B.Mathematics**	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
APRIL	**Theory**	**1.Unit III**: Standard costing and variance analysis:Meaning of standard cost and standard costing: advantages, limitations and applications, Variance analysis – material, labour, overhead and sales variances, Disposition of variances, Control ratios. **2.Unit IV: Methods of Costing** Process Costing (joint and by-products). Service costing (only transport).	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
	Practicals	Problems on Mathematics of Finance	**1. B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**

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	Tutorials	1.Practical questions and Presentation will be takenfrom the following topics: a. Decision making: make or buy, product mix, operateor shut down, sell or process further b Standard costing and variance analysis: Meaning ofstandard cost and standard costing: advantages, limitations and applications, Variance analysis – material, labour, overhead and sales variances, Disposition of variances, Control ratios.	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**

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		Miscellaneous questions will be discussed fromexamination point of view. 2. Practical problems will be taken Methods of costing.		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sindhumani Bag **Department: Commerce**

Semester : IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY-2022	**Theory**	1. **Introduction: meaning, objectives & advantages of cost accounting, Difference between cost accounting and financial accounting. Cost concepts and classifications. Elements of cost, Installation of costing system, Role of cost accountant in an organization.** Materials: material/Inventory Control-Concepts and Techniques, Accounting and control of purchases, Storages and issues of materials, Methods of pricing of materials issues-FIFO, LIFO, Simple Average, Weighted average, Replacement, Standard, Treatment of Material losses. 2. **Introduction: meaning, objectives & advantages of cost accounting, Difference between cost accounting and financial accounting. Cost concepts and classifications. Elements of cost, Installation of costing system, Role of cost accountant in an organization.** Materials: material/Inventory Control-Concepts and Techniques, Accounting and control of purchases, Storages and issues of materials, Methods of pricing of materials issues-FIFO, LIFO, Simple Average, Weighted average, Replacement, Standard, Treatment of Material losses. **3.Business Ethics: Morality and Ethics, Business values and ethics, Various approaches to business ethics.** Ethical theories, ethical governance, corporate ethics.	1. B.Com (H)-IV sem Sec-B 2. B.Com(p)-IV sem,, SEC-B	1. **BCH 4.1: Cost Accounting .** **2. BC 4.3: Cost accounting**

			3.B.Com(H)VI sem, Sec-B	**3.BCH 6.1: Auditing & Corporate Governance**
	Tutorials / Practicals	1. Group wise calculation and presentation of cost of different industrial unit. 2. Group wise calculation and presentation of cost of different industrial unit. 3. Case study presented by the Students	1. B.Com (H)-IV sem Sec-B 2. B.Com (P)-IV Sem, Sec-B 3.B.Com(H)VI sem, Sec-B	**1. BCH 4.1: Cost Accounting** 2.BC 4.3: Cost Accounting **3.BCH6.1: Auditing &**

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FEBRUARY-2022	**Theory:**	1.Labour: Accounting and control of Labour cost, Time booking and time keeping. Concept and treatment of Idle time, over time, Labor turnover and fringe benefits, Overhead: Classification, allocation, apportionment and absorption of overhead. Under and over absorption, capacity costs,Treatment of certain items in costing,like interest on capital, packing expenses, bad debts, research and development expenses,activity based cost allocations 2. Labour: Accounting and control of Labour cost, Time booking and time keeping. Concept and treatment of Idle time, over time, Labor turnover and fringe benefits, Overhead: Classification, allocation, apportionment and absorption of overhead. Under and over absorption, capacity costs, Treatment of certain items in costing, like interest on capital, packing expenses, bad debts, research and development expenses, activity based cost allocations 3.Business Ethics: Benefits of adopting ethics in business. programme, Code of ethics, Ethics committee, Concept of corporate philanthropy.	1. B.Com (H)-IV sem Sec-B 2. B.Com (P)-IV Sem, Sec-B 3.B.Com(H)-VI sem, sec-A	**1. BCH 4.1: Cost Accounting** **2. BC 4.3: Cost Accounting** **3. BCH6.1: Auditing &Corporate Governance**
	Tutorials /Practical:	1. Group wise calculation and presentation of cost of different industrial unit. 2. Group wise calculation and presentation of cost of different industrial unit. 3. Case study presented by the Students	1. B.Com (H)-IV sem Sec-B 2. B.Com(P)-IV sem,, SEC-B 3.B.Com (H)-	**1. BCH 4.1: Cost Accounting** **2. BC 4.3 : Cost Accounting**

				VI Sem, Sec-B	**3. BCH 6.1: Auditing &Corporate Governance**
	Assignment	Assignment questions Given to the students and collected Assignments.	1.B.Com (H)IV sem Sec-B 2. B.Com (P)-IV Sem, Sec-B 3. B.com (H) sem-VI, Sec-B	**1. BCH 4.1: Cost Accounting** **2. BC 4.3:Cost Accounting** **3. BCH 6.1: Auditing&CG**	
MARCH-2022	**Theory:**	1. Methods of Costing: Unit costing, Job Costing, Contract Costing, process costing(process losses, valuation of work in progress, joint and by products), Service Costing 2. Methods of Costing: Unit costing, Job Costing, Contract Costing, process costing(process losses, valuation of work in progress, joint and by products), Service Costing 3. Corporate Social Responsibility:Corporate sustainability, environmental aspects of CSR, CSR provisions under companies Act-2013, CSR Committees, CSR reportings.	1.B.Com (H)-II sem Sec-B 2.B.Com (P)-IV Sem, Sec-B 3. B.Com(H)-VIsem, sec-B	**1. BCH 4.1: Cost Accounting.** **2. BC4.3: Cost accounting** **3. BCH 6.1 Auditing&C.G**	

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	Tutorials/ Practical:	1. Group wise calculation and presentation of cost of different industrial unit. 2. Group wise calculation and presentation of cost of different industrial unit. 3. Case study presented by the Students	1.B.Com (H)-IV sem Sec-B 2. B.Com(P)-IV sem,, SEC-B 3.B.Com (H)-VI Sem, Sec-B	**1. BCH 4.1: Cost Accounting** **2. BC4.3: Cost Accounting** **3. BCH 6.1 A&C.G**
	<u>Test</u>	Time schedule decided for conducting of Internal exam on 4th week of March.	1. B.Com (H)-IV sem Sec-B 2. B.Com(P)-IV sem,, SEC-B 3.B.Com (H)-VI Sem, Sec-B	**1. BCH 4.1: Cost accounting** **2. BC 4.3: Cost Accounting** **3. BCH 6.1 A &C G**
	Theory:	1.Accounting system: Integral and non-Integral Systems, Reconciliation of cost and financial accounts 2.Accounting system: Integral and non-Integral Systems, Reconciliation of cost and financial accounts. 3. Corporate Social Responsibility: CSR models, Drivers of CSR, Code and standard on CSR, Global reporting initiatives	1.B.Com (H)-IV sem Sec-B 2. B.Com(P)-IV sem,, SEC-B 3.B.Com (H)-VI Sem, Sec-B	**1. BCH 4.1: Cost Accounting** **2. BC 4.3: Cost Accounting** **3. BCH 6.1: A &C.G**

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APRIL-2022	**Tutorials/ Practical:**	1. Group wise calculation and presentation of cost of different industrial unit. 2. Group wise calculation and presentation of cost of different industrial unit. 3. Case study presented by the Students	1.B.Com (H)-IV sem Sec-B 2. B.Com(H)-IVsem,, SEC-B 3.B.Com (H)-VI Sem, Sec-B	**1. BCH 4.1: Cost accounting.** **2. BC 4.3: Cost accounting** **3. BCH 6.1: A &C.G**

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	Internal assessment Finalise	1.Cost Accounting 2. Cost Accounting 3.A &C.G	1.B.Com (H)-IV sem Sec-B 2. B.Com(H)-IVsem,, SEC-B 3.B.Com (H)-VI Sem, Sec-B	**1. BCH 4.1: Cost Accounting** **2. BC 4.3: Cost Accounting** **3. BCH 6.1: A &C.G**

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Name of the Faculty: Dr. Vinod Kumar
Department: Commerce
Courses: B.Com (H)/B.Com
Semester: IV/VI

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

Month	Type of Class	Topics	Course	Paper Code/Name
January 2022	**Theory**	1. Understanding financial statements: introduction, statement of financial position (Balance Sheet), Statement of Earnings (Income statement), and statement of cash flows, additional disclosure statements; need for additional statements, auditor's report, director's report, electronic dissemination and corporate governance. 2. Objectives of project planning: introduction, objectives and process of project planning, monitoring and control of investment projects, relevance of social cost benefit analysis, pre-feasibility studies (project life cycle). 3. Role of SEBI and stock exchanges in investor protection.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment
	Tutorials	1. Objectives of project planning: introduction, objectives and process of project planning, monitoring and control of investment projects, relevance of social cost benefit analysis, pre-feasibility studies (project life cycle).	1. B.Com. - VI	1. GE BC 6.4(b): Project Management
	Practical	1. Spreadsheet and its business applications	1. B.Com. – (H) - IV	1. BCH 4.3: Computer applications in business
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
February 2022	**Theory**	1. Elements of Financial Statements: Inventories, receivables, assets (fixed, tangible, intangible),	1. B.Com. (Hons) - VI 2. B.Com. - VI	1. DSE BCH-6.4 (h): Financial Reporting and

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		leases, revenue, income-tax, retained earnings. 2. Technical analysis, marketing feasibility, techniques of risk analysis, collaboration arrangement, loan syndication, tax consideration in project preparation and legal aspects. 3. Investor grievances and their redressal system and insider trading.	3. B. Com – VI	Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment
	Practical	1. Spreadsheet and its business applications	1. B.Com. – (H) - IV	1. BCH 4.3: Computer applications in business
	Tutorials	1. Technical, economic and financial analysis	1. B.Com. - VI	1. GE BC 6.4(b): Project Management
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
March 2022	**Theory**	1. Ratio analysis 2. Business criterion of growth, liquidity and profitability, social cost benefit analysis, UNIDO approach, L-M approach, Investment criterion and choice of techniques. 3. Fundamental analysis and technical analysis.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment
	Practicals	1. Word application and PPT applications	1. B.Com. – (H) - IV	1. BCH 4.3: Computer applications in business
	Tutorials	1. Social cost benefit analysis	1. B.Com. - VI	1. GE BC 6.4(b): Project Management
	Assignment/ workbook	1. Assignments will be issued for financial reporting and analysis 2. Assignments will be issued for project management. 3. Assignments will be issued for fundamentals of investment. 4. Workbook will be issued for computer applications in business.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI 4. B.Com (Hons) - IV	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment 4. BCH 4.3: Computer applications in business

Month	Type of Class	Topics	Course	Paper Code/Name
April 2022	**Theory**	1. Financial ratios used in annual reports, management use of financial analysis, graphing financial information. 2. Cost and time management issues in project planning and management (PERT and CPM). 3. Efficient market hypothesis and valuation of equity shares.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment
	Practicals	1. Database applications in business	1. B.Com. – (H) - IV	1. BCH 4.3: Computer applications in business
	Tutorials	1. PERT & CPM	1. B.Com. - VI	2. GE BC 6.4(b): Project Management
	Test	1. Test would be conducted on the concerned subject. 2. Test would be conducted on the concerned subject. 3. Test would be conducted on the concerned subject. 4. Test would be conducted on the concerned subject.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI 4. B.Com (Hons)- IV	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment 4. BCH 4.3: Computer applications in business

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Neha Singhal **Department: Commerce** **Semester : IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1. Introduction, Types of Audit, Audit Planning and Documentation, Internal Control System, Evidence in Auditing, Vouching, Verification of Assets, Verification of Liabilities, Appointment and Removal of Auditor, Rights and Duties of a CompanyAuditor, Auditor's Report, Liabilities of Auditor. 2. Cyber Crimes: Definition and Terminology	1) B.Com (H)-VI 2) B.Com (H)-IV	1. BCH-6.1-Auditing andCG 2. BCH 4.5(f): CyberCrimes and Laws
	Practical	1. Mathematics of Finance	1.B.com (H)-IV	1. BCH-4.2-BusinesMathematics
FEBRUARY	**Theory:**	1. Role of Auditor, PCAOB, NFRA 2. Corporate Governance Theories and Models 3. Major Corporate Failures 4. Business Issues in Cyber Space and Electronic Money Transfer	1) B.Com (H)-VI 2) B.Com (H)-IV	1BCH-6.1-Auditing and CG 2. BCH 4.5(f): CyberCrimes and Laws
	Practical:	1. Mathematics of Finance	1.B.com (H)-IV	1. BCH-4.2- Business Mathematics
	Assignment	1. Assignment from Chapter- Electronic Money Transfer 2. Assignment from Chapter- Appointment and Removal of an Auditor, CG theories and Models	1) B.Com (H)-VI 2) B.Com (H)-IV	1.BCH-6.1-Auditing andCG 2. BCH 4.5(f): Cyber Crimes and Laws

MARCH	**Theory**	1. Committee, Regulatory Framework 2. Electronic Records and Regulatory Framework	1) B.com (H)-IV 2) B.Com (H)-VI	1.BCH-6.1-Auditingand CG 2. BCH 4.5(f): CyberCrimes and Laws
	Practical	1. Mathematics of Finance 2. Linear Programming	1.B.com (H)-IV	1. BCH-4.2-BusinesMathematics
	Test	1. Test/Assignment from Chapter- Appointment and Removal of an Auditor, Rights and Duties ofAuditor, Liabilities of an Auditor, Theories and Models of CG, Insider Trading, Whistle blower policy and Credit Rating Agencies. 2. Test/Assignment from Chapter- Business Issues, IT Act	1. B.com (H)-IV 2. B.Com (H)-VI	1. BCH 4.5(f): Cyber Crimes and Laws 2. BCH-6.1-Auditing andCG
APRIL	**Theory**	1. Security and Legal Aspects of E-Commerce 2. Business Ethics and Corporate Social Responsibility 3. CAT and Case Laws	1) B.Com (H)-VI 2) B.Com (H)-IV	1. BCH-6.1-Auditing andCG 2. BCH 4.5(f): CyberCrimes and Laws
	Practical	1. Integration	1.B.com (H)-IV	1. BCH-4.2-BusinesMathematics

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

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

Semester : IV & VI

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	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-I	B.Com VI	BC 6.2(d)Organizational Behavior
		Unit I: Leadership Styles and attributes of Leadership; Transactional and transformational leadershiphttps://courses .lumenlearning.com/wm - principlesofmanagement /chapter/transformationa l-and-transactional- theories-of-leadership/; Ethical leadership, culture andleadership (the emerging trends in leadership are to be discussed with case studies andprojects).	B.COM H IV	BCH 4.5 (c) Leadership and Team Development

	Practicals	INTEREST, SIMPLE INTEREST, COMPUND INTEREST	B.Com H IV	BCH4.2 BUSINESS MATHEMATICS
	Tutorials	Case studies and doubts will be taken up	B.Com VI	BC6.2(d)

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FEBRUARY	**Theory:**	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 Communication and Feedback, Models of Communication. Transactional Analysis https://youtu.be/NfIuXG8AN9Y, Johari Window. https://youtu.be/BWii4Tx3GJk Motivation : Meaning and Importance of motivation, Theories- Vroom's Valence - Expectancy Theory,	B.Com VI	BC 6.2(d) Organizational Behaviour

		Intrinsic motivation by Ken Thomas .Behaviour modification, Motivation and organisational effectiveness, Measurement of motivation using standard questionnaire. Unit II: Groups and Group Processes The nature and types of groups; Group dynamics- group cohesion, group roles and group norms, **https://www.youtube.com/watch?v=vsfkk3tQmtw** threat to group effectiveness; Managing group and inter-group dynamics; Managing culturally diverse groups.	B.Com H IV	BCH 4.5 (c) Leadership and Team Development
	Practicals:	PRESENT VALUE, FUTURE VALUE, EQUATION OF VALUE	B.Com H IV	BCH 4.2Business Mathematics
	Tutorials:	Case studies and doubts will be taken up	B.Com VI	BC 6.2(d) Organizational Behaviour

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MARCH	**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. Dynamics of Organisational Behaviour, Organisational Culture and climate- Concept and determinants of organisational culture. Developing Organizational culture Unit III: Leaders and Group Decisions Group decision making; Power and influence in teams; https://screencast-o-matic.com/content/videos?sortBy=most_recent&pageView=grid&page=1 Leadership and team empowerment; Challenges in team decision making.	B.Com VI B.Com H IV	BC 6.2.(d)Organizational Behaviour BCH 4.5 (a) Leadership and Team Development
	Practicals	ANNUTIES , LPP Using solver	B.Com H IV	BCH 4.2 Business Mathematics

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Tutorial	Case studies and doubts	B.Com VI	6.2(d) Orgnaizational Behaviour

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	Assignment	Students will make group presentations on approval topics and present in the class.	B.Com H IV	BCH 4.5 (c) Leadership and Team Development
APRIL	**Theory:**	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 Unit IV: Team Building and Team Effectiveness Group vs. team; Evolution of group into teams; Stages of team development (team development **https://www.youtube.com/watch?v=qtpY9zwuzFM** case studies); Emotionally intelligent teams; Characteristics of effective team; Collaborative communication in teams; https://hbr.org/2007/11/eight-ways-to-build-collaborative-teams Problem solving and conflict resolution in teams. https://hbr.org/1993/03/the-discipline-of-teams-2 Unit V: Emerging Trends in Leadership Women in leadership; Leadership skills- coaching and mentoring; leadership and social media.	B.Com H IV	BCH 4.5 (c) Leadership and Team Development
	Tutorials: **TEST**	**Case study and doubt session** After midterm break, in the second week of March.		

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		MOVIE SCREENING FOR LEADERSHIP AND TEAM DEVELOPMENT: GRIDIRON GANG		

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SEMESTER WISE TEACHING PLAN
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Name of the Faculty: Mr. Ajit Singh Department: Commerce

Semester : IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY-2021	**Theory**	1.**Introduction;** Meaning, scope, objectives and advantages of cost accounting; Difference between financial and cost accounting. Cost concepts and classifications, 2. **Introduction to computers.** **3. Grievance Redressal Mechanism under the CPA,1986 Filing and handling of Complaints.**	1. B.Com (P)-IV 2. B.Com(H)-IV 3.B.Com (H)-VI	1. **BCH 4.1: Cost Accounting** 2. **BCH 4.3 Computer Application In Business.** **3. BCH 6.4 DSE3 Consumer Affairs & customer care.**
	Tutorials /Practical:	1.Introduction to Preparing Presentation	1. B.Com (H)-IV	**1. BCH 4.3 Computer Application In Business.**

FEBRUARY -2021	**Theory:**	1. Overview of elements of cost and Cost sheet. Role of a cost accountant in an organisation. Introduction to Cost Accounting Standards & Cost Accounting Records and Audit Rules 2. Computer Networks. 3. **Leading Cases decided under Consumer Protection law by Supreme Court/National Commission**	1. B.Com (P)-IV 2. B.Com(H)-IV 3.B.Com (H)-VI	**1. BCH 4.1: Cost Accounting** **2. BCH 4.3 Computer Application In Business.** **3. BCH 6.4 DSE3 Consumer Affairs & customer care.**
	Tutorials/Practical:	1. Inserting tables, Images,Text,Symbols	1. B.Com (H)-IV	**1. BCH 4.3 Computer Application In Business.**
	<u>Assignment</u>	Assignment and Presentation Given to the students.	1. B.Com (P)-IV 2. B.Com(H)-IV 3.B.Com (H)-VI	**1. BCH 4.1: Cost Accounting** **2. BCH 4.3 Computer Application In Business.** **3. BCH 6.4 DSE3 Consumer Affairs & customer care.**

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MARCH-2021	**Theory:**	1.Unit costing, Job costing, Contract costing, Process costing (including process losses, valuation of work-in-progress but excluding Joint products By Products). Service costing (only transport). 2.Introduction to Operating Systems. Database System. 3.**Consumer Protection in India. Industry Regulators and Consumer Complaint Redressal Mechanism**	1. B.Com (P)-IV 2. B.Com(H)-IV 3.B.Com (H)-VI	1. **BCH 4.1: Cost Accounting** 2. **BCH 4.3 Computer Application In Business.** 3. **BCH 6.4 DSE3 Consumer Affairs & customer care.**

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	Tutorials/Practical:	1.Media,Design,Transition ,Anima tion, and Slideshow.	1. B.Com (H)-IV	**1. BCH 4.3 Computer Application In Business.**
	<u>Test</u>	Time schedule decided for conduct of Internal exam on 3rd week of March.	1. B.Com (P)-IV 2. B.Com(H)-IV 3.B.Com (H)-VI	**1. BCH 4.1: Cost Accounting** **2. BCH 4.3 Computer Application In Business.** **3. BCH 6.4 DSE3 Consumer Affairs & customer care.**
APRIL-2021	**Theory:**	1.A brief introduction to integral and non-integral system of book-keeping; Reconciliation of cost and financial accounts profit. 2.CAATS & Revision. 3.**Competition Act, 2002**	1. B.Com (P)-IV 2. B.Com(H)-IV 3.B.Com (H)-VI	**1. BCH 4.1: Cost Accounting** **2. BCH 4.3 Computer Application In Business.** **3. BCH 6.4 DSE3 Consumer Affairs & customer care.**
	Tutorials/Practical:	1.Business Presentation Using All Tools.		**1. BCH 4.3 Computer Application In Business.**

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

Name of the Faculty: Ms. Priyanka **Department: Commerce**

Semester: II/IV/VI

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY	**Theory**	**1.Corporate Accounting** ✓ **Introduction of share capital** ✓ **Issue , Forfeiture and reissue of shares** ✓ **Redemption of preference shares** **2. Cost Accounting** ✓ **Introduction of cost Accounting** ✓ **Cost sheet** ✓ **Difference between Cost and Financial Accounting** ✓ **Overhead Cost with all Practical questions**	1. B.Com IV -B 2. B.Com IV -A	1. BC 4.2 Corporate Accounting 2. BC 4.3 Cost Accounting
	Practical	**E- Commerce** ✓ **Introduction – HTML Basics**	B.Com IV-A+B	BC4.4(a) AEEC -2
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
FEBRUARY	**Theory**	**1. Corporate Accounting** ✓ **Accounting of Holding Companies** ✓ **Preparation of consolidated Balance sheet with one subsidiary Company** ✓ **Amalgamation of companies** ✓ **Concept of purchase consideration** ✓ **Amalgamation of Merger and purchase** **2. Cost Accounting** ✓ **Reconciliation of cost and Financial Accounting**	1. B.Com IV -B 2. B.Com - IV -A	1. **BC 4.2 Corporate Accounting** 2. **BC 4.3 Cost Accounting**

		✓ **Contract Costing** ✓ **Process Costing**		PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021
	Practical	**E- Commerce** ✓ **Basic Structure of an HTMl** ✓ **Text Formatting Tags** ✓ **lists**	B.Com -IV A+B	BC4.4 (a) AEEC -2
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
MARCH	**Theory**	**1. Corporate Accounting** ✓ **Amalgamation – Dissenting shareholders** ✓ **External Reconstruction** ✓ **Cash Flow Statement** **2. Cost Accounting** ✓ **Material Costing** ✓ **Labour Costing** ✓ **Non Integrated Accounting** ✓ **Integrated Accounting**	1. B.Com - IV B 2. B.Com - IV -A	1. **BC 4.2 Corporate accounting** 2. **BC 4.3 Cost Accounting**
	Practical	**E – Commerce** ✓ **Graphics** ✓ **Anchors** ✓ **Tables** ✓ **Concepts of frames** ✓ **Forms**	B.Com – II Semester – IV	BC 4.4 (a) AEEC -2
	Assignment	Topics allotment for making the assignments	B.Com – Corporate Accounting and Cost Accounting	
	Test	Test conducted on the concerned subject after mid-semester break.	B.com – Corporate accounting and Cost accounting	
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
APRIL	**Theory**	**1. Corporate Accounting** ✓ **Redemption of Debentures** ✓ **Financial Statement of a company** **2. Cost Accounting**	1. B.com - IV B 2. B.Com IV -A	1. BC4.2 Corporate Accounting 2. BC 4.3 Cost accounting

		✓ **Operating Costing** ✓ **Unit costing** ✓ **Job Costing**		
	Practical	**E- Commerce** ✓ **Creating Drop down list** ✓ **Inserting copyright and trademark symbols in a web page**	B.Com – II Semester – IV	BC 4.4 (a) AEEC -2

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

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Name of the Faculty: Simranjeet Kaur **Department:**

CommerceSemester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introduction to indirect taxes, State Compensation mechanism, exempted supply.	B.Com (Hons.) VI	BCH 6.2 (Goods and Services Tax)
		Concept of risk, sources and measurement of risk, risk retention and transfer, disaster risk management	Commerce GE-4	BCH 4.4(a) Insurance & Risk Management
	Tutorials /Practical:	Discussion on conceptual problems and solving numerical questions.	B.Com (Hons.) VI	BCH 6.2 (Goods and Services Tax)
		Discussion on contemporary events in the area of Insurance	Commerce GE-4	BCH 4.4(a) Insurance & Risk Management
		Spreadsheet and it's business applications	B.Com (Hons.) IV	BCH 4.3 (Computer Applications in Business)
FEBRUARY	**Theory:**	Registration, Levy and collection of GST, supply of goods or services or both, place of supply.	B.Com (Hons.) VI	BCH 6.2 (Goods and Services Tax)
		Need of insurance, principals of utmost good faith, insurable interest, proximate cause,	Commerce GE-4	BCH 4.4(a) Insurance & Risk Management

		subrogation and contribution		

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	Tutorials/Practical:	Discussion on conceptual problems and solving numerical questions. Discussion on contemporary issues Creating business spreadsheet, pivot tables, word processing	B.Com (Hons.) VI Commerce GE-4 B.Com (Hons.) IV	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management BCH 4.3 (Computer Applications in Business)

	<u>Assignment</u>	Comparison of GST structure across various countries Research paper presentation on allocated topics	B.Com (Hons.) VI Commerce GE-4	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management
MARCH	**Theory:**	Time and value of supply,, composition levy, input tax credit. Legal aspects of insurance contract, loss assessment, computation of insurance premium, exclusion of perils	B.Com (Hons.) VI Commerce GE-4	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management
	Tutorials/Practical:	Discussion on conceptual problems and solving numerical questions. Discussion on contemporary issues	B.Com (Hons.) VI Commerce GE-4	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk

		Database management system	B.Com (Hons.) IV	Management BCH 4.3 (Computer Applications in Business)

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	Test	Case study, short answer type and numerical questions to asked.		
APRIL	**Theory:**	Payment of taxes, refund, Reverse charge mechanism, Job work. IRDA act, objectives, compositions, duties, powers and functions, powers to make regulations	B.Com (Hons.) VI Commerce GE-4	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management
	Tutorials/Practical:	Discussion on conceptual problems and solving numerical questions. Discussion on emerging issues in finance. Practice and revision	B.Com (Hons.) VI Commerce GE-4 B.Com (Hons.) IV	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management BCH 4.3 (Computer Applications in Business)

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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: II/IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Goods & Service Tax** **a)** Constitutional framework of Indirect Taxes before GST, Concept of VAT: Meaning, Variants of VAT and Methods of VAT; Major defects in the structure of Indirect Taxesprior to GST. **b)** Rationale of GST; Structure of GST (SGST, CGST, UTGST & IGST); GST Council; GST Network; State Compensation Management & Registration **Cost Accounting** **a)** Cost sheet, Overview of elements of cost & Cost Sheet **b)** Material Costing with various methods – FIFO, LIFO, Simple Average, & Weighted Average **Investing in Stock Market** **a)** Basics of investment, Risk & Return, Instruments of Investments – Equity & Preference shares **b)** Types of orders & Analyst recommendations	1. B.Com – (H) IIISemester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods &Service Tax 2. BC – 4.3: Cost Accounting 3. BC – 4.4(b): Investing in Stock markets
	Practical	**E – Commerce (HTML)** **1.** Introduction to HTML **2.** Structure of HTML **3.** Document, Tags & Attributes	B.Com – II Semester – IV	BCH 4.4(a): E - Commerce
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**

FEBRUARY	**Theory**	**Goods & Service Tax** 1) Supply of GST (Taxable Event) 2) Place of GST (Within State & Inter – State) 3) Time of Supply (Forward Charge; Reverse Charge &Rate of Change in GST) 4) Exemptions of Supply – Goods & Services 5) Levy & Collection of GST	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods& Service Tax 2. BC – 4.3: Cost Accounting 3. BC – 4.4(b): Investing in Stockmarkets

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		6) Reverse Charge Mechanism **Cost Accounting** **a)** Labour Costing **b)** Time keeping & Book Keeping concept **Investing in Stock Markets** **a)** Overview of Indian Securities market – Primary market,private placements, Future & Options **b)** Stock exchange in India – BSE, NSE, MSEI		
	Practical	**E – Commerce (HTML)** **1.** Understanding Text Formatting **2.** Fonts & Hyperlinks	B.Com – II Semester – IV	BCH 4.4(a): E - Commerce
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
MARCH	**Theory**	**Goods & Service Tax** a) Eligible & Ineligible Input Tax Credit b) Composition Scheme c) Composite & Mixed Supply d) Recovery of Tax Credit e) Availability of Tax Credit f) Transfer of Input Tax Credit g) Job Work **Cost Accounting Accounting** **a)** Overhead Costing **b)** Classification, allocation & apportionment of overheadcosting **Investing in Stock Markets** **a)** Analysis of Domestic & International scenario **b)** Industry Analysis, Cash flow statement Analysis	1. B.Com – (H) III Semester-VI 2. B.Com – IISemester – IV	**1.** BCH 6.2: Goods& Service Tax **2.** BC – 4.3: Cost Accounting **3.** BC – 4.4(b): Investing in Stockmarkets
	Practical	**E – Commerce (HTML)** **1.** Insert Graphics, Copyrights, Trademarks Symbols in aWebpage	B.Com – II Semester – IV	BCH 4.4(a): E – Commerce
	Assignment	1. Topics allotment for making the assignments from Introduction and Levy & Collection and ITC	1. B.Com – (H) III Semester-VI 2. B.Com – IISemester – IV	1. BCH 6.2: Goods& Service Tax

	Test	1. Test conducted on the concerned subject after mid-semester break.	1. B.Com – (H) III Semester-VI 2. B.Com – IISemester – IV	1. BCH 6.2: Goods& Service Tax
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
APRIL	**Theory**	**GST & Custom Laws** **a)** Tax Invoice, Credit & Debit Notes, Audit in GST, Self Assessment Tax, E – Way Bills, Offences & Penalties & Appeals **b)** Basic Concept of Custom Laws, Types of Custom Duties, Baggage Rules & Exemptions **Cost Accounting** **a)** Book keeping System **b)** Reconciliation Statement **Investing in Stock Markets** **a)** Trading Rules, confidence index, and charting (use ofhistoric price) **b)** Do's & Don'ts of investment in markets **c)** Investment in Mutual Funds (Types of mutual funds) **d)** Factors affecting choice of mutual funds	1. B.Com – (H) III Semester-VI 2. B.Com – IISemester - IV	1. BCH 6.2: Goods& Service Tax 2. BC 4.3: Cost Accounting 3. BC 4.4(b): Investing in stock markets
	Practical	**E – Commerce (HTML)** **1.** Create list, forms, frames, tables **2.** Cascading Style Sheet	B.Com – II Semester – IV	BCH 4.4(a): E – Commerce

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mohini Yadav **Department: Commerce**

Semester : IV/VI (21-22)

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Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Unit 2: Financial Markets and Capital markets Unit 1: Data processing, networking and recent trends in computing Unit 2: Corporate Governance	B.COM P – Sem VI B.COM (H) – Sem IV (Sec B) B.COM (H) – Sem VI (Sec A)	**Financial Markets, Institutions and Services BC 6.1(e)** **Computer Applications in Business BCH 4.3** **Auditing And Corporate Governance BCH 6.1**
	Tutorials /Practical	Unit 5: Solver in LLP Unit 2: Financial Markets and Capital markets Unit 2: Corporate Governance	B.COM (H) – Sem IV (Sec B) B.COM P – Sem VI B.COM (H) – Sem VI	**Business Mathematics BCH 4.2** **Financial Markets, Institutions and Services BC 6.1(e)** **Auditing And Corporate Governance BCH 6.1**

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FEBRUARY	**Theory**	Unit 3: Financial Institutions I Unit 2 & 3: Word processing and preparing presentations Unit V: Business Ethics and Corporate Social Responsibility (CSR)	B.COM P – Sem VI B.COM (H) – Sem IV (Sec B)	**Financial Markets, Institutions and Services BC 6.1(e)** **Computer Applications in Business BCH 4.3** **Auditing And Corporate Governance BCH 6.1**
	Tutorials /Practical	Unit 5: Solver in LLP Unit 2: Financial Markets and Capital markets Unit 5: Business Ethics and Corporate Social Responsibility (CSR)	B.COM (H) – Sem IV (Sec B) B.COM P – Sem VI B.COM (H) – Sem VI (Sec A)	**Business Mathematics BCH 4.2** **Financial Markets, Institutions and Services BC 6.1(e)** **Auditing And Corporate Governance BCH 6.1**
	<u>Assignment</u>	Unit 2: Financial Markets and Capital markets Unit 1: Data processing, networking and recent trends in computing Unit 5: Business Ethics and Corporate Social Responsibility (CSR)	B.COM P – Sem VI B.COM (H) – Sem IV (Sec B)	**Financial Markets, Institutions and Services BC 6.1(e)** **Computer Applications in Business BCH 4.3** **Auditing And Corporate Governance BCH 6.1**

MARCH	**Theory**	Unit 4: Financial Institutions II Unit 4: Spreadsheet and its business applications Unit 3: Major Corporate Governance Failures and International Codes	B.COM P – Sem VI B.COM (H) – Sem IV (Sec B)	**Financial Markets, Institutions and Services BC 6.1(e)** **Computer Applications in Business BCH 4.3** **Auditing And Corporate Governance BCH 6.1**
	Tutorials /Practical	Unit 4: Mathematics of Finance Unit 2: Financial Markets and Capital markets Unit 3: Major Corporate Governance Failures and International Codes	B.COM (H) – Sem IV (Sec B) B.COM P – Sem VI B.COM (H) – Sem VI (Sec A)	**Business Mathematics BCH 4.2** **Financial Markets, Institutions and Services BC 6.1(e)** **Auditing And Corporate Governance BCH 6.1**

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	Test	Unit 2 & 3: Financial Institutions I and II Unit 1 to 4 Unit 1 & 2	B.COM P – Sem VI B.COM (H) – Sem IV (Sec B)	**Financial Markets, Institutions and Services BC 6.1(e)** **Computer Applications in Business BCH 4.3** **Auditing And Corporate Governance BCH 6.1**
APRIL	**Theory**	Unit 1&5: Introduction to Financial Systems & Financial Service Industry Unit 5: Database Management System Unit 4: Corporate Governance Framework in India	B.COM P – Sem VI B.COM (H) – Sem IV (Sec B)	**Financial Markets, Institutions and Services BC 6.1(e)** **Computer Applications in Business BCH 4.3** **Auditing And Corporate Governance BCH 6.1**
	Tutorials /Practical	Unit 4: Mathematics of Finance Unit 1&5: Introduction to Financial Systems & Financial Service Industry Unit 4: Corporate Governance Framework in India	B.COM (H) – Sem IV (Sec B) B.COM P – Sem VI	**Business Mathematics BCH 4.2** **Financial Markets, Institutions and Services BC 6.1(e)** **Auditing And Corporate Governance BCH 6.1**

			B.COM (H) – Sem VI (Sec A)	

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

Name of the Faculty: Ms Devki **Department: Commerce**

Month	Type of Class	Topics	Course	Paper Code/Name
March	Theory	**Unit I: The Indian Contract Act, 1872** Contract -meaning, characteristics and kinds.	B.com(P) Sem II	BC 2.2 Business law
April	Theory	**Unit I: The Indian Contract Act, 1872** Essentials of valid contract - Offer and acceptance, consideration, contractual capacity, free consent, legality of objects. Void agreements. Discharge of contract – modes of discharge including breach and its remedies. Quasi – contracts.	B.com(P) Sem II	BC 2.2 Business law
May	Theory	**Unit II: Special Contracts** Contract of Indemnity and Guarantee, Contract of Bailment and Pledge Contract of Agency.	B.com(P) Sem II	BC 2.2 Business law
	Tutorials	**Presentation** **Assignment**		
June	Theory	**Unit III: The Sale of Goods Act, 1930** Contract of sale,meaning and difference between sale and agreement to sell. Conditions and warranties. Transfer of ownership in goods including sale by	B.com (P) Sem II	BC 2.2 Business law

		non-owners. Performance of contract of sale. Unpaid seller – meaning and rights of an unpaid seller against the goods.		
	Tutorial	**<u>Presentation</u>** **<u>Assignment</u>** **<u>Case law Presentation</u>**		
July	Theory	**<u>Unit IV: The Limited Liability Partnership Act, 2008</u>** Salient Features of LLP,Difference between LLP and Partnership, LLP and Company LLP Agreement. Nature of LLP. Partners and Designated Partners. Incorporation Document Incorporation by Registration, Registered office of LLP and change therein. Change of name. Partners and their Relations. Extent and limitation of liability of LLP and partners. Whistle blowing. Taxation of LLP. Conversion of LLP. **<u>Unit V: The Information Technology Act 2000</u>** Definitions under the Act. Digital signature. Electronic governance. Attribution, acknowledgement and dispatch of electronic records. Regulation of certifying authorities Digital signatures certificates. Duties of subscribers. Penalties and adjudication. Offences.	B.com (P) Sem II	BC 2.2 Business Law
	Tutorials	**<u>Previous year Question Discussion</u>** **<u>Doubt Session</u>**		BC 2.2 Business Law

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

Name of the Faculty: Ms Devki **Department: Commerce**

Month	Type of class	Topic	Course	Paper code /Name
March	Theory	**Unit IV: Dividends, Audit and Winding Up** Introduction	B.com(H)	BCH 2.3 CorporateLaw
April	Theory	**Unit IV: Dividends, Audit and Winding Up** Provisions relating to payment of dividend; Company Audit; Provisions relating to audit, Auditors' qualification, appointment, rotation of auditors, auditors' report	B.com(H)	BCH 2.3 CorporateLaw
	Tutorial	**Doubt Session** **Discussion on Recent Amendments**		
May		**Unit IV: Dividends, Audit and Winding Up** Winding Up :Concept and modes of winding up; Liquidator; National company Law Tribunal (NCLT); Appellate Tribunal (NCLAT), Special Courts; Relevant provisions of Insolvency and Bankruptcy Code 2016.	B.com(H)	BCH 2.3 CorporateLaw
	Tutorial	**Doubt Session** **Discussion on IBBI**		
June - July	Theory	**Unit V: The Depositories Act 1996** Definitions, Depositories System, Rights and Obligationsof Despositories, Participants issuers and beneficial owners , Inquiry and Inspections , Penalty	B.com(H)	BCH 2.3 CorporateLaw
	Tutorial	**Discussion on Depositories Act**		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2020-21) (Even Semester)

Name of the Faculty: Ms Devki **Department: Commerce**

Month	Type	Topic	Course	Paper code /name
March	Theory	**Introduction**	B.com (H)	BCH 2.2 Corporate accounting
April	Theory	**Unit I: Accounting for Share Capital and Debentures** Introduction to issue of shares and debentures. Issue of rights and Bonus shares, ESOPs and buyback of shares, book building. Redemption of Preference shares, Redemption of debentures: sinking/debenture Redemption fund, open market purchase and conversion of debentures. *Relevant AS and IND-AS as applicable.*	B.com (H)	BCH 2.2 Corporate accountin g
May	Theory	**Unit IV: Amalgamation, Reconstruction and Liquidation of Companies** Concept of Purchase Consideration. Accounting for Amalgamation of Companies (excluding inter-company transactions and holdings) and external reconstruction Accounting for Internal Reconstruction (excluding preparation of scheme for internal reconstruction). *Relevant AS and IND-AS as applicable.*	B.com (H)	BCH 2.2 Corporate accountin g
	Tutorial	**Assignment** **Doubt session**		
June	Theory	**Unit III: Cash Flow Statements**	B.com (H)	BCH 2.2 Corporate accountin g

		Meaning, Usefulness, Preparation of a cash flow statement in accordance with Accounting Standard 3(Revised) issued by the Institute of Chartered Accountants of India. (Only indirect method), Limitations of cash flow statement. *Relevant AS and INDAS as applicable*		
July	Theory	**Unit V: Accounts of Holding Companies/ Parent Companies** Preparation of consolidated balance sheet with one subsidiary company. *Relevant AS and IND-AS as applicable.* **Unit II: Financial Statements of a Company** Preparation of financial Statement of Joint Stock companies as per schedule III Part I & II (Division I in detail and Division II only on overview) *Relevant AS and IND-AS as applicable.*	B.com (H)	BCH 2.2 Corporate accountin g
August	Theory	**Doubt Session** **Previous year question**	B.com (H)	BCH 2.2 Corporate accounting

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

Name of the Faculty: Mr. Manish Kr. Dubey **Department: Commerce** **Semester: II**

Month	Type of Class	Topics	Course	Paper Code/Name
January	**Theory**	**FINANCIAL ACCOUNTING (B.COM H)** Unit-II: Depreciation accounting and inventory valuation Accounting for Plant Property and Equipment & Depreciation: Meaning of Depreciation, Depletion and Amortization, Objective and Methods of depreciation (Straight line, Diminishing Balance), Change of Method, Inventory Valuation: Meaning, Significance of Inventory Valuation, Inventory Record System-Periodic and Perpetual, Methods of Inventory Valuation-FIFO, LIFO and Weighted Average. Unit-III: Accounting for hire purchase and lease transactions Hire Purchase Accounting: Calculation of Interest, Partial and Full Repossession, profit Computation (Stock & Debtors System only) Lease Transactions: Concept, Classification of leases	1. B.Com. (Hons.): Semester-I 2. B.Com.: Semester I	Paper BCH 1.3: BUSINESS LAWS Paper BC 1.3: BUSINESS ORGANISATION AND MANAGEMENT

		BUSINESS LAWS (B.COM H) Special Contracts Quasi – contracts, Contract of Indemnity and Guarantee, Contract of Bailment and Pledge Contract of Agency The Sale of Goods Act, 1930 Contract of sale, meaning and difference between sale and agreement to sell. Conditions and warranties. Transfer of ownership in goods including sale by non-owners. Performance of contract of sale. Unpaid seller – meaning and rights of an unpaid seller against the goods. **FINANCIAL ACCOUNTING (B.COM P)** Unit-II: Depreciation accounting and inventory valuation Accounting for Plant Property and Equipment & Depreciation: Meaning of Depreciation, Depletion and Amortization, Objective and Methods of depreciation (Straight line, Diminishing Balance), Change of Method, Inventory Valuation: Meaning, Significance of Inventory Valuation, Inventory Record System-Periodic and Perpetual, Methods of Inventory Valuation-FIFO, LIFO and Weighted Average. Unit-III: Accounting for hire purchase and lease transactions Hire Purchase Accounting: Calculation of Interest, Partial and Full Repossession, profit Computation (Stock & Debtors System only) Lease Transactions: Concept, Classification of leases		PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021
	Practical	FINANCIAL ACCOUNTING 1. TALLY ERP: Inventory creation and maintenance of Stock, Vouchers in Tally; Basic, types and Creation	B.Com. Semester I	Paper BC 1.2: FINANCIAL ACCOUNTING

Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
February-March	**Theory**	**FINANCIAL ACCOUNTING (B.COM H)** Unit-III: Branch and departmental accounting Accounting for Branches (excluding foreign branches): Dependent branches ('Debtors system' and 'Stock & debtors System'). Departmental Accounting: Concept, Type of departments, basis of allocation of departmental expenses, Methods of departmental accounting (excluding memorandum stock and memorandum mark-up account method). Unit-IV: Partnership Accounting: Dissolution of the firm; Insolvency of the partner, Garner vs. Murray Rule, Piecemeal Distribution **BUSINESS LAWS (B.COM H)** The Limited Liability Partnership Act, 2008 Salient Features of LLP, Difference between LLP and Partnership, LLP and Company LLP Agreement. Nature of LLP, Partners and Designated Partners, Incorporation Document Incorporation by Registration, Registered office of LLP and change therein. Change of name, Partners and their Relations. Extent and limitation of liability of LLP and partners. Whistle blowing. Taxation of LLP. Conversion into LLP. Winding up and dissolution of LLP. The Information Technology Act 2000 Definitions under the Act. Digital signature. Electronic	1. B.Com. (Hons.): Semester-I 2. B.Com.: Semester I	Paper BCH 1.3: BUSINESS LAWS Paper BC 1.3: BUSINESS ORGANISATION AND MANAGEMENT PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021

		governance. Attribution, acknowledgement and dispatch of electronic records. Regulation of certifying authorities. Digital signatures certificates. Duties of subscribers under the Act. Penalties and adjudication. Offences as per the Act. **FINANCIAL ACCOUNTING (B.COM P)** Unit-IV: Branch and departmental accounting Accounting for Branches (excluding foreign branches): Dependent branches ('Debtors system' and 'Stock & debtors System'). Departmental Accounting: Concept, Type of departments, basis of allocation of departmental expenses, Methods of departmental accounting (excluding memorandum stock and memorandum mark-up account method).		PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021
	Practical	FINANCIAL ACCOUNTING 2. TALLY ERP: Recording of transaction, Practice of full fledged questions, generation of various reports	B.Com. Semester I	Paper BC 1.2: FINANCIAL ACCOUNTING
	Test	1. Test conducted on the concerned subject	1. B.Com. (Hons.): Semester-I 2. B.Com.: Semester I	1. Paper BCH 1.2: FINANCIAL ACCOUNTING 2. Paper BCH 1.3: BUSINESS LAWS 3. Paper BC 1.2: FINANCIAL

				ACCOUNTING

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Month	Type of Class	Topics	Course	Paper Code/Name
April	**Theory**	**Corporate Accounting (BCH)** • Introduction to issue of shares and debentures, • issue of rights and bonus shares, • underwriting of shares and debenture, • Redemption of preference shares **Corporate Laws (BCH)** • Introduction to companies act, features ofcompanies, lifting of corporate veil **Business Math. & Stats. (BCP)** • Matrices: Introduction, types, matrixmultiplication, crammers' rule, • Application of matrices • Mathematics of Finance	1. B.Com – (H) ISemester-II 2. B.Com- (H) - ISemester-II 3. B.Com – ISemester-II	1. BCH 2.2: Corporate Accounting 2. BCH 2.3: CorporateLaws 3. BC 2.3: Business Math.& Stats.
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**

May	**Theory**	**Corporate Accounting (BCH)** • Redemption of debenture • Preparation of Financial Statements of company **Corporate Laws (BCH)** • Formation of company: Registration &Incorporation of a company, • Provisional and Pre-incorporation contract • Online registration of company **Business Math. & Stats. (BCP)** • Differentiation; Rules of differentiation • Application of differentiation • Central Tendency	1. B.Com–(H) I Semester-II 2. B.Com - (H) – ISemester-II 3. B.Com – I Semester-II	1. BCH 2.2 Corporate Accounting 2. BCH 2.3: CorporateLaws 3. BC 2.3: Business Math.& Stats.

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Month	Type of Class	Topics	Course	Paper Code/Name
June	**Theory**	**Corporate Accounting (BCH)** • Redemption of debenture • Preparation of Financial Statements of company • Preparation of Cash Flow statement • Amalgamation **Corporate Laws (BCH)** • Director and Key Managerial Personnel: Meaning,Types, Duties and Liabilities of Directors • Key managerial personnel **Business Math. & Stats. (BCP)** • Measures of Dispersion • Correlation Analysis • Regression Analysis	1. B.Com – (H) ISemester-II 2. B.Com - (H) – ISemester-II 3. B.Com – I Semester-II	1. BCH2.2 Corporate Accounting 2. BCH 2.3: CorporateLaws 3. BC 2.3: Business Math.& Stats.
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
July	**Theory**	**Corporate Accounting (BCH)** • Internal reconstruction • Liquidation of companies • Accounts of holding and parent company **Corporate Laws (BCH)** • Meetings: Provisions related to meeting, Types ofmeeting, Quorum of meeting **Business Math. & Stats. (BCP)** • Index Numbers • Time Series **One Assignment and one Test for each paper.**	1. B.Com – (H) ISemester-II 2. B.Com - (H) – ISemester-II 3. B.Com – I Semester-II	1. BCH 2.2 Corporate Accounting 2. BCH 2.3: CorporateLaws 3. BC 2.3: Business Math.& Stats.

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

Name of the Faculty: MUKESH KUMAR MEENA **Department: Commerce** **Semester: II**

Month	Type of Class	Topics	Course	Paper Code/Name

April-May	**Theory**	**BUSINESS LAWS** The Indian Contract Act, 1872 Contract – meaning, characteristics and kinds, Essentials of valid contract - Offer and acceptance, consideration, contractual capacity, free consent, legality of objects. Void agreements. Discharge of contract – modes of discharge including breach and its remedies. **Corporate laws** Unit I: Introduction Meaning and characteristics of a company; Lifting of corporate veil; Administration of Company Law [including National Company Law Tribunal(NCLT), National Company Law Appellate Tribunal (NCLAT), Special Courts]; Types of companies including private and public company, government company, foreigncompany, one person company, small company, associate company, dormant company and producer company; Association not for profit; Illegal association; Formation ofcompany, promoters, their legal position and pre incorporation contracts; Online registration of a company. Unit II: Documents and shares Memorandum of Association and its alteration, Articles of Association and its alteration, doctrine of constructive notice, doctrine of ultra vires and indoor management; Prospectus, Shelf and Red herring prospectus, misstatement in prospectus; book building; Allotment and Forfeiture of share, Sweat Equity, ESOPs, Bonus issue, and Further issue of shares, buyback and provisions regarding buyback; Membership of company. **business mathematics and statistics** Basic Mathematics of Finance: Simple and Compound interest (including continuous compounding); Rates of	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	1. Paper BC 2.2: BUSINESS LAWS 2. Paper BCH 2.3: Corporate laws 3. Paper BC 2.3 business mathematics and statistics C. Sheela Reddy PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021

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		interest- nominal and effective and their interrelationships;Compounding and discounting of a sum using different types of rates.		
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
June-july	**Theory**	**Business Laws** Special Contracts Quasi – contracts, Contract of Indemnity and Guarantee, Contract of Bailment and Pledge Contract of Agency The Sale of Goods Act, 1930 Contract of sale, meaning and difference between sale and agreement to sell. Conditions and warranties. Transfer of ownership in goods including sale by non-owners. Performance of contract of sale. Unpaid seller – meaning and rights of an unpaid seller against the goods. **Corporate laws** Unit III: Management and Meetings B.Com.(Hons) CBCS Department of Commerce, University of Delhi 21 Classification of directors-Additional, Alternate and Casual directors, Women directors, Independent director, Small shareholder's director; Director Identity Number (DIN); Appointment, Disqualifications, Removal of directors; Legal positions, Powers and Duties; Key managerial personnel, Managing director, Manager and Whole Time Director; Board Meetings: meeting through video conferencing; Shareholder meetings: AGM and EGM. Convening and Conduct of meetings: Requisites of a valid meeting; Resolutions; Postal ballot; e-voting. Unit IV: Dividends, Audit and Winding up Provisions relating to payment of Dividend, Company Audit-auditor's qualification and disqualifications, Auditor's appointment, Rotation of auditors, Auditor's removal, Auditors' report and Auditor's powers. Winding Up: Concept and Modes of Winding Up; Provisions of winding up under Insolvency and Bankruptcy Code	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	**1.** Paper BC 2.2: BUSINESS LAWS **2.** Paper BCH 2.3: Corporate laws **3.** Paper BC 2.3 business mathematics and statistics

		2016. Unit V: The Depositories Act **business mathematics and statistics** Differential Calculus: Mathematical functions and their types – linear, quadratic, polynomial; Concepts of limits and continuity of a function; Concept and rules of differentiation; applications of differentiation - elasticity of demand and supply, Maxima and Minima of functions relating to cost, revenue and profit.		
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**

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August	**Theory**	**Business Laws** The Limited Liability Partnership Act, 2008 Salient Features of LLP, Difference between LLP and Partnership, LLP and Company LLP Agreement. Nature of LLP, Partners and Designated Partners, Incorporation Document Incorporation by Registration, Registered office of LLP and change therein. Change of name, Partners and their Relations. Extent and limitation of liability of LLP and partners. Whistle blowing. Taxation of LLP. Conversion into LLP. Winding up and dissolution of LLP. The Information Technology Act 2000 Definitions under the Act. Digital signature. Electronic governance. Attribution, acknowledgement and dispatch of electronic records. Regulation of certifying authorities. Digital signatures certificates. Duties of subscribers under the Act. Penalties and adjudication. Offences as per the Act. **Corporate laws** Definitions; Depositories system; Rights and obligations of depositories; Participants issuers and beneficial owners; Inquiry and inspections; Penalty. **business mathematics and statistics** (a) Matrices: Definition and types; Algebra of matrices; Applications of matrix operations to simple business and economic problems; Calculation of values of determinants up to third order; Finding inverse of a	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	**1.** Paper BC 2.2: BUSINESS LAWS **2.** Paper BCH 2.3: Corporate laws **3.** Paper BC 2.3 business mathematicsand statistics

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		matrix through determinant method; Solution of system of linear equations up to three variables.		
	Assignment	Topics allotment for making the assignments	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	**1)** Paper BC 2.2: BUSINESS LAWS **2)** Paper BCH 2.3: Corporate laws **3)** Paper BC 2.3 business mathematics and statistics
	Test	Test conducted on the concerned subject	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	**1)** Paper BC 2.2: BUSINESS LAWS **2)** Paper BCH 2.3: Corporate laws **3)** Paper BC 2.3 business mathematics and statistics

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

Name of the Faculty: Mr. Yogesh Department: Commerce Semester: II

Month	Type of Class	Topics	Course	Paper Code/Name
April	**Theory**	**1. CORPORATE LAWS** **Unit-I: Introduction** Meaning and characteristics of a company; Lifting of corporate veil; Administration of Company Law [including National Company Law Tribunal (NCLT), National Company Law Appellate Tribunal (NCLAT), Special Courts]; Types of companies including private and public company, government company, foreign company, one person company, small company, associate company, dormant company and producer company; Association not for profit; Illegal association; Formation of company, promoters, their legal position and pre incorporation contracts; Online registration of a company. **2. FINANCE FOR NON-FINANCE EXECUTIVES** **Unit: I Introduction** Meaning and importance of Finance. Time Value of money (Compounding & Discounting), Risk & Return. Alternative investment options, Sources of Long term financing and short term Financing. **Unit: II Financial Analysis & Capital Budgeting** Types of Financial Statements- Income Statement, Balance Sheet, Ratio Analysis: Meaning, Significance and Limitations. Current Ratio, Quick Ratio, Absolute Liquidity Ratio, Debt-Equity Ratio, Interest Coverage Ratio, Inventory Turnover Ratio, Debtors Turnover Ratio, Average Collection Period, Creditors Turnover Ratio, Average Payment Period, Return on Capital Employed, Earning Per Share, Dividend Per Share.	3. B.Com (H)– I Semester-II (B) 4. GE NON COMMERCE II 5. B.Com – I Semester-II (A)	3. BCH 2.3: CORPORATE LAWS 4. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 5. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS

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		3. BUSINESS MATHEMATICS AND STATISTICS **Unit II: Uni-variate Analysis** (a) Measures of Central Tendency: Arithmetic mean, Geometric mean, Harmonic Mean- Properties and applications. Median and other Partition values (quartiles, deciles, Percentiles), Mode. **(b) Measures of Dispersion:** absolute and relative- Range, Quartile deviation, Mean deviation, Standard deviation and their coefficients; Properties of Standard Deviation/Variance.		
	Practical			
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
May	**Theory**	**1. CORPORATE LAWS** **Unit II: Documents and shares** Memorandum of Association and its alteration, Articles of Association and its alteration, doctrine of constructive notice, doctrine of ultra vires and indoor management; Prospectus, Shelf and Red herring prospectus, misstatement in prospectus; book building; Allotment and Forfeiture of share, Sweat Equity, ESOPs, Bonus issue, and Further issue of shares, buyback and provisions regarding buyback; Membership of company **2. FINANCE FOR NON-FINANCE EXECUTIVES** **Unit: II Financial Analysis & Capital Budgeting** Capital Budgeting Process, Capital Budgeting Techniques (Pay Back Period, Discounted Payback period, NPV, IRR). **3.BUSINESS MATHEMATICS AND STATISTICS** **Unit III: Bi-variate Analysis** (a) Simple and Linear Correlation analysis: Meaning, Measurement (Karl Pearson's Co-efficient and Spearman's Rank correlation) and Properties.	1. B.Com (H)– I Semester-II (B) 2. GE NON COMMERCE II 3. B.Com – I Semester-II (A)	6. BCH 2.3: CORPORATE LAWS 7. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 8. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS

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	Practical			
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
June	**Theory**	**1. CORPORATE LAWS** **Unit III : Management and Meetings** Classification of directors-Additional, Alternate and Casual directors, Women directors, Independent director, Small shareholder's director; Director Identity Number (DIN); Appointment, Disqualifications, Removal of directors; Legal positions, Powers and Duties; **2. Finance FOR NON-FINANCE EXECUTIVES** **Unit: III Cost of Capital & Capital Structure** Concept of Cost of Capital and Capital Structure: Cost of Debt Capital, Cost of Preference Share Capital, Equity Share Capital, Weighted Average Cost of Capital (WACC). Meaning of Leverage. Operating Leverage, Financial Leverage, Combined Leverage. **Unit: IV Dividend Decisions & Working Capital** Types of Dividends, Dividend policies and factors affecting dividend policies. Concept of Working Capital, its components and Factors affecting working capital requirements. Contemporary issues in Finance. **3.BUSINESS MATHEMATICS AND STATISTICS** **Unit III: Bi-variate Analysis** (b) Simple and Linear Regression Analysis: Regression equations and estimation; Properties of Regression coefficients; Relationship between correlation and regression. ,	1. B.Com (H)– I Semester-II (B) 2. GE NON COMMERCE II 3. B.Com – I Semester-II (A)	9. BCH 2.3: CORPORATE LAWS 10. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 11. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS
	Practical			
Month	**Types of Class**	**Topics**	**Course**	**Paper code/Name**

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July	**Theory**	**1. CORPORATE LAWS** **Unit III : Management and Meetings** Key managerial personnel, Managing director, Manager and Whole Time Director; Board Meetings: meeting through video conferencing; Shareholder meetings: AGM and EGM. Convening and Conduct of meetings: Requisites of a valid meeting; Resolutions; Postal ballot; e-voting. **2. Finance FOR NON-FINANCE EXECUTIVES** **Unit: V Valuation of Securities** Types of Risks and Returns. Concept of Valuation, Equity Valuation & Analysis, Bond Valuation & Analysis. Portfolio Analysis **3.BUSINESS MATHEMATICS AND STATISTICS** **Unit IV: Index Numbers** Meaning and uses; Construction of index numbers: Aggregative and average of relatives– simple and weighted; Tests of adequacy of index numbers; Computation and uses of Consumer Price Index (CPI). **Unit V: Time Series** Components; additive and multiplicative models; Trend analysis - moving averages and method of least squares (linear trend).	1. B.Com (H)– I Semester-II (B) 2. GE NON COMMERCE II 3. B.Com – I Semester-II (A)	12. BCH 2.3: CORPORATE LAWS 13. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 14. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS
	Practical			
	Assignment	1. Topics allotment for making the assignments from Memorandum and Association 2. Topics allotment for making the assignments from Ratios Analysis and capital Budgeting, 3. Topics allotment for making the assignments from Measures of Central Tendency and Dispersion	1. B.Com (H)– I Semester-II (B) 2. GE NON COMMERCE II 3. B.Com – I Semester-II (A)	15. BCH 2.3: CORPORATE LAWS 16. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 17. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS

	Test	2. Test conducted on the concerned subjects after the 3. Mid-semester.	4. B.Com (H)– I Semester-II (B) 5. GE NON COMMERCE II 6. B.Com – I Semester-II (A)	18. BCH 2.3: CORPORATE LAWS 19. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 20. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS

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

Name of the Faculty: Ms. Angel Josy Lakra **Department: Commerce** **Semester: IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
March	**Theory**	**1.Corporate Accounting** ✓ Introduction of share capital ✓ Issue , Forfeiture and reissue of shares ✓ Issue of Rights and Bonus Shares ✓ Redemption of Preference Shares ✓ Buy-Back of Equity Shares **Test:** Test conducted on the concerned subject after mid-semester break.	B.Com IV -A	BC 4.2 Corporate Accounting
	Theory	**E- Commerce** ✓ Planning Online Business ✓ Technology for Online Business	B.Com IV-A+B	BC4.4(a) AEEC -2
	Practical	**E- Commerce** ✓ Introduction – HTML Basics ✓ Basic Structure of an HTML ✓ Text Formatting Tag lists ✓ Graphics ✓ Anchors ✓ Tables	B.Com IV-A+B	BC4.4(a) AEEC -2

	Theory	**Collective Bargaining** ✓ Theories of Collective Bargaining ✓ Pre-requisites for Successful Collective bargaining ✓ Collective Bargaining in Practice	B.Com VI A+B	BC 6.3 (b)
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
April	**Theory**	**Corporate Accounting** ✓ Issue of Debentures ✓ Redemption of Debentures ✓ Financial Statements of Companies	B.Com -IV -A	BC 4.2 Corporate Accounting
	Theory	**E- Commerce** ✓ E-Payment ✓ Security & Legal Aspects of E-Commerce	B.Com -IV A+B	BC4.4 (a) AEEC -2
	Practical	**E- Commerce** ✓ Concepts of frames ✓ Forms ✓ Creating Drop down list ✓ Inserting copyright and trademark symbols in a web page	B.Com -IV A+B	BC4.4 (a) AEEC -2
	Theory	**Collective Bargaining** ✓ Process of Collective Bargaining ✓ Understanding Negotiation ✓ Preparing for Negotiation	B.Com -VI A+B	BC 6.3 (b)

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2021-2022 (Even Semester)

Name of the Faculty : Dr Nutan Joshi
Department : Electronics

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

Practical : B.Sc(H) Electronics, Sem IV
B.Sc(H) Electronics, Sem VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Basic Operational Amplifier: Concept of differential amplifiers (Dual input balanced and unbalanced output), constant current bias, current mirror, cascaded differential amplifier stages with concept of level translator, block diagram of an operational amplifier (IC 741) Op-Amp parameters: input offset voltage, input offset current, input bias current, differential input resistance, input capacitance, offset voltage adjustment range, input voltage range, common mode rejection ratio, slew rate, supply voltage rejection ratio. ASSIGNMENT	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications
	Practical	Study of op-amp characteristics: CMRR and Slew rate. Designing of an amplifier of given gain for an inverting and non-inverting configuration using an opamp. Designing of analog adder and subtractor circuit. Designing of an integrator using op-amp for a given specification and study its frequency response. FILE SUBMISSION Sem VI: To verify the law of Malus for plane polarized light To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by diffraction grating. To determine the resolving power and Dispersive power of Diffraction Grating (Allotted To Different Groups)	B.Sc.(Hons) Electronics, Sem IV B.Sc.(Hons) Electronics, Sem VI	Core-Course-VIII/ Operational Amplifiers and Applications Lab CC-XIV Photonics Lab
FEBRUARY	**Theory**	Op-Amp Circuits: Open and closed loop configuration, Frequency response of an op-amp in open loop and closed loop configurations, Inverting, Non-	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications

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		inverting, Summing and difference amplifier, Integrator, Differentiator, Voltage to current converter, Current to voltage converter. Comparators: Basic comparator, Level detector, Voltage limiters, Schmitt Trigger. ASSIGNMENT		
	Practical	Designing of an integrator using op-amp for a given specification and study its frequency response Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. **FILE SUBMISSION** Sem VI**:** To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by diffraction grating. To determine the resolving power and Dispersive power of Diffraction Grating	B.Sc.(Hons) Electronics, Sem IV B.Sc.(Hons) Electronics, Sem VI	Core-Course-VIII/ Operational Amplifiers and Applications Lab CC-XIV Photonics Lab
	Assignment	As per the syllabus covered		
MARCH	**Theory**	Signal generators: Phase shift oscillator, Wein bridge oscillator, Square wave generator, triangle wave generator, saw tooth wave generator, and Voltage controlled oscillator(IC 566). Multivibrators (IC 555): Block diagram, Astable and monostable multivibrator circuit, Applications of Monostable and Astable multivibrators. Phase locked loops (PLL): Block diagram, phase detectors,	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications
	Practical	Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab

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		series Sem VI: To determine wavelength of sodium light by diffraction grating. To determine the resolving power and Dispersive power of Diffraction Grating To determine the specific rotation of sugar solution using polarimeter. Characteristics of LEDs and Photodetector and Photodiode.	B.Sc.(Hons) Electronics, Sem VI	CC-XIV Photonics Lab
APRIL	Theory	IC565. Fixed and variable IC regulators: IC 78xx and IC 79xx -concepts only, IC LM317- output voltage equation Signal Conditioning circuits: Sample and hold systems, Active filters: First order low pass and high pass butterworth filter, Second order filters, Band pass filter, Band reject filter, All pass filter, Log and antilog amplifiers.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications
	Practical	Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series Sem VI: To determine wavelength of sodium light by diffraction grating. Diffraction experiments using a laser. Single slit, double slit diffraction grating and circular aperture **ASSIGNMENT WILL BE TAKEN AND PRACTICAL TEST WILL BE CONDUCTED**	B.Sc.(Hons) Electronics, Sem IV B.Sc.(Hons) Electronics, Sem VI	Core-Course-VIII/ Operational Amplifiers and Applications Lab CC-XIV Photonics Lab

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SEMESTER-WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Jan-May 2021-2022

Name of the Faculty: Dr. Sunita Jain

Department: Electronics

Semester: Even

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Introduction to EM waves, concept of spherical & plane waves, reflection and transmission, total internal reflection, origin of refractive index and dispersion. Interference, division of wave front, division of amplitude. Young's double slit experiment, Newton's ring, Michelson Interferometer, and thin film. Holograph	B.Sc. (H)	CC-XIV Photonics
	Practical	Sem VI**:** To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by Michelson Interferometer. To verify the law of Malus for plane polarized light. Sem VI Study of Optical Fiber Communication System Calculation of the transmission losses in an optical communication system	B.Sc. (H)	CC-XIV Photonics Lab DSE Modern Communication Systems
FEBRUARY	**Theory**	Fresnel and Fraunhoffer diffraction. Diffraction by rectangular aperture, single slit, and double slit, diffraction grating and circular aperture. Resolving and dispersive power of grating. Resolving power of telescope and microscope. Polarization of light, production and analysis of linear	B.Sc. (H)	CC-XIV Photonics

		circular and elliptically polarized light. Malus Law, Double refraction, half and quarter wave plate.		
	Practical	Sem VI**:** Determination of unknown wavelength using diffraction grating. Determination of Resolving and dispersive power of grating. Determination of specific rotation of sugarcane solution using polarimeter. Sem VI: Study of cellular communication systems, frequency reuse, sectoring and handoffs.	B.Sc. (H)	CC-XIV Photonics Lab DSE Modern Communication Systems Lab
	Assignment	Questions based on interference, diffraction and Polarization.	B.Sc. (H)	CC-XIV Photonics
MARCH	**Theory**	Liquid crystal display. Interaction of radiation and matter, Einstein coefficients, Condition for amplification, laser cavity, threshold for laser oscillation, line shape function. The semiconductor injection laser diode. LED, photodiodes and photodetectors. Quantum efficiency and responsivity	B.Sc. (H)	CC-XIV Photonics
	Practical	Sem VI**:** Characteristics of LEDs and Photodetector and Photodiode. Diffraction experiments using LASER. Sem VI: Study of sectoring concept in cellular communication systems and handoffs	B.Sc. (H)	CC-XIV Photonics Lab DSE Modern Communication Systems Lab

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	Mid-Term Test	Questions based on interference, diffraction and polarization		
APRIL	**Theory**	T.E. and T.M. modes in symmetric slab waveguide. Wave propagation and concept of linearly polarized waves inside dielectric waveguide. Group velocity and dispersion relation. Single mode and multimode fiber. Dispersion and attenuation in optical fiber.	B.Sc. (H)	CC-XIV Photonics
	Practical	Sem VI : Determination of numerical aperture of a fiber. Sem VI : To study DPCM, DM, ADM, line coding. Study of 16 QAM modulation and Detection with generation of Constellation Diagram	B.Sc. (H)	CC- IV Photonics Lab DSE Modern communication system Lab

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January to April, 2022

Name of the Faculty: Dr. Neeru Kumar

Department: Electronics

Semester: Six

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Introduction: Block diagram of an electronic communication system, electromagnetic spectrum-band designations and applications, need for modulation, concept of channels and base-band signals. Amplitude modulation: Basics of Amplitude Modulation, generation of AM (balanced modulator, collector modulator), Amplitude Demodulation (diode detector), Double side band suppressed carrier, DSBSC generation (balanced modulator), Single side band suppressed carrier, SSBSC generation (filter method, phase cancellation method, Weaver's method),).	**B.Sc. Electronics**	**CCXIII/ Communication Electronics**
	Practicals:	**Sem VI:** 1.Study of Amplitude Modulation 2. Study of Amplitude Demodulation **Sem VI:** 1.To study the position control of DC motor 2. To study the Speed control of DC motor.		**CCXIII/ Communication Electronics** **DSE** Control Systems
	Tutorials:			

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Feburary	**Theory:**	Other forms of AM (Pilot Carrier Modulation, Vestigial Side Band modulation, Independent Side Band Modulation). Block diagram of AM Transmitter and Receiver Angle modulation: Frequency and Phase modulation, modulation index and frequency spectrum, equivalence between FM and PM, Generation of FM (direct and indirect methods), FM detector (PLL). Block diagram of FM Transmitter and Receiver Comparison between AM, FM and PM.	**B.Sc. Electronics**	**CCXIII/ Communication Electronics**
	Practicals:	**Sem VI:** 1. Study of Frequency Modulation 2.Study of Frequency Demodulation 3. AM Transmitter/Receiver **Sem VI:** 1.To study characteristics of: a. Synchro transmitter receiver b. Synchro as an error detector 2.To find characteristics of AC servo motor 3.To study time response of type 0, 1 and 2 systems		**CCXIII/ Communication Electronics** **DSE** Control Systems
	Tutorials:			
	Assignment			
March	**Theory:**	Pulse Analog Modulation: Sampling theorem, Pulse Amplitude Modulation (PAM), Pulse Width Modulation (PWM) and Pulse Position Modulation (PPM). Generation and detection of PAM, PWM, PPM. Concept of Noise: External noise, internal noise, signal to noise ratio, noise factor, noise temperature, Friis formula	**B.Sc. Electronics**	**CCXIII/ Communication Electronics**

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	Practicals:	**Sem VI:** 1 Study of Pulse Amplitude Modulation 2.Study of Pulse Width Modulation 3. Study of Pulse Position Modulation **Sem VI:** 1. To study frequency response of first and second order systems. 2. To study time response characteristics of a second order system. 3.To study effect of damping factor on performance of second order system		**CCXIII/ Communication Electronics** **DSE** Control Systems
	Tutorials:			
	<u>Mid Term Test</u>			
April	**Theory**	Pulse Code Modulation: Need for digital transmission, Quantizing, Uniform and Nonuniform Quantization, Quantization Noise, Companding, Coding, Digital Formats. Decoding, Regeneration, Transmission noise and Bit Error Rate. Differential Pulse Code Modulation, Delta Modulation, Quantization noise, Adaptive Delta Modulation.	**B.Sc. Electronics**	**CCXIII/ Communication Electronics**
	Practicals:	**Sem VI:** 1. Study of Pulse Code Modulation 2. Study of Delta Modulation 3. Study of Adaptive Delta Modulation **Sem VI:** 1. To study frequency response of Lead and Lag networks. 2. Study of P, PI and PID controller.		**CCXIII/ Communication Electronics** **DSE** Control Systems
	Tutorials:			

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2021-2022 (Even Semester)

Name of the Faculty : Mr Hari Singh
Department : Electronics

Semester: Theory : B.Sc (H) Electronics, Semester II

Practical : B.Sc (H) Electronics, Semester II
B.Sc (H) Electronics, Semester VI

Month		Topics	Course	Paper Code/ Name
Apr	Theory	Electric and Magnetic Properties: Conductivity of metals, Ohm's Law, relaxation time, collision time and mean free path, electron scattering and resistivity of metals, heat developed in current carrying conductor, Superconductivity. Classification of Magnetic Materials, Origin of Magnetic moment,	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics
	Practical	To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths To measure the resistivity of a Ge crystal with temperature by Four–Probe method from room temperature to 200 ^{0}C. To determine study the variation of Thermo-emf of a Thermocouple with difference of temperature of its two junctions using a Null Method. And also calibrate the Thermocouple in a specified temperature range.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab
May	Theory	Origin of dia, para, ferro and antiferro magnetism and their comparison, Ferrimagnetic materials, Saturation Magnetisation and Curie temperature, Magnetic domains, Concepts of Giant Magnetic Resistance (GMR), Magnetic recording. Mechanical Properties of Materials: Elastic and Plastic Deformations, Hooke's Law, Elastic Moduli, Brittle, and Ductile Materials, Tensile Strength, Theoretical and Critical Shear Stress of Crystals, Strengthening Mechanisms, Hardness, Creep, Fatigue, Fracture.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics
	Practical	Measurement of susceptibility of paramagnetic solution (Quinck`s Tube Method) To determine Young's modulus of a wire by optical lever method. To determine the value of Boltzmann Constant by studying forward characteristics of diode.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab
	Assignment	As per the syllabus covered		
Mid Term Test and Assignment		**As per the syllabus covered**		
Jun	Theory	Thermal Properties: Brief Introduction to Laws of Thermodynamics, Concept of Entropy, Concept of Phonons. Heat Capacity, Debye's Law, Lattice Specific Heat, Electronic Specific Heat, Specific Heat Capacity for Si and GaAs, Thermal Conductivity, Thermoelectricity, Seebeck Effect,	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics

		Thomson Effect, Peltier Effect Quantum Physics: Inadequacies of Classical physics. Compton‘s effect, Photo-electric Effect, Wave-particle duality, De Broglie waves.		
	Practical	➢ To determine the modulus of rigidity of a wire by Maxwell‘s needle. ➢ To determine the elastic constants of a wire by Searle‘s method.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab
Jul	**Theory**	Basic postulates and formalism of quantum mechanics: probabilistic interpretation of waves, conditions for physical acceptability of wave functions. Schrodinger wave equation for a free particle and in a force field (1 dimension), Boundary and continuity conditions. Operators in Quantum Mechanics, Conservation of probability, Time-dependent form, Linearity and superposition, Operators, Time independent one dimensional Schrodinger wave equation, Stationary states, Eigen-values and Eigen functions. Particle in a one-dimensional box, Extension to a three dimensional box, Potential barrier problems, phenomenon of tunneling. Kronig Penney Model and development of band structure. Spherically symmetric potentials, the Hydrogen-like atom problem.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics
	Practical	➢ To determine e/m of electron by Bar Magnet or by Magnetic Focusing. ➢ To determine the Coefficient of Thermal Conductivity of Cu by Searle‟s Apparatus	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab

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

Name of the Faculty: Ms. Shubhra Gupta **Department: Electronics**

Semester : I/VI

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

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

Month		Topics	Course	Paper
JANUARY	**Theory**	**Optical Communication:** Introduction of Optical Fiber, Types of Fiber, Guidance in Optical Fiber, Attenuation and Dispersion in Fiber, Optical Sources and Detectors, Block Diagram of optical communication system, optical power budgeting. Introduction to wireless communications and cellular communication basic concepts.	BSc(hons) Electronics	DSE 4
	Practicals	**Sem VI :**Study of Optical Fiber Communication System Calculation of the transmission losses in an optical communication system. **Sem I:** 1. Python programs on Lists, Tuples and dictionaries. 2. Write a program in Python to predict the class of the flower based on available attributes. 3. Write a program in Python to predict if a loan will get approved or not.	BSc(hons) Electronics BSc(hons) Electronics	DSE 4 GE I: Data Science
	Tutorials			

FEBRUARY	**Theory:**	**Cellular Communication:** Concept of cellular mobile communication – cell and cell splitting, frequency bands used in cellular communication, absolute RF channel numbers (ARFCN), frequency reuse, roaming and hand off, authentication of the SIM card of the subscribers, IMEI number, concept of data encryption, architecture (block diagram) of cellular mobile communication network, CDMA technology, CDMA overview, simplified block diagram of cellular phone handset, Comparative study of GSM and CDMA, 2G, 3G and 4G concepts. **Satellite communication:** Introduction, need, satellite orbits, advantages and disadvantages of geostationary satellites	BSc(hons) Electronics	DSE 4
	Practicals:	**Sem VI:** Study of cellular communication systems, frequency reuse, sectoring and handoffs. **Sem I:** 1. Write a program in Python to predict the traffic on a new mode of transport. 2. Write a program in Python to predict the class of user. 3. Write a program in Python to indentify the tweets which are hate tweets and which are not. 4. Write a program in Python to predict the age of the actors.	BSc(hons) Electronics BSc(hons) Electronics	DSE 4 GE I: Data Science
	Tutorials:			
	<u>Assignment :</u>	Based on optical and cellular communications		

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MARCH	**Theory:**	**Satellite communication contd:** Satellite visibility, satellite system – space segment, block diagrams of satellite sub systems, up link, down link, cross link, transponders (C-Band), effect of solar eclipse, path loss, ground station, simplified block diagram of earth station. Satellite access, TDMA, FDMA, CDMA concepts, comparison of TDMA and FDMA, Satellite antenna (parabolic dish antenna), GPS-services like SPS & PPS. **Local area networks (LAN):** Primary characteristics of Ethernet-mobile IP, OSI model, wireless LAN requirements-concept of Bluetooth, Wi-Fi and WiMAX. **Multiplexing:** TDM and FDM	BSc(hons) Electronics	DSE 4
	Practicals:	**Sem VI:** Study of sectoring concept in cellular communication systems and handoffs **Sem I:** Mini project to predict the time taken to solve a problem given the current status of the user	BSc(hons) Electronics BSc(hons) Electronics	DSE 4 GE I: Data Science
	Tutorials:			
	<u>Test</u>	Based on optical, cellular and satellite communications		
APRIL	**Theory:**	**Digital Modulation Technique:** Block diagram of digital transmission and reception, Information capacity, Bit Rate, Baud Rate and M-ary coding. Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK), Phase Shift Keying (PSK), Binary Phase Shift Keying (BPSK) and Quadrature Phase Shift Keying (QPSK). Binary Line Coding Technique, Multi level coding, QAM (Modulation and Demodulation)	BSc(hons) Electronics	DSE 4

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	Practicals:	**Sem VI:**To study DPCM, DM, ADM, line coding. Study of 16 QAM modulation and Detection with generation of Constellation Diagram	BSc(hons) Electronics	DSE 4
	Tutorials:			

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

December-April 2021-22

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Name of the Faculty: Dr. Rakhi Narang

Department: Electronics **Semester: I/IV**

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

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

Month		**Topics**	**Course**	**Paper Code/Name**
December	Theory	Sem I: Concept of Data Science, Traits of Big data, 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.	B.Sc(H) Electronics I	GE I: Data Science
	Practicals	**Sem I:** Python programs on basic data types and built in functions, operators	B.Sc(H) Electronics I	GE I: Data Science
January	Theory	Sem I: Random Variables, Continuous Distributions The Normal Distribution, The Central Limit Theorem ; Hypothesis and Inference: Statistical Hypothesis Testing, Confidence Intervals, P-hacking, 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	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: Continuous and discrete time signals, Transformation of the independent variable, Exponential and sinusoidal signals, Impulse and unit step functions, Continuous-Time and Discrete-Time Systems, Basic System Properties. Discrete time LTI systems, the Convolution Sum, Continuous time LTI systems, the Convolution integral.	B.Sc(H) Electronics II	Core course-IX Signals and Systems
	Practicals	**Sem I:** 1. Python programs on Lists, Tuples and dictionaries. 2. Write a program in Python to predict the class of the flower based on available attributes. 3. Write a program in Python to predict if a loan will get approved or not.	B.Sc(H) Electronics I	GE I: Data Science

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		Sem IV: 1. Generation of Signals: continuous time 2. Generation of Signals: discrete time 3. Time shifting and time scaling of signals.	B.Sc(H) Electronics II	Core course-IX Signals and Systems
February	Theory	regularization (lasso, ridge, elastic net), Classification and Regression algorithmsNaïve Bayes, K-Nearest Neighbors, logistic regression, Support vector machines (SVM)	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: Properties of LTI systems Commutative, Distributive, Associative. LTI systems with and without memory, Invariability, Causality, Stability, Unit Step response. Differential and Difference equation formulation, Block diagram representation of first order systems, Laplace Transform, Inverse Laplace Transform	B.Sc(H) Electronics II	Core course-IX Signals and Systems
	Practicals	**Sem I:** 1. Write a program in Python to predict the traffic on a new mode of transport. 2. Write a program in Python to predict the class of user. 3. Write a program in Python to identify the tweets which are hate tweets and which are not. 4. Write a program in Python to predict the age of the actors.	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: 1. Convolution 2. Solution of Difference equation. 3. Step and impulse response	B.Sc(H) Electronics II	Core course-IX Signals and Systems
	Assignment	Sem I: Assignment based on Unit I and II Sem IV: Assignment based on Unit I and II	B.Sc(H) Electronics I B.Sc. Electronics II	GE I: Data Science Core course-IX Signals and Systems
	<u>Mid Term Test</u>	Sem I: Based on Unit I and II	B.Sc(H) Electronics I	GE I: Data Science
March	Theory	**Sem I:** Overview of Deep Learning and Revision	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: Properties of the Laplace Transform, Laplace Transform Pairs, Laplace Transform for signals, Laplace Transform Methods in Circuit Analysis, Impulse and Step response of RL, RC and RLC circuits. Continuous-Time periodic signals, Convergence of the Fourier series, Properties of continuousTime Fourier series, Discrete-Time period	B.Sc(H) Electronics II	Core course-IX Signals and Systems
	Practicals	**Sem I:** Mini project to predict the time taken to solve a problem given the current status of the user	B.Sc(H) Electronics I	GE I: Data Science

		Sem IV: 1. Laplace transform and Fourier transform of continuous time signals, generation of Fourier series through Simulink	B.Sc(H) Electronics II	Core course-IX Signals and Systems
	Mid Term Test	Sem IV: Based on Unit I, II and III	B.Sc(H) Electronics II	Core course-IX Signals and Systems
April	Theory	Sem IV: Properties of Discrete-Time Fourier series. Frequency-Selective filters, Simple RC highpass and lowpass filters Fourier Transform: Aperiodic signals, Periodic signals, Properties of Continuous-time Fourier transform, Convolution and Multiplication Properties, Properties of Fourier transform and basic Fourier transform Pairs	B.Sc(H) Electronics II	Core course-IX Signals and Systems
	Practicals	**Sem IV:** Using Simulink for designing systems through transfer function. 2. Design of Low pass, high pass, band pass filters and studying the frequency response.	B.Sc(H) Electronics II	Core course-IX Signals and Systems

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

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

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

Month		Topics	Course	Paper Code/Name
APRIL	**Theory**	Unit-1: Introduction to Semiconductor Materials, Crystal Structure, Planes and Miller Indices, Energy Band in Solids, Concept of Effective Mass, Density of States, Carrier Concentration at Normal Equilibrium in Intrinsic Semiconductors, Derivation of Fermi Level for Intrinsic & Extrinsic Semiconductors, Donors, Acceptors, Dependence of Fermi Level on Temperature and Doping Concentration, Temperature Dependence of Carrier Concentrations. Carrier Transport Phenomena: Carrier Drift, Mobility, Resistivity, Hall Effect, Diffusion Process, Einstein Relation, Current Density Equation, Carrier Injection, Generation And Recombination Processes, Continuity Equation.	B.Sc.(Hons) Electronics, Sem II	Core-Course-III/ Semiconductor Devices
	Practicals	1. Study of the I-V Characteristics of Diode – Ordinary and Zener Diode. 2. Study of the I-V Characteristics of the CE configuration of BJT and obtain ri, ro, β. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths To measure the resistivity of a Ge crystal with temperature by Four–Probe method from room temperature to 200 ^{0}C. To determine study the variation of Thermo-emf of a Thermocouple with difference of temperature of its two junctions using a Null Method. And also calibrate the Thermocouple in a specified temperature range.	B.Sc.(Hons) Electronics, Sem II B.Sc.(Hons) Electronics, Sem II	Core-Course-III Lab/ Semiconductor Devices Core-Course-IV Lab/Applied Physics
MAY	**Theory**	Unit II: Formation of Depletion Layer, Space Charge at a Junction, Derivation of Electrostatic Potential Difference at Thermal Equilibrium, Depletion Width and Depletion Capacitance of an Abrupt Junction. Concept of Linearly Graded Junction, Derivation of Diode Equation and I-V Characteristics. Zener and Avalanche Junction	B.Sc.(Hons) Electronics, Sem II	Core-Course-III/ Semiconductor Devices

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		Breakdown Mechanism. Tunnel diode, varactor diode, solar cell: circuit symbol, characteristics, applications		
	Practicals	3. Study of the I-V Characteristics of the Common Base Configuration of BJT and obtain ri, ro, α. 4. Study of the I-V Characteristics of the Common Collector Configuration of BJT and obtain voltage gain, ri, ro. 5. Study of the I-V Characteristics of the UJT. Measurement of susceptibility of paramagnetic solution (Quinck`s Tube Method) To determine Young‘s modulus of a wire by optical lever method. To determine the value of Boltzmann Constant by studying forward characteristics of diode.	B.Sc.(Hons) Electronics, Sem II B.Sc.(Hons) Electronics, Sem II	Core-Course-III Lab/ Semiconductor Devices Core-Course-IV Lab/ Applied Physics
JUNE	**Theory**	Unit III: PNP and NPN Transistors, Basic Transistor Action, Emitter Efficiency, Base Transport Factor, Current Gain, Energy Band Diagram of Transistor in Thermal Equilibrium, Quantitative Analysis of Static Characteristics (Minority Carrier Distribution and Terminal Currents), Unit III: Base-Width Modulation, Modes of operation, Input and Output Characteristics of CB, CE and CC Configurations. Metal Semiconductor Junctions: Ohmic and Rectifying Contacts. Unit IV: **Field Effect Transistors:** JFET, Construction, Idea of Channel Formation, Pinch-Off and Saturation Voltage, Current-Voltage Output Characteristics. MOSFET, types of MOSFETs, Circuit symbols,	B.Sc.(Hons) Electronics, Sem II	Core-Course-III/ Semiconductor Devices
	Practicals	6. Study of the I-V Characteristics of the SCR. 7. Study of the I-V Characteristics of JFET. 8. Study of the I-V Characteristics of MOSFET. To determine the modulus of rigidity of a wire by Maxwell‘s needle. To determine the elastic constants of a wire by Searle‘s method.	B.Sc.(Hons) Electronics, Sem II B.Sc.(Hons) Electronics, Sem II	Core-Course-III Lab/ Semiconductor Devices Core-Course-IV Lab/Applied Physics
	Assignment	Assignment: Questions based on topics covered.	B.Sc.(Hons) Electronics, Sem II	Core-Course-III/ Semiconductor Devices
	Tutorials	NA	NA	NA
	Mid Term Test	Test: As per the covered topics.		
JULY	**Theory**	UNIT IV: Working and Characteristic curves of Depletion type MOSFET (both N channel and P	B.Sc.(Hons) Electronics,	Core-Course-III/ Semiconductor

		Channel) and Enhancement type MOSFET (both N channel and P channel). Complimentary MOS (CMOS). **Power Devices:** UJT: Basic construction and working, Equivalent circuit, intrinsic Standoff Ratio, Characteristics and relaxation oscillator-expression. SCR: Construction, Working and Characteristics, Triac, Diac, IGBT, MESFET, Circuit symbols, Basic constructional features, Operation and Applications.	Sem II	Devices
	Practicals	9. Study of Characteristics of Solar Cell 10. Study of Hall Effect. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. To determine the Coefficient of Thermal Conductivity of Cu by Searle‟s Apparatus	B.Sc.(Hons) Electronics, Sem II B.Sc.(Hons) Electronics, Sem II	Core-Course-III Lab/ Semiconductor Devices Core-Course-IV Lab/ Applied Physics

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

December-April 2021-22

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Name of the Faculty: Ms. Hina Yadav

Department: Electronics **Semester: I/IV**

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

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

Month		Topics	Course	Paper Code/Name
December	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, Operators(Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bit wise operator, Increment or Decrement operator)	B.Sc(H) Electronics I	GE I: Data Science
	Practicals	**Sem I:** Python programs on basic data types and built in functions, operators	B.Sc(H) Electronics I	GE I: Data Science
January	Theory	**Sem I:** Iteration and Recursion: Conditional execution, String as a compound data type, Length, Traversal and the for loop, String slices, String comparison, A find function, Looping and counting, List values, Accessing elements, List length, List membership, Lists and for loops, List operations, List deletion. Cloning lists, Nested lists, Tuples and dictionary Object Oriented Programming: Introduction to Classes, Objects and Methods	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: Overview of Python programming, Concept of AI, history, current status, scope, agents, environments, Problem Formulations, Review of tree and graph structures, State space representation, Search graph and Search tree.	B.Sc(H) Electronics IV	SEC: Artificial Intelligence
	Practicals	**Sem I:** 1. Python programs on Lists, Tuples and dictionaries. 2. Write a program in Python to predict the class of the flower based on available attributes. 3. Write a program in Python to predict if a loan will get approved or not.	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: 1. Python programs on Lists, Tuples and dictionaries and standard libraries. 2. Write a program in Python to solve 8 Queens problem	B.Sc(H) Electronics IV	SEC: Artificial Intelligence

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February	Theory	**Sem I:** Standard Libraries, Toolkits using Python: Matplotlib, NumPy, Scikit-learn, NLTK; Visualizing Data: Bar Charts, Line Charts, Scatterplots; Working with data: Reading Files, Scraping the Web Using APIs	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: Search Algorithms: Random search, Search with closed and open list, Depth first and Breadth first search, Heuristic search, Best first search, A* algorithm, Game Search. Probabilistic Reasoning, Bayesian Networks- representation, construction and inference	B.Sc(H) Electronics IV	SEC: Artificial Intelligence
	Practicals	**Sem I:** 1. Write a program in Python to predict the traffic on a new mode of transport. 2. Write a program in Python to predict the class of user. 3. Write a program in Python to indentify the tweets which are hate tweets and which are not. 4. Write a program in Python to predict the age of the actors.	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: 1. Write a program to conduct uninformed and informed search. 2. Write a program to conduct game search. 3. Write a program to construct a Bayesian network from given data	B.Sc(H) Electronics IV	SEC: Artificial Intelligence
March	Theory	**Sem I:** Cleaning and Munging, Manipulating Data, Rescaling, Dimensionality Reduction	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: Hidden Markov model, Markov Decision process: MDP formulation, utility theory, utility functions, value iteration, policy iteration and partially observable MDPs. Reinforcement Learning: Passive reinforcement learning	B.Sc(H) Electronics IV	SEC: Artificial Intelligence
	Practicals	**Sem I:** Mini project to predict the time taken to solve a problem given the current status of the user	B.Sc(H) Electronics I	GE I: Data Science
		Sem IV: 1. Write a program to infer from the Bayesian network. 2. Write a program to run value and policy iteration in a grid world. 3. Write a program to do reinforcement learning in a grid world.	B.Sc(H) Electronics IV	SEC: Artificial Intelligence
April	Theory	**Sem IV:** direct utility estimation, adaptive dynamic programming, temporal difference learning, active reinforcement learning- Q learning.	B.Sc(H) Electronics IV	SEC: Artificial Intelligence
	Practicals	**Sem IV:** Mini Project work.	B.Sc(H) Electronics IV	SEC: Artificial Intelligence

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SEMESTER WISE TEACHING PLAN

EVEN SEMESTER 2021-22

SRI VENKATESWARA COLLEGE

Name of the Faculty: NIKHIL YADAV

Department: ENGLISH

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
APRIL	**Theory**	Introduction to the Rise of the Novel, Novel and its conventions	B.A.(H) English II yr.	British Literature: 18th Century
		Introduction to Psychoanalysis, the Birth and Development, Key Terms of Psychoanalytic Theory	B.A.(H) English III yr	Literary Criticism and Theory
		Introduction to Cinema Studies	B.A.(H) English III yr	Literature and Cinema
		Introduction to Cultural Diversity and Linguistic Plurality in India	SEM IV	GE
		Started with Syllabus Readings	BA Prog I	MIL English A
		Introduction to the Victorian Novel, Women and the Novel Form	BA Prog II	English Discipline

MAY	**Theory**	Beginning Reading of Joseph Andrews, Book I	B.A.(H) English Iiyr.	British Literature: 18th Century
		Readings from prescribed Passages from Freud's Uncanny	B.A.(H) English IIIyr	Literary Criticism and Theory
		Begin Readings from the Prescribed Passages for James Monaco	B.A.(H) English IIIyr	Literature and Cinema
		Continue Readings from Section I, Introduction to Literary Diversity and Cultural Plurality in India	SEM IV	GE
		Reading Journalistic Prose	BA Prog I	MIL English A
		Started Reading Charlotte Bronte's Jane Eyre	BA Prog II	English Discipline
JUNE	**Theory**	BookI, II& III- Joseph Andrews	B.A.(H) English IIyr	British Literature: 18th Century
		Concluding Freud, Beginning with prescribed passages from Lacan	B.A.(H) English IIIyr	Literary Criticism and Theory
		Readings from James Monaco continued, Literary Terms and Application to Cinema Studies	B.A.(H) English IIIyr	Literature and Cinema
		Section II, Linguistic Plurality and Cultural Diversities in India	Sem IV	GE
		Readings from Literature and everyday life, Journalistic Prose continued	BA Prog I	MIL English A

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		Introduction to Gothic genre, Continued Reading of Charlotte Bronte's Jane Eyre	BA Prog II	English Discipline
JULY	**Theory**	Book IV and Conclusion to Joseph Andrews, Key themes and Possible questions from Joseph Andrews. Beginning with Introduction to late Restoration Drama and Sentimental Comedy	B.A.(H) English IIyr	British Literature: 18th Century
		Continuing with Lacan, Early Lacan and the Mirror Stage	B.A.(H) English IIIyr	Literary Criticism and Theory
		Continuing James Monaco, Cinematic Language	B.A.(H) English IIIyr	Literature and Cinema
		Continuing with Literary Diversity and Cultural Plurality, Section II, Sufi Writings	Semester IV	GE
	Mid Term Test	From Psychoanalytic Theory	B.A.(H) English III yr	Literary Criticism and Theory
		Concluding Journalistic Prose and Beginning with introduction to short story, genre and themes	BA Prog I	MIL English A
		Continuing with Charlotte Bronte's Jane Eyre, Female Bildungsroman	BA Prog II	English Discipline
AUGUST	**Theory:** **Assignment**	Continuing Reading of Congreve "The Way of the World"	B.A.(H) English II yr	British Literature: 18th Century
		Concluding Lacan and Starting with Kristeva ' Revolution in Poetic Language'	B.A.(H) English IIIyr	Literary Criticism and Theory
		Conclusion and Overview of James Monaco "The Language of Films: Signs and Syntax"	B.A.(H) English IIIyr	Literature and Cinema

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		Concluding remarks on Section I & II, Literary Diversity and Cultural Plurality in India	SEM IV	GE
		Concluding Short Story Unit and Overview of the term	BA Prog I	MIL English A
		Concluding Reading of Jane Eyre, Key Themes, Characters, Plot and Overview	BA Prog II	English Discipline

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SEMESTER WISE TEACHING PLAN (2021-2022)

SRI VENKATESWARA COLLEGE

Name of the Faculty: RUPLEENA BOSE **Department: ENGLISH**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introduction to AECC	BA Eng Sem I	AECC
		Prescribed Readings	BA Prog DISC BA P Sem IV	ENG DISC TEXT MIL
		Introduction to Film Studies	BA Hons Eng SEM 6	Literature and Cinema

		Individual and Society	BA Hons SEM 4	SEC
	Tutorials	Discussion on Adaptation Writing and Grammer Writng an	BA ENG SEM 6 Bcom Sem 1	DSC
FEBRUARY	**Theory:**	Themes and Contexts Partition Indiv. and Society Stories	BA Hons Eng Sem 6 BA Hons Eng Sem 6	DSC SEC
		AECC ENG DISC- Chap 2	BA Hons Eng I BA PROG	AECC
		Shakespeare and Cinema: Maqbool	BA Hons Eng Sem 6	Literature and Cinema
	Tutorials:	Shakespeare and Cinema -Macbeth adaptations	BA ENG Sem 6	DSC

	<u>Assignment :</u>	Adaptations of Shakespeare and Dialogue in Maqbool	BA ENG Sem 6	Lit and Cinema
MARCH	**Theory:**	Bombay Cinema and Maqbool	BA Hons Eng Sem 6	DSC
		Arjun the Text- Close reading	BA Sem 6	DSC 5
		AECC – Speaking skills	BA Hons Sem 1	AECC

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		Indiv and Society-Global Context	B A hons Sem 4	SEC
	Tutorials:	Maqbool and New cinema	BA ENG Sem 6	DSC
	TUT	Discussion on Writing	BCOM PROG	ENG
APRIL	**Theory:**	Maqbool and Macbeth East Pak War and Arjun	BA Hons Eng Sem 6 BA Hons Eng Sem 6	DSC DSC
		Post Colonial Lit: Short Stories Prescribed Readings Continued	BA Eng I BA Prog IV	
		Language of Cinema: Shakespeare Adaptations GE- Intro to Disability Studies	BA Hons Eng Sem 6 BA Hons Sem 4	Literature and Cinema GE
	Tutorials:	AECC	BA Hons Electronics	Book Review

MAY	**Theory:**	Short Stories	BA Hons English I BA Hons English II	Indian Writing
		AECC -Interview	BA History	AECC
		AECC –Dialogue and Monologue	BA Socio	AECC
	GE:	Disability in Lit. GE	BA hons Sem 4	GE
	Tutorials:	Monologue / Dialogue	BA Electronics	AECC

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JUNE	Theory:	Short Stories	BA Hons English I BA Hons English II	Indian Writing
		AECC –Public Speech	BA History	AECC
		AECC –GD	BA Socio	AECC
		GE- Disability and Autobiography	Ba hons	GE
	Tutorials:	English Book review	BA Eng	MIL B

JULY	Theory:	Short Stories	BA Hons English I BA Hons English II	Indian Writing
		AECC –Personality and CV	BA History	AECC
		AECC –CV writing	BA Socio	AECC
		GE – Disability and Tagore	BA Hons	GE
	Tutorials:	English Book review	BA Eng	MIL B

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SEMESTER WISE TEACHING PLAN

EVEN SEMESTER 2020-21

SRI VENKATESWARA COLLEGE

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Name of the Faculty: DEBARATI SEN

Department: ENGLISH

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
APRIL	**Theory**	Introduction to Middle English & Chaucer and his times.	B.A.(H) English I yr.	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Introduction to Shakespeare	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Introduction to Sonnets and Courtly Romance	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Introduction	B.Sc (H) Bio-Chemistry, B.Sc (H) Bio-Sciences,+ B.Sc (H) Botany, B.Sc (H) Physics, B.A. (H) Political Sciences	AECC
MAY	**Theory**	Introduction to the literary conventions in the times of Chaucer. Introduction to The Canterbury Times	B.A.(H) English I yr.	British Poetry and Drama:14 to 17th Centuries. (Paper 4)

		Introduction to Shakespearean Comedy & Twelfth Night	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Introduction to Wyatt & Poems	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Readings 1 & 2	B.Sc (H) Bio-Chemistry, B.Sc (H) Bio-Sciences,+ B.Sc (H) Botany, B.Sc (H) Physics, B.A. (H) Political Sciences	AECC
JUNE	**Theory**	Prologue and Tale from The Canterbury Tales	B.A.(H) English I yr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Act1-3 Twelft Night	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Introduction to Edmund Spenser & Poems	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Readings 3 & 4	B.Sc (H) Bio-Chemistry, B.Sc (H) Bio-Sciences,+ B.Sc (H) Botany, B.Sc (H) Physics, B.A. (H) Political Sciences	AECC
	Assignment	Chaucer & Shakespeare & Sonnets	B.A.(H) English I yr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)

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			B.Sc (H) Bio-Chemistry, B.Sc (H) Botany	AECC
JULY	**Theory**	Literary Criticism: The Canterbury Tales	B.A.(H) English I yr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Act 4 -5 Twelft Night	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Introduction to John Donne & Poems	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Reading 5	B.Sc (H) Bio-Chemistry, B.Sc (H) Bio-Sciences,+ B.Sc (H) Botany, B.Sc (H) Physics, B.A. (H) Political Sciences	AECC
	Mid Term Test	Chaucer & Shakespeare & Sonnets	B.A.(H) English I yr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
			B.Sc (H) Bio-Chemistry, B.Sc (H) Botany	AECC
AUGUST	**Theory:**	Literary Criticism: The Canterbury Tales contd.	B.A.(H) English I yr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)

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		Concluding remarks on Twelft Night	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Overview of the Sonnet Tradition	B.A.(H) English Iyr	British Poetry and Drama:14 to 17th Centuries. (Paper 4)
		Concluding remarks	B.Sc (H) Bio-Chemistry, B.Sc (H) Bio-Sciences,+ B.Sc (H) Botany, B.Sc (H) Physics, B.A. (H) Political Sciences	AECC

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

2021-22

Name of the Faculty: Dr. Ritika Singh **Department: English**

Semester : II/IV/VI

Jan – May 2022

		Topics	Course	Paper Code/Name
January	**Theory**	Introduction to Romanticism ● Romanticism in Painting and Poetry ● Philosophical beginnings of the movement ● Age of Enlightenment	**B.A English (H) Sem IV**	**Paper 9: British Romantic Literature**

		vs Romantic Era		
		Introduction to Literary Theory ● Theory as praxis ● Practicing theory ● 'Literary' theory	**B.A English (H) Sem VI**	**DSE: Literary Theory and Criticism**
		Introduction to Partition Literature ● Partition, history, memory ● Literature as Mneumohistory ● Definitions and canon	**B.A English (H) Sem VI**	**DSE: Partition Literature**
February	**Theory**	J. J. Rousseau 'Discourse on the Origin of Inequality' – Context, overview, reading	**B.A English (H) Sem IV**	**Paper 9: British Romantic Literature**
		Deconstruction theory Poststructuralism and Derrida	**B.A English (H) Sem VI**	**DSE: Literary Theory and Criticism**
		Partition Memoirs Self/Text and history	**B.A English (H) Sem VI**	**DSE: Partition Literature**
March	**Theory**	Immanuel Kant, 'Analytic of the Sublime' – Context, overview, reading	**B.A English (H) Sem IV**	**Paper 9: British Romantic Literature**

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		Close reading of "Structure, Sign, and Play"	**B.A English (H) Sem VI**	**DSE: Literary Theory and Criticism**
		Close reading of memoirs	**B.A English (H) Sem VI**	**DSE: Partition Literature**
April	**Theory**	Wordsworth and Lyrical Ballads Gilpin and picturesque travel	**B.A English (H) Sem IV**	**Paper 9: British Romantic Literature**
		Foucault and poststructuralism Close reading of "Truth and Power"	**B.A English (H) Sem VI**	**DSE: Literary Theory and Criticism**
		Background readings and discussion	**B.A English (H) Sem VI**	**DSE: Partition Literature**
May	**Theory**	Critical material, discussions	**B.A English (H) Sem IV**	**Paper 9: British Romantic Literature**
		Critical material, discussions	**B.A English (H) Sem VI**	**DSE: Literary Theory and Criticism**
		Critical material, discussions	**B.A**	**DSE:**

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			English (H) Sem VI	**Partition Literature**

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Dhaula Kuan, New Delhi-110021

SEMESTER WISE TEACHING PLAN (2021-2022)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Suniti Madaan **Department: English**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Pico Della Mirandola	SEMESTER II	Paper 4: British Poetry And Drama: 14th To 17th Centuries Background Readings.
		Introduction to Romantic Poetry Blake Poems	SEMESTER IV	Paper 9: British Romantic Literature- Blake & Smith

		Wordsworth, Lines Composed a few Miles above Tintern Abbey	SEMESTER IV	Paper 9: British Romantic Literature- Wordsworth & Coleridge
		Introduction to Post war theatre Fo, Act 1	SEMESTER VI	Paper 13: Modern European Drama- Dario Fo & Rame
		Introduction to Poco African context Trial of Dedan Kimathi	SEMESTER VI	Paper 14: Postcolonial Literatures- Ngugi.
		Introduction to Literature	SEMESTER IV	GE: Individual and Society
		Introduction to Communication. Basics of Communication	SEMESTER II B.Sc. (Hons) Electronics	AECC
		Introduction to Communication. Basics of Communication	SEMESTER II B.Com. (Hons) A	AECC
		Introduction to Communication. Basics of Communication	SEMESTER II B.Com. (H) B	AECC
	Tutorials			Paper 9: British Romantic Literature- Blake & Smith

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FEBRUARY	Theory:	Erasmus *In Praise of Folly*	SEMESTER II	Paper 4: British Poetry And Drama: 14th To 17th Centuries: Background Readings.
		Introduction to *Songs of Innocence and Experience* Lamb Tiger	SEMESTER IV	Paper 9: British Romantic Literature- Blake & Smith
		Wordsworth, Ode Intimations to Immortality	SEMESTER IV	Paper 9: British Romantic Literature- Wordsworth & Coleridge
		Can't Pay Won't Pay	SEMESTER VI	Paper 13: Modern European Drama- Dario Fo & Rame
		The Trial of Dedan Kimathi	SEMESTER VI	Paper 14: Postcolonial Literatures- Ngugi.
		Roger Mais, _Blackout'	SEMESTER IV	GE: Individual and Society
		Reading Comprehension	SEMESTER II B.Sc. (Hons) Electronics	AECC
		Reading Comprehension	SEMESTER II B.Com. (Hons) A	AECC

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		Reading Comprehension	SEMESTER II B.Com. (H) B	AECC
	Tutorial	Writing Practices Doubt Clearing	SEMESTER IV	Paper 9: British Romantic

	<u>Assignment :</u>			
MARCH	Theory:	Machiavelli, *The Prince*	SEMESTER II	Paper 4: British Poetry And Drama: 14th To 17th Centuries Background Readings.
		Chimney Sweeper Poems	SEMESTER IV	Paper 9: British Romantic Literature- Blake & Smith
		Introduction to Coleridge Kubla Khan	SEMESTER IV	Paper 9: British Romantic Literature- Wordsworth & Coleridge
		Can't Pay Won't Pay	SEMESTER VI	Paper 13: Modern European Drama- Dario Fo & Rame

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		Trial of Dedan Kimathi	SEMESTER VI	Paper 14: Postcolonial Literatures- Ngugi.
		Wole Soyinka, _Telephone Conversation‘	SEMESTER IV	GE: Individual and Society
		Writing Letters and Report	SEMESTER II B.Sc. (Hons) Electronics	AECC
		Writing Letters and Report	SEMESTER II B.Com. (Hons) A	AECC
		Writing Letters and Report	SEMESTER II B.Com. (H) B	AECC
	Tutorials:	Writing Practice Doubt Clearance		Paper 9: British Romantic Literature
	Test			
APRIL	Theory:	Calvin, “Predestination and Free Will”	SEMESTER II	Paper 4: British Poetry And Drama: 14th To 17th Centuries Background Readings.

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		London Little Black Boy	SEMESTER IV	Paper 9: British Romantic Literature- Blake & Smith
		Dejection: An Ode	SEMESTER IV	Paper 9: British Romantic Literature- Wordsworth & Coleridge
		Can't Pay Won't Pay	SEMESTER VI	Paper 13: Modern European Drama- Dario Fo & Rame
		The Trial of Dedan Kimathi Concluded Animal's People	SEMESTER VI	Paper 14: Postcolonial Literatures- Ngugi, Sinha.
		Langston Hughes, Harlem	SEMESTER IV	GE: Individual and Society
		Interview and Dialogue	SEMESTER II B.Sc. (Hons) Electronics	AECC
		Interview and Dialogue	SEMESTER II B.Com. (Hons) A	AECC
		Interview and Dialogue	SEMESTER II B.Com. (H) B	AECC

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	Tutorials:	Writing Practice Doubt Clearance		Paper 9: British Romantic Literature

MAY	Theory:	Montaigne, 'Of a Monstrous Child'	SEMESTER II	Paper 4: British Poetry And Drama: 14th To 17th Centuries Background Readings.
		Charlotte Smith To Melancholy Nightingale	SEMESTER IV	Paper 9: British Romantic Literature- Blake & Smith
		Dejection: An Ode contd. Discussion of Previous Year Papers	SEMESTER IV	Paper 9: British Romantic Literature- Wordsworth & Coleridge
		Rape Franca Rame Discussion of QP	SEMESTER VI	Paper 13: Modern European Drama- Dario Fo & Rame
		Animal's People Discussion of QP	SEMESTER VI	Paper 14: Postcolonial Literatures- Ngugi, Sinha
		Maya Angelou, 'Still I Rise'	SEMESTER IV	GE: Individual and Society

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		Discussion of QP	SEMESTER II B.Sc. (Hons) Electronics	AECC
		Discussion of QP	SEMESTER II B.Com. (Hons) A	AECC
		Discussion of QP	SEMESTER II B.Com. (H) B	AECC
	Tutorials:	Writing Practice Doubt Clearance		Paper 9: British Romantic Literature

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SEMESTER WISE TEACHING PLAN (2021-2022)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Aswathy Rajani **Department: English**

Semester: II/IV/VI

FEBRUARY	**Theory:**	a. Introduction to Kamala Das; Critical reading, analysis and interpretation of 'My Grandmother's House' b. Introduction to Ezekiel; Critical reading, analysis and interpretation of 'Enterprise' *	B.A(H) English: Sem II	Indian Writing in English
		a. Introduction to Samuel Johnson: biography, overview of important works, critical reception. *	B.A(H) English: Sem IV	British Literature: 18th Century
		a. Lord Byron: Introduction, Biography and major works. b. 'Childe Harold': canto III (verses 36-45) *	B.A(H) English: Sem IV	British Romantic Literature
		a. Introduction to Modern European Drama *	B.A(H) English: Sem VI	Modern European Drama

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	Practicals:	NA	NA	NA
	Tutorials:	a. Thematic discussion on Henrik Ibsen's *Ghosts*	B.A(H) English: Sem VI	Modern European Drama (Paper 13)

	<u>Assignment :</u>	Themes or motifs in the prescribed plays that are germane to the current times.	B.A(H) English: Sem VI ,	Modern European Drama (Paper 13)

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MARCH	**Theory:**	a. Introduction to Robin S. Ngangom; Critical readings, analysis and interpretation of 'A Poem for My Mother' * a. Samuel Johnson's 'London': Close reading, analysis, critical interpretation. * a. Percy B. Shelley: Introduction, biography and prominent works; * a. Introduction to Brecht: Biography, Works, Epic Theatre b. Brecht's *The Good Woman of Szechuan*: Scene 1 and 2	B.A(H) English: Sem II B.A(H) English: Sem IV B.A(H) English: Sem IV B.A(H) English: Sem VI	Indian Writing in English British Literature: 18th Century British Romantic Literature Modern European Drama
	Practicals:	NA	MA	NA
	Tutorials:	a. Thematic discussion on Dario Fo's *Can't Pay, Won't Pay*	B.A(H) English: Sem VI	Modern European Drama

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	Test	NA	NA	NA
APRIL	**Theory:**	a. Introduction to Meena Kandasamy; Critical reading, analysis and interpretation of 'Touch' b. Introduction to Modern Indian Theatre; Biography of Mahesh Dattani; Major Works *	B.A(H) English: Sem II B.A(H) English: Sem IV	Indian Writing in English British Literature: 18th Century
		a. Introduction to Thomas Gray: Biography, overview of important works and critical reception *	B.A(H) English: Sem IV	British Romantic Literature
		a. Shelley: 'Ode to the West Wind', 'Ozymandias', 'Hymn to Intellectual Beauty: close reading, analysis and critical interpretation. b. John Keats: Introduction, biography, overview of notable works. *	B.A(H) English: Sem VI	Modern European Drama
		a. Brecht's *The Good Woman of Szechuan*: Scene 3, 4,5 and 6		

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	Practicals:	NA	NA	NA
	Tutorials:	a. Thematic Discussion on Brecht's *The Good Woman od Szechuan*	B.A(H) English: Sem VI	Modern European Drama

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MAY	**Theory:**	a. Mahesh Dattani's *Tara*: Critical reading, analysis and interpretation. * a. Thomas Gray's 'Elegy Written in a Country Churchyard': Close reading, analysis and critical interpretation. * a. John Keats: 'Ode to a Nightingale', 'To Autumn', 'Ode on a Grecian Urn': close reading, analysis and critical interpretation. * a. Brecht's *The Good Woman of Szechuan*: Scene 7,8,9 and 10 b. Overview of critical essays on the play. Discussion on previous year question papers	B.A(H) English: Sem II B.A(H) English: Sem IV B.A(H) English: Sem IV B.A(H) English: Sem VI	Indian Writing in English British Literature: 18th Century British Romantic Literature Modern European Drama

	Practicals:	NA	NA	NA
	Tutorials:	a. Thematic discussion on Eugene Ionesco's *Rhinoceros*	B.A(H) English: Sem VI	Modern European Drama
MAY	**Theory:**	a. Discussion on Tara * a. Brecht's *The Good Woman of Szechuan*: Scene 7,8,9 and 10 b. Overview of critical essays on the play. Discussion on previous year question papers	B.A(H) English: Sem II B.A(H) English: Sem VI	Indian Writing in English Modern European Drama
	Practicals:	NA	NA	NA
	Tutorials:	a. Discussion on Franca Rame's *Rape*	B.A(H) English: Sem VI	Modern European Drama

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SRI VENKATESWARA COLLEGE

2021-22

Name of the Faculty: Aman Nawaz **Department: English**

Semester: VI

Jan-May

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Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Introduction to Literary Theory and its application to literature	**B.A English Honours Sem: VI**	**Paper D13. Literary Criticism and Theory-2**
	Practicals		-	-
	Tutorials	-	-	-
February	**Theory:**	a. Antonio Gramsci, "The Formation of the Intellectual" and "Hegemony and Separation of Powers" Discussion of Hegemony, Consent and Coersion		
	Practicals:	-		
	Tutorials:	Application of Hegemony and Consent in reading literature-		

March	**Theory:**	Gyorgy Lukacs "The Phenomenon of Reification" Discussion on Reification and commodity fetishism		

	Practicals:			
	Tutorials:	Application of commodity fetishism and reification in literary studies		
	<u>Assignment:</u>			
April	**Theory:**	Louis Althusser "Ideology and Ideological State Apparatuses"		
	Practicals:			
	Tutorials:	Thinking through different state apparatuses and the role of ideology		
	<u>Test</u>	Question on Gramsci, Althusser, and Lukacs		

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Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Introduction to Postcolonial Studies	**B.A English Honours Sem: VI**	**Paper 14: Postcolonial Literatures – Chinua Achebe**
	Practicals			
	Tutorials			
Feb	**Theory:**	Tracing postcolonial studies through Saidian frame and anticolonial struggles of postcolonial spaces		
	Practicals:			
March April	**Tutorials:**	Close reading of Chinua Achebe "Things Fall Apart" Background Essays and Previous Years Question papers discussions		
May		Doubt Clearing Sessions		

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Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Introduction to Caste and Literature	**B.A Prog**	**BA Prog GE: Individual and Society**
	Practicals			
	Tutorials			
Feb	**Theory:**	Caste and Class Joothan, Ambedkar, Phule, Premchand		
	Practicals:			
March	**Tutorials:**	Violence and War Reading Short Stories and Poems Race		

		Reading Short Stories and Poems With theories on race and critical race theory		
	Assignment	Reading representation of caste, and race in the literary		
April		Previous Year Question Papers and doubt clearing sessions		

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

2021-22

Name of the Faculty: Aman Nawaz **Department: English**

Semester: II

Jan-April

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Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Introduction to Indian Writings in English	**B.A English Honours Sem: II**	Paper 3: Indian Writing in English – Anita Desai
	Practicals		-	-
	Tutorials	Group discussions on language politics	-	-

February	**Theory:**	Reading language conflict post-independence with emphasis on Hindustani		
	Practicals:	-		
	Tutorials:	Group discussion to understand urdu hindi divide		
March	**Theory:**	Reading the novel In Custody PRINCIPAL Sri Venkateswara College Dhaula Kuan, New Delhi-110021		

	Practicals:			
	Tutorials:	Close reading of the novel		
	<u>Assignment:</u>			

April	**Theory:**	Close reading and background essays		
	Practicals:			
	Tutorials:	Movie screening Muhafiz and its analysis		
	<u>Test</u>	Question on Indian Writings in English		

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Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Introduction to anticolonial movement and the caste question	**B.A English Honours Sem: II**	Paper 3: Indian Writing in English – Background readings
	Practicals			
	Tutorials			
Feb	**Theory:**	Reading gaps and fissures in the nationalism movement viz a viz Annhilation of Caste		
	Practicals:			
March April	**Tutorials:**	Reading Meenakshi Mukherjee's Divided by a common Language Reading Bruce King essays on Indian Literature		
	Assignment			

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SEMESTER WISE TEACHING PLAN (2022)

SRI VENKATESWARA COLLEGE

Name of the Faculty: VIJAY PAL BALODIA

Semester : II/ IV/ VI

Department: English

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introduction to Theater of Absurd	B.A(H) English, Semester VI	Modern European Drama: IONESCO
		Introduction to background of Modern European Drama	B.A(H) English, Semester VI	Modern European Drama Background Readings
		Introduction to Partition Literature and Basti text	B.A(H) English, Semester VI	Partition Literature
		Introduction to Speaking Skills	B.Com (P) semester II	AECC
		Introduction to Fiction and ELTL	B. Com (P) SEM IV	ELTL
		Introduction to Gender	B.A(P) SEM VI	GE Individual and Society

	Tutorials	Doubts and Discussion session	B. Com (P) SEM IV	ELTL
FEBRUARY	**Theory:**	Textual Reading of the play	B.A(H) English, Semester VI	Modern European Drama: IONESCO

		Critical analysis of the texts	B.A(H) English, Semester VI	Modern European Drama Background Readings
		Textual Analysis and Discussion on some key terms related to the text	B.A(H) English, Semester VI	Partition Literature
		Practice for Speaking Skills	B.Com (P) semester II	AECC
		Textual Analysis and Discussion on some key terms related to the Fiction	B. Com (P) SEM IV	ELTL
		Introduction and Critical analysis of Shakespeare's Sister	B.A(P) SEM VI	GE Individual and Society

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	Tutorials:	Doubts and Discussion session	**B Com (P) Sem IV**	ELTL
MARCH	**Theory:**	Reading of Ionesco in his essays	B.A(H) English, Semester VI	Modern European Drama: IONESCO
		Relationship between Background reading texts and theater of absurd	B.A(H) English, Semester VI	Modern European Drama Background Readings
		Textual Analysis and Criticism	B.A(H) English, Semester VI	Partition Literature

		Speaking Skills: Group Discussion on Social Issues, Monologue through Image Prompts and Video Clips, Dialogues.	B.Com (P) semester II	AECC
		Class practice for fiction writing	B.A.(H) Hindi, I sem B.A. (Prog), I sem	ELTL

		Textual Analysis and Discussion of The Exercise Book, Girl, Breaking Out	B.A(P) SEM VI	GE Individual and Society
	Tutorials:	Doubts and Discussion session	B Com P Sem IV	ELTL

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APRIL		**Theory:**	Discussion of Ionesco's idea of absurdity in his plays		Modern European Drama: IONESCO
				B.A(H) English, Semester VI	
			Reading of texts	B.A(H) English, Semester VI	Modern European Drama Background Readings
			Textual Analysis and Criticism	B.A(H) English, Semester VI	Partition Literature
			Practice for speaking skills	B.Com (P) semester II	AECC
			Discussion of different ways of writing Fiction		ELTL
			Textual reading of the texts	B.A(P) SEM VI	
					GE Individual and Society
		Tutorials:			

			Doubts and Discussion session	BCom (P) Sem IV	ELTL
MAY		**Theory:**	Discussion of Last Year Question Papers	B.A(H) English, Semester VI	Modern European Drama: IONESCO
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	Discussion of Last Year Question Papers	B.A(H) English, Semester VI	Modern European Drama Background Readings
	Discussion of Last Year Question Papers	B.A(H) English, Semester VI	Partition Literature
	Discussion of Last Year Question Papers	B.Com (P) semester II	AECC
	Discussion of Last Year Question Papers	B Com (P) sem IV	c
	A Prayer for my daughter, Marriages are made, Yellow Fish,	B.A(P) SEM VI	GE Individual and Society

Tutorials:	Doubts and Discussion session	B Com (P) sem IV	B Com (P) sem IV

SEMESTER WISE TEACHING PLAN (2021-2022)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Ankita Kaushik **Department: English**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name

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JANUARY	**Theory**	Introduction to Elizabethan Period- History, Politics and Society and Religion	B.A. (H) English, II semester	Paper 4: British Poetry and Drama: 14th to 17th Century
		Introduction to Victorian Age and Literature	BA (H) English, IV Sem	Paper 10: British Lit: 19th Century
		Introduction to key terms in cultural studies	B.A. (H) English, VI semester	DSE 2, Paper 9: Literary Theory
		Introduction to Postcolonial Theory		Paper 14: Postcolonial Literatures
		Introduction to Gender and Gender Studies in India	B.A. (H), II semester	GE- Marginalities in Indian Writing
		Introduction to Gujarati Literature and History	B.A. (H), IV semester	GE- Reading Cultural Diversity and Literary Movements in India
		Introduction to Drama	B.A. (Prog), II semester	MIL- English A
		Introduction to Communication, its process and types.	B.A. (H) Sociology, II sem & B.A (H) Pol Sci, II sem	AECC
	Practicals			

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	Tutorials	Disability and its instances from daily lives Discussion and Doubts Session on topics covered in Lectures	B.A. (H), II sem B.A. (Prog), II sem	GE MIL-ENG A
FEBRUARY	**Theory:**	Renaissance Literature and Dramaturgy, Humanism Form of Novel Close Reading and analysis of Adorno Textual Analysis and Criticism of texts in Gender Unit Close Reading and Discussion of Sitanshu Yashaschandra Close Reading and Analysis of "Crossing the River". Types of Non-Verbal Communication through Analysis of instances in Unseen Passages	B.A. (H) English, II semester BA (H) English, IV Sem B.A. (H) English, VI semester B.A. (H), II semester B.A. (H), IV semester B.A. (Prog), II semester B.A. (H) Sociology, II sem & B.A (H) Pol Sci, II sem	Paper 4: British Poetry and Drama: 14th to 17th Century Paper 10: British Lit: 19th Century DSE 2, Paper 9: Literary Theory GE- Marginalities in Indian Writing GE- Reading Cultural Diversity and Literary Movements in India MIL- English A AECC

	Practicals:			
	Tutorials:	Discussion on Representation of Disability on Screen Discussion and Doubts Session on topics covered in Lectures	B.A. (H), II sem B.A. (Prog), II sem	GE MIL-ENG A

	<u>Assignment :</u>			

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MARCH	**Theory:**	Christopher Marlowe- Life and Works	B.A. (H) English, II semester	Paper 4: British Poetry and Drama: 14th to 17th Century
		Charlotte Bronte and Her works	BA(H) English, IV Sem	Paper 10: Brit Lit 19th Cent
		Close Reading and Analysis of Adorno and Introduction to Postmodernism	B.A. (H) English, VI semester	DSE 2, Paper 9: Literary Theory- Poststructuralism
		Textual Analysis and Criticism of units in Region	B.A. (H), II semester	GE- Marginalities in Indian Writing
		Sindhi Literature and Culture	B.A. (H), IV semester	GE- Reading Cultural Diversity and Literary Movements in India
		Introduction to Poetry	B.A. (Prog), II semester	MIL- English A
		Speaking Skills: Group Discussion on Social Issues, Monologue through Image Prompts and Video Clips, Dialogues.	B.A. (H) Sociology, II sem & B.A(H) Pol Sci, II sem	AECC
	Practicals:			

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	Tutorials:	Discussion on Representation of Disability on Screen Discussion and Doubts Session on topics covered in Lectures	B.A. (H), II sem B.A. (Prog), II sem	GE MIL-ENG A
	<u>Test</u>			
APRIL	**Theory:**	Close Reading, Analysis and Criticism- *Doctor Faustus* *Jane Eyre* Close Reading and Analysis of Jameson, Introduction to Bhabha Textual Analysis and Criticism of units in Region and Caste Close Reading and Discussion of Ali S. Asani Close reading and Analysis of "Caged Bird" & "Goodbye Party for Miss Pushpa TS" Writing Skills: Discussion of different kinds of Writing, Formal and Informal Language, Summary and Paraphrasing.	B.A. (H) English, II semester BA(H) English, IV Sem B.A. (H) English, VI semester B.A. (H), II semester B.A. (H), IV semester B.A. (Prog), II semester B.A. (H) Sociology, II sem & B.Com (H), II sem	Paper 4: British Poetry and Drama: 14th to 17th Century Paper 10: Brit Lit 19th Cent DSE 2, Paper 9: Literary Theory- Poststructuralism GE- Marginalities in Indian Writing GE- Reading Cultural Diversity and Literary Movements in India MIL- English A AECC

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	Practicals:			
	Tutorials:	Discussion and Doubts Session Discussion and Doubts Session	B.A. (H), II sem B.A. (Prog), II sem	GE MIL-ENG A

MAY	**Theory:**	Close Reading, Analysis and Criticism- *Doctor Faustus* Jane Eyre and Background Readings Close Reading and Analysis of Bhabha. Textual Analysis and Criticism of texts in unit on caste Last Year Question Papers Close reading and Analysis of “Last Lesson of the Afternoon” & “Once Upon A Time” Writing Skills: Letter and Report and Discussion of Last Year Question Papers	B.A. (H) English, II semester BA(H) English, IV sem B.A. (H) English, VI semester B.A. (H), II semester B.A. (H), IV semester B.A. (Prog), II semester B.A. (H) Sociology, II sem &	Paper 4: British Poetry and Drama: 14th to 17th Century Paper 10: Brit Lit 19th Cent DSE 2, Paper 9: Literary Theory GE- Marginalities in Indian Writing GE- Reading Cultural Diversity and Literary Movements in India MIL- English A AECC

			B.Com (H), II sem	
	Practicals:			
	Tutorials:	Discussion and Doubts Session Discussion and Doubts Session	B.A. (H), II sem B.A. (Prog), II sem	GE MIL-ENG A

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SEMESTER WISE TEACHING PLAN (2021-2022)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Nishant **Department: English**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name

JANUARY	Theory	Life of Jonathan Swift and Introduction to Gulliver's Travels	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
		Gender Unit- Reading Rabindranath Tagore and Virgina Woolf	BA (H) English Semester IV	SEC: Literature in Cross Cultural Encounters
		Introduction to Victorian themes in poetries of Tennyson, Browning and Rossetti	BA (Programme) Semester IV	English Discipline:
		Introduction to Theatre Unit	BA (Programme) Semester IV	MIL A: English Language Through Literature
		Introduction to Laura Mulvey	BA (H) English Semester VI	DSE 2: Literature and Cinema
	Tutorials	Discussions on forms of Satire	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
FEBRUARY	Theory	Book 3 of Gulliver's Travels: A Voyage to Laputa, Balnibarbi, Luggnagg, Glubbdubdrib and Japan	BA (H) English Semester IV	Paper 8: British Literature: 18th Century

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		Race Unit- Reading Roger Mais and Wole Soyinka	BA (H) English Semester IV	SEC: Literature in Cross Cultural Encounters
		Reading Tennyson's The Lady of Shalott and Browning's My Last Duchess	BA (Programme) Semester IV	English Discipline:
		Reading Badal Sircar's Beyond the Land of Hattamala	BA (Programme) Semester IV	MIL A: English Language Through Literature
		Reading Visual Pleasure and Narrative Cinema	BA (H) English Semester VI	DSE 2: Literature and Cinema
	Tutorial	Student presentations on politics of language in Swift's Gulliver's Travels	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
MARCH	Theory	Reading Book 4 of Gulliver's Travels: A Voyage to the Land of the Houyhnhnms	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
		Gender Unit- Reading Eunice De Souza and Margaret Atwood	BA (H) English Semester IV	SEC: Literature in Cross Cultural Encounters
		Reading poetries of Emily Dickinson and Thomas Hardy and	BA (Programme) Semester IV	English Discipline:

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		Reading Autobiography Unit- Steve Jobs and Kamla Das	BA (Programme) Semester IV	MIL A: English Language Through Literature
		Discussing Thelma and Louis and Margarita with a Straw	BA (H) English Semester VI	DSE 2: Literature and Cinema
	Tutorials:	Discussions on Jonathan Swift's misanthropy in Gulliver's Travels	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
	Assignment	2 questions with internal choice on Jonathan Swift's critique of empirical knowledge and his misogynist take in Gulliver's Travels.	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
APRIL	Theory	Final Discussions on Gulliver's Travels and Revision	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
		Reading Langston Hughes and Maya Angelou and discussing themes and issues related to race and gender	BA (H) English Semester IV	SEC: Literature in Cross Cultural Encounters
		Reading and discussion on essays pertaining to Victorian poetry	BA (Programme) Semester IV	English Discipline:

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		Academic writing exercises with students	BA (Programme) Semester IV	MIL A: English Language Through Literature
		Discussions on Freud's ideas of scopophilia and Mulvey's reinterpretation of it in relation to cinema and gender based power dynamics	BA (H) English Semester VI	DSE 2: Literature and Cinema
	Tutorials	Individual assignment discussions along with remarks.	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
	Test	2 questions with internal choice on Menippean satire in Swift and Swift's criticism of Britain's colonial expansion.	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
MAY	Theory	Revision and previous years' question papers' discussion.	BA (H) English Semester IV	Paper 8: British Literature: 18th Century
		Revision and previous years' question papers' discussion.	BA (H) English Semester IV	SEC: Literature in Cross Cultural Encounters

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		Revision and previous years' question papers' discussion.	BA (Programme) Semester IV	English Discipline:
		Revision and previous years' question papers' discussion.	BA (Programme) Semester IV	MIL A: English Language Through Literature
		Revision and previous years' question papers' discussion.	BA (H) English Semester VI	DSE 2: Literature and Cinema
	Tutorials	NA	NA	NA

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SEMESTER WISE TEACHING PLAN

EVEN SEMESTER 2022

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. N. Subhadra Chari

Department: ENGLISH

Semester: II/IV/VI

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Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Introduction to Unit 4: Short Stories Critical Analysis: Bessie Head's The Collector of Treasures	B.A.(H) English III year	Paper 14: Postcolonial Literatures Paper Code:12031602
		Introduction to Unit 5	B.A. (P), II year B.Com. (P), II yr	English Language Through Literature Paper Code: 62031901
FEBRUARY	Theory	Unit 4: Short Stories Critical Analysis: Ama Ata Aidoo's The Girl Who Can & M. M. Vinodini's The Parable of the Lost Daughter	B.A.(H) English III year	Paper 14: Postcolonial Literatures Paper Code:12031602
		Unit 5 Writing your own academic essay / paper for the classroom	B.A. (P), II year B.Com. (P), II year	English Language Through Literature Paper Code: 62031901
MARCH	Theory	Unit 4 Poems	B.A.(H) English	

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		a) Pablo Neruda (i)Tonight I can write the saddest Lines '(ii) The Way Spain Was' b) Derek Walcott: 'Goats and Monkeys' 'Names'	III year	Paper 14: Postcolonial Literatures Paper Code:12031602
		Unit 5 Academic Writings	B.A. (P), II year B.Com. (P), II year	English Language Through Literature Paper Code: 62031901
APRIL	Theory	Critical Analysis: Mamang Dai Poems (i) Small Towns and the River '(ii) The Voice of the Mountain Revision	B.A.(H) English III year	Paper 14: Postcolonial Literatures Paper Code:12031602
		Unit 5 Concluded Revision	B.A. (P), II year B.Com. (P), II year	English Language Through Literature Paper Code: 62031901
		Introduction to Modern Indian Literature Short Story Critical Analysis: Premchand's The Holy Panchayat Introduction & Readings: 1	B.A (P), I yr B.Com.(H) I yr. B.Com.(P) I yr. B.Sc. (H). Bio-Sci & Zoology I yr B.Sc. (H) Electronics I year	Selections (Poems, Short Stories) from Modern Indian Literature Paper Code: 62031201 Paper Name: English A-AECC (Ability Enhancement Course Compulsory)

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				Paper Code: 72032801
MAY	Theory	Short Story Critical Analysis: Saadat Hasan Manto's Toba Tek Singh Readings 2 &3	B.A (P), I yr B.Com.(H) I yr. B.Com.(P) I yr. B.Sc. (H). Bio-Sci & Zoology I yr B.Sc. (H) Electronics I year	Selections (Poems, Short Stories) from Modern Indian Literature Paper Code: 62031201 English A-AECC Paper Code: 72032801 AECC
JUNE	Theory	Critical Analysis: Nissim Ezekiel's Enterprise Readings 4 & 5	B.A (P), I yr B.Com.(H) I yr. B.Com.(P) I yr. B.Sc. (H). Bio-Sci & Zoology I yr B.Sc. (H) Electronics I year	Selections (Poems, Short Stories) from Modern Indian Literature Paper Code: 62031201 English A-AECC Paper Code: 72032801
JULY	Theory	Critical Analysis: Nissim Ezekiel's Goodbye Party for Miss Pushp Revision	B.A (P), I yr	Selections (Poems, Short Stories) from Modern Indian Literature Paper Code: 62031201

		Revision	B.Com.(H) I yr. B.Com.(P) I yr. B.Sc. (H). Bio-Sci & Zoology I yr B.Sc. (H) Electronics I year	English A-AECC Paper Code: 72032801

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डॉ. राम किशोर यादव

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बी.ए. (ऑनर्स) हिंदी, सेमेस्टर-5
HDSEC-I अस्मितामूलक विमर्श

इकाई -1 : विमर्शों की सैद्धांतिकी

क) दलित विमर्श: अवधारणा और आंदोलन, फुले और अम्बेडकर
ख) स्त्री विमर्श: अवधारणाएं और आंदोलन (पाश्चात्य और भारतीय)

बी.ए. (ऑनर्स) हिंदी, सेमेस्टर-5

पाश्चात्य काव्यशास्त्र, पेपर-11 (आतंरिक मूल्याङ्कन)

पाश्चात्य काव्यशास्त्र
इकाई-3
सामान्य परिचय - स्वच्छन्दतावाद, मार्क्सवादी आलोचना, संरचनावाद, उत्तर-संरचनावाद

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डॉ. रामकिशोर यादव

आतंरिक मूल्याङ्कन

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B.com .III HN B
हिंदी गद्य : उद्भव और विकास (हिंदी-'ख'),सेक्शन-बी

BAP V GE जनपदीय साहित्य

इकाई 4

(क) पाठ :संक्षिप्त लक्कड़हारा - सांग लखमीचंद ग्रन्थावली

संपा प्रो. पूरनचंद शर्मा, हरियाणा साहित्य अकादमी, चंडीगढ़

(ख) विदेसिया भिखारी ठाकुर कृत लोकनाट्य

विदेसिया, कठपुतली, सांग, (हरियाणा) भांड, ख्याल (राजस्थान), माच (मालवा)

HN- III SEC - 1
विज्ञापन और हिंदी भाषा

इकाई 4

विज्ञापन निर्माण का अभ्यास
प्रिंट माध्यम: वर्गीकृत एवं सजावटी विज्ञापन निर्माण
रेडियो जिंगल लेखन
टेलीविज़न के लिए स्टोरी बोर्ड का निर्माण

BAP III HN B
हिंदी गद्य: उद्भव और विकास (हिंदी : ख)

इकाई 1
हिंदी गद्य : उद्भवऔर विकास
हिंदी गद्य रूपों का सामान्य परिचय

BAP III HN DIS हिंदी कथा साहित्य

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

PRINCIPAL
Sri Venkateswara College
Dhaula Kuan, New Delhi-110021

Name of the Faculty: M. Jeevan

Department: History

Semester: IV,VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	I. Reconstruction [a] The Makings of Radical Reconstruction; Radical Reconstruction in the South: Blacks, Carpetbaggers, Scalawags, KKK (Ku Klux Klan) [b] Redemption vs. Failure: an interpretation II. The Gilded Age – Economic and Social Divide [a] Growth of Capitalism - Big Business: Competition, Consolidation, Monopolism [b] Worker's Culture; Organization of Labour Unions and Movements (both men and women)	B.A. (Hons.) IIIrd Year (VIth Semester)	History of USA: Reconstruction to New Age Politics

		I. India in the 18th century- Background and Debates II. Expansion and consolidation of British power: Special reference to Bengal, Mysore, Maratha and Punjab	B.A. (Prog.) IInd Year (IVth Semester) Section A	History of India c. 1700-1950
	Tutorials:	Discussions		
FEBRUARY	**Theory:**	III. Resistance vs. Reform [a] The Populist Challenge: Agrarian Crisis and Discontent [b] The Politics of Progressivism: Varieties and Limitations [c] The New Deal: Response to the Great Depression, Reformism or Economic Experi-mentation IV. Gender Roles [a] Cult of Womanhood in the Nineteenth Century; The 'Feminist Mystique': Women's Liberation [b] White and Black Women in 'Public' Space [c] Class and Gender: 'Pastoralization' of Housework; Sexual Division of Labor and Ar-tisan Tradition; Lowell Textile Mill Workers	B.A. (Hons.) IIIrd Year (VIth Semester)	History of USA: Reconstruction to New Age Politics

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		III. Making of the British Colonial Economy: [a] Land revenue settlements; [b] Commercialisation of agriculture; [c] Deindustrialisation; [d] Drain of wealth IV. The Revolt of 1857: Causes, nature and consequences	B.A. (Prog.) IInd Year (IVth Semester) Section A	History of India c. 1700-1950
	Tutorials: **<u>Assignment:</u>**	Group Discussions to discuss the problems and concepts Assignment Questions given to		
MARCH	**Theory:**	V. African-American Movement [a] Black Leadership: Booker T. Washington; W.E.B. Dubois; NAACP and Marcus Gar- vey, Malcolm X [b] Civil Rights Movement: Martin Luther King Jr. VI. USA in World Politics [a] Imperial ambition and power: the Spanish-American War; USA and East Asia; USA and Latin America; America in the First World War [b] America in the Second World War; The Cold War: Strategy of 'Containment'; Truman Doctrine [c] Anti-Communist Crusade: McCarthyism; Korean War; Cuban Project	B.A. (Hons.) IIIrd Year (VIth Semester)	History of USA: Reconstruction to New Age Politics

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		V. Social and Religious Reform Movements in Colonial India:[a] Overview of reformist and revivalist movements in the 19th century; [b] Caste Movements (Phule, Sree Narayan Guru, Ambedkar); [c] Peasant and tribal movements: an overview VI. Growth of the National Movement, 1858-1947:[a] Early nationalism and foundation of the Indian National Congress; [b] A critique of colonialism (moderates, extremists and militant nationalists); [c] Mahatma Gandhi and mass nationalism: Non-cooperation, Civil Disobedience, and Quit India movements; relationship between the masses and leaders	B.A. (Prog.) IInd Year (IVth Semester) Section A	History of India c. 1700-1950
	Tutorials: **<u>Mid Term Test:</u>**	Question Answer sessions Internal Class Test on Themes covered so far for the courses.		
APRIL	**Theory:**	Revision	B.A. (Hons.) IIIrd Year (VIth Semester)	History of USA: Reconstruction to New Age Politics

		VII. Development of Communalism and the Partition of India: [a] An overview of the growth of communalism; [b] Towards Freedom and Partition VIII. Independent India: Making of the Constitution: The evolution of the Constitution and its Main Provisions; basic features of the Constitution	B.A. (Prog.) IInd Year (IVth Semester) Section A	History of India c. 1700-1950
	Tutorials:	Revision & Presentations		

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

Name of the Faculty: Ningmuanching

Department: History

Semester: II (April to July 2022)/ IV/VI

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Dhaula Kuan, New Delhi-110021

Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory: 1.**	• Structure of inequalities: Caste-Normative and historical experience • Discussion on untouchability through the documentary film by V. Stalin, "India Untouched"	BA (H) HISTORY IVth Semester GENERIC ELECTIVE	Inequality and Difference
	2.	• Establishment and Expansion of Akashvani under Keskar: Classical vs. Popular	Skill Enhancement Course, BA Programme vith Semester	Radio and Cinema in India: A Social History
	Tutorials:	Discussion		

FEBRUARY	**Theory:** **1.** **2.**	• Race, Tribe and Colonial Knowledge • Gender, Household and Public Sphere • Establishment and Expansion of Akashvani under Keskar: Classical vs. Popular		
	Tutorials: **<u>Assignment:</u>**			
MARCH	**Theory:** **1.** **2.**	• Gender, Household and Public sphere • Forms of Bondage: Ganikas, Slavery and Servitude • Ban on film music		

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	Tutorials: **<u>Mid Term Test:</u>**	• Assignment on the topic Gender and the Household • Test on Caste, and Indian Constitution and questions of equality		
APRIL	**Theory:** **1.** **2.**	• Social Distancing and Exclusion: Forest Dwellers and Untouchables • Indian Constitution and Questions of Equality • Radio Ceylon, Vividh Bharati		
	3.	• Ancient Greece and Rome (subtopics a and b) • Evolution of the polis, • Conflict of the Orders and • The Augustan Experiment	IInd Semester, BA (H) History Core Course	Social Formations and cultural patterns of the Ancient and Medieval World

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	Tutorials:	Discussion		
May	**Theory**	Slavery in Ancient Greece and Rome, Culture and Religion in Ancient Greece and Rome	IInd Sem	Social Formations and cultural patterns of the Ancient and Medieval World
	Assignment and Tutorials	• Assignmnet on topic: Emergence of the Polis • Student group presentation and discussion		
June	**Theory**	Feudal Societies in Medieval Europe (8th to 14th Centuries)	IInd Sem	Social Formations and cultural patterns of the Ancient and Medieval World
	Tutorials	Group presentation and discussion		
July	**Theory**	Early Islamic Societies in West Asia: Transition from Tribe to State	IInd Sem	Social Formations and cultural patterns of the Ancient and Medieval World
	Test and Tutorials	• Class test on themes covered till June • Group presentation and discussion		

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

Name of the Faculty: PROF. NIRMAL KUMAR & PRABAL SARAN AGARWAL

Department: HISTORY

Semester: IV and VI

Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory:**	PERSIAN LITERARY TRADITIONS	HISTORY OF INDIA 1500-1600	Core Course IX
		Defining Popular Culture; Folk Culture; Mass Culture	UNDERSTANDING POPULAR CULTURE	SEC V
	Tutorials:	Discussion on primary sources	Movie and documentary screenings	Discussion on Project Work on Popular Culture
FEBRUARY	**Theory:**	Establishment of Political Authority: Mughals, Rajputs and Nayakas; Military Tactics & Technology; Abul Fazal; Mansabdari	History of India 1500-1600	Core Course IX
	Tutorials:	Visual Expressions: Folk Art; Calendar Art; Photography Discussion on essential readings	Understanding Popular Culture Visit to *melas*	SEC V Food tours
	<u>Assignment:</u>	First Battle of Panipat	Project Work on Popular Culture	
MARCH	**Theory:**	RAJPUTS, NAYAKAS, GOPURAMS, FATEHPUR SIKRI	HISTORY OF INDIA 1500-1600	CORE COURSE IX

		ORAL CULTURE/ PERFORMANCES, AUDIO-VISUAL MEDIUM	UNDERSTANDING POPULAR CULTURE	SEC V
	Mid Term Test: **Tutorials:**	ANTI-APARTHEID MOVEMENT & CIVIL RIGHTS MOVEMENT SYLLABUS COVERED TILL MARCH DISCUSSION ON SUGGESTED READINGS	ISSUES IN TWENTIETH CENTURY WORLD HISTORY-II	DSE VI
APRIL	**Theory:**	SULH-I KULL, REVIVALISM, VAISHNAVA BHAKTI, DECCAN	HISTORYOF INDIA V 1500-1600	CORE COURSE IX
		FAIRS, FESTIVALS & RITUALS, PILGRIMAGE; FOOD CULTURES	UNDERSTANDING POPULAR CULTURE	SEC V
	Tutorials:	SPECTATOR SPORTS; CINEMA MOVIE SCREENING	ISSUES IN TWENTIETH CENTURY WORLD HISTORY- II	DSE VI

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

Name of the Faculty: NUTI NAMITA

Department: HISTORY

Semester: II and VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Crisis of the Tokugawa *Bakuhan* System The Meiji Restoration : Nature and Significance; Early Meiji Reforms Economic Development in the Meiji Era Online	B.A Honours History(VI Semester) (Third Year)	DSE-XII History of Modern Japan (c.18681950s)
	Tutorial	Discussions		
April	**Theory:**	Unit-1; Delhi Before 1857 Company Raj, Mughal Court and Literary Culture Unit 2- 1857 IN Delhi; Rebel Violence and British Reconquest	General Elective 2-History Semester -11	GE-2 DELHI THROUGH THE AGES; FROM COLONIAL TO CONTEMPORARY TIMES

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FEBRUARY	**Theory:**	Agrarian Settlement Industrialisation and Capitalism **Democracy and Militarism** Popular Rights Movement Women's Rights in the Meiji Era Industrialization and Capitalism	B.A (H) History V1 Semester	DSE-XII History of Modern Japan (c.18681950s
	Tutorials:	Through group discussions discuss about problems and concepts.		
	<u>Assignment:</u>	What was the Bakuhan System? Explain the internal and external crisis which led to its decline.		
MAY	**THEORY**	UNIT 3- Making of NEW Delhi; Imperial Ideology and Urban Morphology Unit 4- Delhi in 1947; Partition and Aftermath	General Elective 2- History Semester -11	GE-2 DELHI THROUGH THE AGES; FROM COLONIAL TO CONTEMPORARY TIMES
	Tutorials	Group discussions and question answer sessions.		
	Assignment	What were the continuities and changes in the morphology of Delhi before and after the revolt of 1857		
MARCH	**Theory:**	Meiji Constitution Failure of Parliamentary Democracy; Militarism and Fascism Imperialistic Expansion and Resistance Imperialism and Japanese Nationalism Expansion in China and Manchuria	B.A (H) History V1 Semester	DSE-XII History of Modern Japan (c.18681950s

	Tutorials :	Question answer sessions		
	<u>Mid Term Test:</u>	Class test was conducted		
June	**THEORY** **Test**	Making of Contemporary Delhi; Displacement and Resettlement Class test was conducted	General Elective 2-History Semester -11	GE-2 DELHI THROUGH THE AGES; FROM COLONIAL TO CONTEMPORARY TIMES
APRIL	**Theory:**	Colonisation of Korea and Korean Nationalism American Occupation, post-War Reconstruction and "Reverse Course"	B.A (H) History V1 Semester	DSE-XII History of Modern Japan (c.18681950s
	Tutorials :	Question -answer sessions		
JULY	**THEORY**	Capital Culture: Public Spaces and Socialites	General Elective 2-History Semester -11	GE-2 DELHI THROUGH THE AGES; FROM COLONIAL TO CONTEMPORARY TIMES

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SEMESTER WISE
TEACHING PLAN - EVEN 2022
SRI VENKATESWARA COLLEGE

Name of the Faculty: PREETI GULATI

Department: HISTORY

Semester: Even (II/IV/VI)

Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory:**	UNIT III: 1. Early years of Indian Cinema : Beginning of motion pictures, silent films, technologies of film making 2. Dadabhai Saheb Phalke: History and Mythology in Indian Films	B.A. Programme VI	SEC: Radio and Cinema in India: A Social history
	Practicals:	N/A		
	Tutorials:			
FEBRUARY	**Theory:**	UNIT III: 1. Women enter Films	B.A. Programme VI	SEC: Radio and Cinema in India: A Social history
	Practicals:	N/A		
	Tutorials:	N/A		
MARCH	**Theory**	UNIT III: 1. The Era of Studios: AVM and Gemini Studios, regional film industries, political contexts of the Indian freedom movement, changing themes.	B.A. Programme VI	SEC: Radio and Cinema in India: A Social history

	Practicals:	N/A		
APRIL	**Theory:**	UNIT I 1.Introducing the early historical: Sources (600 BCE onwards) UNIT II: 1.600 BCE: Beginnings of state society, different political formations, mahajanapadas, ganasanghas, UNIT V: 1. 600 BCE: Sramanic traditions: Doctrines of Buddhism and Jainism, inter-linkages and implications on polity, economy and society. 2. Consolidation of the Brahmanical Tradition: changes between the Early Vedic and Later Vedic literature and systems	B.A. Honours II	Core Course I, Paper- History of India-I
		UNIT I 1. Survey of the sources UNIT II 1. Guptas and Vakatakas: Administration, state, economy, society, religion and art	B.A. Programme II	Core Course I: History of India up to c. 300 CE
		UNIT III: Colonial Censorship and Patriotic Creativity, song genres.	B.A. Programme VI	SEC: Radio and Cinema in India: A Social history

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	Tutorials:	Discussion on defining concepts of early historical, sources for Early India, References and question-answer sessions	B.A. Honours II	Core Course I, Paper- History of India-I
		Discussion of the sources, a background of Pre-Gupta situation and question-answer sessions	B.A. Programme II	Core Course I: History of India up to c. 300 CE
	Project Presentation:	Make a presentation on the any film from the period under study, and analyse the social and political context.	B.A. Programme VI	SEC: Radio and Cinema in India: A Social history
MAY	**Theory:**	UNIT II 1.Mauryan Empire: understanding difference between kingdom and empire, political structure, nature of dhamma Megasthenes and Kautilya case studies 2.Kushanas and Satavahanas: extend and nature of rule 3.Tamilakam: Sangam literature, five *tinais*, landscape, polity and economy UNIT III: 1. Agrarian relations c. 600 BCE-300 CE. 2. Urban growth: comparative studies of patterns of urbanisation in north, central and southern India, external and internal trade interactions with special focus on Indo-Roman trade.	B.A. (Honours) II	Core Course III, History of India-II
		UNIT III 1.Changes in the Post-Gupta period and characterization of early medieval period; understanding land-grants, changing historiographical perspectives on feudalism vis-a-vis integrative framework UNIT IV 1. Vardhans, Pallavas and Chalukyas: Political and cultural developments	B.A. (Programme) II	Core Paper II: History of India c. 300-1200
	Practicals:	N/A		

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	Tutorials:	Discussions based on extracts from Arthashastra and Megasthenes'Indica to understand variations in historical sources, discussions on historical methods. Question-answer sessions	B.A. (Honours) II	Core Course III, History of India-II
		Discussions on Post-Gupta Developments and the theoretical models of Feudalism, Segmentary State and Integrative Polity. Question-answer session	B.A. (Programme) II	Core Paper II: History of India c. 300-1200
	<u>Project Presentations</u>	On a topic of your choice, research and present a 10 minute presentation, based on original research and secondary readings.	B.A. (Honours) II	Core Course III, History of India-II
JUNE	**Theory:**	UNIT III 3.Patterns of social stratification: class, varna, jati, gender, marriage and property relations, untouchability UNIT IV 1.Towards early medieval India: Introducing changing historical perspectives 300-750 CE, role of land grants in agrarian expansion, graded land rights and peasantry 2.Guptas and Vakatakas: nature of polities, society, economy, classical age of literature and art. 3. Debate on urban decline: textual perspectives on urban culture 4.Varna, proliferation of jatis, changing ideas of marriage and inheritance	B.A. (Honours) II	Core Course III, History of India-II
		UNIT V 1. Palas, Pratiharas and Rashtrakutas: Introduction; tripartite conflict over Kannauj UNIT VI: 1. Rajput States in north India: questions of origins, socio-economic foundations UNIT VII: 1. Cholas: State and administration, economy and culture	B.A. (Programme) II	Core Paper II: History of India c. 300-1200
	Practicals:	N/A		

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	Tutorials:	Discussions based on relevant extracts from Pali and Sanskrit texts to understand patterns of urban culture and evolving varna-jati system; question-answer session Discussions on nature of political formations at the macro-level in early medieval India, understanding similarities and differences in the post-Gupta polities.	B.A. (Honours) II B.A. (Programme) II	Core Course III, History of India-II Core Paper II: History of India c. 300-1200
	Assignment	Answer any one of the following Q1. According to Megasthenes, all land belonged to the king, Chandragupta Maurya, and he exercised direct control over his realm. How far do you think Megasthenes was correct in his observation ? Evaluate Megathenes' observation in light of other sources to discuss the nature of Mauryan control and administration. **OR** Q2. In RS Sharma's monumental work *'Urban Decay in India, c.300-1000 CE',* (1987), he argued that in this period, cities that had been flourishing earlier, witnessed large-scale desertion and decline. Do you agree? Corroborate your answer with evidence and examples. **OR** Q3. Discuss the evolution of the varna-jati system from c.200 BCE to 750 CE, with special attention on gender relations, occupation and property inheritance rights. Discuss the cultural developments during Gupta and Vakataka period. Answer any one of the following 1. Examine the new trends which emerged in society and economy during the post-Gupta period **OR** 2. Write an essay on the main features of Chola administration, with special emphasis on the role played by local-level bodies.	B.A. (Honours) II B.A. (Programme) II	Core Course III, History of India-II Core Paper II: History of India c. 300-1200

JULY-AUGUST	**Theory:**	UNIT V 1. Puranic Hinduism: Beginnings and consolidation UNIT VI 1. Creative and Scientific literature: brief look at treatises 2. Art and Architecture: Mauryan Art, religious and political symbolism; beginnings of sculpture, Gandhara, Mathura and Amaravati styles; Rock-cut caves; Temple architecture and Puranic representations in sculpture, forms of patronage	B.A. (Honours) II	Core Course III, History of India-II
		UNIT VIII 1. Arabs, Ghazanavids and Ghurids, trans-regional exchange, understanding military and political formations in Northwest Indian subcontinent. 2. Art and Architecture: Buddhist art, rock-cut caves, stone sculptures and temple architecture in 300-1200 CE	B.A. (Programme) II	Core Paper II: History of India c. 300-1200
	End-Term Test	1. Outline in your own words, the differences in the campaigns of Mahmud Ghazni and Muhammad Ghuri, and analyse the reasons for their success in the northwest part of the subcontinent.	B.A. Programme II	Core Paper II: History of India c. 300-1200

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

Name of the Faculty: Rajbir Kaur

Department: History

Semester: IV, VI

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Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory:**	I. (a.) Eighteen Century Debate (b.) India in the mid-eighteenth century: society, economy and polity	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
		I. Many pasts of Delhi: Ecology, Archaeology and History II. Cities of Delhi: Urban Settlements from the 13th and 14th centuries – Focus on any two Mehrauli, Siri, Tughluqabad, Firuzabad	B.A. (Prog.) IIIrd Year	GE – Delhi through the Ages
	Tutorials:	Introducing the course and its themes.		
		Discussion		
FEBRUARY	**Theory:**	II. Expansion and consolidation of colonial power III. Colonial state and ideology: emergence of the Company State	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
		III. 18th and early 19th Century Shahjahanabad: Politics, Literary Culture and Delhi College IV. Delhi in 1857: Revolt and Re-conquest	B.A. (Prog.) IIIrd Year	GE – Delhi through the Ages

	Tutorials:	Discussion with the tutorial groups on the topics already taken up in the lectures		
	<u>Assignment:</u>	To what extend has the focus on regional studies in recent writings influenced our understanding of the eighteenth century in India?	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
		What changed in the life of the city and its landscape after the British recaptured Delhi in 1857.	B.A. (Prog.) IIIrd Year	GE – Delhi through the Ages
MARCH	**Theory:**	IV. Law and education V. Economy and Society (Online Classes	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
		V. Making of the New Imperial Capital: Delhi 1911-1930 VI. Delhi in 1947: Partition and After	B.A. (Prog.) IIIrd Year	GE – Delhi through the Ages
	Tutorials:	Discussion with regard to specific readings given for study		
		Discussion group for Hindi medium students		
	<u>Mid Term Test:</u>	Internal Class Test from the Themes covered till then		
APRIL	**Theory:**	VI. Cultural changes, social and religious reform movements VII. Popular resistance - 1857	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)

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		VII. Delhi as economic and cultural centre: Case study (Any Two) a. Crafts and artisans b. Music c. Hazrat-i Dehli d. Tombs of Delhi e. Coronation park	B.A. (Prog.) IIIrd Year	SEC – Popular Culture
	Tutorials:	Revision of the courses Discussion on previous year's question papers		

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SEMESTER WISE TEACHING
PLAN (2022, Jan-May)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Rajni Chandiwal **Department: History**
Semester : IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory- 1.**	• 17th Century Crises-Economic, Social and Political Dimensions, • The English Revolution, Major Issues, Political and intellectual Currents.	Core Course	Rise of the Modern West-II/ VIII
	2.	• Caste Community and Nation: Regional, Religious and Linguistic Identities, Assertions of Caste Identity-Sanskritisation and anti-Brahamanical Trends – Regional Variations. • Economy and Social classes-Economic Critique of Colonial Rule, Rise of Modern Industry –Emergence of Capitalist and Working Class, Famines and Their Impacts.	Core Course-X	History of India VIII (1857-1950)
	3.	• Broadcasting in India Colonial Period	SEC-VIII Semt.	Radio in Cinema in India:A social History, SEC VIII
	Practicals	NA		
	Tutorials	• Discussion on the theme • Discussion on the theme and reading of fiction of the same. • NA		

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FEBRUARY	**Theory:** **1.** **2.** **3.**	• The Rise of Modern Science in Relation to the European Society from Renaissance to 17 Century., Mercantilism. • Early Nationalism: Emergence of Congress, Moderates and Extremists, Swadesi and Revolutionary Movements • Emergence and Social Base of Gandhian Nationalism – Intellectual Foundation of Gandhian Nationalism, Rowlett, Khilafat and Non Cooperation Movements • AIR Programming, Policies and Propaganda		
	Practicals:	NA		
	Tutorials:	Discussion on theme Screening a movie of the National Movement NA		

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	<u>Assignment:</u> **1** **2.**	• 17 century Crises/ Causes/Historiography/ Debate • Non Cooperation and Anti caste Movement		
MARCH	**Theory:** **1** **2.**	• Enlightenment Ideas and its Impact • Mercantilism • Civil Disobedience Movements, Quit India Movements , Other Currents in Nationalism Ambedkar and Dalit Movement, • Singh Sabha and Akali Movement, Left Movements, Peasants and Workers, Tribal Movements, Communalism and Ideological Practices.		
	Practicals:	NA		
	Tutorials:	Discussions /Presentations NA		
	<u>Test</u> **<u>PROJECT</u>**	On the themes taught till March On the themes related to the course		
APRIL	**Theory:** **1** **2.**	• Origin of Industrial Revolution –Divergence Debate • Partition • Independence and the New State • Congress Radio		
	Practicals:	NA		
	Tutorials:	Question Answer/Discussion		

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MAY	**Theory:** **1** **2.**	Revision Revision Revison		
	Practicals:	NA		
	Tutorials:	Revision		

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

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Name of the Faculty: DR. SAURABH KUMAR

Department: HISTORY

Semester: 2 and 4

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	1) SURVEY OF SOURCES, 2) THE GUPTAS AND VAKATAKAS	BA PROG SEM 2	HISTORY OF INDIA 300 TO 1200 CE
		1) INDIA IN THE 18TH CENTURY 2) EXPANSION AND CONSOLIDATION OF BRITISH POWER	BA PROG SEM 4	HISTORY OF INDIA 1700-1950
		Tutorials:		
FEBRUARY	**Theory:**	3) CHANGES IN THE POST-GUPTA PERIOD 4) VARDHANAS, PALLAVAS AND CHALUKYAS	BA PROG SEM2	HISTORY OF INDIA 300 TO 1200 CE
		3)MAKING OF THE BRITISH COLONIAL ECONOMY 4) THE REVOLT OF 1857	BA PROG SEM 4	HISTORY OF INDIA 1700-1950

MARCH	**Theory:**	5) RASHTRAKUTAS , PALAS AND CHALUKYAS 6) EMERGENCE OF RAJPUT STATES IN NORTHERN INDIA	BA PROG	HISTORY OF INDIA 300 TO 1200 CE
	<u>Mid Term Test:</u>	5) SOCIAL AND RELIGIOUS REFORM MOVEMENTS IN COLONIAL INDIA 6) GROWTH OF THE NATIONAL MOVEMENT 1858-1947	BA PROG SEM 4	HISTORY OF INDIA 1700-1950
APRIL	**Theory:**	7) THE CHOLAS 8) THE ARABS, THE GHAZNAVIDS IN THE NORTH-WEST	BA PROG	HISTORY OF INDIA 300 TO 1200 CE
	Tutorials:	7) DEVELOPMENT OF COMMUNALISM	BA PROG SEM 4	HISTORY OF INDIA 1700-1950

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		AND PARTITION OF INDIA 8) INDEPENDENT INDIA		

NOTE: Papers titled: Issues in 20th century world History-II (BA PROG SEM 6) and GE- Delhi Through the Ages-II (BA HONS SEN 2) SHARED FOR SOME TIME.

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SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA
January - April, 2022

Name of the Faculty: Dr. Vandana Joshi

Department: History

Semester: VI 2022

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Month		Topics	Course	Paper Code/ Name
January	**Theory:**	I. Varieties of Nationalisms and the remaking of states in the 19th and 20th centuries [a] Intellectual currents, popular movements and the formation of national identities in Germany, Italy and the Balkans. [b] Post-Unification: problems of state building in Germany and Italy II. Tsarist Russia and the coming of the Bolshevik revolution [a] Serfdom, Populism and Social Democracy [b] The Revolution of 1905; the revolutions of 1917: origins, visions, movements	**BA HON Core Course XIV**	**History of Modern Europe-II** I.
		Unit I: The World Divided : The Cold War-case studies, Korea/ Vietnam	BA Programme DSE	Twentieth Century World history II
	Practicals :			
	Tutorials:	Presentations		
		Presentation		
February	**Theory:**	III. Imperialism, war and crisis, c. 1880-1939 [a] Theories and mechanisms of Imperialism [b] War of 1914-18: historiographical debates; developments leading to the War; power blocs and alliances	**BA HON Core Course XIV**	**History of Modern Europe-II** I.

		II. **Unit II: Decolonization and the long shadow of colonial exploitation** : Ghana/Algeria **Unit III: Popular Movements** a)Environmental Struggles: Chipko Movement; Struggles for the Amazon; Bhopal (b)Student Movements: Paris 1968	BA Programme DSE	Twentieth Century World history II Europe
	Practicals :			
	Tutorials:			
March	**Theory:**	[c] Fascism and Nazism: origins and forms; nature of the fascist state	**BA HON Core Course XIV**	**History of Modern Europe-II**
		(c) Anti-apartheid movements in S. Africa and Civil Rights Movement USA (d) Women's Movements: Issues and Debates/Women and Work Place-Vishakha	BA Programme DSE	Twentieth Century World history II
	Practicals			
	Tutorials:	presentattions		
	<u>Assignment</u>			
April	**Theory**	IV. Cultural and intellectual developments since c.1850 [a] Creation of a new public sphere, print culture, mass education and the extension of literacy [b] Creation of new cultural forms: romanticism to abstract art [c] Institutionalization of disciplines: history, anthropology, psychology	**BA HON Core Course XIV**	**History of Modern Europe-II**

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		Unit IV: Leisure and Entertainment (a) Spectator Sports (football/ Olympics) (b) Cinema (James Bond films in the context of the Cold War, Satyajit Ray's films and Bicycle Thief in the context of the Depression	BA Programme DSE	Twentieth Century World history II
	Practicals :			
	Tutorials:			
	<u>Mid Term Test</u>			
May	**Theory:**	[d] Culture and empire: race, gender and Imperialism; Orientalism	**BA HON Core Course XIV**	**History of Modern Europe-II**
		Revision	BA Programme DSE	Twentieth Century World history II
	Practical:			
	Tutorials:			

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SRI VENKATESWARA COLLEGE

Semester Teaching Plan (2021-2022)

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

Semester: II

Month		Topics	Course	Paper Name/ Code
April	Theory	Differential Equations and mathematical models,order and degree, Exact Differential Equations and integrating factors of Ist order Differential Equations.	B.Sc.(H) Maths Sem-II	Differential Equations
	Practical	Plotting of II and III order respective solution family of differential equations.	B.Sc.(H) Maths Sem-II	Differential Equations
	Theory	Fundamental operation with vectors, Linear combination, Dot product, Cauchy schwarz inequality, Triangle inequality, Projection vectors, Matrices, Gauss jordan row reduction, Reduced row echelon form, Row equivalence, Rank.	GE-II	Linear Algebra
May	Theory	Reducible IInd order Differential Equations, Applications of Ist order Differential Equations to acceleration velocity model, Growth and Decay model, Introduction to compartmental model, Lake pollution model, Drug assimilation model, Exponential growth of population, Limited growth of population and with harvesting also.	B.Sc.(H) Maths Sem-II	Differential Equations
	Practical	To discuss Growth and decay model, lake pollution model, case of pills model, Limited growth of population, plotting of recursive sequences.	B.Sc.(H) Maths Sem-II	Differential Equations

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	Theory	Row space, Eigenvalues, eigenvectors, eigenspace, Characteristic polynomial, Diagonalization, Vector spaces, subspaces, span, spanning set, Linear independence and dependence, Basis, dimension, Maximal LI, Minimal spanning set.	GE-II	Linear Algebra
	Assignment	To be given assignment related to syllabus.		
June	Theory	General solution of homogeneous equation of IInd order, Principle of superposition for a homogeneous equation, wronskian, its properties and applications, Linear homogeneous and non homogeneous equations of higher order with constant coefficients, Euler's equation.	B.Sc.(H) Maths Sem-II	Differential Equations
	Practical	Find m for the given inequality, Verify bolzano weirestrass theorem, Study the convergence/ divergence of infinite series of real numbers, Cauchy root test.	B.Sc.(H) Maths Sem-II	Differential Equations
	Theory	Application of rank, coordinates of a vector, Transition matrix, Linear transformation, Linear operator and similarity, Application: Graphics, Fundamental movement, Homogeneous coordinates, Composition of movements, Kernel and range.	GE-II	Linear Algebra
	Assignment	To be given assignment related to syllabus.		
July	Theory	Method of undetermined coefficients, Method of variation of parameters, applications of Iind order Differential Equations, Interacting population models, Epidemic model of influenza and its analysis,Predator prey model and its analysis.	B.Sc.(H) Maths Sem-II	Differential Equations
	Practical	D'Alembert's ratio test, For the given sequences find m, For the given series, identify the convergent series.	B.Sc.(H) Maths Sem-II	Differential Equations

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	Theory	Dimension theorem, One to one and onto linear transformations, Invertible linear transformations, Isomorphisms, Isomorphic vector spaces, Orthogonal and orthonormal vectors and bases, orthogonal complement.	GE-II	Linear Algebra
	Class test	To take class tests related to covered syllabus and lab test related to the Practicals discussed so far.		
August	Theory	Equilibrium points, Interpretation of the phase plane, Battle model and its analysis.	B.Sc.(H) Maths Sem-II	Differential Equations
	Practicals	To discuss predator prey model, epidemic model of influenza, Battle model.	B.Sc.(H) Maths Sem-II	Differential Equations
	Theory	Projection theorem, orthogonal projection onto a subspace, Application: Least squares solutions for inconsistent systems, Non unique least square solutions.	GE-II	Linear Algebra

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Even Semester Teaching Plan (Jan-April 2022)

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

Semester: I/IV

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Definition of Riemann integration, Inequalities for upper and lower Darboux sums. Necessary and sufficient conditions for the Riemann inerrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to upper, lower Darboux sum, and Riemann Integration.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Theory:	Volumes by slicing disks and method of washers, Volumes by cylindrical shells, Arc length, Arc length of parametric curves, Area of surface of revolution; Hyperbolic functions; Reduction formulae.	B.Sc(H) Maths Sem-I	Calculus
	Practicals	Introduction to Mathematica and Calculus Practical. (1) Plotting of graphs of function of type (greatest integer function)… (even and odd positive integer), (even and odd positive integer), (a positive integer) , , , Discuss the effect of and on the graph and to solve different Questions.	B.Sc(H) Maths Sem-I (A)	Calculus

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Feb	**Theory**	Riemann integrability of monotone functions and continuous functions, Algebra and properties of Riemann integrable functions. Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, Intermediate value theorem for integrals. First and second fundamental theorems of integral calculus, and the integration by parts. Related Examples and Exercise questions.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to monotone functions and continuous functions, and piecewise continuous and piecewise monotone functions.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Theory	Introduction to vector functions and their graphs, Operations with vector functions, Limits and continuity of vector functions, Differentiation and integration of vector functions; Modeling ballistics and planetary motion, Kepler's second law.	B.Sc(H) Maths Sem-I (A)	Calculus
	Practicals	Plotting the graphs of polynomial of degree 4 and 5, the derivative graph, the second derivative graph and comparing them. Discuss the observation of these function to solve different Questions	B.Sc(H) Maths Sem-I A	Calculus
	Test	To take class test related to syllabus and lab test related to above Practicals.	B.Sc(H) Maths Sem-IV/I	BMATH409: Riemann Integration & Series of Functions / Calculus

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March				
	Theory	Improper integrals of Type-I, Type-II and mixed type. Definitions and examples of pointwise and uniformly convergent sequence of functions. Motivation for uniform convergence by giving examples, Theorem on the continuity of the limit function of a sequence of functions. The statement of the theorem on the interchange of the limit function and derivative, and its illustration with the help of examples, The interchange of the limit function and integrability of a sequence of functions.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Tut	To discuss the doubt of students and various exercise questions and examples related to work done in class.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Theory	Unit tangent, Normal and binormal vectors, Curvature.	B.Sc(H) Maths Sem-1 (A)	Calculus
	Assign ments	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-IV A / I	BMATH409: Riemann Integration & Series of Functions/ Calculus
	Practica ls	Sketching parametric curves. Tracing of conics in Cartesian coordinates. Giving Assignment related to above topics. 5). Obtaining surface of revolution of curves. (6). Sketching ellipsoid, hyperboloid of one and two sheets, Questions, To take Lab Test. Giving Assignment related to above topics.	B.Sc(H) Maths Sem-I A	Calculus

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April	**Theory**	Pointwise and uniform convergence of series of functions, Theorems on the continuity, derivability and integrability of the sum function of a series of functions. Cauchy criterion for the uniform convergence of series of functions, and the Weierstrass M-test for uniform convergence. Definition of a power series, Radius of convergence, Absolute and uniform convergence of a power series. Differentiation and integration of power series, Statement of Abel's theorem and its illustration with the help of examples.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Test	To take class test related to all syllabus.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions / Calculus

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

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Name of the Faculty: Anirban Chatterjee

Department: Mathematics

Semester: IV

Month		Topics	Course	Paper Code/ Name
January	**Theory**	Application of R as a calculator, explore data and relationships in R. Reading and getting data into R: Combine and scan commands, Types and structure of data items with their properties. Manipulating vectors, Data frames, Matrices and lists. Viewing objects within objects. Constructing data objects and conversions.	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software
	Practical	Installation of R. Basic functionalities, change of working directory, imput data through R, data structures, Conversion of data types and manipulation.	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software
February	**Theory**	Summary commands: Summary statistics for vectors, Data frames, Matrices and lists, Summary tables, Stem and leaf plot, Histograms, Plotting in R: Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts and bar charts, Copy and save graphics to other applications.	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software
	Practical	Use of R in summary calculation, pictorial representation of data and exploring relationship between different data types.	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software
March	**Theory**	Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, plotting functions of two variables using Plot3D and Contour Plot, plotting parametric curves surfaces, customizing plots, animating plots, producing tables of values, working with piecewise defined functions, Combining graphics.	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software
	Practical	Use of mathematica as calculator of different kind like graphs. For e.g., 2D ,3D. Combination of graphs. Parametric curve, Revolution of curves and their customization as required. Analyse piece-wise function etc.	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software
	Assignment	Basically, it'll be a practice for mathematica and R in line with the exercises given in the prescribed books	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software
	Test	I'll test their capability of applying mathematica and R with real life data prescribed in the syllabus	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software

April	**Theory**	Simple programming in a CAS, working with matrices, Performing Gauss elimination, operations (transpose, determinant, inverse), Minors and cofactors, working with large matrices, Solving system of linear equations, Rank and nullity of a matrix, Eigenvalue, eigenvector and diagonalization.	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software
	Practical	Application of mathematica in linear algebra.	B.Sc(H) Math Sem- III A	SEC-2: Computer algebra system & related software

Signature of the teacher

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

Name of the Faculty: Dr. Mohd. Aquib

Department: Mathematics

Semester: EVEN

Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory**	Polynomial rings over commutative rings, Division algorithm and consequences, Principal ideal domains, Factorization of polynomials, Reducibility tests, Irreducibility tests, Eisenstein criterion, Unique factorization in Z[x]	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory-II
	Theory	Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, producing tables of values, working with piecewise defined functions, Combining graphics. Simple programming in a CAS, Plotting functions of two variables using Plot3D and Contour Plot.	B.Sc(H) Maths Sem-IV B	**SEC-2** Computer Algebra Systems and Related Softwares
	Practical	[1] Chapter 12 (Exercises 1 to 4 and 8 to 12) Chapter 3 [Exercises 3.2 (1 and 2)]	B.Sc(H) Maths Sem-IV B	**SEC-2**
	Theory	Definition and a necessary condition for convergence of an infinite series, Geometric series, Cauchy convergence criterion for series, positive term series	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4** Elements of Analysis

Month		Topics	Course	Paper Code/ Name
FEBRUARY	**Theory**	Divisibility in integral domains, Irreducibles, Primes, Unique factorization domains, Euclidean domains. Dual spaces, Double dual, Dual basis, Transpose of a linear transformation and its matrix in the dual basis, Annihilators, Eigenspaces of linear operators	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory-II
	Theory	Plotting parametric curves surfaces, Customizing plots, Animating plots, Working with matrices, Performing Gauss elimination, operations (Transpose, Determinant, Inverse), Minors and cofactors, working with large matrices, Solving system	B.Sc(H) Maths Sem-IV B	**SEC-2** Computer Algebra Systems and Related Softwares
	Practical	[2]Chapter 3 [Exercises 3.3 (1, 2 and 4), 3.4 (1 and 2), 3.5 (1 to 4), 3.6 (2 and 3)]	B.Sc(H) Maths Sem-IV B	**SEC-2**
	Theory	State the integral test and prove the convergence of p-series, Comparison test, Limit comparison test and examples.	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4** Elements of Analysis

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Month		Topics	Course	Paper Code/ Name
MARCH	**Theory**	Diagonalizability, Invariant subspaces and Cayley-Hamilton theorem; The minimal polynomial for a linear operator. Inner product spaces and norms, Gram-Schmidt orthogonalization process, Orthogonal complements, Bessel's inequality.	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory-II
	Theory	Rank and nullity of a matrix, Eigenvalue, Eigenvector and diagonalization, R as a calculator, explore data and relationships in R. Reading and getting data into R: Combine and scan commands, Types and structure of data items with their properties. Manipulating vectors, Data frames, Matrices and Lists. Viewing objects within objects. Constructing data objects and conversions.	B.Sc(H) Maths Sem-IV B	**SEC-2** Computer Algebra Systems and Related Softwares
	Practical	[2] Chapter 6 (Exercises 6.2 and 6.3)	B.Sc(H) Maths Sem-IV B	**SEC-2**
	Theory	D'Alembert's ratio test, Cauchy's root test, Alternating series, Leibnitz test; Absolute and conditional convergence.	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Maths	**GE-4** Elements of Analysis
	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		

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Month		Topics	Course	Paper Code/ Name
APRIL	**Theory**	The adjoint of a linear operator, Least squares approximation, Minimal solutions to systems of linear equations, Normal and Self-adjoint operators, Orthogonal Projections and Spectral theorem	B.Sc(H) Maths Sem-VI A	Ring Theory-II
	Theory	Summary commands: Summary statistics for vectors, Data frames, Matrices and lists, Summary tables. Stem and leaf plot, histograms. Plotting in R: Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts and Bar charts. Copy and save graphics to other applications.	B.Sc(H) Maths Sem-IV B	**SEC-2** Computer Algebra Systems and Related Softwares
	Practical	[2] Chapter 7 [Exercises 7.1 (1), 7.2, 7.3 (2), 7.4 (1) and 7.6]	B.Sc(H) Maths Sem-IV B	**SEC-2**
	Theory	Definition of power series, Radius and interval of convergence, Cauchy−Hadamard theorem, Statement and illustration of term-by-term differentiation, Integration of power series and Abel's theorem, Power series expansions for e^x, $\sin x$, $\cos x$, $\log(1+x)$	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4** Elements of Analysis

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Dr. Mohd. Aquib

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

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Name of the Faculty: Dr Deepti Jain

Department: Mathematics

Semester: IV/ VI

Month		Topics	Course	Paper Code/ Name
January	**Theory**	Algebraic and order properties of $\mathbb{R}$, Absolute value and the real line, Suprema and infima, The completeness and Archimedean property of $\mathbb{R}$	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercises and doubts based on countable and uncountable sets, bounded and unbounded sets and supremum and infimum of sets.	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercise questions and doubts based on Principal Ideal Domain, Factorization of Polynomials	B.Sc. (H) Mathematics VI Sem	Ring Theory & Linear Algebra-II
	Practical	Use of a CAS as a calculator, Computing and plotting functions in 2D, Plotting functions of two variables using Plot3D and ContourPlot, Plotting parametric curves surfaces, Customizing plots, Animating plots, Producing tables of values, working with piecewise defined functions, Combining graphics.	B.Sc. (H) Mathematics IV Sem	SEC 2 (CAS)
February	**Theory**	Sequences and their limits, Convergent sequences, Limit theorems, Monotone sequences and their convergence, Subsequences, Cauchy sequence and convergence criterion; Infinite series and their convergence, Cauchy criterion for series	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercises and doubts based on convergence and divergence of sequences using various results and/or tests.	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercise questions and doubts based on Dual Space, Dual base, Annihilators, Eigenspace of linear operators	B.Sc. (H) Mathematics VI Sem	Ring Theory & Linear Algebra-II
	Practical	Simple programming in a CAS, Working with matrices, Performing Gauss elimination, operations (transpose, determinant, inverse), Minors and cofactors, Working with large matrices, Solving system of linear equations, Rank and nullity of a matrix, Eigenvalue, eigenvector and diagonalization.	B.Sc. (H) Mathematics IV Sem	SEC 2 (CAS)

March	**Theory**	Positive term series, Comparison tests, Absolute and conditional convergence, Cauchy's nth root test, D'Alembert's ratio test, Raabe's test, Alternating series, Leibnitz test. Limit of functions, Sequential criterion for limits, Algebra of limits, Continuous functions, Sequential criterion for continuity and discontinuity, Properties of continuous functions, Uniform continuity.	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercises and doubts based on convergence and divergence of series using various results and/or tests.	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercises and doubts based on Inner product space, Gram-Schmidt Orthogonalization process	B.Sc. (H) Mathematics VI Sem	Ring Theory & Linear Algebra-II
	Practical	R as a calculator, Explore data and relationships in R. Reading and getting data into R: Combine and scan commands, Types and structure of data items with their properties, Manipulating vectors, Data frames, Matrices and lists, Viewing objects within objects, Constructing data objects and conversions.	B.Sc. (H) Mathematics IV Sem	SEC 2 (CAS)
	Assignment	Questions from the topics including Supremum and Infimum of sets, and sequences and series of real numbers. Limit and Continuity of functions.	B.A.(Prog) IV Sem	Analysis
	Test	Questions from the topics including Supremum and Infimum of sets, convergence/divergence of sequences and series of real numbers. Limit and Continuity of functions.	B.A.(Prog) IV Sem	Analysis
April	**Theory**	Riemann integral, Integrability of continuous and monotonic functions.	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercises and doubts based on Riemann integration.	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercises and doubts based on Adjoint of a linear operator, Normal and self-adjoint operators, Orthogonal Projections.	B.Sc. (H) Mathematics VI Sem	Ring Theory & Linear Algebra-II
	Practical	Summary commands: Summary statistics for vectors, Data frames, Matrices and lists, Summary tables, Stem and leaf plot, Histograms, Plotting in R: Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts and bar charts, Copy and save graphics to other applications.	B.Sc. (H) Mathematics IV Sem	SEC 2 (CAS)

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

Name of the Faculty: Dr. Garima V Arora

Department: Mathematics

Semester: 2021-22 Even Sem IV and VI

Month		Topics	Course	Paper Code/ Name
January	**Theory**	Introduction, classification, construction and geometrical interpretation of 1st order PDE, method of characteristic and general solution, canonical forms, method of separation of variables	B.Sc(H) Maths Sem-IV B	BMH408- Partial Differential Equations
	Practical	Practical 2- plotting the characteristics for 1st order pde	B.Sc(H) Maths Sem-IV B	BMH408- Partial Differential Equations
	Theory	Interest rates, types of rates, measuring interest rates, zero rates, bond pricing, forward rate, duration, convexity, exchange traded markets, OTC markets, Derivatives- Forward contracts, future contract, options, types of traders, hedging, speculation, arbitrage, no arbitrage principle, short selling.	B.Sc(H) Maths Sem-VI A	DSE-3(i) – Mathematical Finance
	Tutorial	To discuss doubts and questions of the topics discussed in the theory class	B.Sc(H) Maths Sem-VI A	DSE-3(i) – Mathematical Finance
February	**Theory**	Gravitational potential, conservation laws and Burger's equation, classification of 2nd order PDE, canonical forms, equations with constant coefficients, general solution, mathematical modeling of vibrating string, vibrating membrane	B.Sc(H) Maths Sem-IV B	BMH408- Partial Differential Equations
	Practical	Practical 1- Cauchy problem for 1st order PDE Practical 3- plotting the integral surfaces Practical 4- solution of wave equation	B.Sc(H) Maths Sem-IV B	BMH408- Partial Differential Equations
	Theory	Forward price for an investment asset, types of options, option positions, underlying assets, factors affecting option prices, bonds on option prices, Put call parity, early exercise, effect of dividends.	B.Sc(H) Maths Sem-VI A	DSE-3(i) – Mathematical Finance
	Tutorial	To discuss doubts and questions of the topics discussed in the theory class	B.Sc(H) Maths Sem-VI A	DSE-3(i) – Mathematical Finance

March	**Theory**	Cauchy problem for 2nd order PDE, homogeneous wave equation, initial boundary value problem, non-homogeneous boundary conditions, finite strings with fixed ends, non-homogeneous wave equations, Goursat problem	B.Sc(H) Maths Sem-IV B	BMH408- Partial Differential Equations
	Practicals	Practical 5- Solution of 1-D heat equation Practical 6- solving ODE	B.Sc(H) Maths Sem-IV B	BMH408- Partial Differential Equations
	Theory	Binomial option pricing model, risk neutral valuation, lognormal property, distribution of rate of return, expected return, volatility, estimating volatility, extension of risk neutral valuation following GBM, black-scholes formula.	B.Sc(H) Maths Sem-VI A	DSE-3(i) – Mathematical Finance
	Tutorial	To discuss doubts and questions of the topics discussed in the theory class	B.Sc(H) Maths Sem-VI A	DSE-3(i) – Mathematical Finance
	Assignment	To give assignments to both sem IV and VI based on the course completed till the month of February.		
	Test	Test would be taken in the form of viva for sem IV and VI.		
April	**Theory**	Method of separation of variables for 2nd order PDE, vibrating string problem and existence and uniqueness of its solution, heat conduction problem and existence and uniqueness of its solution, non-homogeneous problem	B.Sc(H) Maths Sem-IV B	BMH408- Partial Differential Equations
	Practicals	Practical 7- pointwise convergence Practical 8- uniform convergence	B.Sc(H) Maths Sem-IV B	BMH408- Partial Differential Equations
	Theory	Hedging parameters, trading strategies, swaps, mechanics of interest rate swaps, comparative advantage argument, valuation of interest rate swaps, currency swaps, valuation of currency swaps	B.Sc(H) Maths Sem-VI A	DSE-3(i) – Mathematical Finance
	Tutorial	To discuss doubts and questions of the topics discussed in the theory class	B.Sc(H) Maths Sem-VI A	DSE-3(i) – Mathematical Finance

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Teaching Plan (Jan-April 2022)

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

Semester: IV/VI

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Definition of Riemann integration, Inequalities for upper and lower Darboux sums, Necessary and sufficient conditions for the Riemann integrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions, Riemann integrability of monotone functions and continuous functions, Properties of Riemann integrable functions, Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, intermediate value theorem for integrals.	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of Definition of Riemann integration, Inequalities for upper and lower Darboux sums, Necessary and sufficient conditions for the Riemann integrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions, Riemann integrability of monotone functions and continuous functions, Properties of Riemann integrable functions, Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, intermediate value theorem for integrals.	B.Sc(H) Sem-IVB	Riemann Integration & Series of Functions

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	Practicals	1. Make a geometric plot to show that the n th roots of unity are equally spaced points that lie on the unit circle and form the vertices of a regular polygon with n sides, for n = 4, 5, 6, 7, 8. 2. Find all the solutions of the equation m = 89 and represent these geometrically. 3. Write parametric equations and make a parametric plot for an ellipse centered at the origin with horizontal major axis of 4 units and vertical minor axis of 2 units. Show the effect of rotation of this ellipse by an angle of radians and shifting of the Centre	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)
Feb	**Theory**	Fundamental theorems (I and II) of calculus, and the integration by parts, Improper integrals of Type-I, Type-II and mixed type, Convergence of Beta and Gamma functions, and their properties.	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Practical	4. Show that the image of the open disk $D_1(-1-i)=\{z: \lvert z+1+i\rvert<1\}$ under the linear transformation w = f(z) = (3 – 4i)z + 6 + 2i is the open disk: $D_5(-1 + 3i) = \{w: \lvert w + 1 - 3i\rvert < 5\}$. 5. Show that the image of the right half plane Re z = x > 1 under the linear transformation w = (–1 + i)z – 2 + 3i is the half plane v>u+7, where u = Re(w), etc. Plot the map. 6. Show that the image of the right half plane A = {z : Re z ≥ 1/2 } under the mapping w=f(z)=1/z is the closed disk $D_1(1) = \{w : \lvert w - 1\rvert \le 1\}$ in the w-plane.	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)
	Test	To take class test related to syllabus And lab test related to above Practicals.	B.Sc(H) Maths Sem-IVB/VIA	

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March	**Theory**	Pointwise and uniform convergence of sequence of functions, Theorem on the continuity of the limit function of a sequence of functions, Theorems on the interchange of the limit and derivative, and the interchange of the limit and integrability of a sequence of functions. Pointwise and uniform convergence of series of functions, Theorems on the continuity, Derivability and integrability of the sum function of a series of functions, Cauchy criterion and the Weierstrass M-Test for uniform convergence	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of Pointwise and uniform convergence of sequence of functions, Theorem on the continuity of the limit function of a sequence of functions, Theorems on the interchange of the limit and derivative, and the interchange of the limit and integrability of a sequence of functions. Pointwise and uniform convergence of series of functions, Theorems on the continuity,	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Practicals	7. Make a plot of the vertical lines x = a, for a = −1, -1/2 ,1/2,1 and the horizontal lines y = b, for b= −1, -1/2,1/2,1. Find the plot of this grid under the mapping w=f(z)=1/z. 8. Find a parametrization of the polygonal path C = C1 + C2 + C3 from –1 + i to 3 – i, where C1 is the line from: –1 + i to –1, C2 is the line from: –1 to 1 + i and C3 is the line from 1 + i to 3 – i. Make a plot of this path. 9. Plot the line segment 'L' joining the point A = 0 to B = 2 + t j 9 and give an exact calculation of $\int_C e^z dz$.	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)
	Assignments	To give assignment related to syllabus		
	Test	To take internal test related to syllabus And internal lab test related to above Practicals		

April	**Theory**	Definition of a power series, Radius of convergence, Absolute convergence (Cauchy-Hadamard theorem), Uniform convergence, Differentiation and integration of power series, Abel's Theorem to Revise whole syllabus, to Discuss last previous year questions papers	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of Definition of a power series, Radius of convergence, Absolute convergence (Cauchy-Hadamard theorem), Uniform convergence, Differentiation and integration of power series, Abel's Theorem to Revise whole syllabus, to Discuss last previous year questions papers.	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Practicals	10. Plot the semicircle 'C' with radius 1 centered at z = 2 and evaluate the contour integral $\int_C \frac{1}{z-2} dz$ 11. Show that $\int_{C_1} zdz = \int_{C_2} \frac{1}{z-2} dz$=4+2i where C_1 is the line segment from –1–i to 3 + i and C_2 is the portion of the parabola x = y^2 + 2y joining –1 – i to 3 + i. Make plots of two contours C_1 and C_2 joining –1 – i to 3 + I.	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)

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

Name of the Faculty: Dr. Neelesh Kumar

Department: Mathematics

Semester: VI

Month		Topics	Course	Paper Code/ Name
January	**Theory**	Introducing R, using R as a calculator; Explore data and relationships in R; Reading and getting data into R: combine and scan commands, viewing named objects and removing objects from R, Types and structures of data items with their properties, Working with history commands, Saving work in R; Manipulating vectors.	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505
	Practical	Practicals will be performed using statistical software R. How to use R software, how to save the work and how to edit and/or open the saved work. Practicals based on simple arithmetic calculations like in calculator. How to store the results. Combine and scan command to read and make data. Reading small and bigger data file from a disk. Viewing and removing objects from R. Manipulation of data object.	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505
February	**Theory**	Data frames, Matrices and lists; Viewing objects within objects, Constructing data objects and their conversions. Summary commands: Summary statistics for vectors, Data frames, Matrices and lists; Summary tables.	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505
	Practical	Practical to learn how to select and display parts of data objects, how to sort and rearrange data objects, how to construct data objects, how to determine what form a data object is, how to convert a data object from one form to another. To learn how to summarize data samples, how to use cumulative statistics, how to create summary tables, how to cross-tabulate, how to test for different object types.	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505
March	**Theory**	Stem and leaf plot, Histograms, Density function and its plotting, The Shapiro-Wilk test for normality, The Kolmogorov-Smirnov test.	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505
	Practicals	Practical's to learn how to create histograms and other graphics of sample distribution, how to examine various distributions, how to test for the normal distribution, how to generate random numbers.	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505

	Assignment	To be given assignment related to Syllabus covered so far	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505
	Test	To take class test related to syllabus and lab test related to Practical's done.	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505
April	**Theory**	Plotting in R: Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts, Bar charts; Copy and save graphics to other applications	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505
	Practicals	Practical's to learn how to make a plot ready to print, how to create a range of graphs to summarize your data and results, how to create box-whisker plots, how to create scatter plots, including multiple correlation plots, how to create line graphs, how to create pie charts, how to create bar charts, how to move graphs from R to other programs and save graphs as files on disk.	B.A. (Prog.) Mathematics	SEC-4: Statistical Software: R. Paper Code: 62353505

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Semester Wise Teaching plan
Sri Venkateswara College
2021- 2022 Even Semester

Name of Faculty: Dr. Nisha Bohra
Department: Mathematics
Semester: IV/VI

Month		Topics	Course	Paper Code and Name
January	Theory 1	Definition and examples of rings, Properties of rings, Subrings, Integral domains and fields, Characteristic of a ring, Ideals, Ideal generated by a subset of a ring	B.Sc. (H) Mathematics IV B	Ring Theory and Linear Algebra-I, BMATH410
	Theory 2	Properties of Complex Numbers, Regions in Complex plane, Functions of Complex variable, Mappings, Differentiability, Cauchy- Riemann equations, Analytic function, Exponential function, Logarithmic function, Trigonometric function.	B.Sc. (H) Mathematics VI B	Complex Analysis, BMATH613
	Practicals	1. Make a geometric plot to show that the *n*th roots of unity are equally spaced points that lie on the unit circle and form the vertices of a regular polygon with *n* sides, for *n* = 4, 5, 6, 7, 8. 2. Find all the solutions of the equation z^3=8i and represent these geometrically. 3. Write parametric equations and make a parametric plot for an ellipse centered at the origin with horizontal major axis of 4 units and vertical minor axis of 2 units. Show the effect of rotation of this ellipse by an angle of Pi/6 radians and shifting of the centre from (0,0) to (2,1), by making a parametric plot. 4. Image of open disk under the given linear transformation	B.Sc. (H) Mathematics VI B	Complex Analysis, BMATH613

	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III B and IIA	C13 and BMATH410
February	Theory 1	Factor rings, Operations on ideals, Prime and maximal ideals. Ring homomorphisms, Properties of ring homomorphisms, First, Second and Third Isomorphism theorems for rings, The Field of quotients.	B.Sc. (H) Mathematics IV B	Ring Theory and Linear Algebra-I, BMATH410
	Theory 2	Derivatives of function, Definite Integrals of functions, Contours, Contour Integrals and its examples, Upper bounce for moduli of contour Integrals, Antiderivatives, Proof of Antiderivative Theorem, Cauchy-Goursat Theorem.	B.Sc. (H) Mathematics VI B	Complex Analysis, BMATH613
	Practicals	5. Plotting image of right half plane under the given linear transformation 6. To plot the given polygonal path 7. Performing contour integration of the given functions along the given path	B.Sc. (H) Mathematics VI B	Complex Analysis, BMATH613
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III B and IIA	C13 and BMATH410
March	Theory 1	Vector spaces, subspaces, Algebra of subspaces quotient spaces, linear combination of vectors, span of a set, linear dependence and linear independence of vectors, concept of basis and dimension, replacement theorem, dimension of subspaces	B.Sc. (H) Mathematics IV B	Ring Theory and Linear Algebra-I, BMATH410
	Theory 2	Cauchy Integral Formula, Extension of Cauchy Integral formula, Some consequences of the extension, Exercise problems. Liouville's theorem, Fundamental theorem of Algebra, Convergence of sequences and series. Taylor series and its examples, Laurent series and its examples, Absolute and Uniform convergence of power series.	B.Sc. (H) Mathematics VI B	Complex Analysis, BMATH613

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	Practicals	8. Some more problems on contour integration 9. Finding and plotting three different Laurent series representations of the given function 10. To compute the poles of given complex functions.	B.Sc. (H) Mathematics VI B	Complex Analysis, BMATH613
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III B and IIA	BMATH613 and BMATH410
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics IV B and VI B	Ring Theory and Linear Algebra-1 and Complex Analysis
	Test	Internal Exam will be conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics IV B and VI B	Ring Theory and Linear Algebra-1 and Complex Analysis
April	Theory 1	Linear transformation: definition and examples, null space, range space, nullity, rank, dimension theorem, one- one and onto Linear Transformations, Matrix representation of a Linear Transformation, Algebra of Linear Transformations, Isomorphisms, Invertibility and Isomorphisms, Change of Coordinate matrix	B.Sc. (H) Mathematics IV B	Ring Theory and Linear Algebra-I, BMATH410
	Theory 2	Uniqueness of series representations of power series. Isolated singular point, Residues, Cauchy's Residue Theorem, Types of Isolated Singular point, Residues at poles, Definite Integrals Involving Sines and Cosines	B.Sc. (H) Mathematics VI B	Complex Analysis, BMATH613
	Practicals	11. Finding residues of given functions 12. Evaluation of integrals by finding residues	B.Sc. (H) Mathematics VI B	Complex Analysis, BMATH613

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SEMESTER WISE

TEACHING PLAN

SRI VENKATESWARA COLLEGE

2021-22 Even Sem

Name of the Faculty: Ms. Pratibha Gaur Department: Mathematics

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Introduction, classification, construction and geometrical interpretation of first order partial differential equations (PDE), method of characteristic and general solution of first order PDE, canonical form of first order PDE, method of separation of variables for first order PDE.)	B.Sc(H) Maths Sem-IV A	BMATH408: Partial Differential Equations
	Tutorials	To Discuss the doubt of students and to solve various exercise of Definition and examples of rings, properties of rings, subrings, integral domains and fields, characteristic of a ring. Ideals, ideal generated by a subset of a ring, factor rings, operations on ideals, prime and maximal ideals.	B.Sc.(H) Maths Sem-IV A	BMATH410: Ring Theory & Linear Algebra-I
	Practicals	1. Solution of Cauchy problem for first order PDE. 2. Plotting the characteristics for the first order PDE.	B.Sc(H) Maths Sem-IV A	BMATH408: Partial Differential Equations
Feb	**Theory**	Mathematical modeling of vibrating string, vibrating membrane, conduction of heat in solids, gravitational potential, conservation laws and Burger's equations, classification of second order PDE, reduction to canonical forms, equations with constant coefficients, general solution.	B.Sc(H) Maths Sem-IV A	BMATH408, Partial Differential Equations
	Tutorials	To Discuss the doubt of students and to solve various exercise of Ring homomorphisms, properties of ring homomorphisms, Isomorphism theorems I, II and III, field of quotients.	B.Sc(H) Maths Sem-IV A	BMATH 410: Ring Theory & Linear Algebra-I

	Practicals	3. Plot the integral surfaces of a given first order PDE with initial data. 4. 4. 4. Solution of wave equation for associated conditions, Solution of one-Dimensional heat equation for a homogeneous rod of length ℓ with various examples.	B.Sc(H) Maths Sem-IV A	BMATH 408: Partial Differential Equations
	Test	To take class test related to syllabus and lab test related to above Practicals.	B.Sc(H) Maths Sem-IV A	BMATH408: PDE

March	**Theory**	Cauchy problem for second order PDE, homogeneous wave equation, initial boundary value problems, non-homogeneous boundary conditions, finite strings with fixed ends, non-homogeneous wave equation, Riemann problem, Goursat problem, spherical and cylindrical wave equation, Method of separation of variables for second order PDE.	B.Sc(H) Maths Sem-IV A	BMATH 408: Partial Differential Equations
	Tutorials	To Discuss the doubt of students and to solve various exercise of Vector spaces, subspaces, algebra of subspaces, quotient spaces, linear combination of vectors, linear span, linear independence, basis and dimension, dimension of subspaces. Linear transformations, null space, range, rank and nullity of a linear transformation	B.Sc(H) Maths Sem-IV A	BMATH 410: Ring Theory & Linear Algebra-I
	Practicals	5. Solution of one-Dimensional heat equation for a homogeneous rod of length ℓ with various examples. 6. Solving systems of ordinary differential equations.	B.Sc(H) Maths Sem-IV A	BMATH 408: Partial Differential Equations
	Assignments	To give assignment related to syllabus	B.Sc.(H) Maths Sem-IV A	BMATH 408, Partial Differential Equations
	Test	To take internal test related to syllabus and internal lab test related to above Practicals.	B.Sc(H) Maths Sem-IV	PDE
April	**Theory**	Vibrating string problem, existence and uniqueness of solution of vibrating string problem, heat conduction problem, existence and uniqueness of solution of heat conduction problem, Laplace and beam equation, non-homogeneous problem and to revise whole syllabus, to discuss last previous year questions papers.	B.Sc(H) Maths Sem-IV A	BMATH 408, Partial Differential Equations

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	Tutorials	To Discuss the doubt of students and to solve various exercise of matrix representation of a linear transformation, algebra of linear transformations. Isomorphisms, Isomorphism theorems, invertibility and isomorphisms, change of coordinate matrix.	B.Sc(H) Maths Sem-IV A	BMATH 410: Ring Theory & Linear Algebra-I
	Practicals	7. Drawing the sequence of function o given interval and discuss the point wise convergence. 8. Discuss the uniform convergence of sequence of function	B.Sc(H) Maths Sem-IV A	BMATH 408:Partial Differential Equations
	Test	To take test related to syllabus and internal lab test related to above Practicals.	B.Sc(H) Maths Sem-IV	BMATH 408:Partial Differential Equations

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

Name of the Faculty: Dr Rajni Arora

Department: Mathematics

Semester: IV/ VI

Month		Topics	Course	Paper Code/ Name
January	**Theory**	Definition and examples of rings, Properties of rings, Subrings. Integral domains and fields, Characteristic of a ring, Ideals, Ideal generated by a subset of a ring, Factor rings, Operations on ideals, Prime and maximal ideals	BSc(H) Mathematics Sem -IV	BMATH410: Ring Theory & Linear Algebra-I
	Theory	Interest rates, Types of rates, Measuring interest rates, Zero rates, Bond pricing, Forward rate, Duration, Convexity, Exchange traded markets and OTC markets, Derivatives- forward contracts, Futures contract, Options, Types of traders, Hedging, Speculation, Arbitrage.	BSc(H) Mathematics Sem -VI	DSE-3 (i): Mathematical Finance
	Practical	1. Solution of Cauchy problem for first order PDE. 2. Plotting the characteristics for the first order PDE.	BSc(H) Mathematics Sem -IV	BMATH408: Partial Differential Equations
	Tutorials	Problem discussion sessions and practice.	BSc(H) Mathematics Sem -VI	DSE-3 (i): Mathematical Finance
February	**Theory**	Ring homomorphisms, Properties of ring homomorphisms, First, Second and Third Isomorphism theorems for rings, The field of quotients, Vector spaces, Subspaces, Algebra of subspaces. Linear combination of vectors, Linear span, Linear independence	BSc(H) Mathematics Sem -IV	BMATH410: Ring Theory & Linear Algebra-I
	Theory	No Arbitrage principle, Short selling, Forward price for an investment asset, Types of options, Option positions, Underlying assets, Factors affecting option prices, Bounds on option prices, Put-call parity, Early exercise, Effect of dividends, Binomial option pricing model, Risk neutral valuation (for European and American options on assets following binomial tree model).	BSc(H) Mathematics Sem -VI	DSE-3 (i): Mathematical Finance
	Practical	3. Plot the integral surfaces of a given first order PDE with initial data. 4. Solution of wave equation subject to different types of boundary conditions.	BSc(H) Mathematics Sem -IV	BMATH408: Partial Differential Equations

	Tutorials	Problem discussion sessions	BSc(H) Mathematics Sem -VI	DSE-3 (i): Mathematical Finance
March	**Theory**	Bases and dimension. Dimension of subspaces, Linear transformations, Null space, Range, Rank and nullity of a linear transformation, Matrix representation of a linear transformation	BSc(H) Mathematics Sem -IV	BMATH410: Ring Theory & Linear Algebra-I
	Theory	Lognormal property of stock prices, Distribution of rate of return, expected return, Volatility, estimating volatility from historical data. Extension of risk neutral valuation to assets following GBM (without proof), Black−Scholes formula for European options.	BSc(H) Mathematics Sem -VI	DSE-3 (i): Mathematical Finance
	Practicals	5. Solution of one-dimensional heat equation subject to some boundary conditions 6. Solving systems of ordinary differential equations.	BSc(H) Mathematics Sem -IV	BMATH408: Partial Differential Equations
	Tutorials	Problem discussion sessions	BSc(H) Mathematics Sem -VI	DSE-3 (i): Mathematical Finance
	Assignment	Assignment to be submitted during mid -semester break consisting of questions from topics covered till date	BSc(H) Mathematics Sem –VI and VI	
	Test/Presentation	Test or ppt in last week of March from topics covered till date	BSc(H) Mathematics Sem –VI and VI	
April	**Theory**	Algebra of linear transformations, Isomorphisms, Isomorphism theorems, Invertibility and the change of coordinate matrix	BSc(H) Mathematics Sem -IV	BMATH408: Partial Differential Equations
	Theory	Hedging parameters (the Greeks: Delta, Gamma, Theta, Rho and Vega), Trading strategies Involving options, Swaps, Mechanics of interest rate swaps, Comparative advantage argument, Valuation of interest rate swaps, Currency swaps, Valuation of currency swaps	BSc(H) Mathematics Sem -VI	DSE-3 (i): Mathematical Finance
	Practicals	7. Drawing the sequence of functions on given interval and discuss the pointwise convergence. 8.Discuss the uniform convergence of sequence of functions.	BSc(H) Mathematics Sem -IV	BMATH408: Partial Differential Equations
	Tutorials	Problem discussion sessions	BSc(H) Mathematics Sem -VI	DSE-3 (i): Mathematical Finance

Signature of the teacher

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Semester Wise Teaching plan
Sri Venkateswara College
2021- 2022 Even Semester

Name of Faculty: **Dr. Ramesh K Budhraja**
Department: **Mathematics**
Semester: **VI**

Month		Topics	Course	Paper Code and Name
January	Theory	Introduction to Linear Programming, Graphical solution, Basics of Simplex Method, Basic Feasible solutions, Reduction of feasible solution to BFS, 1-1 correspondence. Simplex Method. Examples, Illustrations and Questions based on these topics.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Practicals	1. Make a geometric plot to show that the *n*th roots of unity are equally spaced points that lie on the unit circle and form the vertices of a regular polygon with *n* sides, for *n* = 4, 5, 6, 7, 8. 2. Find all the solutions of the equation z^3=8i and represent these geometrically. 3. Write parametric equations and make a parametric plot for an ellipse centered at the origin with horizontal major axis of 4 units and vertical minor axis of 2 units. Show the effect of rotation of this ellipse by an angle of Pi/6 radians and shifting of the centre from (0,0) to (2,1), by making a parametric plot. 4. Image of open disk under the given linear transformation	B.Sc. (H) Mathematics VI B	, BMATH613 Complex Analysis
	Tutorials	Doubts and Questions based on these Theory Topics will be taken up.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications

February	Theory	Simplex Method along with Theorems, Solving LPPs using Simplex method. Solution of System of Equations and Inverse finding method.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Practicals	5. Plotting image of right half plane under the given linear transformation 6. To plot the given polygonal path 7. Performing contour integration of the given functions along the given path	B.Sc. (H) Mathematics VI B	BMATH613 Complex Analysis
	Tutorials	Doubts and Questions based on these Theory Topics will be taken up.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
March	Theory	Duality Theory. Introduction to Transportation problem, Basics and Solving Transportation problem using UV - method	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Practicals	8. Some more problems on contour integration 9. Finding and plotting three different Laurent series representations of the given function 10. To compute the poles of given complex functions.	B.Sc. (H) Mathematics VI B	BMATH613 Complex Analysis
	Tutorials	Doubts and Questions based on these Theory Topics will be taken up.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications

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	Test	Internal Exam will be conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
April	Theory	Assignment problem and its solution using Hungarian method	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications
	Practicals	11. Finding residues of given functions 12. Evaluation of integrals by finding residues	B.Sc. (H) Mathematics VI B	BMATH613 Complex Analysis
	Tutorials	Doubts and Questions based on these Theory Topics will be taken up.	B.Sc. (H) Mathematics Sem VI	DSE - 4 (ii) Linear Programming and Applications

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Dr. Ramesh K Budhraja

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

Name of the Faculty: Dr. Shahna

Department: Mathematics

Semester: Even (IV & VI)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Polynomial rings over commutative rings, Division algorithm and consequences, Principal ideal domains, Factorization of polynomials, Reducibility tests, Irreducibility tests, Eisenstein's criterion, Unique factorization in $\mathbb{Z}[x]$.	B.Sc(H) Maths Sem-VI B	BMATH614- Ring Theory and Linear Algebra-II
	Theory	First order exact differential equations including rules for finding integrating factors, First order higher degree equations solvable for x, y, p and Clairut's equations; Wronskian and its properties;	B.A. (Prog) Sem- VI	DSE-2 Differential Equations
	Practical	Bisection method, Secant method and Regula-Falsi method	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons)	GE-4 Numerical Methods (including practicals)

FEBRUARY	**Theory**	Divisibility in integral domains, Irreducibles, Primes, Unique factorization domains, Euclidean domains. Dual spaces, Double dual, Dual basis, Transpose of a linear transformation and its matrix in the dual basis, Annihilators; Eigenvalues, Eigenvectors, Eigenspaces and characteristic polynomial of a linear operator	B.Sc(H) Maths Sem-VI B	BMATH614- Ring Theory and Linear Algebra-II

	Theory	Linear homogeneous equations with constant coefficients, The method of variation of parameters; Euler's equations; Simultaneous differential equations; Total differential equations.	B.A. (Prog) Sem- VI	DSE-2 Differential Equations
	Practical	Newton-Raphson method, Gaussian elimination method and Gauss-Jordan method	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons)	GE-4 Numerical Methods (including practicals)

MARCH	**Theory**	Diagonalizability, Invariant subspaces and Cayley−Hamilton theorem; Minimal polynomial for a linear operator. Inner product spaces and norms, Orthonormal basis, Gram−Schmidt orthogonalization process, Orthogonal complements, Bessel's inequality.	B.Sc(H) Maths Sem-VI B	BMATH614- Ring Theory and Linear Algebra-II
	Theory	Order and degree of partial differential equations, Concept of linear partial differential equations, Formation of first order partial differential equations, Linear partial differential equations of first order and their solutions.	B.A. (Prog) Sem- VI	DSE-2 Differential Equations
	Practical	Jacobi method, Gauss-Seidel method, Lagrange interpolation and Newton interpolation	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Maths	GE-4 Numerical Methods (including practicals)
	Assignment	Assignments to be given on each course		
	Test	To take internal test of above courses.		

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APRIL	**Theory**	Adjoint of a linear operator, Least squares approximation, Minimal solutions to systems of linear equations, Normal, self-adjoint, unitary and orthogonal operators and their properties.	B.Sc(H) Maths Sem-VI B	BMATH614- Ring Theory and Linear Algebra-II
	Theory	Concept of non-linear partial differential equations, Lagrange's method, Charpit's method, classification of second order partial differential equations into elliptic, parabolic and hyperbolic through illustrations only.	B.A. (Prog) Sem- VI	DSE-2 Differential Equations
	Practical	Trapezoidal rule, Simpson's rule and Euler methods for solving first order initial value problems of ODE's.	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons)	GE-4 Numerical Methods (including practicals)

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Department of Mathematics

Sri Venkateswara College

Even Semester Teaching Plan (January-April 2022)

Faculty: Ms. Shakuntla Wadhwa

Month		Topics	Course	Paper Name and code
January	Theory	Linear Diophantine equation, congruence relation and its properties, linear congruence, Set of residues, Chinese remainder theorem, Fermat's little theorem, Wilson's theorem	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV
February	Theory	Number theoretic functions, sum and number of divisors, Multiplicative functions, definition and properties of Dirichlet function, The Mobius inversion formula, the greatest integer function, Euler's phi function and properties, Euler's theorem, reduced set of residues	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV
March	Theory	Order of an integer modulo n, primitive roots for primes, composite numbers having primitive roots, Definition of quadratic residue of an odd prime, and Euler's criterion, Legendre symbol and its properties, Quadratic Reciprocity Law, the Legendre symbol and its properties	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics III year	DSE IV

	Internal Test	Internal Exam will be conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics III year	DSE IV
April	Theory	Quadratic congruencies with composite moduli, Statement of prime number theorem, Goldbach conjecture, Prime counting function, public key encryption and decryption	B.Sc. (H) Mathematics III year	DSE IV Number Theory

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SEMESTER WISE

TEACHING PLAN

SRI VENKATESWARA COLLEGE
Teaching Plan: Even Sem 2021-22

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

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Finite and infinite sets, Examples of countable and uncountable sets; Absolute value and the Real line.	GE-IV	Elements of Analysis
	Theory	Limits, Limits involving the point at infinity, continuity. Properties of complex numbers, regions in the complex plane, functions of complex variable, mappings. Derivatives, differentiation formulas, Cauchy-Riemann equations, sufficient conditions for differentiability.	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related Finite and infinite sets, Examples of countable and uncountable sets; Absolute value and the Real line	GE-IV	Elements of Analysis
	Practicals	1. Make a geometric plot to show that the n th roots of unity are equally spaced points that lie on the unit circle and form the vertices of a regular polygon with n sides, for n = 4, 5, 6, 7, 8. 2. Find all the solutions of the equation m = 89 and represent these geometrically. 3. Write parametric equations and make a parametric plot for an ellipse centered at the origin with horizontal major axis of 4 units and vertical minor axis of 2 units. Show the effect of rotation of this ellipse by an angle of radians and shifting of the centre from (0,0) to (2,1), by making a parametric plot.	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)
Feb	**Theory**	Suprema and infima, The completeness property of $\mathbb{R}$, Archimedean property of $\mathbb{R}$	GE-IV	Elements of Analysis

	Theory	Analytic functions, examples of analytic functions, exponential function, Logarithmic function, trigonometric function, derivatives of functions, definite integrals of functions, Contours, Contour integrals and its examples, upper bounds for moduli of contour integrals.	B.Sc(H) Maths Sem-VI A	Complex Analysis
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Suprema and infima, The completeness property of $\mathbb{R}$, Archimedean property of $\mathbb{R}$.	GE-IV	Elements of Analysis
	Practicals	To perform contour integration, To plot the complex functions and analyze the graph and To perform the Taylor series expansion of a given function f(z) around a given point z. The number of terms that should be used in the Taylor series expansion is given for each function. Hence plot the magnitude of the function and magnitude of its Taylors series expansion.	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)
	Test	To take class test related to syllabus and lab test related to above Practicals.	B.Sc.(H) Math /GE-4	
March	**Theory**	Convergence, sum and product of convergent sequences, Order preservation and squeeze theorem; Monotone sequences and their convergence. Proof of convergence of some simple sequences	GE-4	Elements of Analysis
	Theory	Antiderivatives, proof of antiderivative theorem, Cauchy-Goursat theorem, Cauchy integral formula. An extension of Cauchy integral formula, consequences of Cauchy integral formula, Liouville's theorem and the fundamental theorem of algebra, Convergence of sequences and series, Taylor series and its examples. Laurent series and its examples, absolute convergence of power series.	B.Sc(H) Maths Sem-VI A	Complex Analysis

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	Tutorials:	To discuss the doubt of students and various exercise questions and examples related Convergence, sum and product of convergent sequences, Order preservation and squeeze theorem; Monotone sequences and their convergence. Proof of convergence of some simple sequences	GE-4	Elements of Analysis
	Practicals	To determines how many terms should be used in the Taylor series expansion of a given function f(z) around z = 0 for a specific value of z to get a percentage error of less than 5 %,To perform Laurent's series expansion of a given function f(z) around a given point z .	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)
	Assignments	To give assignment Related to above syllabus.		
	Test	To take internal test related to syllabus And internal lab test related to above Practicals.	B.Sc(H) Maths Sem-VI/VI A	

April	**Theory**	Subsequences and the Bolzano−Weierstrass theorem; Limit superior and limit inferior of a bounded sequence; Cauchy sequences, Cauchy convergence criterion for sequences.	GE-4	Elements of Analysis
	Theory	Uniform convergence of power series, uniqueness of series representations of power series, Isolated singular points, residues, Cauchy's residue theorem, residue at infinity. Types of isolated singular points, residues at poles and its examples, definite integrals involving sines and cosines and revise the syllabus.	B.Sc(H) Maths Sem-VI B	Complex Analysis

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	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Subsequences and the Bolzano−Weierstrass theorem; Limit superior and limit inferior of a bounded sequence; Cauchy sequences, Cauchy convergence criterion for sequences and whole syllabus and discuss previous year questions papers	GE-4	Elements of Analysis
	Practicals	To compute the poles and corresponding residues of complex functions, to perform Conformal Mapping and Bilinear Transformations and to revise the whole Practicals syllabus.	B.Sc(H) Maths Sem-VI A	Complex Analysis (Analysis V)

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SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

2021-22 Even Semester

Name of the Faculty: Dr. Swarn Singh

Department: Mathematics

Semester: IV

Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory:**	Floating point representation and computer arithmetic, Significant digits; Errors: Roundoff error, Local truncation error, Global truncation error; Order of a method, Convergence and terminal conditions; Bisection method, Secant method,	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods
	Practicals :	Basic concepts of Mathematica and Practical (1) Bisection method	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods
	Tutorials:			
FEBRUARY	**Theory:**	Regula−Falsi method, Newton−Raphson method., Gaussian elimination method (with row pivoting), Gauss−Jordan method; Iterative methods: Jacobi method, Gauss−Seidel method;	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods
	Practicals :	Practicals (2) Secant method and Regula Falsi Method (3)Newton Raphson Method	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods
	Tutorials:			
MARCH	**Theory:**	Interpolation: Lagrange form, Newton form, Finite difference operators, Gregory−Newton forward and backward difference interpolations, Piecewise polynomial interpolation (linear and quadratic).	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods
	Practicals :	Practicals: (4) Gauss elimination method and Gauss-Jordan method (5) Jacobi method and Gauss Siedel method (6) Lagrange Interploation and Newton Interpolation	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods
	Tutorials:			
	Assignment	Assignment to be given related to syllabus.	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods

APRIL	**Theory**	Numerical differentiation: First and second order derivatives, Richardson extrapolation method; Numerical integration: Trapezoidal rule, Simpson's rule; Ordinary differential equation: Euler's method, Modified Euler's methods (Heun's and midpoint) and to revise whole syllabus. To discuss previous year questions papers some of which are available on my Blog https://numericalmaths.wordpress.com/	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods
	Practicals :	Practicals: (7) Trapezodial rule and Simpson's rule (8) Euler methods for solving first order initial value problems of ODE's and revise all practicals	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods
	Tutorials:			
	Internal Test	To take internal Test based on the syllabus covered.	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods
		To take internal Lab Test based on the syllabus covered.	B.Sc.(Hons.), B.Com(Hons.) Sem IV	GE Numerical Methods

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

Name of the Faculty: Namita Pandey **Department:** Political Science

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Globalisation - Concepts and Perspectives: Understanding globalisation and its alternative perspectives with reference to hyperglobalists, skeptics and transformational debate. Political: Debates on Sovereignty and Territoriality Global Economy: Its significance and impact. Anchors of global political economy: 1. IMF: Role, Functions and Structure 2. World Bank: Role, Functions and Structure		Global Politics
	Practicals			
	Tutorials	Discussion on Robert Keohane's article Sovereignty in international society and Susan Strange's article Declining authority of nation states		
FEBRUARY	**Theory:**	WTO: Role, Functions and Structure Transnational Corporations: Role, Functions and Structure Culture and technological dimensions: Culture and Globalisation with reference to convergence, differentiation and diffusion of culture Globalisation and Technology: Technological Facilitation of Globalization and its impact. Global Resistance Movement: A) Global Social Movement B)NGO's		

	Practicals:			
	Tutorials:	Discussion on Samuel Huntington's Clash of Civilization and Benjamin Barber's Article on Mcworld vs Jihad Discussion on the impact of transnational corporations on developing countries.		

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	Assignment :	Define Globalisation; Discuss Alternative perspectives of Globalization		
MARCH	**Theory:**	Ecological Issues: Historical overview of international environment agreements, climate change, global commons debate. Contemporary Global Issues Proliferation of Nuclear Weapons International Terrorism, Non-State Actors and State Terrorism; Post 9-11 developments		
	Practicals:			
	Tutorials:	Discussion of Non Proliferation Treaty and its impact.		
	Test	Discuss the concept of Political with special reference to debates of Sovereignty & Territoriality Critically examine the working of the WTO Write an Essay on Global Social Movements		
APRIL	**Theory:**	Migration: Definition and nature of international migration Human Security - Difference between traditional and human security; Components of Human Security		
	Practicals:			
	Tutorials:	Presentation on Food Insecurity in India		

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MAY	**Theory:**	Globalization: Power & Resource Governance		
	Practicals:			
	Tutorials:	Discussion on Major Shifts in the nature of power and governance post 1990		

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

Name of the Faculty: Dr Jita Mishra **Department: Political Science**

Semester : II/IV/VI Political Theory- Concepts and Debates

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Liberty- negative and positive	Ba Hons political science 1 year 11 term	PAPER111 2.1 Political Theory- Concepts and debates
	Practicals			
	Tutorials	Discussion J S mill on liberty		
FEBRUARY	**Theory:**	Freedom emancipation, swaraj		
	Practicals:			
	Tutorials:	Relationship between equality and liberty		

the

	Assignment :	Critically evaluate the negative concept of liberty,		
MARCH	**Theory:**	Justice, Rawls		
	Practicals:			
	Tutorials:	Swaraj Discussion on free speech		
	Test	Critically evaluate Rawls theory of justice.		
APRIL	**Theory:**	Feminist perspective of justice		
	Practicals:			
	Tutorials:	Human rights		

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MAY	**Theory:**	Affirmative action		
	Practicals:			
	Tutorials:	Affirmative action		

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

Name of the Faculty: Dr Jita Mishra
Department:Political science

Semester : II/IV/VI

Paper: Citizenship in a Globalising World

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Classical conceptions of citizenship Greek, roman	BA Hons political science 3 rd year vi sem	6.3 A Citizenship in a Globalizing world
	Practicals			
	Tutorials	Plato and Aristotle		
FEBRUARY	**Theory:**	The evolution of citizenship		
	Practicals:			
	Tutorials:	Historical evolution		

	Assignment :	Critically evaluate the classical theory of citizenship		
MARCH	**Theory:**	Liberal theory of citizenship		
	Practicals:			
	Tutorials:	T H marshall		
	Test	Discuss Giddens criticism of marshalls theory of citizenship		
APRIL	**Theory:**	Citizenship beyond the nation state globalisation		
	Practicals:			
	Tutorials:	globalisation		

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MAY	**Theory:**	Global Justice		
	Practicals:			
	Tutorials:	Global justice		

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

Name of the Faculty: Dr Arup Singh **Department: Political Science**

Semester : II

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1.Political Parties & the Party System 2.Voting Behaviour		
	Practicals			
	Tutorials	Political Parties & the trends & changes in the party system		
FEBRUARY	**Theory:**	2. Voting Behaviour (contd.) 3. Regional Aspirations. The Politics of Secession & Aspiration		
	Practicals:			
	Tutorials:	Voting Behaviour. Regional Aspirations.		

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	Assignment :	Trends and changes in Party System since Independence		
MARCH	**Theory:**	3. Regional Aspirations (contd.) 4. Religion & Politics. Debates on Secularism; minority 7 majority communalism		
	Practicals:			
	Tutorials:	Religion & Politics. Debates on Secularism & Communalism		
	Test	Regional Aspirations		
APRIL	**Theory:**	5. Caste & Politics. Caste in politics and the politicisation of caste 6.Affirmative Action Policies. Women, Caste & Class		
	Practicals:			
	Tutorials:	Caste & politics. Affirmative Action		

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MAY	**Theory:**	7.The Changing Nature of the Indian State: Developmental, Welfare & Coercive Dimensions		
	Practicals:			
	Tutorials:	Affirmative Action (contd.). The Changing nature of the Indian State.		

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

Name of the Faculty: Dr Arup Singh **Department: Political Thought**

Course: BA (Hons) Political Science 3rd year **Semester: VI**

Paper: Indian Political Thought - II

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1.Introduction to Modern Political Thought 2 Rammohan Roy: Rights		
	Practicals			
	Tutorials	Introduction to Indian Political Thought. Rammohan Roy		
FEBRUARY	**Theory:**	3. Pandita Ramabai : Gender 4.Vivekananda : Ideal Society		
	Practicals:			
	Tutorials:	Pandita Ramabai . Vivekananda		

	Assignment :	Vivekananda		
MARCH	**Theory:**	5 Gandhi: Swaraj .6 Ambedkar: Social Justice		
	Practicals:			
	Tutorials:	Gandhi. Ambedkar		
	Test	Gandhi & Ambedkar		
APRIL	**Theory:**	7Tagore: critique of Nationalism 8.Iqbal :Community 9. Savarkar: Hindutva		
	Practicals:			
	Tutorials:	Tagore. Iqbal. Savarkar		

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MAY	**Theory:**	10. Nehru:Nationalism 11.Lohia:Socialism		
	Practicals:			
	Tutorials:	Nehru. Lohia		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE 2021-2022

Name of the Faculty: Dr Deepika Singh
Department: political science

Semester : IV

Paper : Introduction To International Relations

Month		Topics	Cour	Paper Code/Name
JANUARY	**Theory**	**Unit 1** **Early Debates In International Relations:** **a) Idealism vs Realism** **b) Liberalism To Neo Liberal Institutionalism** **c) Structural Approaches: World System Theory and De[pendency School**	B A Program	**Introduction To International Relations**
	Tutorials	Discussion on the above mentioned topics		
FEBRUARY	**Theory:**	D) Feminist Perspectives: Ann Tickner **Unit 2** Post War Intranational Relations and Emergence Of Cold war a) Second World War and Emergence of Cold War b) Phases of Cold War: First Cold War, Rise and Fall of Détente, Second Cold War and End of Cold War and Collapse Of Soviet Union		
	Tutorials :	Discussions on the above-mentioned topics		

	Assignment :	Realism vs Idealism in contemporary polituics		
MARCH	**Theory:**	C) Post Cold War Era and Emerging Centres of Powers: EU, China And Russia and Japan **Unit 3 India's Foreign Policy** **a) Basic Determinants (Historical, Geopolitical , Economic, Domestic and Strategic**		
	Tutorials:	Concept of nation State		
	Test	Internal test		
APRIL	**Theory:**	**b) . India's Policy of Non Alignment** **c) India : AN Emerging Power**		
	Tutorials:	Discussion on topics covered		
	Tutorials:	Addressing doubts		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE 2021-2022

Name of the Faculty: Dr Deepika Singh
Department: political science
Semester : IV

Paper : POLITICAL PROCESSES AND INSTITUTIONS IN COMPARATIVE PERSPECTIVE

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Forms of Government:** Unitary and Federal System **Regime Types: Democratic, Authoritarian, Populism**	B A HONOURS	**: POLITICAL PROCESSES AND INSTITUTIONS IN COMPARATIVE PERSPECTIVE**
	Tutorials			
FEBRUARY	**Theory:**	ELECTORAL SYSTEM; A)DEFINITIONS AND PROCEDURES; TYPES OF ELECTION SYSTEM (first past the post, proportional representation, mixed representation) Party system Historical context of emergence of the party system		
	Tutorials:			

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	Assignment :	Comparing Various Federal System in contemporary politics.		
MARCH	**Theory:**	Nation state What is nation state? HISTORICAL EVOLUTION IN WESTERN EUROPE AND POST COLONIAL CONTEXT NATION AND STATE DEBATE DEMOCRATISATION: PROCESS OF DEMOCRATISATION,		
	Tutorials:	Concept of nation State		
	Test	Internal test		
APRIL	**Theory:**	POST AUTHORITARIANISM AND POST COMMUNIST COUNTRIES FEDERALISM; HISTORICAL CONTEXT FEDERATION AND CONFEDERATION .		
	Tutorials:	Discussion on Federalism		
MAY	**Theory:**	DEBATES AROUND TERRITORIAL DIVISION		
	Tutorials:	Discussion on territorial division		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-June, 2022

Name of the Faculty: **Dr SANTOSH KUMAR SINGH**

Department: **POLITICAL SCIENCE**

Semester: **B.A (H)-VIth**

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Understanding modern political philosophy Modernity and Its Discourses-Kant, Hegel, Marx, Derrida & Hall Rousseau's Philosophy-State, Social Contract, General Will, Government & Education	B.A (H)	Modern Political Philosophy/Paper XIII
		Knowledge vs Ideas Forms vs Ideas Metaphysics & Epistemology		
	Tutorials:	Discourse on Modernity, Enlightenment and Post-Modernity Corelating the Rousseau's Contribution in terms of Modernity Rousseau's Social Contract theory, Government, Education & discourses on Inequality		
February	**Theory:**	Rousseau's Contract Theory Vs Hobbes and Lockes's Theory Liberty-Equality and Rights theory Mary Wollstonecraft and Feminism, On Rousseau's Education, Rights, Women and paternalism		Modern Political Philosophy/Paper XIII

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	Tutorials:	State birth Vs Contractarian Thinkers Rousseau as a Thinker Mary Wollstonecraft's contributions in the modern political philosophy. Mary as Feminist Thinker		
March	**Theory:**	J S Mill on Representative Government Liberty, Expression, Rights of minorities; subjection of women Hegel's Philosophy-Dialectics Ethical life: family, civil society and state		Modern Political Philosophy/Paper XIII
	Tutorials:	Examine the concept of Mill in modern era. Hegal's contribution in the philosophy		
	<u>Assignment</u>	Critically examine the contributions of Immanuel Kant in the Enlightenment tradition in modern political philosophy and corelate with the Rousseau's philosophy. What is 'Modernity'? Examine the role of the enlightenment tradition in enriching the modern political philosophy		
April	**Theory**	Marx Philosophy, State, Class, Revolution, Marx and Modernity, Marx and Science		Modern Political Philosophy/Paper XIII

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	Tutorials:	Where there is no common power, there is no law where no law, there is no justice (Hobbes). In the light of this discuss Hobbes's The theory of Social Contract as developed by Hobbes has its own problems. What main problems do you see in it?		
	<u>Mid Term Test</u>	Why is Karl Marx regarded as the founder of scientific socialism? Would you describe him as evolutionary or revolutionary socialist?		
		Rousseau's theory of General Will "is a strange mixture of utopian idealism and plain common sense." Discuss Rousseau's political philosophy was so vogue that it could hardly be said to point in any specific direction' (Sabine). How Far "I found the Hegelian dialectics standing on its head. I put it down on its feet" (Karl Marx). Critically examine the statement, Did Karl Marx succeed in his attempt? Why is Karl Marx regarded as the founder of scientific socialism? Would you describe him as evolutionary or revolutionary socialist? do you agree with it?		
	Tutorials:	Discuss the views of J S Mill for securing Individual liberty in modern state. Is it correct to say that he was prophet of an empty liberty? What are the dangers of representative government, according to J S Mill? What safeguards against these dangers does he prescribe? "Rousseau's political philosophy was so vague that it could hardly be said to point in any specific direction"		

		(Sabine). How far do you agree with it? “I found the Hegelian dialectics standing on its head. I put it down on its feet” (Karl Marx). Critically examine the statement, Did Karl Marx succeed in his attempt? Critically analyse the ‘Hegal’s philosophy on State and Civil Society’		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-June 2022

Name of the Faculty: **Dr SANTOSH KUMAR SINGH**

Department: **POLITICAL SCIENCE**

Semester: **B.Com (P)-IInd Semester**

Month		Topics	Course	Paper Code/Name
April	**Theory:**	What is Politics? Nature and Significance of Political Science Political Theory vs Thought vs Philosophy Relevance of Political Theory and Science	B.Com (P) MIL	Introduction to Political Theory (52321422)
	Tutorials:	Compare the political Science with other Subjects. Significance of Political Science in contemporary Era		
May	**Theory:**	Political Concepts: Democracy Liberty, Equality and Rights	B. Com (P) MIL	Introduction to Political Theory (52321422)
	Tutorials:	Relationship between Liberty, Equality and Rights		
June	**Theory:**	Civil Society and State Relationship between Civil Society and State	B.Com (P) MIL	Introduction to Political Theory (52321422)

		Examine the role of civil society in democracy.		
	Tutorials:	The Myth of State Intervention in the Family		
	<u>Assignment</u>	1. Discuss liberal theory of Democracy. On what grounds Marxists have criticised it. 2. What is Citizenship? Elucidate Giddens views as a critique of Marshall's Theory of Citizenship. 3. What is Justice? Critically examine the John Rawls theory of distributive Justice. 4. Do you think Democracy and Economic growth are compatible? Discuss		
July	**Theory**	Is democracy compatible with economic growth? Does protective discrimination violate principles of fairness?	B.Com (P) MIL	Introduction to Political Theory (52321422)
	Tutorials:	How do you see the role of democracy in modern state? Liberty, equality under Democrcay		
	<u>Mid Term Test</u>			

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-June, 2022

Name of the Faculty: **Dr SANTOSH KUMAR SINGH**

Department: **POLITICAL SCIENCE**

Semester: **B.A (P)-VIth Generic Elective - (GE)**

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Understand the issues concerning the rights of citizens, Conceptual dimensions, international trends on Human Rights, Social Inequality-Caste, Gender, Ethnicity and Class Globalisation and its impact on workers, peasants, dalits, adivasis and women	B.A (P) Generic Elective - (GE)	Human Rights, Gender and Environment (62325602)
	Tutorials:	Understanding of socio – economic and political problems of marginalized groups in society such as women, dalits, minorities and adivasis		
February	**Theory:**	Human Rights: Various Meanings, UN Declarations and Covenants, Human Rights and Citizenship Rights Human Rights and the Indian Constitution Human Rights, Laws and Institutions in India; the role of the National Human Rights Commission	B.A (P)	Human Rights, Gender and Environment (62325602)
	Tutorials:	Understand the impact of globalization-Economic, political and Social Human right in Globalisation		

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		Role and significance of Human Rights		
March	**Theory:**	Human Rights of Marginalized Groups: Dalits, Adivasis, Women, Minorities and Unorganized Workers, Consumer Rights, Human Rights Movement in India	B.A (P)	Human Rights, Gender and Environment (62325602)
	Tutorials:	Human Rights and Constitutional Rights, UN and Human Rights, The Consumer Protection Act and grievance redressal mechanisms, Human Rights and Globalisation		
	<u>Assignment</u>	What do understand by the term 'social inequality'? Discuss the various forms of inequality in the form of class and gender on Human Rights What do you understand the term Patriarchy? Discuss the role and impact of patriarchy on Indian Society. Discuss the role and significant contributions of Universal Declaration on Human Rights.		
		Discuss the role of various institutions of India to protect the Women's right. What do you understand by the term Sustainable Development? Discuss the various initiative undertaken in the world.		
April	**Theory**	Analysing Structures of Patriarchy & Gender, Economic Development and Women, Women's Political Participation and Representation in India, Women's Rights in India, Women's Movements in India	B.A (P)	Human Rights, Gender and Environment

	Tutorials:	Women Institutions in India Women in Legislature Women in India		
	<u>Mid Term Test</u>	1. What is social inequality? discuss the impact and role of globalisation on social inequality. with especial reference to India. 2. Critically discuss the impact of globalisation on Indian social structure. 3. What do you understand by the term Globalisation. How are the forces of globalisation affecting the working class in the rural and urban India?		
		4. 'The Constitution of lndia upholds the tenets of Human Rights through various provisions enumerated in it' Discuss. 5. What do you understand by the term Sustainable Development? Discuss the various initiative undertaken in the world. 6. What are the provisions related to the protection of human rights in the Indian Constitution.		

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

Name of the Faculty: **Dr. Haokam Vaiphei**
Department: **Political Science**
Even Semester: **II/IV/VI**

Name of the Paper**: Policy and Administration in India, IV SEM (3 classes/week, shared with Principal)**

Month		Topic	Course	Paper Code/Name
January	**Theory**	Budget	Honours Core Paper	**12321402_OC**
	Practicals			
	Tutorials	The budget process in Parliament		
February	**Theory**	Citizen and Administration Interface		
	Practicals			
	Tutorials	Technology and Public Administration		
	Assignment	Write a research paper on any topic related to current public policy in India.		
March	**Theory**	Social Welfare Administration		
	Practicals			
	Tutorials	Redressal Grievance System		
April	**Theory**	Social Welfare Administration		
	Practicals			
	Tutorials	Various Schemes		
	Test	Presentations of Projects		
May	**Theory**	Social Welfare Administration		
	Practicals			
	Tutorials	Various Schemes		

Name of the Paper: **Colonialism and Nationalism in India (DSE) VI SEM (5 classes/week)**

Month		Topic	Course	Paper Code/Name
January	**Theory**	**Colonialism & Nationalism:** a. Main perspectives on colonialism: Liberalism, Marxism, Postcolonialism b. Approaches to the study of nationalism in India: Nationalist, Imperialist, Marxist, and Subaltern interpretations	Honours DSE Paper	**12327905**
	Practicals			
	Tutorials	Subaltern Approach		
February	**Theory**	**Colonial Rule in India and its impact:** a. Constitutional developments and the colonial state b. **Colonial ideology of civilizing mission**: Utilitarians and Missionaries		

		c. Impact on agriculture, land relations, industry and ecology		
	Practicals			
	Tutorials	Civilizing Mission		
	Assignment	Write a Project on any one topic: 1. Your Idea of India 2. Freedom Movements, Fighters etc of Northeast India. 3. Stories of Freedom Fighters or Movements that are not recorded in mainstream history. Minimum word limit: 1500 Words.		
March	**Theory**	**Reform and Resistance:** a. The 1857 rebellion b. Major social and religious movements c. Education and the rise of the new middle class		
	Practicals			
	Tutorials	Rise of Middle Class		
April	**Theory**	**Nationalist Politics and Expansion of its Social Base** a. Phases of the Nationalist Movement: Liberal constitutionalist, Swadeshi and the Radicals, Formation of the Muslim League b. Gandhi and mass mobilization: Non-cooperation, Civil Disobedience, and Quit India Movements c. Socialist alternatives: Congress socialists, Communists d. Communalism in Indian Politics e. The two-nation theory, negotiations over partition		
	Practicals	Presentation of Projects		
	Tutorials			
	Test	Presentations of Assignments		
May	**Theory**	Social Movements a. The Women's Question: participation in the national movement and its impact b. The Caste Question: anti-Brahmanical Politics c. Peasant, Tribals, and Workers movements		
	Practicals			
	Tutorials	Women empowerment		

Name of the Paper**: Your Laws and Your Rights BA H (SEC Paper) IV SEM (2 classes/week, shared with Amit Yadav)**

Month		Topic	Course	Paper Code/Name
January	**Theory**	Rule of Law and the Criminal Justice System in India	Honours SEC Paper	**12323901_OC**
	Practicals			
	Tutorials	Criminal Justice		
February	**Theory**	Laws Relating to Criminal Justice Administration in India		
	Practicals			
	Tutorials			
	Assignment	Write a research paper relevant to any topic of this course.		

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March	**Theory**	How to file a complaint, First Information Report (FIR) Detention, arrest and bail		
	Practicals			
	Tutorials			
April	**Theory**	**Gender:** The protection of women against domestic violence, rape and sexual harassment **Caste:** Laws abolishing untouchability and providing protection against atrocities		
	Practicals			
	Tutorials	Domestic Violence		
	Test			
May	**Theory**	Class: laws concerning minimum wages d. Disability and equality of participation and opportunity		
	Practicals			
	Tutorials	Issues related to disability and the question of equality		

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(Dr. Haokam Vaiphei)
Assistant Professor
Department of Political Science

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SEMESTER WISE TEACHING PLAN (2021-2022)
SRI VENKATESWARA COLLEGE
Even Semester
Jan-April, 2022

Name of the Faculty: Dr. Vikash Kumar

Department: Political Science

Semester: BA (P)- Political Science 4th Semester
Public Opinion and Survey Research
(12323902)

Month		Topics	Course	Paper Code/Name
JANUARY, 2022	**Theory**	public opinion, conceptions and characteristics, uses for opinion poll	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
	Practicals	NA		
	Tutorials	Discussion with students	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
FEBRUARY, 2022	**Theory:**	Measuring Public Opinion with Surveys: Sampling design and Survey Research: Interview and Questionnaire	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
	Practicals:	NA		
	Tutorials:	Questions and Answer session	BA (P)- Political Science 4th Semester	Public Opinion and Survey Research (12323902)

	Assignment:		BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
MARCH, 2022	**Theory:**	Quantitative Data Analysis: Prediction, descriptive statistics	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
	Practicals:	NA		
	Tutorials:	Discuss with students	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
	Test		BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
APRIL, 2022	**Theory:**	Interpreting polls: Prediction in polling research and politics	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
	Practicals:			
	Tutorials:	Questions and Answers Session	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)

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SEMESTER WISE TEACHING PLAN (2021-2022)
SRI VENKATESWARA COLLEGE
Even Semester
Jan-April, 2022

Name of the Faculty: Dr. Vikash Kumar

Department: Political Science

Semester: BA (P)- Political Science 6th Semester
Democracy and Governance (62327602)

Month		Topics	Course	Paper Code/Name
JANUARY, 2022	**Theory**	Idea and Institution of Public Policy	BA (P)- Political Science 6th Semester	Democracy and Governance (62327602)
	Practicals	NA		
	Tutorials			
FEBRUARY,2022	**Theory:**	Policy design and Institutions of Policy making	BA (P)- Political Science 6th Semester	Democracy and Governance (62327602)
	Practicals:	NA		
	Tutorials:			

	Assignment:		BA (P)- Political Science 6th Semester	Democracy and Governance (62327602)
MARCH, 2022	**Theory:**	Regulatory Institutions	BA (P)- Political Science 6th Semester	Democracy and Governance (62327602)
	Practicals:	NA		
	Tutorials:			
	Test		BA (P)- Political Science 6th Semester	Democracy and Governance (62327602)
APRIL, 2022	**Theory:**	Lobbying Institutions	BA (P)- Political Science 6th Semester	Democracy and Governance (62327602)
	Practicals:			
	Tutorials:			

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SEMESTER WISE TEACHING PLAN (2021-2022)
SRI VENKATESWARA COLLEGE
Even Semester
Jan-April, 2022

Name of the Faculty: Dr. Vikash Kumar

Department: Political Science

Semester: BA (H)- Political Science 6th Semester
Public Policy in India (12327904)
DSE Paper

Month		Topics	Course	Paper Code/Name
JANUARY, 2022	**Theory**	Introduction to Policy and Analysis	BA (H)- Political Science 6th Semester	Public Policy in India (12327904)
	Practicals	NA		
	Tutorials	Discussion with Students	BA (H)- Political Science 6th Semester	Public Policy in India (12327904)
FEBRUARY,2022	**Theory:**	Models of Policy Decision-Making	BA (H)- Political Science 6th Semester	Public Policy in India (12327904)
	Practicals:	NA		
	Tutorials:	Discussion with Students	BA (H)- Political Science 6th Semester	Public Policy in India (12327904)

	Assignment:			
MARCH, 2022	**Theory:**	Political Economy and Policy	BA (H)- Political Science 6th Semester	Public Policy in India (12327904)
	Practicals:	NA		
	Tutorials:			
	Test		BA (H)- Political Science 6th Semester	Public Policy in India (12327904)
APRIL, 2022	**Theory:**	Economy and Policy: Liberalization and Globalisation	BA (H)- Political Science 6th Semester	Public Policy in India (12327904)
	Practicals:			
	Tutorials:	Questions and Answers Session	BA (H)- Political Science 6th Semester	1.Public Opinion and Survey Research (12323902)

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SEMESTER WISE TEACHING PLAN (2021-2022)
SRI VENKATESWARA COLLEGE
Even Semester
April-July, 2022

Name of the Faculty: Dr. Vikash Kumar

Department: Political Science

Semester: BA (H)- Political Science 2nd Semester
Paper IV- Political Process in India (12321202)

Month		Topics	Course	Paper Code/Name
April, 2022	**Theory**	Understanding Political Parties and the Party System	BA (H)- Political Science 2nd Semester	1. Political Process in India (12321202)
	Practicals	NA		
	Tutorials			
May, 2022	**Theory:**	National Parties and State Parties, Trends in the Party System and Congress System to Multi-Party Coalitions	BA (H)- Political Science 2nd Semester	1. Political Process in India (12321202)
	Practicals:	NA		
	Tutorials:			

	Assignment:			
June, 2022	**Theory:**	Electoral Process, Representation and social determinants of voting behaviour, Election Commission and Electoral Reforms	BA (H)- Political Science 2nd Semester	1. Political Process in India (12321202)
	Practicals:	NA		
	Tutorials:			
	Test			
July, 2022	**Theory:**	Caste and Politics Caste in Politics and the Politicization of Caste, Intersectionality of Caste, Class and Gender, reservation and affirmative action policies	BA (H)- Political Science 2nd Semester	1. Political Process in India (12321202)
	Practicals:			
	Tutorials:			

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(Dr. Vikash Kumar)

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

Name of the Faculty: Amit Yadav **Department: Political Science**

Semester: 1st-BA(H)

Paper: United Nations and Global Conflicts (12325908)

Month		Topics	Course	Paper Code/Name
December	**Theory**	The United Nations: (a) An Historical Overview of the United Nations (b) Principles and Objectives (c) Structures and Functions: General Assembly, Security Council, Economic and Social Council; the International Court of Justice.	BA(H)- 1st Semester	12325908/ United Nations and Global Conflicts
	Practicals			
	Tutorials	Discussion around the above topics, answering doubts and other information regarding answer writing		

January	**Theory:**	(c) Structures and Functions: specialized agencies- (International Labour Organization [ILO], United Nations Educational, Scientific and Cultural Organization [UNESCO], World Health Organization [WHO], and UN programmes and funds: United Nations Children's Fund *UNICEF+, United Nations Development Programme [UNDP], United Nations Environment Programme [UNEP], UN Women, United Nations High Commissioner for Refugees [UNHCR]), Critical Asssessment of Secretary General (d) Peace Keeping, Peace Making and Enforcement, Peace Building and Responsibility to Protect (e) Millennium Development Goals.		
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		

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	Assignment :	Questions assigned from above topics making up the internal assessment requirements, students divided in groups of five and each group given different theme upon which presentation had to be done.		
February	**Theory:**	Major Global Conflicts since the Second World War- (a) Korean War (b) Vietnam War (c) Afghanistan Wars (d) Balkans: Serbia and Bosnia. Relevant documentaries also shown to students for a better understanding.		
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing along with visual presentations in form of documentary screenings.		
	Test	A short write up from the topics covered so far in an exam kind of setting.		
March	**Theory:**	Assessment of the United Nations as an International Organization: Imperatives of Reforms and the Process of Reforms. Also, evaluating UN in context of India.		
	Practicals:			
	Tutorials:	Discussion around the whole syllabus, revising the core areas, answering doubts and other information regarding answer writing with relevant examples.		

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SEMESTER WISE TEACHING
PLAN (2021-2022)
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Name of the Faculty: Amit Yadav **Department: Political Science**

Semester: 4th- BA(H)

Paper: Your Laws, Your Rights(12323901)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Empowerment :** (a) Access to information-right to information act (b) Rights of the consumer- consumer rights and grievance redressal.	BA(H)- 4th semester	12323901/Your Laws, Your Rights
	Practicals			
	Tutorials	Discussion around the above topics, answering doubts and other information regarding answer writing.		
FEBRUARY	**Theory:**	(b) Rights of the consumer- consumer rights and grievance redressal. **Redistribution, recognition and livelihood:** a) Traditional rights of forest dwellers and the issue of women's property rights.	BA(H)- 4th semester	12323901/Your Laws, Your Rights
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		

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	Assignment :	Questions assigned from above topics making up the internal assessment requirements.		
MARCH	**Theory:**	**Redistribution, recognition and livelihood:** a) the issue of women's property rights b) Rural employment guarantee.	BA(H)- 4th semester	12323901/Your Laws, Your Rights
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing along with visual presentations in form of documentary screenings.		
	Test	A short write up from the topics covered so far in an exam kind of setting.		
APRIL	**Theory:**	Rural employment guarantee schemes. **Access to Identification documents and Social Security Schemes** Familiarize students with the following: Procedure for obtaining an Election Commission of India Identity Card, Driving license, Ration Card, Rashtriya Swasthya Bima Yojna, Old Age Pension Scheme.	BA(H)- 4th semester	12323901/Your Laws, Your Rights
	Practicals:			

	Tutorials:	Discussion around the whole syllabus, revising the core areas, answering doubts and other information regarding answer writing with relevant examples.	

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

Name of the Faculty: Amit Yadav **Department: Political Science**

Semester: 6th- BA(P)

Paper: Human Rights Gender and Environment(62325602)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Environment** Environmental and Sustainable Development	BA(P)- 6th semester	62325602/Human Rights Gender and Environment
	Practicals			
	Tutorials	Discussion around the above topics, answering doubts and other information regarding answer writing.		
FEBRUARY	**Theory:**	UN Environment Programme: Rio, Johannesburg and after.	BA(P)- 6th semester	62325602/Human Rights Gender and Environment
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		

	Assignment :	Questions assigned from above topics making up the internal assessment requirements.		
MARCH	**Theory:**	Issues of Industrial Pollution, Global Warming and threats to Bio – diversity.	BA(P)- 6th semester	62325602/Human Rights Gender and Environment
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing along with visual presentations in form of documentary screenings.		
	Test	A short write up from the topics covered so far in an exam kind of setting.		
APRIL	**Theory:**	Environment Policy in India, Environmental Movements in India.	BA(P)- 6th semester	62325602/Human Rights Gender and Environment
	Practicals:			
	Tutorials:	Discussion around the whole syllabus, revising the core areas, answering doubts and other information regarding answer writing with relevant examples.		

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

Name of the Faculty: Amit Yadav **Department: Political Science**

Semester: 6th-BA(P)

Paper:Conflict and Peace Building(62323601)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Concepts** a. Understanding Conflict b. Conflict Management, Conflict Resolution and Conflict Transformation c. Peace Building: Meaning and Concept.	BA(P)- 6th semester	62323601/Conflict and Peace Building
	Practicals			
	Tutorials	Discussion around the above topics, answering doubts and other information regarding answer writing.		
FEBRUARY	**Theory:**	**Dimensions of Conflict** a. Ideology b. Economic/Resource Sharing Conflicts c. Socio-Cultural Conflicts (Ethnic, Religious, Gender-based)	BA(P)- 6th semester	62323601/Conflict and Peace Building
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		

	Assignment :	Questions assigned from above topics making up the internal assessment requirements.		
MARCH	**Theory:**	**Levels of Conflict** a. Local b. Sub-National c. International	BA(P)- 6th semester	62323601/Conflict and Peace Building
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing along with visual presentations in form of documentary screenings.		
	Test	A short write up from the topics covered so far in an exam kind of setting.		
APRIL	**Theory:**	**Conflict Responses: Skills And Techniques** a. Negotiations: Trust Building b. Mediation: Skill Building; Active Listening c. Track I, Track II & Multi Track Diplomacy	BA(P)- 6th semester	62323601/Conflict and Peace Building
	Practicals:			
	Tutorials:	Discussion around the whole syllabus, revising the core areas, answering doubts and other information regarding answer writing with relevant examples.		

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

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

Semester: B.A.(P) Sem VI

Paper: Democracy and Governance

Month		Topics	Course	Paper Code/Name
JANUARY		**Course objective:** to explain the institutional aspects of democracy and how institutions function within a constitutional framework. **Unit I:** Structure and Process of Governance: Indian Model of Democracy, Parliament, Party Politics and Electoral behaviour, Federalism, The Supreme Court and Judicial Activism, Units of Local Governance (Grassroots Democracy) Political Communication -Nature,Forms and Importance • Atul Kohli (ed.), The Success of India's Democracy. • Kothari, Rajini, Politics in India. • Mackie, Gerry, Democracy Defended. • Paul Brass, Politics in India Since Independence.	B.A. (P), Sem VI	62327602/ Democracy and Governance
	Practicals			
	Tutorials			

FEBRUARY	**Theory:**	**Unit III:** Contemporary Political Economy of Development in India: Policy Debates over Models of Development in India, Recent trends of Liberalisation of Indian Economy in different sectors, E-governance. • Paul Brass, Politics in India Since Independence • J.Dreze and A.Sen, India: Economic Development and Social Opportunity • Jagdish Bhagwati, India in Transition: Freeing The Economy • Joseph E. Stiglitz, Globalisation and its Discontents • Patel, I.G., Glimpses of Indian Economic Policy: An Insider View • Pankaj Sharma, E-Governance: The New Age Governance • Pippa Norris, Digital Divide: Civic Engagement, Information Poverty and the Internet in Democratic Societies • Bidyut Chakrabarty, Public Administration: A Reader	B.A. (P), Sem VI	62327602/ Democracy and Governance
	Practicals:			
	Tutorials:			

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MARCH	**Theory:**	**Unit 4:** Dynamics of Civil Society: New Social Movements and Various interests, Role of NGO's, Understanding the political significance of Media and Popular Culture. • Ghanshyam Shah [ed.], Social Movements and The State • Su H. Lee, Debating New Social Movements: Culture, Identity, and Social Fragmentation • Mohanty, Manoranjan, Peoples Rights: Social Movements and the State in the Third World • S. Laurel Weldon ,When Protest Makes Policy : How Social Movements Represent Disadvantaged Groups • Saima Saeed, Screening the Public Sphere: Media and Democracy in India	B.A. (P), Sem VI	62327602/ Democracy and Governance
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		

APRIL	**Theory:**	• Discussion - Previous year questions - Individual doubts - Assignments • Revision	B.A. (P), Sem VI	62327602/ Democracy and Governance
	Practicals:			
	Tutorials:	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		

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SEMESTER WISE TEACHING PLAN (2021-2022)
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Name of the Faculty: Ashish Kumar Thakur (Adhoc-joined on 28th Sept. 2020)
Department: Political Science

Semester: B.A.(H) Sem **VI**

Paper Name: Citizenship in a Globalizing World

Month		Topics	Course	Paper Code/Name
JANUARY		**Course objective:** to introduce different trajectories of the debates concerning citizenship. • Introduction **Unit 3:** Citizenship and Diversity • Kymlicka, W.(1995). Multicultural Citizenship • Acharya, Ashok. (2012) Citizenship in a Globalising World. • Citizenship in Diverse Societies, W. Kymlicka, W. Norman (eds.) • Kymlicka, Will (1999), "Citizenship in an Era of Globalization: A Response to Held	B.A.(H) Sem VI	Citizenship in a Globalizing World
	Practicals			
	Tutorials			

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FEBRUARY		**Unit 3:** Citizenship and Diversity • Kymlicka, W.(1995). Multicultural Citizenship • Acharya, Ashok. (2012) Citizenship in a Globalising World. • Citizenship in Diverse Societies, W. Kymlicka, W. Norman (eds.) • Kymlicka, Will (1999), "Citizenship in an Era of Globalization: A Response to Held	B.A.(H) Sem VI	Citizenship in a Globalizing World
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		

MARCH		**Unit 5:** The idea of cosmopolitan citizenship • Parekh, B.(2000). Rethinking Multiculturalism: Cultural Diversity and Political Theory • Pogge, T. W.(1992). "Cosmopolitanism and Sovereignty" • Zolo, Danilo (1997), Cosmopolis: Prospects for World Government • Acharya, Ashok. (2012) Citizenship in a Globalising World. • Citizenship in Diverse Societies, W. Kymlicka, W. Norman (eds.)	B.A.(H) Sem VI	Citizenship in a Globalizing World

	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		
	Practicals:			
APRIL		• Discussion - Previous year questions - Individual doubts - Assignments Revision	B.A.(H) Sem VI	Citizenship in a Globalizing World
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		
	Practicals:			

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

Semester: B.A.(H) VIth Sem

Paper Name: Indian Political Thought-II

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Course Objective:** The objective is to study general themes that have been produced by thinkers from varied social and temporal contexts. Unit XI: Lohia: Socialism • S. Sinha, (2010) 'Lohia's Socialism: An underdog's perspective'. • Kumar, (2010) 'Understanding Lohia's Political Sociology: Intersectionality of Caste, Class, Gender and Language Issue'	BA(H), Sem VI	12321602/Indian Political Thought-II
	Practicals			
	Tutorials			
FEBRUARY	**Theory:**	**Unit X**: Nehru: Secularism • R. Pillai, (1986) 'Political thought of Jawaharlal Nehru', in Th. Pantham, and K. Deutsch (eds.), Political Thought in Modem India • B. Zachariah, (2004) Nehru	BA(H), Sem VI	12321602/ Indian Political Thought-II

	Practicals:			
	Tutorials:			

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MARCH	**Theory:**	**Unit VI:** Ambedkar: Social Justice • P. Chatterjee, (2005) 'Ambedkar and the Troubled times of Citizenship', in V. Mehta and Th. Pantham (eds.), Political ideas in modern India: Thematic Explorations. • Annihilation of Caste, Dr. B. R. Ambedkar **Unit V:** Gandhi: Swaraj • Parel, (ed.), (2002) 'Introduction', in Gandhi, freedom and Self Rule	BA(H), Sem VI	12321602/ Indian Political Thought-II
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		
APRIL	**Theory:**	• Discussion - Previous year questions - Individual doubts - Assignments • Revision	BA(H), Sem VI	12321602/ Indian Political Thought-II
	Practicals:			
	Tutorials:	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		

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

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

Semester : B.A.(H) Sem II

Paper: Political Process in India

Month		Topics	Course	Paper Code/Name
April		**Course Objective:** to equip students with the tools of studying the political process in India by looking at the relationship between the components of the political system, the social and economic contexts in which they unfold, and the democratic values that they seek to achieve. **Unit III:** Religion and Politics Debates on Secularism and Communalism • T. Pantham, (2004) 'Understanding Indian Secularism: Learning from its Recent Critics'. • P.R. Brass, (2003) 'Introduction: Explaining Communal Violence', in The Production of Hindu-Muslim Violence in Contemporary India. • B. Chandra, (1999) 'Communalism as False Consciousness'. • R. Bhargava (ed). (1998), Secularism and Its Critics. • N. Chandhoke, (2010) 'Secularism', in P. Mehta and N. Jayal (eds.) The Oxford Companion to Politics in India	B.A.(H), Sem II	12321202/ Political Process in India

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	Practicals:			
	Tutorials:	• Discussion - Previous year questions - Individual doubts		

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MAY	**Theory:**	**Unit III:** Religion and Politics Debates on Secularism and Communalism • Continued ➢ P.R. Brass, (2003) 'Introduction: Explaining Communal Violence', in The Production of Hindu- Muslim Violence in Contemporary India. ➢ Does the State Promote Communal Violence for Electoral Reasons?, ASHUTOSH VARSHNEY and JOSHUA R. GUBLER	B.A.(H), Sem II	12321202/ Political Process in India
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		
	Assignment:			
JUNE	**Theory:**	**Unit IV: Caste and Politics** Caste in Politics and the Politicisation of Caste; Intersectionality of Caste, Class and Gender, reservation and affirmative action policies • R. Kothari, (1970) 'Introduction', in Caste in Indian Politics. • M. Weiner, (2001) 'The Struggle for Equality: Caste in Indian Politics'. • S. Deshpande (2016), 'Caste in and as Indian Democracy'. • C. Jaffrelot, (2005) 'The Politics of the OBCs'. • U. Chakravarti. (2003)'Caste and Gender in Contemporary India', in Gendering Caste Through a Feminist Lens.	B.A.(H), Sem II	12321202/ Political Process in India
	Practicals:			

	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments. • Assignment		
JULY	**Theory:**	**Unit V:** Tribes and Politics Policies and Challenges: Fifth and Sixth Schedules; Forest Rights Act; Development and Issues of Displacement ➢ Discussion	B.A.(H), Sem II	12321202/ Political Process in India
	Practicals:			
	Tutorials:	• Discussion - Previous year questions • Revision		

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

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

Semester: B.A.(P) Sem **IV**

Paper Name: Introduction to International Relations

Month		Topics	Course	Paper Code/Name
JANUARY		**Course objective:** to give students a sense of some important theoretical approaches to understand international relations; a history from 1945 onwards to the present; and an outline of the evolution of Indian foreign policy since independence and its possible future trajectory. • **Introduction** **Unit 3**: India's Foreign Policy (a) Basic Determinants (Historical, Geo-Political, Economic, Domestic and Strategic) • Ian Hall (ed) (2014), "The Engagement of India: Strategies and Responses", • Muchkund Dubey, (2016), "India's Foreign Policy: Coping with the Changing World" • Harsh V.Pant (ed), (2009) "India's foreign Policy in a Unipolar World"	B.A.(P) Sem IV	Introduction to International Relations
	Practicals			
	Tutorials			

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FEBRUARY		**Unit 3**: India's Foreign Policy (b) India's Policy of Non-alignment (c) India: An Emerging Power • Sumit Ganguly (ed),(2016) "Engaging the World-Indian Foreign Policy since 1947" • S. Ganguly and M.S. Pardesi, "Explaining Sixty Years of India's Foreign Policy • Amitabh Mattoo and Happymon Jacob, (eds), (2014), "India and the Contemporary International System" • W. Anderson, (2011) 'Domestic Roots of Indian Foreign Policy' • Ian Hall (ed) (2014), "The Engagement of India: Strategies and Responses", • Muchkund Dubey, (2016), "India's Foreign Policy: Coping with the Changing World" • Harsh V.Pant (ed), (2009) "India's foreign Policy in a Unipolar World"	B.A.(P) Sem IV	Introduction to International Relations
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		
MARCH	**Theory:**	**Unit 3**: India's Foreign Policy b) India's Policy of Non-alignment c) (c) India: An Emerging Power • Sumit Ganguly (ed),(2016) "Engaging the World-Indian Foreign Policy since 1947" • Amitabh Mattoo and Happymon Jacob, (eds), (2014), "India and the Contemporary International System" • W. Anderson, (2011) 'Domestic Roots of Indian Foreign Policy'	B.A.(P) Sem IV	Introduction to International Relations

		• Ian Hall (ed) (2014), "The Engagement of India: Strategies and Responses", • Muchkund Dubey, (2016), "India's Foreign Policy: Coping with the Changing World" • S. Ganguly and M.S. Pardesi, "Explaining Sixty Years of India's Foreign Policy		
	Practicals:			
	Tutorials:	• Discussion - Previous year questions - Individual doubts - Assignments • Revision		

APRIL	**Theory:**	• Discussion - Previous year questions - Individual doubts - Assignments ➢ Revision	B.A.(P) Sem IV	Introduction to International Relations
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		

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

Name of the Faculty: Rajan Jha (Adhoc-joined 2nd December 2020)
Department: Political Science

Semester : IV(even sem)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Course objective:** Locating Gandhi in a global frame, the course seeks to elaborate Gandhian thought and examine its practical implications. Unit I: Gandhi on Modern Civilization and Ethics of Development a. Conception of Modern Civilisation and Alternative Modernity b. Critique of Development: Narmada BachaoAndolan - 'The Critique of Modernity', B. Parekh - 'Narmada BachaoAndolan', D. Hardiman - 'The Politics of the Andolan', A Baviskar	B.A. (H) GE-Political Science, Sem IV	12325904/Gandhi and the Contemporary World
	Practicals			

	Tutorials	Discussion - Previous year questions - Assignment: B.A. (H) GE- Political Science, Sem IV Gandhi and the Contemporary World Revision		
	Theory:			
	Theory	-		
FEBRUARY		Unit – 11 Gandhian Thought : Theory Action - 'Satyagrah', in Gandhi, B. Parekh - 'The Kheda Satyagrah', D. Hardiman - 'Gandhi and human right', J. Brown	B.A. (H) GE-Political Science, Sem IV	12325904/Gandhi and the Contemporary World
	Tutorials:	Discussion - Previous year questions - Assignment: B.A. (H) GE- Political Science, Sem IV Gandhi and the Contemporary World		

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MARCH	**Theory**	Gandhi's legacy: - 'Gandhi's Global Legacy', D. Hardiman - 'Gandhigiri; Philosophy of our time', M. Shah	B.A. (H) GE-Political Science, Sem IV	12325904/Gandhi and the Contemporary World
	Tutorials:	Discussion - Previous year questions - Assignment: B.A. (H) GE- Political Science, Sem IV Gandhi and the Contemporary World Revision		

APRIL	**Theory:**	Gandhi and the idea of political: - 'The moment of maneuver', Partha Chatterjee 'Swaraj: Gandi's idea of freedom' D. Dalton	BA(Hons) GE Sem VI	12325904/Gandhi and the Contemporary World
	Tutorials	Discussion - Previous year questions - Assignment: B.A. (H) GE- Political Science, Sem IV Gandhi and the Contemporary World Revision		

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SEMESTER WISE TEACHING PLAN (2021-2022)
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Name of the Faculty: RajanJha (Adhoc-joined 2nd December 2020)
Department: Political Science

Semester : VI(even sem)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Course Objective:** to enhance students' understanding on the meaning, nature and significance of peace, conflict management, conflict resolution and conflict transformation. a. Gandhian Methods 'Peacebuilding and Non-Violence: Gandhi's Perspective on Power', M. Steger	BA(prog), Sem VI	62323601/ Conflict and Peace Building
	Practicals			
	Tutorials			

FEBRUARY	**Theory:**	Negotioation : Trust Building Dynamics and constrains in Negotiation in Internal conflicts, W. Zartman	BA(prog), Sem VI	62323601/ Conflict and Peace Building
	Practicals:			
	Tutorials:			

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MARCH	**Theory:**	Meditation: Skill Building; Active Listening 'Timing meditation initiative', I. Zartman and A. De. Soto	BA(prog), Sem VI	62323601/ Conflict and Peace Building
	Practicals:			
	Tutorials:			
APRIL	**Theory:**	Track 1, Track II and Multi Track Diplomacy 'Conducting Track II', H. Burgess and G. Burgess	BA(prog) Sem VI	62323601/ Conflict and Peace Building

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

Name of the Faculty: RajanJha (Adhoc-joined 2nd December 2020)
Department: Political Science

Semester : VI(even sem)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Course objectives: The course provides a theoretical and practical understanding of the concepts and methods that can be employed in the analysis of Public Policy. It uses the method of political economy to understand policy as well as understand politics as it is shaped by economic changes. The course will be useful for students to seek an integrative link through their understanding of political science, economic theory and the practical world of development and social change. Unit – 11 The analyses of policy in the context of theories of state. Readings: - 'Understanding Public Policy,' T. R. Dye - 'Theories of the State', P. Dunleavy and B O' Leary	BA(prog), Sem VI	232508/ Public Policy in India

	Practicals			
	Tutorials			
FEBRUARY	**Theory:**	Ideology and Policy: Nehruvian Vision	BA(prog), Sem VI	232508/Public Policy in India
	Practicals:			
	Tutorials:			

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MARCH	**Theory:**	Economic Liberalisation: - 'Economic liberalization in India', E. J. Girden	BA(prog), Sem VI	232508/ Public Policy in India
	Practicals:			
	Tutorials:			
APRIL	**Theory:**	Ideology and Policy: Recent Developments - ;Government'by the market? The politics of public choice', P. Self	BA(prog) Sem VI	232508/ Public Policy in India

SEMESTER WISE LESSON PLAN

SRI VENKATESWARA COLLEGE

April-July 2022 (Even Semester)

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

Month		Topic(s)	Course	Paper Code/Name
April	**Theory**	1.Plurality of the Sociological Perspective 2. Functionalism	Core Course-03	Introduction to Sociology II
	Practical	NA	NA	NA
	Tutorial	Plurality of the Sociological Perspective with regard to Theory and Research	Core Course-03	Introduction to Sociology II
May	**Theory**	1.Interpretive Sociology 2. Interactionism	Core Course-03	Introduction to Sociology II
	Practical	NA	NA	NA
	Tutorial	Functionalist Perspective of Society	Core Course-03	Introduction to Sociology II
June	**Theory**	1.Conflict Theory 2. Feminist Theory	Core Course-03	Introduction to SociologyII
	Practical	NA	NA	NA
	Tutorial	Interpretive Sociology	Core Course-03	Introduction to Sociology II
	Assignment	Examine the theory of Interpretive Sociology	Core Course-03	Introduction to Sociology II
July	**Theory**	1. Structuralism	Core Course-03	Introduction to Sociology II
	Practical	NA	NA	NA
	Tutorial	Feminist Perspective	Core Course-03	Introduction to Sociology II

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SEMESTER WISE LESSON PLAN
SRI VENKATESWARA COLLEGE
Jan-May 2022 (Even Semester)

Name of the Faculty: Geeta Jayaram Sodhi
Department: Sociology
Semester: IV (Jan-May, 2022)

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	1.Sociological Research 2. Objectivity in Social sciences	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	What is Sociological Research ?	Core Course 4	Methods of Sociological Enquiry
FEBRUARY	**Theory**	1.Reflexivity 2. Comparative Method	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	Comparative Method	Core Course 4	Methods of Sociological Enquiry
MARCH	**Theory**	1.Ethnographic Method 2. Theory and Research	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	Ethnographic Method	Core Course 4	Methods of Sociological Enquiry
	Assignment	Discuss the Comparative Method in Sociology?	Core Course 4	Methods of Sociological Enquiry
APRIL	**Theory**	Constructing the Object of Research	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	Quantitative and Qualitative Methods in Research	Core Course 4	Methods of Sociological Enquiry

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SRI VENKATESWARA COLLEGE
Even Semester TEACHING Plan 2021-2022

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Name of the Faculty: ABHIJIT KUNDU
Department: SOCIOLOGY
Semester : VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1. **Talcott Parsons** 2. **The Social System** 3. **Pattern Variables**	Hons Core Course-13	Sociological Thinkers II
	Practicals			
	Tutorials	1. Integration of Cultural, Personality and Social System	do	do
FEBRUARY	**Theory:**	1. **G. H. Mead and Erving Goffman** 2. **Peter L. Berger and Thomas Luckmann**	do	do
	Practicals:			
	Tutorials: **<u>Assignment :</u>**	1. Interactional Self 2. Dramaturgy 1. Discuss the analytical scheme Of The Social System	do	do
MARCH	**Theory:**	**1. Max Horkheimar, T.W. Adorno** 2. **H. Marcuse**	do	do
	Practicals:			
	Tutorials:	1. Dialectics of Enlightenment 2. Repressive De-sublimation	do	do
	<u>Test</u>	1. Analyze the salient features of the Critical School		
APRIL	**Theory:**	1. **Pierre Bourdieu**	do	do
	Practicals:			
	Tutorials:	1. The Concept of Habitus 2. Structure and Habitus		

MAY	**Theory:**	1. The Students' Companion	do	do
	Practicals:			
	Tutorials:	1. The Blended Mode	do	do

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SRI VENKATESWARA COLLEGE
Even Semester Teaching Plan , 2021-2022

Name of the Faculty: ABHIJIT KUNDU
Department: SOCIOLOGY
Semester : IV

Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory**	4. History of Ethno Filmmaking	Hons SEC Course	Techniques of Ethnographic Filmmaking
	Practicals	1. Understanding multiple shots and camera movement	do	do
	Tutorials	2. Discuss the development of Ethnographic Filmmaking	do	do
FEBRUARY	**Theory:**	3. Anthropology and Filmmaking 4. Different Modes of Filmmaking	do	do
	Practicals:	1. Tools for Film Editing 2. Understanging the use of Light and Sound		
	Tutorials: **<u>Assignment :</u>**	3. The Relationship between the Text and The Image 2. Explain the contribution of Visual text in Anthropology	do	do
MARCH	**Theory:**	3. **The Filmmaker and the Filmed**	do	do
	Practicals:	: Multiple shots, understanding point_of_ view; 1. narrative building		
	Tutorials:	Camera angles; How to store your data?; How to take care of equipment?	do	do
	<u>Test</u>	2. Analyze the question of Ethics in Etnographic Filmmaking		

APRIL	**Theory:**	2. **Editing and Construction of Meaning** 3. **Filming Oral Testimonies, Interviews and Interactions**	do	do
	Practicals:	1. Screening of Film Scenes/ Sequences: *Chronicle of a Summer… etc*		
	Tutorials:	3. 'Anthropological Visions: Some Notes on Visual and Textual Authority'		
MAY	**Theory:**	1. Projects Screening	do	do
	Practicals:	Viewing of assignments and discussions.		
	Tutorials:	Viewing of assignments and discussions on Final Projects	do	do

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

January-June 2022 (Even Semester)

Name of the Faculty: Nabanipa Bhattacharjee
Department: Sociology
Semester: BA (H), Semester II (January-June, 2022)

Month		Topic(s)	Course	Paper Code/Name
APRIL	**Theory**	India as an Object of Knowledge: A discursive discourse; nationalist discourse	Core Course 03 (C03)	Sociology of India II
	Practical	NA	NA	NA
	Tutorial	Reading Kaviraj and Srinivas on the nationalist and post-colonial discourses	Core Course 03 (C03)	Sociology of India II
MAY	**Theory**	Indological and ethnographic approaches to India including disciplinary history of Indian sociology; Sanskritization and mobility; Dalit movement.	Core Course 03 (C03)	Sociology of India II
	Practical	NA	NA	NA
	Tutorial	Conceptualizing Dalit identity and tracing the trajectory of Dalit movement in India.	Core Course 03 (C03)	Sociology of India II
JUNE	**Theory**	Mapping resistance in the contexts of women, peasant and ethnic movements in India; rise and growth of the Indian middle class.	Core Course 03 (C03)	Sociology of India II

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	Practical	NA	NA	NA
	Tutorial	Discussion on ethnicity, nation and citizenship by exploration of the Assam movement.	Core Course 03 (C03)	Sociology of India II
	Assignment	NA	Core Course 03 (C03)	Sociology of India II
JUNE	**Theory**	Communalism in India; the history & growth of secularism, citizenship and identity in India.	Core Course 03 (C03)	Sociology of India II
	Practical	NA	NA	NA
	Tutorial	Mapping the debates on secularism as an ideology; problems faced by Indian secularism particularly since independence.	Core Course 03 (C03)	Sociology of India II
	Assignment (25 Marks)	Essay on nationalist discourse	Core Course 03 (C03)	Sociology of India II
JULY	**Theory**	Understanding the varieties of secularism in India.	Core Course 03 (C03)	Sociology of India II
	Practical	NA	NA	NA
	Tutorial	Revision of the entire syllabus depending on student feedback and demand.	Core Course 03 (C03)	Sociology of India II

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-June 2022 (Even Semester)

Name of the Faculty: Nabanipa Bhattacharjee
Department: Sociology
Semester: BA (Program), Semester VI (January-June, 2022)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introducing economic sociology; economy as a n embedded process; substantivist and formalist approaches	Generic Elective 02 (GE 02)	Economy and Society
	Practical		NA	NA
	Tutorial	Discuss Karl Polanyi's contribution to economic sociology	Generic Elective 02 (GE 02)	Economy and Society
FEBRUARY	**Theory**	Functionalist approach in economic sociology; domestic mode of production; introduction to peasant economy	Generic Elective 02 (GE 02)	Economy and Society
	Practical	NA	NA	NA
	Tutorial	With reference to Marshall Sahlins define and discuss the features of domestic mode of production	Generic Elective 02 (GE 02)	Economy and Society

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MARCH	**Theory**	Understanding peasant economy with the help of Eric Wolf's work; socialist economies of eastern Europe; examining capitalism and its mode of production	Generic Elective 02 (GE 02)	Economy and Society
	Practical	NA	NA	NA
	Tutorial	Write an essay on socialist mode of production and the reasons for its failure	Generic Elective 02 (GE 02)	Economy and Society
	Assignment (12.5 Marks)	Discussion substantivist and formalist approaches to economic anthropology	Generic Elective 02 (GE 02)	Economy and Society
APRIL	**Theory**	Globalization as an economic and cultural process; Mcdonaldization as a process; cross-cultural consumption; theories of economic development	Generic Elective 02 (GE 02)	Economy and Society
	Practical		NA	NA
	Tutorial	Cross-cultural consumption is a reality in the modern word. Elaborate.	Generic Elective 02 (GE 02)	Economy and Society
	Assignment (12.5 Marks)	Define and discuss the domestic mode of production	Generic Elective 02 (GE 02)	Economy and Society
MAY	**Theory**	Theories of development [contd.]	Generic Elective 02 (GE 02)	Economy and Society
	Practical	NA	NA	NA
	Tutorial	Revision of the entire syllabus depending on student feedback and demand.	Generic Elective 02 (GE 02)	Economy and Society

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Jan-July 2022 (Even Semester)

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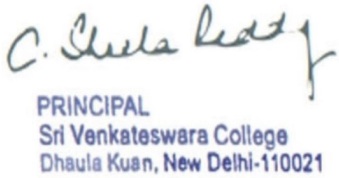
Name of the Faculty: Padma Priyadarshini
Department: Sociology
Semester: IV (Jan- Apr 2022)

Month		Topic(s)	Course	Paper Code/Name
JAN	**Theory**	**Perspectives in Economic Sociology** 1.Formalism and Substantivism 2. New Economic Sociology	Core Course-08	Economic Sociology
	Practical	NA	NA	NA
	Tutorial	Discuss the ways in which the term 'economy' has evolved over the years. (Ref: Hann and Hart, Polanyi)	Core Course-08	Economic Sociology
FEB	**Theory**	**Forms of Exchange** 1.Reciprocity and Gift 2. Exchange and Money **Systems of Production** **1.**Hunting and Gathering 2. DMP	Core Course-08	Economic Sociology
	Practical	NA	NA	NA
	Tutorial	What is the difference between gifts and commodities? (Ref: Marcel Mauss and Carrier).	Core Course-08	Economic Sociology
	Mid Sem Evaluation	Topics: 1.Formalism and Substantivism 2. Gifts and Commodities.		
MARCH	**Theory**	**Contemporary issues in Economic Sociology** 1.Development 2. Globalization	Core Course-08	Economic Sociology

	Practical	NA	NA	NA
	Tutorial	Systems of production with special reference to capitalism and Socialism	Core Course-08	Economic Sociology
	<u>Assignment</u>	Examine the differences between different systems of production, circulation and consumption Topics 1 and 2	Core Course-08	Economic Sociology
APRIL	**Theory**	1.Globalization and cross-cultural consumption Ref: David Howes	Core Course-08	Economic Sociology
	Practical	NA	NA	NA
	Tutorial	Why is globalization being referred to as the latest stage of capitalism? (Ref: Wallerstein and Fran Tonkiss)	Core Course-08	Economic Sociology



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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Jan-July 2022 (Even Semester)

Name of the Faculty: Padma Priyadarshini
Department: Sociology
Semester: II (April - July2022)

Month		Topics	Course	Paper Code/Name
APRIL	**Theory**	**What is Family?** 1.Historicalaccount 2.Sociological account 3.Anthropological 4. How just is the family? 5. Gay-Lesbian families	GE 02	Family and Intimacy
	Practical	NA	NA	NA
	Tutorial	What do we mean by the family? Has it lost its functions? How just is it? (Ref: Mitterauer, Worsley,Shapiro, Okin and Weston)	GE 02	Family and Intimacy
MAY	**Theory**	**Family and Intimacy** 6. Socialization in the Indian family 7. Gujarati family 8. Tamil Family 9. Eroticism in Rajasthani folk songs 10. The Elderly	GE 02	Family and Intimacy
	Practical	NA	NA	NA
	Tutorial	Discuss the different aspects of Indian families (Ref: Lannoy, Trawick, Raheja and Gould and Vatuk)	GE 02	Family and Intimacy
	Mid-Sem Evaluation to be undertaken	Topics: 1,2 and 3	GE 02	Family and Intimacy

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JUNE	**Theory**	**Critiques and Transformations** 11. The anti-social family 12. Feminist Heterosexuality 13. History of Marriage 14. Joint family system of India	GE 02	Family and Intimacy
	Practical	NA	NA	NA
	Tutorial	Critically assess the family. (Ref: Barett, Carteledge and Ryan, Coontz and Shah)	GE 02	Family and Intimacy
	<u>Assignment to be given:</u>	When is a marriage not a marriage? Sex, sacrament and contract in Hindu marriage. (Ref: Patricia Uberoi)	GE 02	Family and Intimacy
JULY	**Theory**	15. Hindu Marriage 16. How's the family?	GE 02	Family and Intimacy
	Practical	NA	NA	NA
	Tutorial	How is the family doing today? How has this course enhanced your understanding of the family? (Ref: Uberoi and Hochschild)	GE 02	Family and Intimacy

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SEMESTER WISE TEACHING PLAN (2021-22)

SRIVENKATESWARA COLLEGE

EVEN SEMESTER

Name of the Faculty: DR. URMI BHATTACHARYYA
Department: SOCIOLOGY
***Semester*: IV**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Key Approaches in Kinship: Descent theory Alliance theory	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Kinship and the study of descent. Early anthropologists in African societies structuralism and kinship	Core Course 08	Sociology of Kinship
FEBRUARY	**Theory**	Key Approaches in Kinship: Cultural theory	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Cultural reconceptualization of kinship and its meaning	Core Course 08	Sociology of Kinship

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MARCH	**Theory**	Concepts of family, household, domestic groups and its relation to kinship The anthropological definition of marriage	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Family and domestic cycle and the redefinition of kinship definition of kinship among the Nayars, and in Sinhalese law	Core Course 08	Sociology of Kinship
	Assignment 01	Write a note on the structural principles underlying African kinship systems.	Core Course 08	Sociology of Kinship
APRIL	**Theory**	Contemporary anthropological definitions of marriage Contemporary meaning of kinship – as relatedness Gender and kinship	Core Course 08	Sociology of Kinship
	Practical		NA	NA
	Tutorial **Assignment 02**	Hindu marriage law Relatedness among the Malays Interconnections of gender and kinship	Core Course 08 Core Course 08	Sociology of Kinship Sociology of Kinship
	(in lieu of the mid-sem test)	How are elements of biology and culture synthesized and reflected in kinship? Provide illustrations		

MAY	**Theory**	Redefining kinship: Cultural construction of kinship Reconstructing families Questioning biological paternity/maternity with IVF Surrogacy	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Chosen families New reproductive technologies and the construction of identity	Core Course 08	Sociology of Kinship

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SEMESTER WISE TEACHING PLAN (2021-22)
SRIVENKATESWARA COLLEGE
EVEN SEMESTER

Name of the Faculty: DR. URMI BHATTACHARYYA
Department: SOCIOLOGY
***Semester*: VI**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introducing visual culture and the process of seeing	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	social construction of seeing Ways of seeing and knowledge-production throughout history	DSE 07	Visual Culture
FEBRUARY	**Theory**	The Spectacles of Modernity Critiquing the history of visual culture Narrative and visual forms of perception in contemporary life Panopticism and power	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Critiquing technical modernity How can visual culture escape the dominant narrative of the West Global events and local narratives Visuality and power	DSE 07	Visual Culture

MARCH	**Theory**	The Right to Look, power and visuality Representing Authority in colonial India State and Photographic Records	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Countervisuality How was authority symbolically represented in colonial India Photography, technology and truth	DSE 07	Visual Culture
	Assignment 01	What according to Debord is at the heart of unrealism in present-day society? Explain how it leads to a visible negation of life itself. Give your personal observations.	DSE 07	Visual Culture
APRIL	**Theory**	Critical Art Representation, theatre and resistance Visual Practices and identity formation	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial **Assignment 02**	Problems and possibilities of critical art Carnival and theatre as subversive contexts How does technology contribute to the restructuring of space and identity	DSE 07 DSE 07	Visual Culture Visual Culture
	(in lieu of the mid-sem test)			

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MAY	**Theory**	Everyday life and visuality Printed image and identity Globalism, visuality and identity	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Practice of tactics and strategies in everyday and visuality How is the market as well as individual identity defined through technologically equipped forms of visuality Revision and clarification of doubts Declaration of internal evaluation results	DSE 07	Visual Culture

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SEMESTER WISE TEACHING PLAN (2021-22)
SRIVENKATESWARA COLLEGE
EVEN SEMESTER

Name of the Faculty: Antasa Vairagya
Department: Sociology
Semester: IV BA (Hons)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	The Gendered Society;Anthropology at the Front Lines of Gender-Based Violence	Generic Elective04	Gender and Violence
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
FEBRUARY	**Theory**	Caste and Gender; Dalit Women Speak Out; Domestic Violence	Generic Elective 04	Gender and Violence
	Practical	NA	NA	NA
	Tutorial	What is gendered violence	Generic Elective 04	Gender and Violence

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MARCH	**Theory**	Enforcing Cultural Codes; Variation in Sexual Violence During War; Sexual Harassment at Workplace; Rape andSexual Assaults on Women; Rewards ofRape; Recovering Subversions	Generic Elective 04	Gender and Violence
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
	Assignment	On Flavia Agnes, My Story, Our Story: Building Broken Lives	Generic Elective 04	Gender and Violence
APRIL	**Theory**	The other side of silence; Only words;Violence Against Women; This thing Called Justice	Generic Elective 04	Gender and Violence
	Practical	NA	NA	NA
	Test	Enforcing Cultural Codes	Generic Elective 04	Gender and Violence

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SEMESTER WISE TEACHING PLAN (2021-22)

SRI VENKATESWARA COLLEGE

EVEN SEMESTER

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Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: IV BA (P)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Sex, Gender and Sexuality	SEC	Gender Sensitization
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
FEBRUARY	**Theory**	Gender Rights and Law	SEC	Gender Sensitization
	Practical	NA	NA	NA
	Tutorial	What is the differerencebetween gender and sex	SEC	Gender Sensitization
MARCH	**Theory**	Gender, Family, Community and the State	SEC	Gender Sensitization
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
	Assignment	On Sex, Gender and Sexuality	SEC	Gender Sensitization
APRIL	**Theory**	Intersections of Caste,Class,Religion, Region and Disability	SEC	Gender Sensitization
	Practical	NA	NA	NA
	Test	Domestic Violence	SEC	Gender Sensitization

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

Name of the Faculty: Dr. Nupurnima Yadav **Semester: 6th**
Department:Sociology
(January-June, 2021)

Paper: Core course 14, Sociological Research Methods – II

Month		Topic(s)	Course	Paper Code/Name
January	**Theory**	The Process of Social Research Introduction to the theory of Concepts and Hypothesis	Core course 14	Sociological Research Methods – II
	Practical	NA	NA	NA
	Tutorial	Students were divided into three groups, each group comprising of 20 students. They were asked to choose atopic of their choice and prepare a research report.		
February	**Theory**	Field (Issues and Context) Survey Methods: Sampling, Questionnaire and Interview	Core Course-14	Sociological Research Methods – II
	Practical	NA	NA	NA
	Tutorial	The concept of field was explored and each student was advice to problematize their respective field of choice.		
March	**Theory**	Observation: Participant and non-participant. Graphical and Diagrammatic Presentation of Data (Bar diagrams, Pie- diagram, Histogram, Frequency Polygon, Smoothed frequency curve	Core Course-14	Sociological Research Methods – II

	Practical	NA	NA	NA
	Tutorial	Supervision of their Research questions and techniques of doing research. their interview schedules and questionnaires were closely monitored.		
	Mid- Semester exam (10 Marks)			
April	**Theory**	Measures of Central Tendency (Simple Arithmetic Mean, Median and Mode)	Core Course-14	Sociological Research Methods – II
	Practical	NA	NA	NA
	Tutorial	Various tools from statistics were explored to ease their respective data projections.		
	Project (10 Marks)			Sociological Research Methods – II
May	**Theory**	Standard Deviation, Variance and Covariance	Core Course-14	Sociological Research Methods – II
	Practical	NA	NA	NA
	Tutorial		Core Course-14	Sociological Research Methods – II

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

Name of the Faculty: Nupurnima Yadav
Department: Sociology
Semester: VI (January-June 2021)
Paper: DSE 06 Indian Sociological Traditions

Month		Topics	Course	Paper Code/Name
January	**Theory**	G.S Ghurye: Caste and Race City and Civilization Social Ecology	DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial	Discussion on the respective biographies of each scholar and engaging students for their review of Ghurye and	DSE 06	Indian Sociological Traditions
February	**Theory**	Society, Values. D P Mukerji: Tradition and Modernity Middle Class	DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial	The boundaries of contemporary middle class were explored and students were asked to reflect on how social order impinges on their individual personality and value system	DSE 06	Indian Sociological Traditions

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March	**Theory**	M.N. Srinivas: Social Change Verrier Elwin:Tribes in India	DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial	Each student was asked to locate the idea of modernity in contemporary society and juxtapose that with the tribal societies.	DSE 06	Indian Sociological Traditions
	Assignment (10 Marks)	Values are intrinsic as well as instrumental. Elucidate the statement through the ideas of R.K Mukerjee.		
April	**Theory**	IrawatiKarve : Gender and Kinship Leela Dube: Caste and Gender	DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial **Mid-Semester Examination (10 Marks)**	Exploring Biographies of both the scholars and how each of them contributed towards the fortification of Gender studies in India.	DSE 06	Indian Sociological Traditions

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May	**Theory**		DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial		DSE 06	Indian Sociological Traditions

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

Name of the Faculty: Niharika Jaiswal
Department: Sociology
Semester : IV

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introducing Stratification **Readings** Beteille (1977) Tawney (1964)	Core Course 10	Social Stratification
	Practicals			
	Tutorials	To understand the difference between stratification, Inequality and hierarchy.		
FEBRUARY	**Theory:**	Theories of social stratification Marx, Weber and Class **Readings** McLellan (1995) Weber (1946) Bendix (1974) Functionalism **Readings** Davis and Moore (1949,1953) Tumin (1953) Wrong(1959) Stinchcombe (1963)	Core Course 10	Social Stratification
	Practicals:			
	Tutorials:	Explain the Weberian model of stratification as against Marxian.		

	Assignment :	Present a comparative analysis of Weberian and Marxian model of stratification.		
MARCH	**Theory:**	Identities and Inequalities Caste, Race and Ethnicity **Readings:** Bailey (1963) Jain (1996) Omi and Winant (1986) Rivers-Pitt (1967	Core Course 10	Social Stratification
	Practicals:			
	Tutorials:	Discuss the intersectionality of race and class with relevant examples		
	Test	Write short notes on any of the following two: 1. Class 2. Race 3. Ethnicity 4. Caste		
APRIL	**Theory:**	Feminism and Gendered Stratification Mitchell (1971) Acker (1973) Collins (1993)	Core Course 10	Social Stratification
	Practicals:			
	Tutorials:	Analyse the category of 'gender' to understand stratification.		
MAY	**Theory:**	MOBILITY AND REPRODUCTION **Readings** Bottero (2005) Goldthrope	Core Course 10	Social Stratification
	Practicals:			
	Tutorials:	Discuss patterns of mobility and reproduction of hierarchies.		

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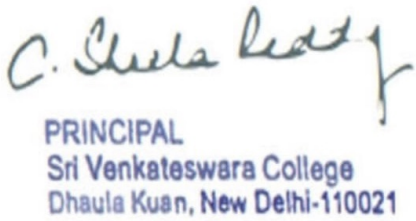
SEMESTER WISE TEACHING PLAN
January-April 2022 EVEN SEMESTER
SRI VENKATESWARA COLLEGE

Name of the Faculty: Niharika Jaiswal
Department: Sociology
Semester: VI (January- April 2022)

Month		Topic(s)	Course	Paper Code/Name
January	**Theory**	1. Introduction to the sociology of health and medicine 2. Conceptualizing disease sickness and illness 3. Social and cultural Dimension of Illness and Medicine	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine
	PRACTICAL	NA		
	Tutorial	Trace the origin and development of modern medicine in arriving at an understanding of sickness, disease and illness.	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine
February	**Theory**	Theoretical Orientation in Health and Illness Political economy of health Systems approach Health as a power discourse Feminist approach	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine
	Practical	NA	NA	NA
	Tutorial	examine how the concept of 'sick role' encapsulates the functional aspect of medicine as a social system	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine.
March	**Theory**	Negotiating Health and Illness - **Health behaviours**	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine.

APRIL	**Practical** Theory	NA Negotiating Health and Illness Health systems and Health Policies	NA Discipline Specific Elective	NA DSE 05 Sociology of Health and Medicine
	Tutorial	evaluate the ways in which biomedicine has 'overmedicalized' women's health issues.	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine.
ASSIGNMENTS QUESTIONS	1. WRITE A RESEARCH PAPER ON THE LIVED EXPERIENCE OF COVID 19 INTERTWINED WITH QUESTIONS OF IDENTITIES. a. To select ¾ case studies and conduct detailed telephonic interviews with reflect their lived experiences of negotiating with the illness and present a paper of 4000 words on the same. 2. TO BRIEFLY ANALYSE ANY ONE OF THE FOLLOWING WITH RESPECT TO ITS RELEVANCE IN CONTEMPORARY TIMES: a. Nichter, Mark and Mimi Nichter (1996) Popular Perceptions of Medicine: A South Indian Case Study. b. Qadeer, Imrana (2013). Universal Health Care in India: Panacea for whom? Indian Journal of Public Health Volume 57 Issue 4 October-December 2013 pp 225-229 c. Baru, Rama (2003). Privatisation of Health Services: A South Asian Perspective. *Economic and Political Weekly.* 38(42) 4433-4437			



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

Name of the Faculty: Dr. S. Vivekananthan
Department: Tamil
CBCS Semester: II

Month	Theory/Practical	Topics	Course	Paper code/Name
January	Theory	Study of Important Authors: Tamil Techniques of epics and Kaviyarangam	B.A Prog Tamil DSC	62084206 / 62081210_OC
February	Theory	Study of Important Authors: Tamil life of Mudiyarsan	B.A Prog Tamil DSC	62084206 / 62081210_OC
March	Theory Assignment	Study of Important Authors: Tamil Creative style of Introduction of Mudiyarasan and contemporary writers Mudiyarasan	B.A Prog Tamil DSC	62084206 / 62081210_OC
April	Theory Mid-Term Test	Study of Important Authors: Tamil Mudiyarasan Kaappiya Punaithiran	B.A Prog Tamil DSC	62084206 / 62081210_OC
May	Theory	Study of Important Authors: Tamil Art and Ideology of Mudiyarasan	B.A Prog Tamil DSC	62084206 / 62081210_OC

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

Name of the Faculty: Dr. S. SEENIVASAN
Department: Tamil
CBCS Semester: II

Month	Theory/Practical	Topics	Course	Paper code/Name
January	Theory	Study of Important Authors: Tamil Introduction of EVR. Periyar and contemporary Social Reformers	B.A Prog Tamil DSC	62084206 / 62081210_OC
February	Theory	Study of Important Authors: Tamil Vaikkam fight	B.A Prog Tamil DSC	62084206 / 62081210_OC
March	Theory Assignment	Study of Important Authors: Tamil Journalistic style of EVR Periyar Social and Political life of Periyar	B.A Prog Tamil DSC	62084206 / 62081210_OC
April	Theory Mid-Term Test	Study of Important Authors: Tamil Views & Thoughts of EVR. Periyar	B.A Prog Tamil DSC	62084206 / 62081210_OC
May	Theory	Study of Important Authors: Tamil Political Ideology of EVR Periyar	B.A Prog Tamil DSC	62084206 / 62081210_OC

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

Name of the Faculty: Dr. S. Vivekananthan
Department: Tamil
CBCS Semester: IV

Month	Theory/Practical	Topics	Course	Paper code/Name
January	Theory	Study of Important Texts: Nedunalvaadai Introduction of Sangam literature	B.A Prog Tamil DSC	62084403/ 62081436_OC
February	Theory	Study of Important Texts: Nedunalvaadai Introduction of Sangam Literature and Nedunalvaadai	B.A Prog Tamil DSC	62084403/ 62081436_OC
March	Theory Assignment	Study of Important Texts: Nedunalvaadai Life style of Forest land (Mullai) Concept of Akam and Puram	B.A Prog Tamil DSC	62084403/ 62081436_OC
April	Theory Mid-Term Test	Study of Important Texts: Nedunalvaadai Nedunalvaadai in Sangam Literature	B.A Prog Tamil DSC	62084403/ 62081436_OC
May	Theory	Study of Important Texts: Nedunalvaadai Expressions of the Characters and culture, custom of the people	B.A Prog Tamil DSC	62084403/ 62081436_OC

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SEMESTER WISE TEACHING PLAN
2021-22 (Even Semester)

Name of the Faculty: Dr. S. SEENIVASAN
Department: Tamil
CBCS Semester: IV

Month	Theory/Practical	Topics	Course	Paper code/Name
January	Theory	Study of Important Texts: Kuyilpaattu Introduction of Subramania Bharathi and contemporary Poets	B.A Prog Tamil DSC	62084403/ 62081436_OC
February	Theory	Study of Important Texts: Kuyilpaattu Kuyilpaattu in Barathi's Epics	B.A Prog Tamil DSC	62084403/ 62081436_OC
March	Theory Assignment	Study of Important Texts: Kuyilpaattu Bharathiyin Kuyilpattu Punaithiran. Creative Style and Techniques of Kuyilpaattu	B.A Prog Tamil DSC	62084403/ 62081436_OC
April	Theory Mid-Term Test	Study of Important Texts: Kuyilpaattu Views & Description of Nature in Kuyilpaattu	B.A Prog Tamil DSC	62084403/ 62081436_OC
May	Theory	Study of Important Texts: Kuyilpaattu Emotions and Expressions of Characters	B.A Prog Tamil DSC	62084403/ 62081436_OC

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SEMESTER WISE TEACHING PLAN
2021-22 (Even Semester)

Name of the Faculty: Dr. S. Vivekananthan
Department: Tamil
CBCS Semester: VI

Month	Theory/Practical	Topics	Course	Paper code/Name
January	Theory	Selected Texts: Poetry & Play : Kudumba Vilakku Life history of Bharathi Dasan and contemporary Poets	B.A Prog Tamil DSE	62087640
February	Theory	Selected Texts: Poetry & Play : Kudumba Vilakku Study of culture and customs of Tamils	B.A Prog Tamil DSE	62087640
March	Theory Assignment	Selected Texts: Poetry & Play : Kudumba Vilakku Kudumba Vilakku in Modern Epic	B.A Prog Tamil DSE	62087640
April	Theory Mid-Term Test	Selected Texts: Poetry & Play : Kudumba Vilakku Study of Characters in Kudumba Vilakku	B.A Prog Tamil DSE	62087640
May	Theory	Selected Texts: Poetry & Play : Kudumba Vilakku Expressions of the Women Characters	B.A Prog Tamil DSE	62087640

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2021-22 (Even Semester)

Name of the Faculty: Dr. S. SEENIVASAN
Department: Tamil
CBCS Semester: VI

Month	Theory/Practical	Topics	Course	Paper code/Name
January	Theory	Selected Texts: Poetry & Play : Durkkira Avalam Outline of modern street play	B.A Prog Tamil DSE	62087640
February	Theory	Selected Texts: Poetry & Play : Durkkira Avalam Durkkira Avalam in Modern Tamil Plays	B.A Prog Tamil DSE	62087640
March	Theory Assignment	Selected Texts: Poetry & Play : Durkkira Avalam Study of Characters in Durkkira avalam Character study of Durkkiran	B.A Prog Tamil DSE	62087640
April	Theory Mid-Term Test	Selected Texts: Poetry & Play : Durkkira Avalam Study of Social conflicts in Durkkira Avalam	B.A Prog Tamil DSE	62087640
May	Theory	Selected Texts: Poetry & Play : Durkkira Avalam Techniques of Tamil Play and Durkkira Avalam	B.A Prog Tamil DSE	62087640

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

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

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Unit 1. Kumarastra Vidya Sandarsanamu by Nannaya	III B.A (PROGRAM) /TELUGU / Discipline course	62087650/ Classical and medieval Telugu poetry
	Practicals	……		
	Tutorials	FOUR		
FEBRUARY	Theory:	Unit 1. Kumarastra Vidya Sandarsanamu by Nannaya		
	Practicals:	----------		
	Tutorials: Assignment :	FOUR TWO		
MARCH	Theory:	Unit 2 Vindhya garvabhangam by Srinatha Unit 5 Divyadrishti by Muddupalani.		
	Practicals:	----------		
	Tutorials:	FOUR		
	Test	TWO		
APRIL	Theory:	Unit 5 Divyadrishti by Muddupalani.		
	Practicals:	----------		
	Tutorials:	FOUR		

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

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

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Unit 1 The origin and development of Telugu Novel.	II B.A (PROGRAM) /TELUGU / Discipline course	62084404/ An exegetic study of Telugu Novel
	Practicals	----------		
	Tutorials	FOUR		
FEBRUARY	Theory:	Unit 3 SelectTexts: Satyaraja purva desha yatralu by Kandukuri Veereshalinga Pantulu. Chaduvu by Kodavatiganti Kutumbarao.		
	Practicals:	----------		
	Tutorials: Assignment :	FOUR TWO		
MARCH	Theory:	Unit 3 SelectTexts: Satyaraja purva desha yatralu by Kandukuri Veereshalinga Pantulu.		
	Practicals:	----------		
	Tutorials:	FOUR		
	Test	TWO		
APRIL	Theory:	Unit 3 Chaduvu by Kodavatiganti Kutumbarao.		
	Practicals:	----------		
	Tutorials:	FOUR		

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

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

Month		Topics	Course	Paper Code/Name
APRIL	Theory	Unit 1 *Kavitrayamu* (Nannaya, Tikkana, Errana) Andhra Mahabharatamu.	I B.A (PROGRAM) /TELUGU/ Discipline course	62084202/A brief survey of Telugu Literature
	Practicals	----------		
	Tutorials	TWO		
MAY	Theory:	Unit 3 *Prabandha* poets or Asta Diggaja poets and their writings (Allasani Peddana, Nandi Thimmana, Madayyagari Mallana, Dhurjati, Ayyalaraju Ramambhadrudu, Pingali Surana, Ramarajabhushanudu, and Tenali Ramakrishnudu), Srikrishna Devaraya, Unique features of *Prabandha* period.		
	Practicals:	----------		
	Tutorials: <u>Assignment :</u>	FOUR TWO		
JUNE	Theory:	Unit 3 *Prabandha* poets or Asta Diggaja poets and their writings (Allasani Peddana, Nandi Thimmana, Madayyagari Mallana, Dhurjati, Ayyalaraju Ramambhadrudu, Pingali Surana, Ramarajabhushanudu, and Tenali Ramakrishnudu), Srikrishna Devaraya, Unique features of *Prabandha* period.		
	Practicals:	----------		

	Tutorials:	FOUR		
	Test	TWO		
JULY	Theory:	Unit 5 Modern Poets (Devulapalli Krishna Shastry, SriSri, Tilak)		
	Practicals:	----------		
	Tutorials:	FOUR		

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

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

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Unit 1 An Introduction to Autobiography and Biography.	II B.A (HONOURS) /TELUGU	12085425/ A study of Autobiography and Biography
	Practicals	----------		
	Tutorials	TWO		
FEBRUARY	Theory:	Unit 2 Narration of significant events, characterization and conversations in Autobiography / Biography.		
	Practicals:	----------		
	Tutorials: <u>Assignment :</u>	FOUR TWO		
MARCH	Theory:	Unit 3 GurajadaAppa Rao.		
	Practicals:	----------		
	Tutorials:	FOUR		
	<u>Test</u>	TWO		
APRIL	Theory:	Unit 5 Voice, Tense and Point of View.		
	Practicals:	----------		
	Tutorials:	FOUR		

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

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

Month		Topics	Course	Paper Code/Name
APRIL	Theory	Unit 1 Short Stories: *Gulabi Attaru* by Sripada Subrahmanya Sastry. *Varsham* by Rachakonda Viswanatha Sastry. *Dharmavaddee* by Tripuraneni Gopichand.	I B.COM (PROGRAM) /TELUGU	52081241 / Telugu Poetry, Short Story and Modern Prose
	Practicals			
	Tutorials	TWO		
MAY	Theory:	Unit 2 *Saisavamu* by Errana. *Bhattu Nalagama Rajuku Cheppina Raajaneeti* by Srinathudu.		
	Practicals:			
	Tutorials: **<u>Assignment :</u>**	FOUR TWO		
JUNE	**Theory:**	**Unit 2**		
	Practicals:	----------		
	Tutorials:	FOUR		
	<u>Test</u>	TWO		

JULY	**Theory:**	**Unit 3** Drama: *Swapna Vasavadattamu* by Chilakamarti Lakshimi Narasimham, Addepally & Co., Saraswathi Power Press, Rajamundry.		
	Practicals:	----------		
	Tutorials:	FOUR		

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-May,2022

Name of the Faculty: Dr. AARTI SEHERAWAT

Department: Zoology

Semester: Even (II,IV,VI)

Month		Topics	Course	Paper Code/Name
January	**Theory:**	**UNIT 1: Integumentary System** - Structure of Integument - Soft Derivatives	**BSc. Zoology Hons. IV Sem**	**Comparative anatomy of Vertebrates: CCVIII**
		UNIT 10: Early embryonic development - Gametogenesis	**BSc. Zoology Hons. VI Sem**	**Developmental Biology CCXIII**
		Unit 2: Cells and Organs of Immune System - Hematopoiesis - Cells of immune system - Primary and secondary lymphoid organs	**BSc. Life Science VI Sem (Sec A + B)**	**DSE II Immunology**
	Practicals:	- Protein estimation by Lowry's method - Trace the labeled C atoms in TCA	**BSc. Zoology Hons. IV Sem**	**Biochemistry of Metabolic Processes: CCX**
February	**Theory:**	**UNIT 1: Integumentary System** - Function - Hard Derivatives	**BSc. Zoology Hons. IV Sem**	**Comparative anatomy of Vertebrates: CCVIII**
		UNIT 2: Early embryonic development - Types of eggs - Egg membranes	**BSc. Zoology Hons. VI Sem**	**Developmental Biology CCXIII**
		Unit 3: Antigens - Antigens and Immunogens - Factors affecting immunogenicity - Antigenic determinants	**BSc. Life Science VI Sem**	**DSE II Immunology**
	Practicals:	- Study of Biological Oxidation(SDH) - Study of enzymatic activity of Trypsin - Study of enzymatic activity of Lipase	**BSc. Zoology Hons. IV Sem**	**Biochemistry of Metabolic Processes: CCX**
March	**Theory:**	**UNIT 3: Digestive System** - Comparative account of alimentary canal	**BSc. Zoology Hons. IV Sem**	**Comparative anatomy of Vertebrates: CCVIII**

		- Associated glands (liver, pancreas, gall bladder)		
		UNIT 2: Early embryonic development - Fertilization - Changes in gametes - Cleavage	BSc. Zoology Hons. VI Sem	Developmental Biology CCXIII
		Unit 3: Antigens - Antigen recognition - B and T cell Epitopes	BSc. Life Science VI Sem	DSE II Immunology
	Practicals	- To perform Acid Phosphatase assay - To perform Alkaline Phosphatase assay - To perform SGPT - To perform SGOT	BSc. Zoology Hons. IV Sem	Biochemistry of Metabolic Processes: CCX
	Assignment	- Last two years question papers	BSc. Zoology Hons. VI Sem	Developmental Biology CCXIII
	Mid Term Test	UNIT 1: INTEGUMENTARY SYSTEM	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
		Unit 2: Cell and organs of Immune system	BSc. Life Science VI Sem	DSE II Immunology
		UNIT 2: Early embryonic development	BSc. Zoology Hons. VI Sem	Developmental Biology CCXIII
April	Theory:	UNIT 3: Digestive System - Comparative account - Dentition	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
		Unit 3: Antigens - Adjuvants - Haptens	BSc. Life Science VI Sem	DSE II Immunology
		UNIT 2: Types of Blastula	BSc. Zoology Hons. VI Sem	Developmental Biology CCXIII
	Practicals:	- Mock Test - Revision	BSc. Zoology Hons. IV Sem	Biochemistry of Metabolic Processes: CCX
		-		

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

Name of the Faculty: Dr. AARTI SEHERAWAT

Department: Zoology

Semester: Even (II)

Month		Topics	Course	Paper Code/Name
April	**Theory:**	UNIT 10: Early embryonic development - Gametogenesis - Fertilization - Cleavage	B.Sc. Life Sciences Sem II **(SEC A+ B)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
	PRACTICAL	1. Osteology: a) Disarticulated skeleton of fowl and rabbit b) Carapace and plastron of turtle/tortoise c) Mammalian skulls: one herbivorous and one carnivorous animal. - *With continuous evaluation.* Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem II **(Batch – 1 & 2)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
MAY	**THEORY**	UNIT 10: Early embryonic development - Morphogenetic movements - Early development of frog - Human - Fate Maps	B.Sc. Life Sciences Sem II (SEC A+ B)	Core Course-II COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
		1. Frog - Study of developmental stages - whole mounts and sections through permanent slides	B.Sc. Life Sciences Sem II (Batch – 1 & 2)	Core Course-II COMPARATIVE ANATOMY AND DEVELOPMENTAL

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	PRACTICAL	- cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages. - Study visit to a IVF Centre and submission of report *With continuous evaluation* Evaluation of students on their performance in practical and Record		BIOLOGY OF VERTEBRATES
	ASSIGNMENT	Separate questions will be given to students from previous year question paper	B.Sc. Life Sciences Sem II	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
June	**Theory**	UNIT 11: Late embryonic development - Metamorphosis - Implantation - Types of Placenta	B.Sc. Life Sciences Sem II **(SEC A+ B)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
	PRACTICAL	1. Study of the different types of placenta- histological sections through permanent slides or photomicrograph. Temporary mount of sperm (frog/rat) *With continuous evaluation* .Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem II **(Batch – 1 & 2)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
	Mid Term Test	Test questions in DU exam pattern of covered topics	B.Sc. Life Sciences Sem II	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
JULY	**THEORY**	UNIT 9: History of developmental biology - Epigenesis - Preformation - Specification	B.Sc. Life Sciences Sem II **(SEC A+ B)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
	PRACTICAL	Submission of File and IVF Centre report, containing photographs with appropriate write up Mock test	B.Sc. Life Sciences Sem II **(Batch – 1 & 2)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Planner: Even Semester 2021 (Jan-April)

Name of the Faculty: Dr. Ajaib Singh
Department: Zoology
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	Unit 2: Carbohydrate metabolism: Glycolysis, citric acid cycle, HMP pathway, GNG, glycogenesis, glycogenolysis.	B.Sc Zoology Sem IV	CC X/ Biochemistry of metabolic processes
		Cloning vectors: plasmids, cosmids, phagemids, phage lambda, M13, BAC, YAC, MAC and expression vectors.	B.Sc Zoology Sem VI	DSE/ Animal Biotechnology
	Practical	Genomic DNA and plasmid DNA isolation,Transformation efficiency, PCR	B. Sc. (H) Zoology 3nd year Sem VI	DSEIII/ Animal Biotechnology
		To perform Ouchterlony double immunodiffusion assay. ABO blood group determination.	B.Sc LifeSciences Sem VI (Two batches)	DSE/ Immunolo gy
February	**Theory**	Unit 5: Oxidative phosphorylation. Redox system, ETC, inhibitors and uncouplers.	B.Sc Zoology SemIV	CC X/ Biochemistry of metabolic processes
		Restriction enzymes, nomenclature, type II. Construction of genomic and cDNA library. Screening by colony and plaque hybridization.	B.Sc Zoology SemVI	DSE/ Animal Biotechnology
	Practicals:	Isolation of Genomic DNA and Plasmid DNA, Restriction Mapping, Transformation numericals practice	B. Sc. (H) Zoology 3nd year Sem VI	DSE/ Animal Biotechnology

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		Cell counting and viability of splenocytes. ELISA Immunoelectrophoresis	B.Sc LifeSciences SemVI (Twobatches)	DSE/ Immunolo gy
March	**Theory**	Biochemistry of metabolic processes Unit 1: Catabolism vs anabolism. Compartmentalization of metabolic pathways, shuttle systems and transporters.	B.Sc Zoology Sem IV	CC X/ Biochemistry of metabolic processes
		Animal biotechnology Recombinant DNA in medicine, recombinant insulin and human growth hormone. Gene therapy.	B.Sc Zoology SemVI	DSE/ Animal Biotechnology
	Practical	DNA sequencing, DNA Fingerprinting, Restriction digestion, Agarose gel electrophoresis run	B. Sc. (H) Zoology 3nd year Sem VI	DSE/ Animal Biotechnology
		Study of lymphoid organs: spleen, thymus, lymph nodes. Preparation of stained blood film.	B.Sc Life Sciences SemVI (Twobatches)	DSE/ Immunolo gy
	<u>Mid Term Test</u>	Test of B.Sc Zoology Sem IV (Biochemistry of metabolic processes)		
		Test of B.Sc Zoology SemVI (Animal. Biotechnology)		
APRIL	**Theory:**	Biochemistry of metabolic processes Unit 1: ATP as energy currency, coupled reactions, use of reducing equivalents and cofactors. Intermediary metabolism.	B.Sc Zoology SemIV	CC X/ Biochemistry of metabolic processes

		Animal biotechnology Animal cell culture, Molecular diagnosis of diseases	B.Sc Zoology SemVI	DSE/ Animal Biotechnology
	Practicals:	Western Blotting, Southern, Northern blotting Revision exercises and test, viva for practical exams, checking of project report	B. Sc. (H) Zoology 3nd year Sem VI	DSE: Animal Biotechnology
		Revision Mock tests.	B.Sc LifeSciences SemVI (Twobatches)	DSE/ Immunolo gy

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SEMESTER WISE TEACHING PLAN
January, 2022 -May, 2022

Name of the Faculty: Dr. Amarjeet Singh **Department:** Zoology

Semester: Even (II/IV/VI)- **Semester IV & VI**

Month		Topics	Course	Paper Code/Name
January, 2022	**Theory:**	**Unit 5: Physiology of Heart:** Structure of mammalian heart, Coronary circulation, Structure and working of myocardial fibers	B.Sc. (H) Zoology Semester IV	CC IX: Physiology: Life Sustaining Systems
		Unit 1: Historical Review of Evolutionary Concept: Pre-Darwinian ideas: List of contributors influencing Darwin indicated as a timeline, Lamarckism: Merits and demerits, Post-Darwinian era: Modern synthetic theory; biomathematics and the theory of population genetics leading to Neo-Darwinism **Unit II: History of Life:** Chemogeny: An overview of pre-biotic conditions and events; experimental proofs to abiotic origin of micro-and macro-molecules.	B.Sc. (H) Biological Sciences, Semester VI	BS-C14 Evolutionary Biology
		Unit 3: Freshwater Biology: Lakes: Origin and classification, Lake as an ecosystem, Lake morphometry	B.Sc. (H) Zoology Semester IV	GE 4: Aquatic Biology
	Practical:	• Study of whole mounts and sections of developmental stages of frog through permanent slides: Cleavage stages, blastula, gastrula, neurula, tail-bud stage, tadpole (external and internal gill stages)	B.Sc. (H) Zoology Semester VI	CC XIII: Developmental Biology
		• Determine the area of lake using graphimetric and gravimetric method. • Identify the important Macrophytes, phytoplanktons and zooplanktons present in a lake ecosystem.	B.Sc. (H) Zoology Semester IV	GE 4: Aquatic Biology

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		• Determine the amount of turbidity/ transparency, dissolved oxygen in water collected from a nearby lake/ water body.		
February, 2022	**Theory:**	**Unit 5: Physiology of Heart:** Origin and conduction of cardiac impulses, Cardiac cycle, Cardiac output and its regulation	B.Sc. (H) Zoology Semester IV	CC IX: Physiology: Life Sustaining Systems
		Unit II: History of Life: Current concept of chemogeny: RNA first hypothesis, Biogeny: Cellular evolution based on proto-cell models (coacervates and proteinoid microspheres). Origin of photosynthesis, Evolution of oxygen and ozone build up. Evolution of eukaryotes from Prokaryotes, multicellularity. Cambrian explosion and timeline of plant and animal evolution in the Phanerozoic eon.	B.Sc. (H) Biological Sciences, Semester VI	BS-C14 Evolutionary Biology
		Unit 3: Freshwater Biology: Physico-chemical characteristics: Light, temperature, Thermal stratification	B.Sc. (H) Zoology Semester IV	GE 4: Aquatic Biology
	Practical:	• Study of whole mounts of developmental stages of chick through permanent slides: Primitive streak (13 and 18 hours), 21, 24, 28, 33, 36, 48, 72, and 96 hours of incubation (Hamilton and Hamburger stages)	B.Sc. (H) Zoology Semester VI	CC XIII: Developmental Biology
		• Determine the amount of free carbon dioxide, alkalinity (carbonates, bicarbonates)in water collected from a nearby lake/ water body. - Instruments used in limnology (Secchi disc, van darn bottle) and their significance.	B.Sc. (H) Zoology Semester IV	GE 4: Aquatic Biology
March, 2022	**Theory:**	**Unit 5: Physiology of Heart:** Frank-Starling Law of the heart, nervous and chemical regulation of heart rate, Electrocardiogram • **Assignment and Test**	B.Sc. (H) Zoology Semester IV	CC IX: Physiology: Life Sustaining Systems
		Unit IV: Forces of Evolution: Heritable variations and their role in evolution, recombination and random assortment (basis of sexual		

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		reproduction), gene regulation. Natural selection as a guiding force: Its attributes and action. Basic characteristics of natural selection. Co-adaptation and co-evolution, Man-made causes of change: Industrial melanism; antibiotic resistance. Modes of selection, artificial selection, Polymorphism, Heterosis and Balanced lethal systems. • **Assignment and Test**	B.Sc. (H) Biological Sciences, Semester VI	BS-C14 Evolutionary Biology
		Unit 3: Freshwater Biology: Dissolved solids, carbonates, bicarbonates • **Assignment and Test**	B.Sc. (H) Zoology Semester IV	GE 4: Aquatic Biology
	Practicals	• Study of the developmental stages and life cycle of Drosophila from stock culture	B.Sc. (H) Zoology Semester VI	CC XIII: Developmental Biology
		• Instruments used in limnology (conductivity meter, turbidity meter, PONAR grab sampler) and their significance. • Visit to a sewage treatment plant/ fisheries institute - A project report on a visit to sewage treatment plant/ fisheries institute	B.Sc. (H) Zoology Semester IV	GE 4: Aquatic Biology
April, 2022	**Theory:**	**Unit 5: Physiology of Heart:** Blood pressure and its regulation **Unit 4: Blood:** Haemostasis: Blood clotting system, Kininogen Kinin system, Fibrinolytic system	B.Sc. (H) Zoology Semester IV	CC IX: Physiology: Life Sustaining Systems
		Unit IV: Forces of Evolution: Hardy-Weinberg's Law of Genetic Equilibrium. Genetic Drift (Sewall Wright effect) as stochastic/random force; Its attributes and action. Basic characteristics of drift; selection Vs drift, Bottleneck effect, Founder principle. Alternation in gene frequency (when selection operates), Calculation based on selection co-efficient and fitness. Fluctuations in gene frequency (when drift operates): calculation based on standard deviation	B.Sc. (H) Biological Sciences, Semester VI	BS-C14 Evolutionary Biology

		Unit 3: Freshwater Biology: Phosphates and nitrates	B.Sc. (H) Zoology Semester IV	GE 4: Aquatic Biology
	Practical:	• Study of different sections of placenta (photomicropgraph/ slides) • Submission of project report on Drosophila culture/chick embryo development • Revision/ mock exam	B.Sc. (H) Zoology Semester VI	CC XIII: Developmental Biology
		• Evaluation of Practical File and Report Practice and Repetition of all experiments • Conduct of Mock examination	B.Sc. (H) Zoology Semester IV	GE 4: Aquatic Biology

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SEMESTER WISE TEACHING PLAN
April, 2022-July, 2022

Name of the Faculty: Dr. Amarjeet Singh **Department:** Zoology

Semester: Even (II/IV/VI)- **Only Semester II**

Month		Topics	Course	Paper Code/Name
April, 2022	**Theory:**	**Unit 1: Introduction to Coelomates:** Evolution of coelom and metamerism	B.Sc. (H) Zoology, Semester II	CC III: Non-Chordates II: Coelomates
		Unit 3: Digestive system: Brief account of alimentary canal and digestive glands	B.Sc. (P) Life Sciences, Semester II	CC II: Comparative Anatomy and Developmental Biology of Vertebrates
	Practical:	• Syllabus overview, general instructions and maintenance of lab record. • Study of *Aphrodite, Nereis, Heteronereis, Sabella, Serpula, Chaetopterus, Pheretima, Hirudinaria,* Trochophore larva, • Study of T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm.	B.Sc. (H) Zoology, Semester II	CC III: Non-Chordates II: Coelomates
May, 2022	**Theory:**	**Unit 5: Mollusca:** General characteristics of Mollusca, Classification up to classes	B.Sc. (H) Zoology, Semester II	CC III: Non-Chordates II: Coelomates
		Unit 5: Circulatory system: Evolution of heart and aortic arches **Unit 9: Scope and History of Developmental Biology:** Concepts of epigenesist, Preformation	B.Sc. (P) Life Sciences, Semester II	CC II: Comparative Anatomy and Developmental Biology of Vertebrates

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	Practical:	• Study of *Peripatus*. • Study of *Limulus, Palamnaeus, Palaemon, Daphnia, Balanus, Sacculina, Cancer, Eupagurus, Scolopendra, Julus, Bombyx, Periplaneta,* termites*, Apis, Musca*, Crustacean larvae (Any three). **Project Report:** Field study of the social behaviour of any insect (bees/termites/ants/wasps) or behavioural pattern of earthworm in nature.	B.Sc. (H) Zoology, Semester II	CC III: Non-Chordates II: Coelomates
June, 2022	**Theory:**	**Umit 5: Mollusca:** Respiration in Mollusca, Torsion and detorsion in Gastropoda • **Mid Term Test**	B.Sc. (H) Zoology, Semester II	CC III: Non-Chordates II: Coelomates
		Unit 9: Scope and History of Developmental Biology: Specification **Unit 11: Late embryonic development:** Metamorphic events in life cycle of frog and its hormonal regulation • **Mid Term Test**	B.Sc. (P) Life Sciences, Semester II	CC II: Comparative Anatomy and Developmental Biology of Vertebrates
	Practical:	• Study of mouth parts, digestive system and nervous system of *Periplaneta*. • Study of *Chiton, Dentalium, Pila, Doris, Helix, Unio, Patella,Ostrea, Pinctada, Sepia, Octopus, Nautilus.*	B.Sc. (H) Zoology, Semester II	CC III: Non-Chordates II: Coelomates
July, 2022	**Theory:**	**Unit 5: Mollusca:** Pearl Formation in Bivalves • **Revision**	B.Sc. (H) Zoology, Semester II	CC III: Non-Chordates II: Coelomates
		Unit 11: Late embryonic development: Implantation of embryo in human; formation, types and functions of placenta in mammals	B.Sc. (P) Life Sciences, Semester II	CC II: Comparative Anatomy and Developmental Biology of Vertebrates
	Practical:	• Study of *Pentaceros/Asterias*, *Ophiura, Clypeaster, Echinus, Cucumaria, Antedon.*	B.Sc. (H) Zoology, Semester II	CC III: Non-Chordates II: Coelomates

		• **Revision.** • **Mock Exam**		

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

Name of the Faculty: Dr. Anita Verma **Department: Zoology**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit I: Production of Energy:** Feeding patterns found in different animals; Intracellular and extracellular digestion, digestive enzymes, cellulose digestion in animals.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	Practicals	Effect of isotonic, hypotonic and hypertonic saline solutions on erythrocytes. Preparation of temporary mounts: nerve cells.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Syllabus overview, general instructions and maintenance of lab record. Estimation of haemoglobin using Sahli's haemoglobinometer. Preparation of haemin and haemochromogen crystals. Enumeration of white blood cells using haemocytometer.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)

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FEBRUARY	**Theory:**	**Unit II: Gas Exchange In Organisms:** Physiology of aquatic and terrestrial breathing, respiratory organs in aquatic and terrestrial organisms: trachea in insects, gills in fishes, lungs in birds; role of skin in respiration.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	Practicals:	Enumeration of white blood cells using haemocytometer. Preparation of blood smear and Differential Leucocyte Count (D.L.C).	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Enumeration of red blood cells and white blood cells using haemocytometer. Examination of sections of mammalian oesophagus, stomach, duodenum, ileum, rectum liver, trachea, lung, kidney. Interpretation of recording of frog's heart beat (in situ) under normal and experimental conditions.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)

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MARCH	**Theory:**	**Unit V: Integrative Physiology:** An overview of neuronal structure and function; general principles of sensory physiology- chemoreceptors (gustatory and olfactory).	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	Practicals:	Study of permanent slides of mammalian oesophagus, stomach, ileum, rectum, liver, trachea, lung, kidney, skin. Study of lung volumes and capacities by Spirometry; Comparison of normal physiological and one pathological condition. Revision.	B.Sc. (Hons) Biological Science, Semester-IV B.Sc. (Hons) Zoology, Semester-IV	Systems Physiology (BS C-8) Animal Physiology: Life Sustaining Systems (CC IX)
	Assignment:	Cellulose digestion/ Circulation/ Feeding patterns in different animals.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	<u>Test</u>	**Internal assessment test** (Unit I: Production of Energy, Unit II Gas exchange and Unit III: Bulk Transport).	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
APRIL	**Theory:**	**Unit V: Integrative Physiology:** General principles of sensory physiology- mechanoreceptors (statocyst in invertebrates and lateral line system of fishes);sonar system in bats; General principles of sensory physiology- electroreceptors (electric organs in fishes); thermoreceptors.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)

Practicals:	Mounting of septal and pharyngeal nephridia of earthworm. Recording of blood pressure using a sphygmomanometer. Revision. Evaluation of students on their performance in practical and Record Mock Practical Test. Submission of practical files.	B.Sc. (Hons) Biological Science, Semester-IV B.Sc. (Hons) Zoology, Semester-IV	Systems Physiology (BS C-8) Animal Physiology: Life Sustaining Systems (CC IX)
Test:	Mock Test (full syllabus Final Practical assessment.	B.Sc. (Hons) Biological Science, Semester-IV B.Sc. (Hons) Zoology, Semester-IV	Systems Physiology (BS C-8) Animal Physiology: Life Sustaining Systems (CC IX)

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Name of the Faculty: Dr. Anita Verma
Department: Zoology
Semester: Even – II

Month		Topics	Course	Paper Code/Name
April	**Practical:**	**Experiment 1:** Preparation of temporary mounts: Neurons and Blood film	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
May				
	Practical:	**Experiment 2:** Preparation of haemin and haemochromogen crystals **Experiment 3:** Demonstration of haemoglobin using Sahli's haemoglobinometer Evaluation of record file and discussion in the class	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
June	**Practical:**	**Experiment 4:** Examination of permanent histological sections of mammalian, stomach, lung, kidney, thyroid, pancreas, testis, ovary Evaluation of record file and discussion in the class	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
	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. (H) Zoology, Semester II	**GE: Human Physiology**
July				
	Practical:	**Experiment 5:** Determination of ABO Blood group **Experiment 6:** Recording of blood pressure using a Sphygmomanometer in resting condition Evaluation of record file and discussion in the class	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
	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 Checking of complete practical file	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**

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SEMESTER WISE
TEACHING PLAN
Sri Venkateswara College
January-April, 2022

Name of the Faculty: Dr. Mrs. Himani Khurana
Department: Zoology
Semester: Even – IV, VI

Subjects:
THEORY: B. Sc. (H) Zoology, Semester IV: **GE: Aquatic Biology**
B.Sc. (P) Life Sciences, Semester IV: **CC IV: Genetics and Evolutionary Biology**
B.Sc. (P) Life Sciences, Semester VI: **DSE 4: Immunology**
PRACTICAL: B.Sc. (P) Life Sciences, Semester IV: **SEC: Aquarium Fish Keeping**
B.Sc. (P) Life Sciences, Semester IV: **Genetics and Evolutionary Biology**

Month		Topics	Course	Paper
January, 2022	**Theory:**	**Unit 1: Aquatic Biomes** Brief introduction of the aquatic biomes: Freshwater ecosystem (lakes, wetlands, streams and rivers	B. Sc. (H) Zoology, Semester IV	**GE: Aquatic Biology**
		Unit 6: Direct Evidences of Evolution Types of fossils, incompleteness of fossil record, dating of fossils	B.Sc. (P) Life Sciences, Semester IV	**CC IV: Genetics and Evolutionary Biology**
		Unit 1: Overview of the Immune System Historical perspective, early theories of immunology, clonal selection theory. Innate immunity: defensive barriers of innate immunity, cell types and molecules involved in innate immunity	B.Sc. (P) Life Sciences, Semester VI (Batch A)	**DSE 4: Immunology**
		Unit 1: Overview of the Immune System Historical perspective, early theories of immunology, clonal selection theory. Innate immunity: defensive barriers of innate immunity, cell types and molecules involved in innate immunity	B.Sc. (P) Life Sciences, Semester VI (Batch B)	**DSE 4: Immunology**
	Practical:	-Study of different species of aquarium fishes and biology of endemic and exotic fishes (breeding, feeding, economic importance etc.) -Study of sexual dimorphism of Freshwater and marine fishes (guppy, Molly, sword tail, gold fish, angel fish, blue morph, anemone fish	B.Sc. (P) Life Sciences Semester IV (Batch 2)	**SEC/ Aquarium Fish Keeping**

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		• Study of Human Karyotypes (normal and abnormal) • Study of homology and analogy from suitable specimens/ pictures	B.Sc. (P) Life Sciences Semester IV (Batch 1)	**CC IV: Genetics and Evolutionary Biology**
February, 2022	**Theory:**	**Unit 1: Aquatic Biomes** Estuaries, Intertidal zones, Oceanic pelagic zone, Marine benthic zone and Coral reefs	B. Sc. (H) Zoology, Semester IV	**GE: Aquatic Biology**
		Unit 6: Direct Evidences of Evolution Phylogeny of horse **Unit 8: Species Concept** Biological species concept (advantages and limitations)	B.Sc. (P) Life Sciences, Semester IV	**CC IV: Genetics and Evolutionary Biology**
		Unit 1: Overview of the Immune System Adaptive immune system: attributes of acquired immunity, Humoral and cellular mediated immunity, active and passive immunity, primary and secondary cellular response, cells and molecules involved in adaptive immunity	B.Sc. (P) Life Sciences, Semester VI (Batch A)	**DSE 4: Immunology**
		Unit 1: Overview of the Immune System Adaptive immune system: attributes of acquired immunity, Humoral and cellular mediated immunity, active and passive immunity, primary and secondary cellular response, cells and molecules involved in adaptive immunity	B.Sc. (P) Life Sciences, Semester VI (Batch B)	**DSE 4: Immunology**
	Practical:	-Types, composition and formulation of fish feed (using Pearson square methods) -Preparation of fish feed in the lab -Setting up of an aquarium in the lab/ Construction and maintenance of glass aquarium and filter system using indigenous locally available materials -Techniques for fish handling and packaging	B.Sc. (P) Life Sciences Semester IV (Batch 2)	**SEC/ Aquarium Fish Keeping**
		• Study of Mendelian inheritance and gene interactions (non-Mendelian inheritance) using suitable examples (chi-square analysis) • Study of linkage, recombination, gene mapping using data • Visit to natural history museum and submission of report	B.Sc. (P) Life Sciences Semester IV (Batch 1)	**CC IV: Genetics and Evolutionary Biology**

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March, 2022	**Theory:**	**Unit 3: Freshwater Biology** Turbidity; dissolved gases (Oxygen, Carbon dioxide). Streams: Different stages of stream development	B. Sc. (H) Zoology, Semester IV	**GE: Aquatic Biology**
		Unit 8: Species Concept Modes of speciation **Unit 9: Macro-evolution** Macro-evolutionary principles (example: Darwin's Finches)	B.Sc. (P) Life Sciences, Semester IV	**CC IV: Genetics and Evolutionary Biology**
		Unit 9: Vaccines General introduction	B.Sc. (P) Life Sciences, Semester VI (Batch A)	**DSE 4: Immunology**
		Unit 9: Vaccines General introduction	B.Sc. (P) Life Sciences, Semester VI (Batch B)	**DSE 4: Immunology**
	Practical:	-Monitoring of aquarium water quality (temperature, pH, Dissolved oxygen, carbon dioxide, ammonia light N load) through titrimetry methods -Potential of aquarium fish farm as cottage industry -Field trip to aquarium shop/fish farm	B.Sc. (P) Life Sciences Semester IV (Batch 2)	**SEC/ Aquarium Fish Keeping**
		• Pedigree analysis of some human inherited traits • Study and verification of Hardy-Weinberg Law by Chi-square analysis	B.Sc. (P) Life Sciences, Semester IV (Batch 1)	**CC IV: Genetics and Evolutionary Biology**
	Assignment:	Set up a small bottle aquarium and rear small fish	B.Sc. (P) Life Sciences Semester IV (Batch 2)	**SEC/ Aquarium Fish Keeping**
	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 IV	**CC IV: Genetics and Evolutionary Biology**
April, 2022	**Theory:**	**Unit 3: Freshwater Biology** Physico-chemical environment, Adaptation of hill-stream fishes	B. Sc. (H) Zoology, Semester IV	**GE: Aquatic Biology**
		Revision	B.Sc. (P) Life Sciences, Semester IV	**CC IV: Genetics and Evolutionary Biology**

		Unit 9: Vaccines Types of vaccines	B.Sc. (P) Life Sciences, Semester VI (Batch A)	**DSE 4: Immunology**
		Unit 9: Vaccines Types of vaccines	B.Sc. (P) Life Sciences, Semester VI (Batch B)	**DSE 4: Immunology**
	Practical:	-Write a project proposal for setting up small aquarium fish keeping as a cottage industry to a funding agency for self- employment of youths or for helping poor farmers; after visiting any farm/ enterprise -Evaluation of Practical File and Report Practice and repetition of practical -Conduct of Mock examination	B.Sc. (P) Life Sciences Semester IV (Batch 2)	**SEC/ Aquarium Fish Keeping**
		Revision exercises and test, viva for practical exams	B.Sc. (P) Life Sciences, Semester IV (Batch 1)	**CC IV: Genetics and Evolutionary Biology**

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SEMESTER WISE
TEACHING PLAN
Sri Venkateswara College
April-July, 2022

Name of the Faculty: Dr. Mrs. Himani Khurana
Department: Zoology
Semester: Even – II

Subjects:
THEORY: B. Sc. (H) Zoology, Semester II: **GE: Human Physiology, CC IV: Cell Biology**
PRACTICAL: B. Sc. (H) Zoology, Semester II: **CC IV: Cell Biology**

Month		Topics	Course	Paper
April, 2022	**Theory:**	**Unit 4: Renal Physiology** Functional anatomy of kidney	B. Sc. (H) Zoology, Semester II	**GE: Human Physiology**
		Unit 2: Plasma Membrane Various models of plasma membrane structures, Transport across membranes: active and passive transport, facilitated transport; Cell-cell junctions, structures and functions: Tight junctions, adherens junctions, gap junctions **Unit 4: Mitochondria** Structure, Semi-autonomous nature, Endo-symbiotic hypothesis	B. Sc. (H) Zoology, Semester II	**CC IV: Cell Biology**
	Practical:	Syllabus overview, general instructions and maintenance of lab record Principle of Light microscope, Phase contrast microscope and Electron microscope and principle of cell fixation, staining and fractionation Preparation of temporary stained squash of onion root tip to study various stages of mitosis	B. Sc. (H) Zoology, Semester II	**CC IV: Cell Biology**
May, 2022	**Theory:**	**Unit 4: Renal Physiology** Mechanism of urine formation	B. Sc. (H) Zoology, Semester II	**GE: Human Physiology**
		Unit 4: Mitochondria Respiratory chain, Chemiosmotic hypothesis and ATP Synthase **Unit 5: Cytoskeleton** Structure and Functions: Microtubules, Microfilaments and Intermediate filaments	B. Sc. (H) Zoology, Semester II	**CC IV: Cell Biology**

	Practical:	Study the effect of colchicine on mitosis at 24 hrs and 48 hrs Study of various stages of meiosis	B. Sc. (H) Zoology, Semester II	**CC IV: Cell Biology**
June, 2022	**Theory:**	**Unit 4: Renal Physiology** Regulation of urine formation	B. Sc. (H) Zoology, Semester II	**GE: Human Physiology**
		Unit 6: Nucleus Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Transport of molecules across nuclear membrane, Chromatin: euchromatin, heterochromatin and packaging, nucleosome, nucleolus **Unit 7: Cell Division** Mitosis, Meiosis	B. Sc. (H) Zoology, Semester II	**CC IV: Cell Biology**
	Practical:	Preparation of temporary stained mount to show the presence of Barr body in human female blood cells/ cheek cells Cytochemical staining and preparation of permanent slide to demonstrate: (a) DNA by Feulgen reaction (b) Mucopolysaccharides by PAS reaction	B. Sc. (H) Zoology, Semester II	**CC IV: Cell Biology**
	Assignment:	Assignment will be given from the topics covered	B. Sc. (H) Zoology, Semester II	**CC IV: Cell Biology**
	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. (H) Zoology, Semester II	**CC IV: Cell Biology**
July, 2022	**Theory:**	**Revision**	B. Sc. (H) Zoology, Semester II	**GE: Human Physiology**

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		Unit 7: Cell Division Cell cycle and its regulation **Unit 8: Cell Signalling** Cell Signalling through G-protein coupled receptor (GPCR) and role of secondary messenger:cAMP and protein kinase; Apoptosis **Revision**	B. Sc. (H) Zoology, Semester II	**CC IV: Cell Biology**
	Practical:	Cytochemical staining and preparation of permanent slide to demonstrate: (c) Proteins by Mercuric Bromophenol Blue/Acid Fast Green **Revision** **Mock Exam**	B. Sc. (H) Zoology, Semester II	**CC IV: Cell Biology**

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

Name of the Faculty: Dr. Mansi Verma **Department: Zoology**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Mass-scale extinctions: causes, significance and events. Cretaceous: Tertiary Mass Extinction in detail	B.Sc. (H) Biological Sciences Semester VI	BS-C14 Evolutionary Biology
		Unit 1: Mendelian Genetics and its Extension Mendel's work on transmission of traits, principles of inheritance, chromosome theory of inheritance, incomplete dominance and co-dominance, multiple alleles, lethal alleles, epistasis, pleiotropy,	B.Sc. (H.) Life Sciences Semester IV (Batch A and B)	LS Core IV: Genetics and Evolutionary Biology
	Practicals	• Study of Human Karyotypes (normal and abnormal). • Study of homology and analogy from suitable specimens/pictures.	B.Sc. (H.) Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
		Evolutionary Biology • Living fossils - Eg. *Limulus, Peripatus,Latimeria, Sphaenodon* • Study of types of fossils (e.g. Body fossils, trails, casts and moulds and others) and Index fossils of Palaeozoic era • Vestigial, Analogous and Homologous organs using photographs, models or specimen • Connecting links/transitional forms - Eg. *Euglena, Neopilina, Balanoglossus, Chimaera, Tiktaalik, Archaeopteryx, Ornithorhynchus*	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology	B.Sc. (H)	CC-14

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		• Study of fossils from models/ pictures • Study of homology and analogy from suitable specimens • Study and verification of Hardy-Weinberg Law by chi square analysis method	Zoology Sem VI	(Evolutionary Biology)
FEBRUARY	**Theory**	**Unit III: Evidences of Evolution** Paleobiological: Concept of Stratigraphy and geological timescale; fossil study (types,formation and dating methods). Anatomical: Vestigial organs; Homologous and Analogousorgans (concept of parallelism and convergence in evolution). Taxonomic: Transitionalforms/evolutionary intermediates; living fossils	B.Sc. (H) Biological Sciences Semester VI	BS-C14 Evolutionary Biology
		polygenic inheritance, sex linked inheritance, extra-chromosomal inheritance **Unit 2: Linkage, Crossing Over and Chromosomal Mapping** Linkage and crossing over, recombination frequency as a measure of linkage intensity, two factor and three factor crosses, interference and coincidence, somatic cell genetics - an alternative approach to gene mapping	B.Sc. (H.) Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
	Practical	Study of Mendelian inheritance and gene interactions (non-Mendelian inheritance) using suitable examples (chi-square analysis). Study of linkage, recombination, gene mapping using data. Visit to natural history museum and submission of report.	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	LS Core IV: Genetics and Evolutionary Biology
		Evolutionary Biology • Simulation experiments using	B.Sc. H . Biological	BS-C14 (Evolutionary

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		coloured beads/playing cards to understand the effects of Natural selection on allele frequencies • **Selection Exemplifying Adaptive strategies (**Colouration, Mimetic form, Co-adaptation and co-evolution; Adaptations to aquatic, fossorial and arboreal modes of life**)** using Specimens	Science Sem VI	Biology)
		Evolutionary Biology • Construction of cladograms based on morphological characters. • Construction of phylogenetic tree with the help of bioinformatics tools (Clustal X, Phylip, MLK) and its interpretation. • Study of variations in a sample human population: (a) Continuous variation: Height/Weight in relation to age and sex (b) Discontinuous variation: Ability/Inability to taste Phenyl thiocarbamide (PTC)	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
MARCH	**Theory**	Phylogenetic: a) Fossil based: Phylogenyof horse as a model. b) Molecule based: Protein model (Cytochrome C); gene model (Globingene family). Basics of molecular phylogenetics.	B.Sc. (H) Biological Sciences Semester VI	BS-C14 Evolutionary Biology
		Unit 3: Mutations Chromosomal mutations (classification, types and examples), gene mutations (types and classification) **Unit 4: Sex Determination** Chromosomal mechanisms, dosage compensation	B.Sc. (H.) Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary Biology
	Practical	Pedigree analysis of some human inherited traits. Study and verification of Hardy-Weinberg Law by Chi-square analysis.	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	LS Core IV: Genetics and Evolutionary Biology

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		Evolutionary Biology • Simulation experiments using coloured beads/playing cards to understand the effects of Bottleneck effect and Founder effect • Digit reduction in horse phylogeny (study from chart), • Study of horse skull to illustrate key features in equine evolution • Construction of Phylogenetic tree using morphological characters.	B.Sc. (H .) Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology • Demonstration of role of natural selection and genetic drift in changing allelic frequencies using simulation studies. • Continued : Construction of phylogenetic tree with the help of bioinformatics tools (Clustal X, Phylip, MLK) and its interpretation. • Revision : Study and verification of Hardy-Weinberg Law by chi square analysis.	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
	Assignments	Genetics and Evolutionary Biology	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	LS Core IV: Genetics and Evolutionary Biology
		Evolutionary Biology	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
	<u>Mid Term Test</u>	Genetics and Evolutionary Biology	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	LS Core IV: Genetics and Evolutionary Biology
		Evolutionary Biology	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
APRIL	**Theory**	Coloration, camouflage and mimicry	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Unit 10: Extinction Mass extinction (causes, names of five major	B.Sc. (H.) Life Sciences Semester IV	LS Core IV: Genetics and Evolutionary

		extinctions, K-T extinction in detail), role of extinction in evolution		Biology
	Practical	Revision Mock Test	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	LS Core IV: Genetics and Evolutionary Biology
		Evolutionary Biology • Study of monkey and human skull - A comparison to illustrate common primate and unique Hominin features • Revision and mock practical test • Extension activity if time permits : Teaching Bioinformatic tools and introduction to databases Alignment using clustal X and construction of phylogenetic tree • Visit to Geology/ Anthropology museums, Delhi University if permission is obtained	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology • Revision of bioinformatics tools , Simulation exercises and other practicals, and mock practical test	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)

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

Name of the Faculty: Dr. Namita Nayyar **Department: Zoology**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit 5: Circulatory System** General plan of circulation, Evolution of heart and aortic arches	B.Sc. (H) Zoology Selester IV	CCVIII: Comparative anatomy of Vertebrates
		Unit 4: Genetically Modified Organisms Production of cloned and transgenic animals: Nuclear Transplantation,	B.Sc. (H) Zoology Selester VI	DSE: Animal Biotechnology
		Unit 5: History of Life and Introduction to Evolutionary Theories Major events in history of life, Lamarckism, Darwinism, Neo-Darwinism	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
	Practicals	• Study of Human Karyotypes (normal and abnormal). • Study of homology and analogy from suitable specimens/ pictures.	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology

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		1. Study of placoid, cycloid and ctenoid scales of fish through permanent slides/photographs. 2. Study of different types of feathers of birds.	B.Sc. (H) Zoology Selester IV	CCVIII: Comparative anatomy of Vertebrates
FEBRUARY	**Theory**	**Unit 6: Urinogenital System** Succession of kidney, Evolution of urinogenital ducts, Types of mammalian uteri. **Unit 4: Respiratory System** Skin, gills, lungs and air sacs	B.Sc. (H) Zoology Selester IV	CCVIII: Comparative anatomy of Vertebrates
		Retroviral Method, DNA microinjection; Applications of transgenic animals	B.Sc. (H) Zoology Selester VI	DSE: Animal Biotechnology
		Unit 7: Population Genetics and Processes of Evolutionary Change Hardy-Weinberg law (statement, derivation and applications), evolutionary forces upsetting H-W equilibrium (concepts only)	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
	Practicals	1. Study of Mendelian inheritance and gene interactions (non-Mendelian inheritance) using suitable examples (chi-square analysis). 2. Study of linkage, recombination, gene mapping using data.	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology

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		3. Visit to natural history museum and submission of report.		
		3. Disarticulated skeleton of Frog, *Varanus*, (Skull, Limb bones, Vertebral Column, Sternum, Girdles, Ribs). 4. Carapace and plastron of turtle/tortoise.	B.Sc. (H) Zoology Selester IV	CCVIII: Comparative anatomy of Vertebrates
	Assignment :	Any topic from Syllabus OR Previous Years Question papers	B.Sc. (H) Zoology Selester IV	CCVIII: Comparative anatomy of Vertebrates
MARCH	**Theory:**	**Unit 4: Respiratory System** Accessory respiratory organs **Unit 7: Nervous System** Comparative account of brain; Autonomic nervous system, Spinal cord, Cranial nerves in Mammals	B.Sc. (H) Zoology Selester IV	CCVIII: Comparative anatomy of Vertebrates
		Production of pharmaceuticals, production of donor organs, knock out mice.Production of transgenic plants: Agrobacterium mediated transformation.	B.Sc. (H) Zoology Selester VI	DSE: Animal Biotechnology

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		Unit 7: Population Genetics and Processes of Evolutionary Change Hardy-Weinberg law (statement, derivation and applications), evolutionary forces upsetting H-W equilibrium (concepts only), organic variations, isolating mechanisms, natural selection and its types, artificial selection	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
	Practicals	Pedigree analysis of some human inherited traits. Study and verification of Hardy-Weinberg Law by Chi-square analysis.	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
		5. Mammalian skulls: One herbivorous and one carnivorous animal. 6. Study of digestive, circulatory and urinogenital system of frog/rat through videos on dissection or through virtual dissections. 7. Study of anatomical details of any two organs (brain, heart, lung, kidney, eye and ear) through videos	B.Sc. (H) Zoology Selester IV	CCVIII: Comparative anatomy of Vertebrates
	Test	Syllabus Covered till Now.		
APRIL		**Unit 8: Sense Organs** Classification of	B.Sc. (H) Zoology Selester IV	CC VIII: Comparative anatomy of Vertebrates

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	Theory	receptors; Brief account of visual and auditory receptors in man **Unit2: Skeletal System** Outline of axial and appendicular skeleton: basic plan of bones of skull, girdles and limbs. Classification of vertebrae, structure of a typical vertebra, Jaw suspensorium, Visceral arches.		
		Applications of transgenic plants: insect and herbicide resistant plants.	B.Sc. (H) Zoology Selester VI	DSE: Animal Biotechnology
		natural selection and its types, artificial selection	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
	Practicals	Revision Mock Test	B.Sc. Life Sciences Semester IV	CC IV: Genetics and Evolutionary Biology
		8. Project on modifications in skeletal structures/GI tract/Respiratory organs in vertebrates. 9. Documentary film show on vertebrates/Visit to Zoological park, Biodiversity park or Sanctuary Revision/ mock exam	B.Sc. (H) Zoology Selester IV	CCVIII: Comparative anatomy of Vertebrates

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

Name of the Faculty: Dr. Nawaz Alam Khan **Department: Zoology**

Semester: II (Even Semester)

Month		Topics	Course	Paper Code/Name
APRIL	**Theory:**	Syllabus overview. Scope of studying the course. **Unit 2: Annelida:** • General characteristics and Classification up to classes; Digestion, Excretion and Reproduction in Annelida.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201**)
		Syllabus overview. Scope of studying the course. **Unit 1: Overview of Cells:** • Prokaryotic and Eukaryotic cells, Virus, Viroids, Mycoplasma, Prions.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		Syllabus overview. Scope of studying the course. **Unit 2: Skeletal System:** • Overview of skeleton: Brief account of jaw suspensorium and visceral arches.	B.Sc. Life Sciences II Semester	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**
	Practicals:	• Syllabus overview, general instructions and maintenance of lab record. • Study of *Aphrodite, Nereis, Heteronereis, Sabella, Serpula, Chaetopterus, Pheretima, Hirudinaria,* Trochophore larva, • Study of T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201**)
		• Syllabus overview, general instructions and maintenance of lab record. • Principle of Light microscope, Phase contrast microscope and Electron microscope and principle of cell fixation, staining and fractionation. • Preparation of temporary stained squash of onion root tip to study various stages of mitosis.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		• Syllabus overview, general instructions and maintenance of lab record. • Osteology: a) Disarticulated skeleton of fowl and rabbit.	B.Sc. Life Sciences II Semester **(Batch-III)**	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**

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MAY	**Theory:**	**Unit 3: Arthropoda:** • General characteristics and Classification up to classes, Classification of Insecta up to orders, Vision and Respiration in Arthropoda.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates **(32231201)**
		Unit 3: Endomembrane System: • Structure and Functions: Endoplasmic Reticulum, Signal hypothesis, Vesicular transport from ER to Golgi apparatus.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		Unit 6: Urinogenital System: • Succession of kidney, Evolution of urinogenital ducts.	B.Sc. Life Sciences II Semester	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**
	Practicals:	• Study of *Peripatus*. • Study of *Limulus, Palamnaeus, Palaemon, Daphnia, Balanus, Sacculina, Cancer, Eupagurus, Scolopendra, Julus, Bombyx, Periplaneta,* termites*, Apis, Musca*, Crustacean larvae (Any three).	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates **(32231201)**
		• Study the effect of colchicine on mitosis at 24 hrs and 48 hrs. • Study of various stages of meiosis.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		• Osteology: b) Carapace and plastron of turtle/tortoise, c) Mammalian skulls: one herbivorous and one carnivorous animal. • Frog - Study of developmental stages - whole mounts and sections through permanent slides - cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages.	B.Sc. Life Sciences II Semester **(Batch-III)**	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**
	Assignment:	• Topic: Respiration in Arthropoda.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates **(32231201)**
	Project Report:	• Field study of the social behaviour of any insect (bees/termites/ants/wasps) or behavioural pattern of earthworm in nature.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates **(32231201)**
		• Study visit to a IVF centre and submission of report.	B.Sc. Life Sciences II Semester **(Batch-III)**	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**
JUNE	**Theory:**	**Unit 3: Arthropoda:** • Metamorphosis in Insects; Social life in bees and termites. **Unit 4:Onychophora:** • General characteristics and Evolutionary significance.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates **(32231201)**
		Unit 3: Endomembrane System: • Protein sorting and transport from Golgi apparatus; Golgi apparatus, Vesicular transport.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		Unit 7: Nervous System: • Comparative account of brain.	B.Sc. Life Sciences II Semester	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**

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	Mid-Term Exam:	• The entire topics covered so far.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201**)
		• The entire topics covered so far.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		• The entire topics covered so far.	B.Sc. Life Sciences II Semester	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**
	Practicals:	• Study of mouth parts, digestive system and nervous system of *Periplaneta*. • Study of *Chiton, Dentalium, Pila, Doris, Helix, Unio, Patella,Ostrea, Pinctada, Sepia, Octopus, Nautilus.*	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201**)
		• Preparation of temporary stained mount to show the presence of Barr body in human female blood cells/ cheek cells. • Cytochemical staining and preparation of permanent slide to demonstrate: (a) DNA by Feulgen reaction (b) Mucopolysaccharides by PAS reaction.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		• Study of the different types of placenta- histological sections through permanent slides or photomicrograph. • Temporary mount of sperm (frog/rat). • Revision.	B.Sc. Life Sciences II Semester **(Batch-III)**	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**
JULY	**Theory:**	**Unit 6: Echinodermata:** • General characteristics and Classification up to classes; Protective mechanisms in echinoderms (Dermal skeleton, evisceration, autotomy); Water-vascular system in Asteroidea; Larval forms in echinoderms.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201**)
		Unit 3: Endomembrane System: • Coated Vesicles; Lysosomes; Peroxisomes.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		Unit 8: Sense Organs: • Types of receptors, Visual receptors in man.	B.Sc. Life Sciences II Semester	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**
	Practicals:	• Study of *Pentaceros/Asterias*, *Ophiura, Clypeaster, Echinus, Cucumaria, Antedon.* • Revision. • Mock Exam.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201**)
		• Cytochemical staining and preparation of permanent slide to demonstrate: (c) Proteins by Mercuric Bromophenol Blue/Acid Fast Green. • Revision. • Mock Exam	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		• Revision. • Mock Exam	B.Sc. Life Sciences II Semester **(Batch-III)**	Comparative Anatomy and Developmental Biology of Vertebrates **(42231202)**

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

Name of the Faculty: Dr. Nawaz Alam Khan **Department: Zoology**

Semester: IV (Even Semester)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Syllabus overview. Scope of studying the course. **Unit 3: Renal Physiology:** • Structure of kidney and its functional Unit.	B.Sc. (Hons) Zoology, Semester-IV	Physiology: Life Sustaining Systems **(32231402)**
FEBRUARY	**Theory:**	**Unit 3: Renal Physiology:** • Mechanism of urine formation.	B.Sc. (Hons) Zoology, Semester-IV	Physiology: Life Sustaining Systems **(32231402)**
MARCH	**Theory:**	**Unit 3: Renal Physiology:** • Regulation of water balance; Regulation of acid-base balance.	B.Sc. (Hons) Zoology, Semester-IV	Physiology: Life Sustaining Systems **(32231402)**
	Mid-Term Exam:	• The entire topics covered so far.	B.Sc. (Hons) Zoology, Semester-IV	Physiology: Life Sustaining Systems **(32231402)**
APRIL	**Theory:**	**Unit4: Blood:** • Components of blood and their functions; Structure and functions of haemoglobin. • Revision.	B.Sc. (Hons) Zoology, Semester-IV	Physiology: Life Sustaining Systems **(32231402)**

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Planner: Even Semester 2021 (Jan-April)

Name of the Faculty: Dr. Om Prakash
Department: Zoology
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	Immunology Introduction to concepts in Immunology Immunoglobulins: their role, primary and secondary response.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	Practical	Genomic DNA and plasmid DNA isolation,Transformation efficiency, PCR	B. Sc. (H) Zoology 3nd year Sem VI	DSEIII/ Animal Biotechnology
		IMMUNOLOGY To perform Ouchterlony double immunodiffusion assay. ABO blood group determination. 1. Demonstration of lymphoid organs. 2. Histological study of spleen, thymus and lymph nodes through slides/photographs IMMUNOLOGY	B.Sc LifeSciences Sem VI (Batch I) Batch II) B.Sc. (Life Sciences.) VI Semester (TLS)	DSE/ Immunology LS DSE 4: Immunology
February	**Theory**	Immunology Structure, different classes and function of antibodies, Antigenic determinants on immunoglobulins, Antigen-antibody interactions as tools for research and diagnosis	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	Practicals:	Isolation of Genomic DNA and Plasmid DNA, Restriction Mapping, Transformation numericals practice	B. Sc. (H) Zoology 3nd year Sem VI	DSE/ Animal Biotechnology
		IMMUNOLOGY Cell counting and viability of splenocytes. ELISA Immunoelectrophoresis 3. Preparation of stained blood film to study various types of blood cells. 4. Oüchterlony's double immuno-diffusion method.	B.Sc LifeSciences SemVI (Batch I) B.Sc LifeSciences SemVI (Batch I)	DSE/ Immunology DSE/ Immunology

March	**Theory**	Immunology Precipitation reaction, agglutination, immunofluorescence and ELISA Polyclonal sera, Hybridoma technology for monoclonal antibodies in therapeutics and diagnosis.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	Practical	DNA sequencing, DNA Fingerprinting, Restriction digestion, Agarose gel electrophoresis run	B. Sc. (H) Zoology 3nd year Sem VI	DSE/ Animal Biotechnology
		Study of lymphoid organs: spleen, thymus, lymph nodes. Preparation of stained blood film. 5. ABO blood group determination. 6. Demonstration of ELISA and Immunoelectrophoresis.	B.Sc LifeSciences SemVI (Batch I) B.Sc LifeSciences SemVI (Batch I)	DSE/ Immunology DSE/ Immunology
	<u>Mid Term Test</u>	Immunology Test papers for the internal assessment would be prepared from topics covered before mid-semester break. Test would be conducted immediately after the break.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
APRIL	**Theory:**	Major Histocompatibility Complex (MHC I and II) Structure and functions of MHC	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	Practicals:	Western Blotting, Southern, Northern blotting Revision exercises and test, viva for practical exams, checking of project report	B. Sc. (H) Zoology 3nd year Sem VI	DSE: Animal Biotechnology
		Revision Mock tests.	B.Sc LifeSciences SemVI (Batch I & II)	DSE/ Immunology

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-May, 2022

Name of the Faculty: Dr. Preeti Khandelwal
Department: Zoology
Semester: Even – II, IV and VI

Month		Topics	Course	Paper Code/Name
January	**Theory:**	**Unit 4: Protein Metabolism** Catabolism of amino acids; Transamination, deamination, Urea cycle; Fate of C-skeleton of Glucogenic and Ketogenic amino acids	B.Sc (Hons.) Zoology (Semester IV, 2nd year)	**CCX /Biochemistry of Metabolic Processes**
		Unit 2: Aquatic Resources Important fish and shellfish resources of inland (major carps, catfish and prawns), brackish water (Hilsa) , Marine (demersal and pelagic), ornamental and sport fishes	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 1: Introduction to aquarium fish keeping The potential scope of aquarium fish keeping as a cottage industry, exotic and endemic species of aquarium fishes. **Unit2: Biology of Aquarium fishes:** Common characteristics and sexual dimorphism of fresh water and marine aquarium fishes such as guppy, molly	B.Sc Life Sciences Sem VI (Batch 2)	**SEC: Aquarium Fish Keeping**
	Practical:	-Study of different species of aquarium fishes and biology of endemic and exotic fishes (breeding, feeding, economic importance etc.) -Study of sexual dimorphism of Freshwater and marine fishes (guppy, Molly, sword tail, gold fish, angel fish, blue morph, anemone fish, butterfly fish). -Guidelines of aquarium -Cleaning of aquarium, siphoning	B.Sc Life Sciences Sem IV (Batch 2)	**SEC/ Aquarium fish keeping**
		-Determine the area of lake using graphimetric and gravimetric method. -Identify the important Macrophytes, phytoplanktons and zooplanktons present in a lake ecosystem - Determine the amount of turbidity/ transparency, dissolved oxygen in water collected from a nearby lake/ water body.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**

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		-Estimation of total protein in a given sample by Lowry's method -Detection of SGOT and SGPT or GST and GSH in serum/ tissue - To study enzymatic activity of Trypsin and Lipase - Dry lab: to trace labelled 'C' atoms of acetyl Co-A till they evolve as CO2 in the TCA cycle through models	B.Sc (Hons.) Zoology Semester IV - SZH	**CCX: Biochemistry of Metabolic Processes**
February	**Theory:**	**Unit 4: Marine Biology** Salinity and Density of sea water, continental shelf, Adaptations of deep sea organisms, coral reefs, sea weeds.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 3: Lipid Metabolism B-oxidation and ω-oxidation of saturated fatty acids with even and odd number of carbon atoms; ketogenesis	B.Sc (Hons.) Zoology (Semester IV)	**CCX /Biochemistry of Metabolic Processes**
		Unit 2: Biology of Aquarium fishes: Common characteristics and sexual dimorphism of fresh water and marine aquarium fishes such as sword tail, gold fish, angel fish, blue morph, anemone fish and butterfly fish **Unit 4: Fish Transportation:** live fish transport, Fish handling, packaging &	B.Sc Life Sciences Sem IV (Batch 2)	**SEC/ Aquarium fish keeping**
	Practical	-Types , composition and formulation of fish feed (using Pearson square methods) -Preparation of fish feed in the lab -Setting up of an aquarium in the lab/ Construction and maintenance of glass aquarium and filter system using indigenous locally available materials. -Techniques for fish handling and packaging	B.Sc Life Sciences Sem IV (Batch 2)	**SEC/ Aquarium fish keeping**
		- Determine the amount of free carbon dioxide, alkalinity (carbonates, bicarbonates)in water collected from a nearby lake/ water body. -Instruments used in limnology (Secchi disc, van darn bottle) and their significance.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		-study of biological oxidation (SDH) goat liver -to perform acid and alkaline phosphatase assay from serum / tissue	B.Sc (Hons.) Zoology Semester IV - SZH	**CCX: Biochemistry of Metabolic Processes**
March	**Theory:**	**Unit 5: Management of Aquatic Resources** Causes of pollution: Agricultural, Industrial, sewage, thermal and oil spills, eutrophication, Management and conservation (legislation), sewage treatment, water quality assessment: BOD and COD	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 3: Lipid Metabolism Biosynthesis of Palmitic acid. **Unit 1: Overview of Metabolism**	B.Sc (Hons.) Zoology (Semester IV)	**CCX /Biochemistry of Metabolic Processes**

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		Catabolism vs Metabolism, shuttle systems and membrane transporters;		
		Unit 3: Food and Feeding of aquarium fishes: Use of live fish feed organisms, preparation and composition of formulated fish feeds, Types of formulated fish feeds **Unit 5: Maintenance of aquarium** General aquarium maintenance- budget for setting up an aquarium fish farm as a cottage industry	B.Sc Life Sciences Sem IV (Batch 2)	**SEC: Aquarium Fish Keeping**
	Practicals	-Monitoring of aquarium water quality (temperature, pH, Dissolved oxygen, carbon dioxide, ammonia light N load) through titrimetry methods. -Potential of aquarium fish farm as cottage industry -Field trip to aquarium shop/ fish farm	B.Sc Life Sciences Sem IV(Batch 2)	**SEC/ Aquarium fish keeping**
		- Instruments used in limnology (conductivity meter, turbidity meter, PONAR grab sampler) and their significance. Visit to a sewage treatment plant/ fisheries institute - A project report on a visit to sewage treatment plant/ fisheries institute	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		- To estimate the bilirubin by clinical method and to know the physiological significance of the bilirubin	B.Sc (Hons.) Zoology Semester IV - SZH	**CCX: Biochemistry of Metabolic Processes**
	Assignment	Coral Reefs, Sea weeds, Eutrophication, Sewage treatment, thermal and oil spill.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Set up a small bottle aquarium and rear small fish	B.Sc Life Sciences Sem IV(Batch 2)	**SEC/ Aquarium fish keeping**
	Mid Term Test	Unit: 4: Management of Aquatic resources	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 3: Lipid Metabolism Unit 4: Protein Metabolism	B.Sc (Hons.) Zoology (Semester IV)	**CCX /Biochemistry of Metabolic Processes**
April	**Theory**	**Revision**	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Revision	B.Sc (Hons.) Zoology (Semester IV, 2nd	**CCX /Biochemistry of Metabolic**
		Unit 3: Food and Feeding of aquarium fishes: formulation and preparation of fish feed, advantages and disadvantages of formulated feed. **Revision**	B.Sc Life Sciences Sem IV(Batch 2)	**SEC/ Aquarium fish keeping**

	Practical	- Write a project proposal for setting up small aquarium fish keeping as a cottage industry to a funding agency for self- employment of youths or for helping poor farmers; after visiting any farm/ enterprise. -Evaluation of Practical File and Report Practice and repetition of practical Conduct of Mock examination.	B.Sc Life Sciences Sem IV(Batch 2)	**SEC/ Aquarium fish keeping**
		Evaluation of Practical File and Report Practice and Repetition of all experiments Conduct of Mock examination	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Evaluation of Practical File Practice and repetition of practical Conduct of Mock examination.	B.Sc (Hons.) Zoology Semester IV - SZH	**CCX: Biochemistry of Metabolic Processes**

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January -May 2022, (Session 2021-22)

Name of the Faculty: Dr. Rajendra Phartyal

Department: Zoology

Semester: IV, VI: Theory: B.Sc. H . Biological Science Sem VI(Evolutionary Biology), B.Sc. (H) Zoology Sem VI (Evolutionary Biology), BSc (H) Zoology Semester IV (Physiology: Life Sustaining Systems)
Practicals: B.Sc. H . Biological Science Sem VI(Evolutionary Biology), B.Sc. (H) Zoology Sem VI (Evolutionary Biology), BSc (H) Zoology Semester IV (Physiology: Life Sustaining Systems)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	**Evolutionary Biology** Concept of species as a real entity- species concept, Mechanisms of speciation, Allopatric, Peripatric, Parapatric and sympatric; Patterns of speciation. Anagenesis and Cladogenesis;	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology Speciation: Micro-evolutionary changes (inter-population variations, clines, Ring species, races), Species concept, Isolating mechanisms, Modes of speciation, Adaptive radiation/macroevolution, Phyletic gradualism and punctuated equilibrium	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology: Life Sustaining Systems **Physiology of Digestion** Structural organization and functions of gastrointestinal tract and associated glands; Mechanical and chemical digestion of food;	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

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	Practicals:	**Evolutionary Biology** • Living fossils - Eg. *Limulus, Peripatus,Latimeria, Sphaenodon* • Study of types of fossils (e.g. Body fossils, trails, casts and moulds and others) and Index fossils of Palaeozoic era • Vestigial, Analogous and Homologous organs using photographs, models or specimen • Connecting links/transitional forms - Eg. *Euglena, Neopilina, Balanoglossus, Chimaera,Tiktaalik, Archaeopteryx, Ornithorhynchus*	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology • Study of fossils from models/ pictures • Study of homology and analogy from suitable specimens • Study and verification of Hardy-Weinberg Law by chi square analysis method	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems Syllabus overview, general instructions and maintenance of lab record. Estimation of haemoglobin using Sahli's haemoglobinometer Preparation of haemin and haemochromogen crystals Enumeration of white blood cells using haemocytometer	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
FEBRUARY	**Theory:**	**Evolutionary Biology** Phyletic Gradualism and Punctuated Equilibrium (Quantum Evolution), Basis of speciation: Isolating mechanisms. Continuous and discontinuous variations Concept of micro- and macro-evolution:	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology Mass extinctions (events, causes and effects), Detailed explanation of K-T extinction Palaeontological: Fossils (formation, types and dating); Geological time scale; Study of horse phylogeny	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems • Absorptions of carbohydrates, lipids, proteins, water, minerals and vitamins; Hormonal control of secretion of enzymes in Gastrointestinal tract.	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

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	Practicals:	**Evolutionary Biology** • Simulation experiments using coloured beads/playing cards to understand the effects of Natural selection on allele frequencies • **Selection Exemplifying Adaptive strategies (**Colouration, Mimetic form, Co-adaptation and co-evolution; Adaptations to aquatic, fossorial and arboreal modes of life**)** using Specimens	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology • Construction of cladograms based on morphological characters. • Construction of phylogenetic tree with the help of bioinformatics tools (Clustal X, Phylip, MLK) and its interpretation. • Study of variations in a sample human population: (a) Continuous variation: Height/Weight in relation to age and sex (b) Discontinuous variation: Ability/Inability to taste Phenyl thiocarbamide (PTC)	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems • Enumeration of red blood cells and white blood cells using haemocytometer • Examination of sections of mammalian oesophagus, stomach, duodenum, ileum, • rectum liver, trachea, lung, kidney • Interpretation of recording of frog's heart beat (in situ) under normal and experimental conditions.	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
MARCH	**Theory:**	**Evolutionary Biology** Primate characteristics and unique Hominin characteristics. Advantages and adaptations to bipedalism.Primate phylogeny leading to Homininline.	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology Origin of photosynthesis, Endo-symbiotic theory. Unique hominin characteristics contrasted with primate characteristics	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)

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	Physiology:Life Sustaining Systems Histology of respiratory tract; Mechanism of respiration, Pulmonary ventilation; Respiratory volumes and capacities; Transport of oxygen and carbon dioxide in blood;	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
Practicals:	**Evolutionary Biology** • Simulation experiments using coloured beads/playing cards to understand the effects of Bottleneck effect and Founder effect • Digit reduction in horse phylogeny (study from chart), • Study of horse skull to illustrate key features in equine evolution • Construction of Phylogenetic tree using morphological characters.	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
	Evolutionary Biology • Demonstration of role of natural selection and genetic drift in changing allelic frequencies using simulation studies. • Continued : Construction of phylogenetic tree with the help of bioinformatics tools (Clustal X, Phylip, MLK) and its interpretation. • Revision : Study and verification of Hardy-Weinberg Law by chi square analysis.	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
	Physiology:Life Sustaining Systems • Study of lung volumes and capacities by spirometry Comparison of normal physiological and one pathological condition. • Revision	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
Assignment	**Evolutionary Biology**	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
	Evolutionary Biology	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
	Physiology:Life Sustaining Systems	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
TESTS	**Evolutionary Biology**	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
	Evolutionary Biology	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
	Physiology:Life Sustaining Systems	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

APRIL	**Theory**	**Evolutionary Biology** Australopithecines, Homo habilis, Homo erectus, Neanderthal man . Archaic and modern Homo sapiens. Human migration. Theories. Brief reference to molecular analysis of human origin – Mitochondrial DNA and Y-chromosome studies.	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology Primate phylogeny from Dryopithecus leading to Homo sapiens, molecular evidences in human evolution.	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology: Life Sustaining Systems Dissociation curves and the factors influencing it; Carbon monoxide poisoning; Control of respiration.	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
	Practicals:	**Evolutionary Biology** • Study of monkey and human skull - A comparison to illustrate common primate and unique Hominin features • Revision and mock practical test • Extension activity if time permits : Teaching Bioinformatic tools and introduction to databases Alignment using clustal X and construction of phylogenetic tree • Visit to Geology/ Anthropology museums, Delhi University if permission is obtained	B.Sc. H . Biological Science Sem VI	BS-C14 (Evolutionary Biology)
		Evolutionary Biology • Revision of bioinformatics tools , Simulation exercises and other practicals, and mock practical test	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems • Recording of blood pressure using a sphygmomanometer • Revision • Evaluation of students on their performance in practical and Record • Mock Practical Test • Submission of practical files	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

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SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE
January-April, 2022

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Name of the Faculty: Dr. Richa Misra

Department: Zoology

Semester: II, IV, VI (Even)

Month		Topics	Course	Paper Code/Name
January	**Theory: (2+2+1)**	Unit IV: Regulatory Physiology: Thermoregulation chapter	B. Sc. (H) Biological Sciences 2nd year Sem IV	BS-C8: Systems Physiology
		Introduction to Research Methodology, Foundations of Research, Importance of proposals and surveys, Overview of research paper	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		Introduction to Evolutionary Biology, Introduction to Population Genetics (Hardy-Weinberg equilibrium), derivation of equation, Natural Selection, types	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals: (4+4+4=12)	Theory and Usage of various search engines such as Pubmed, Google scholar, Scopus, Web of Science, Importance of Referencing and Understanding of Plagiarism and Tools, Types of Reference Styles,	B. Sc. (H) Zoology 2nd year Sem IV	SEC/ Research Methodology
		• Study of Human Karyotypes (normal and abnormal). • Study of homology and analogy from suitable specimens/ pictures.	B.Sc. Life Sciences Semester IV Batch 1	CC IV: Genetics and Evolutionary Biology
		• Study of Human Karyotypes (normal and abnormal). • Study of homology and analogy from suitable specimens/ pictures.	B.Sc. Life Sciences Semester IV Batch 3	CC IV: Genetics and Evolutionary Biology
February	**Theory:**	Unit IV: Osmoregulation: Regulation of Water and solutes in aquatic and terrestrial animals, Osmoregulatory Organs in various terrestrial and aquatic animals	B. Sc. (H) Biological Sciences 2nd year Sem IV	BS-C8: Systems Physiology
		Discussion of various current areas of Research, Motivation for Research, Research Design, Finalizing Survey Topics, Data collection	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		derivation of equations for change in allelic frequencies in a population by evolutionary forces upsetting H-W equilibrium, kin selection, sexual selection, adaptive resemblances	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals: (4+4+4=12)	Exercises related to Plagiarism, Learning usage of Endnote and other similar softwares, Hypothesis building, Role of statistics, Types of graphs and its importance in Data presentation	B. Sc. (H) Zoology 2nd year Sem IV	SEC/ Research Methodology
		• Study of Mendelian inheritance and gene interactions (non-Mendelian inheritance) using suitable examples (chi-square analysis) • Study of linkage, recombination, gene mapping using data • Visit to natural history museum and submission of report	B.Sc. Life Sciences Semester IV Batch 1	CC IV: Genetics and Evolutionary Biology
		• Study of Mendelian inheritance and gene interactions (non-Mendelian inheritance) using suitable examples (chi-square analysis) • Study of linkage, recombination, gene mapping using data • Visit to natural history museum and submission of report	B.Sc. Life Sciences Semester IV Batch 3	CC IV: Genetics and Evolutionary Biology
March	**Theory:**	Unit IV: Regulatory Physiology: Excretion in animals and excretory organs	B. Sc. (H) Bio Sciences Sem IV	BS-C8: Systems Physiology
		Ethical Issues, Discussion about Survey progress and	B. Sc. (H) Zoology 2nd	SEC/Research

		Proposal topics with students, Report writing	year Sem IV	Methodology
		Genetic drift, Role of migration and mutation in changing allele frequencies, frequency-dependent selection	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals (4+4+4=12)	Troubleshooting related to analysis of survey and proposal, Title and abstract writing for a given research paper, Writing a report	B. Sc. (H) Zoology 2nd year Sem IV	SEC/ Research Methodology
		• Pedigree analysis of some human inherited traits. • Study and verification of Hardy-Weinberg Law by Chi-square analysis.	B.Sc. Life Sciences Semester IV Batch 1	CC IV: Genetics and Evolutionary Biology
		• Pedigree analysis of some human inherited traits. • Study and verification of Hardy-Weinberg Law by Chi-square analysis.	B.Sc. Life Sciences Semester IV Batch 3	CC IV: Genetics and Evolutionary Biology
	Assignment	Topics for presentation assigned to students related to the syllabus and a new discovery related to the topic	B. Sc. (H) Biological Sciences 2nd year Sem IV	BS-C8: Systems Physiology
		Assignment related to various topics from syllabus	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
April	**Mid Term Test**	Time-bound OBE Test questions of covered topics	B. Sc. (H) Zoology 2nd year Sem IV	BS-C8: Systems Physiology
		Time-bound OBE Test questions of covered topics	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
April	**Theory:**	Unit III: Bulk Transport (Circulation, Cardiac Output) Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B. Sc. (H) Zoology 2nd year Sem IV	BS-C8: Systems Physiology
		Progress Updates of Research Proposal and Survey Reports	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		Discussion of Mid-term Test paper and previous year question papers, Doubts	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals:	Survey and Proposal submission, viva for practical exams	B. Sc. (H) Zoology 2nd year Sem IV	SEC: Research Methodology
		Revision exercises and test, viva for practical exams	B.Sc. Life Sciences Semester IV Batch 1	CC IV: Genetics and Evolutionary Biology
		Revision exercises and test, viva for practical exams	B.Sc. Life Sciences Semester IV Batch 3	CC IV: Genetics and Evolutionary Biology

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SEMESTER TEACHING PLAN
SRI VENKATESWARA COLLEGE
JANUARY-APRIL, 2022

NAME OF THE FACULTY: Dr. RIYAZ BAKSHI
DEPTT. OF ZOOLOGY
SEMESTER: II/IV/VI

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MONTH		TOPIC	COURSE	Paper Code/Name
JANUARY	THEORY	Unit 1: Introduction to Public health and Hygiene Unit 2: Environment and Health hazards	B.Sc. Life sciences Sem. VI	Public Health and Hygiene(SEC)
	PRACTICAL	1. Estimation of blood glucose level. 2. Study of household pests following with reference to public health.	B.Sc. Life sciences Sem. VI	Public Health and Hygiene(SEC)
FEBUARY	THEOTY	Unit 3: Communicable diseases Unit 4: Life Style related Non-Communicable diseases	B.Sc. Life sciences Sem. VI	Public Health and Hygiene(SEC)
	PRACTICAL	3. Testing portability of water for human consumption by MPN method. 4. To determine the content of different pollution in soil/ water samples. Calculate the BMI of students and analyze the results with suitable statistical tools.	B.Sc. Life sciences Sem. VI	Public Health and Hygiene(SEC)
MARCH	THEORY	Unit 5: Social health problems	B.Sc. Life sciences Sem. VI	Public Health and Hygiene(SEC)
	PRACTICAL	5. Measure the blood pressure using Sphygmomanometer. 6. Data collection, case studies or interviews of the individuals suffering from diseases,	B.Sc. Life sciences Sem. VI	Public Health and Hygiene(SEC)
APRIL	THEORY	Revision and assignment	B.Sc. Life sciences Sem. VI	Public Health and Hygiene(SEC)
	PRACTICAL	1. Evaluation of record file and discussion in the class. 2.checking of complete file 3.mock test	B.Sc. Life sciences Sem. VI	Public Health and Hygiene(SEC)

SEMESTER TEACHING PLAN
SRI VENKATESWARA COLLEGE
APRIL-JULY, 2022

NAME OF THE FACULTY: Dr. RIYAZ BAKSHI
DEPTT. OF ZOOLOGY
SEMESTER: II

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Dhaula Kuan, New Delhi-110021

MONTH		TOPIC	COURSE	Paper Code/Name
APRIL	THEORY	Unit 1: Digestion and Absorption of Food Unit 2: Functioning of Excitable Tissue (Nerve and Muscle)	B.Sc. (H) zoology, Sem. II	GE II, HUMAN PHYSIOLOGY
	PRACTICAL	Syllabus overview, general instructions and maintenance of lab record. Osteology: a) Disarticulated skeleton of fowl and rabbit.	B.Sc. Life sciences Sem. II (Batch-III)	LS Core II, COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES (42231202)
		Preparation of temporary mounts: Neurons and Blood film.	B.Sc. (H) zoology, Sem. II	GE II, HUMAN PHYSIOLOGY
MAY	THEOTY	Unit 3: Respiratory Physiology Unit 5: Cardiovascular Physiology	B.Sc. (H) zoology, Sem. II	GE II, HUMAN PHYSIOLOGY
	PRACTICAL	Osteology: b) Carapace and plastron of turtle/tortoise, c) Mammalian skulls: one herbivorous and one carnivorous animal. Frog - Study of developmental stages - Whole mounts and sections through permanent slides - cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages.	B.Sc. Life sciences Sem. II (Batch-III)	LS Core II, COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES (42231202)
		1. Preparation of haemin and haemochromogen crystals. 2. Estimation of haemoglobin using Sahli's haemoglobinometer. 3. Evaluation of record file and discussion in the class.	B.Sc. (H) zoology, Sem: II	GE II, HUMAN PHYSIOLOGY
JUNE	THEORY	Unit 6: Endocrine and Reproductive Physiology	B.Sc. (H) zoology, Sem. II	GE II, HUMAN PHYSIOLOGY
	PRACTICAL	Study of the different types of placenta-histological sections through permanent slides or photomicrograph. Temporary mount of sperm (frog/rat). Revision.	B.Sc. Life sciences Sem. II (Batch-III)	LS Core II, COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES (42231202)
		Examination of permanent histological sections of mammalian stomach, lung, kidney, pancreas, ovary, thyroid. Evaluation of record file and discussion in the class.	B.Sc. (H) zoology, Sem. II	GE II, HUMAN PHYSIOLOGY

JULY	THEORY	Assignment- ACCORDING TO TOPICS	B.Sc. (H) zoology, Sem. II	GE II, HUMAN PHYSIOLOGY
	PRACTICAL	Revision. Mock Exam	B.Sc. Life sciences Sem. II (Batch-III)	LS Core II, COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES (42231202)
		1. Determination of ABO blood group 2. Record of blood pressure using a sphygmomanometer in resting condition. 3. Evaluation of record file and discussion in the class. 4. checking of complete file 5. mock test	B.Sc. (H) zoology, Sem. II	GE II, HUMAN PHYSIOLOGY

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January – April, 2022

Name of the Faculty: Dr. Sadqua Shameem

Department: Zoology

Semester: IV/VI

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Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Unit 6: Direct Evidences of Evolution Types of fossils, incompleteness of fossil record, dating of fossils, phylogeny of horse	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Historical review of evolutionary concept: Lamarckism, Darwinism, Neo-Darwinism	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY
FEBRAURY	**Theory:**	**Unit-8** Species Concept :Biological species concept (advantages and limitations), modes of speciation	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Unit-1 Life's Beginning: Chemogeny, RNA World, Biogeny **Unit-4** Raw material for Evolution: Variations: Heritable variations and their role	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY
	Assignment:	Separate questions will be given to students from previous year question paper	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY
MARCH	**Theory:**	**Unit-9** Macro-evolution: Macro-evolutionary principles (example: Darwin's Finches)	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Unit-4 Raw material for Evolution: Variations: Heritable variations and their role in evolution **Unit-3** Evidences of Evolution: Neutral theory	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY

	<u>Mid Term Test</u>	Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY
		Test questions in DU exam pattern of covered topics	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY
APRIL	**Theory**	Revision	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Revision	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY

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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
April –July, 2022

Name of the Faculty: Dr. Sadqua Shameem

Department: Zoology

Semester: II

Month		Topics	Course	Paper Code/Name
APRIL	**Theory:**	**Unit-1** Introduction to animal diversity, Whittaker's five kingdom classification, Systematic classification and general features of chordates and non chordates (Protista, Porifera, Cnidaria, Platyhelminthes, Aschelminthes,	B.Sc. (Hons.) Biological Science Sem II	**BS – 4** BIODIVERSITY
		Unit-1 Integumentary System: Structure and function of integument, Derivatives of integument glands.	B.Sc. Life Sciences Sem II **(Batch – 1 & 2)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
	Practicals:	Study of following specimens: *Euglena, Paramecium, Sycon, , Tubipora,Taenia, Ascaris Aphrodite, Leech, Peripatus, Limulus,* Hermit crab, Beetle, *Pila*, *Chiton, Dentalium, Octopus, Asterias* *With continuous evaluation.* Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Biological Science Sem II	BS – 4 BIODIVERSITY
		1. Osteology: a) Disarticulated skeleton of fowl and rabbit b) Carapace and plastron of turtle/tortoise c) Mammalian skulls: one herbivorous and one carnivorous animal. *With continuous evaluation.* Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem II **(Batch – 1 & 2)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
MAY	**Theory:**	**Unit-1** Annelida, Arthropoda, Mollusca, Echinodermata, Protochordata, Osteichthyes, Amphibia, Reptilia, Aves and Mammals. Principles of taxonomy, Linnaean system of classification, Binomial nomenclature, Species concepts.	B.Sc. (Hons.) Biological Science Sem - II	**BS – 4** BIODIVERSITY

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		Unit-4 Respiratory System : Brief account of gills, lungs, air sacs and swim bladder	B.Sc. Life Sciences Sem II (Batch – 1 & 2)	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
	Practicals:	Dissections/ Virtual demonstration: Digestive and nervous system of Cockroach; Unstained mount of Placoid scales. -Study of following specimens: *Balanoglossus, Amphioxus, Petromyzon, Pristis, Hippocampus, Labeo, Icthyophis/Uraeotyphlus, Salamander, Draco, Naja,* any three common birds, Bat. Visit toBiodiversity park, *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Biological Science Sem II	BS – 4 BIODIVERSITY
	Assignment:	1. Frog - Study of developmental stages - whole mounts and sections through permanent slides - cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages. - Study visit to a IVF Centre and submission of report *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem II **(Batch – 1 & 2)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
		Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Biological Science Sem II	**BS – 4** BIODIVERSITY
		Separate questions will be given to students from previous year question paper	B.Sc. Life Sciences Sem II	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
JUNE	**Theory:**	Unit-2 Endemism, endemic animals; Assessment of mapping of biodiversity; GIS/Remote sensing; Biotechnology and Conservation, IUCN; Germplasm banks, National Parks, Botanical Gardens; Wildlife Sanctuaries, Sacred fauna	B.Sc. (Hons.) Biological Science Sem - II	**BS – 4** BIODIVERSITY

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		Unit -12 Applied Aspects of Developmental Biology, Stem cells, Cloning, IVF	B.Sc. Life Sciences Sem II **(Batch – 1 & 2)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
	Practicals:	Study of a few endangered species of amphibians, reptiles, birds and mammals of India To study faunal composition of water samples (Lucky drop method) *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Biological Science Sem II	**BS – 4** BIODIVERSITY
		1. Study of the different types of placenta- histological sections through permanent slides or photomicrograph. 2. Temporary mount of sperm (frog/rat) *With continuous evaluation* .Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem II **(Batch – 1 & 2)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
	<u>Mid Term Test</u>	Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Biological Science Sem II	**BS – 4** BIODIVERSITY
		Test questions in DU exam pattern of covered topics	B.Sc. Life Sciences Sem II	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL
JULY	**Theory**	**Unit-4** Bioremediation, Bioethics Revision	B.Sc. (Hons.) Biological Science Sem - II	**BS – 4** BIODIVERSITY
		Revision	B.Sc. Life Sciences Sem II	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES
	Practicals:	Submission of File and Biodiversity parks report, containing photographs with appropriate write up Mock test	B.Sc. (Hons.) Biological Science Sem II	**BS – 4** BIODIVERSITY
		Submission of File and IVF Centre report, containing photographs with appropriate write up Mock test	B.Sc. Life Sciences Sem II **(Batch – 1 & 2)**	**Core Course-II** COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES

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SEMESTER WISE TEACHINGPLAN
SRI VENKATESWARA COLLEGE
Jan-April, 2021-2022 (Even Semester)

Name of the Faculty: Dr. Vagisha Rawal
Department: Zoology
Semester: II/IV/VI

- **Theory & Practical:**
  B.Sc. (H) Zoology Sem VI (Wildlife Conservation and management)
  BSc (H) Biological Sciences Sem VI (Wildlife Biology and conservation)

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Unit 6: Management of Excess Population** Bio- telemetry; Care of injured and diseased animal; Quarantine; Common diseases of wild animals: Zoonosis (Ebola and Salmonellosis), Rabies, Foot and Mouth Disease, *Mycobacterium* TB, Bovine and Avian Flu	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Unit 5: Management of excess Population and Translocation No. of Hours: 6 Bio- telemetry; Common diseases of wild animal; Quarantine; Population Viability and Habitat Analysis (PVHA), captive breeding and propagation, rescue, rehabilitation and reintroduction,	B.Sc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
	Practicals	**Public health & Hygiene** • Estimate the blood glucose level by glucometer / kit • To study the functioning and clinical significance of sphygmomanometer. • To determine the BMI	B.Sc. Life Sciences Sem VI TLS	Public Health & Hygiene (SEC)
		Wildlife Conservation and management • Identification of flora, mammalian fauna, avian fauna, herpeto-fauna • Nests of Birds • Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders)	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)

		Wildlife Conservation and management • Identification of flora, mammalian fauna, avian fauna, herpeto-fauna • Nests of Birds • Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders)	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
February	**Theory**	**Unit 5: Management Planning of Wildlife in Protected Areas** Estimation of carrying capacity; Human-wildlife conflict; Eco tourism / wild life tourism in forests; Climax communities: characteristics and theories; Ecology of purterbance **Unit 2: Evaluation and Management of Wildlife** Habitat analysis: a) Physical parameters: Topography, Geology, Soil and water; b) Biological Parameters: food, cover, forage, browse and cover estimation; Standard evaluation procedures: remote sensing and GIS.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Unit 4: Modern Concepts of Management No. of Hours: 15 Protected Area Network (PAN), WWFN, IUCN, and CITES. Wild life Legislation – Wild life Protection act (1972), its amendments and implementation. IUCN Red data book and red list categories (only names), Protected areas National parks & sanctuaries, Community reserve; Important features of protected areas in India; Project Tiger and Project Elephant & crocodile.	B.Sc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
	Practicals:	**Public Health & Hygiene** • To study the medically important organisms- Rat, Cockroach, Ants, Mosquitoes, Housefly	B.Sc. Life Sciences Sem VI TLS	Public Health & Hygiene (SEC)
		Wildlife Conservation and management • Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats, pellet groups, nest, antlers etc. • Identification of big cats,	B.Sc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
		Wildlife Conservation and management • Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats, pellet groups, nest, antlers etc. Identification of big cats, birds of prey, poisonous snakes	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI

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March	**Theory**	**Unit 3: Management of Habitats** Setting back succession: Grazing logging; Mechanical treatment; Advancing the successional process: Cover construction; Preservation of general genetic diversity; Restoration of degraded habitats.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Unit 6: Human-wildlife Conflict No. of Hours Poaching, illegal trading, conflict management and shifting from extraction to preservation; effect of extinction of a species on ecosystem; Forest landscape restoration. **Unit 3 Population Estimation** Population density, Natality, Birth rate, Mortality, fertility schedules and sex ratio computation	B.Sc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
	Practical	**Public Health & Hygiene** • To estimate the purity of water by MPN method • To study the different Life style diseases- diabetes, Hypertension, TB, PCOD	B.Sc. Life Sciences Sem VI TLS	Public Health & Hygiene (SEC)
		Wildlife Conservation and management Demonstration of different field techniques for flora and fauna PCQ, Ten tree method, Circular, Square & rectangular plots, • Field study to Corbett National Park Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences)	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Demonstration of different field techniques for flora and fauna PCQ, Ten tree method, Circular, Square & rectangular plots, • Field study to Corbett National Park Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences)	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
	<u>Assignment</u>	**WILD LIFE CONSERVATION AND MANAGEMENT** • Powerpoint presentations on the topics from syllabus	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Topic: PPTs on Animal behavior related concepts	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)

	Mid Term Test	• Test will include all the topics covered	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
		• Test will include all the topics covered	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
APRIL	**Theory:**	**Unit:7 Protected Areas** National parks and sanctuaries; Biosphere reserves; Conservation and Community reserve; Important features of protected areas in India; Tiger conservation – Tiger reserves in India and Management challenges in Tiger reserve.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		• Revision	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
	Practicals:	• Public Health & Hygiene • Revision/ mock exam	B.Sc. Life Sciences Sem VI TLS	Public Health & Hygiene (SEC)
		• Revision/ mock exam	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		• Revision/Mock test	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Jan-April, 2021-2022 (Even Semester)

Name of the Faculty: Dr. Vartika Mathur
Department: Zoology
Semester: II/IV/VI

- **Theory & Practical:**
  B.Sc. (H) Zoology Sem VI (Wildlife Conservation and management)
  BSc (H) Biological Sciences Sem VI (Wildlife Biology and conservation)

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Introduction**, Values and ethics of wildlife conservation; importance of conservation,	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Introduction, Values and ethics of wildlife conservation; importance of conservation,	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
	Practicals	Identification and Study of mammalian fauna, avian fauna, herpetofauna through direct and indirect evidences. Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders, Global Positioning System, Various types of Cameras and lenses)	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI

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		Identification and Study of mammalian fauna, avian fauna, herpetofauna through direct and indirect evidences. Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders, Global Positioning System, Various types of Cameras and lenses)	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
		Theory and Usage of various search engines such as Pubmed, Google scholar, Scopus, Web of Science	B.Sc. (H) Sem IV SZH	Research Methodology (SEC)
February	**Theory**	• Faecal analysis of ungulates and carnivores: Faecal samples, slide preparation, Hair identification, Pug marks and census method.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		• Faecal analysis of ungulates and carnivores: Faecal samples, slide preparation, Hair identification, Pug marks and census method.	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
	Practicals:	• Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats, pellet groups, nest, antlers etc. • Identification of big cats	BSc (H) Zoology Sem VI	Wildlife Conservation and management DSE-XI
		• Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats, pellet groups, nest, antlers etc. • Identification of big cats, birds of prey, poisonous snakes	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
		• Types of Reference Styles, Learning usage of Endnote, Exercises related to Plagiarism	B.Sc. (H) Sem IV SZH	Research Methodology (SEC)
March	**Theory**	Setting back succession; Grazing logging; Mechanical treatment; Advancing the successional process; Cover construction; Preservation of general genetic diversity.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Setting back succession; Grazing logging; Mechanical treatment; Advancing the successional process; Cover construction; Preservation of general genetic diversity.	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)

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	Practical	Demonstration of different field techniques for flora and fauna PCQ, Ten tree method, Circular, Square & rectangular plots, • Field study to Corbett National Park • Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences)	BSc (H) Zoology Sem VI	Wildlife Conservation and management DSE-XI
		Demonstration of different field techniques for flora and fauna PCQ, Ten tree method, Circular, Square & rectangular plots, • Field study to Corbett National Park • Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences)	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
		Hypothesis building, Role of statistics, Types of graphs and its importance in Data presentation	B.Sc. (H) Sem IV SZH	Research Methodology (SEC)
	Assignment	**WILD LIFE CONSERVATION AND MANAGEMENT** Concept of climax persistence/ Ecology of perturbence.	B.Sc. (Hons.) Zoology Sem VI TZH	Wildlife Conservation and management DSE-XI
		Topic: Animal behavior related concepts	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
	Mid Term Test	Test will include all the topics covered	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
		Test will include all the topics covered	B.Sc. (Hons.) Zoology Sem VI TZH	Wildlife Conservation and management
APRIL	**Theory:**	• Revision	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		• Revision	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
	Practicals:	• **Wildlife training: Educational tour to Jim Corbett National Park** • Revision/ mock exam	BSc (H) Zoology Sem VI	Wildlife Conservation and management DSE-XI

		• **Wildlife training: Educational tour to Jim Corbett National Park** • Revision/ mock exam	BSc (H) Biological Sciences Sem VI	Wildlife Biology and conservation (DSE-VI)
		• Revision/ mock exam • Submission of project report	B.Sc. (H) Sem IV SZH	Research Methodology (SEC)

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SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Planner: Even Semester 2022 (Jan-April)

Name of the Faculty: Dr. P.Jayaraj
Department: Zoology
Semester: IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	DEVELOPMENTAL BIOLOGY Unit 1: Introduction 4 Historical perspective and basic concepts: Phases of development, Cell-Cell interaction, Pattern formation, Differentiation and growth, Differential gene expression, Cytoplasmic determinants and asymmetric cell division	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		IMMUNOLOGY Unit6: Complement System: Components, alternate and classical pathway, biological consequences of complement activation	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	Practicals	DEVELOPMENTAL BIOLOGY Study of whole mounts and sections of developmental stages of frog through permanent slides: Cleavage stages, blastula, gastrula, neurula, tail-bud stage, tadpole (external and internal gill stages)	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		COMPARATIVE ANATOMY OF VERTEBRATES 1. Study of placoid, cycloid and ctenoid scales of fish through permanent slides/photographs. 2. Study of different types of feathers of birds.	B.Sc (H) Zoology II year IVsemester (SZH)	**ZH Core-VIII:**
		IMMUNOLOGY 1. Demonstration of lymphoid organs. 2. Histological study of spleen, thymus and lymph nodes through slides/photographs	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
February	**Theory**	DEVELOPMENTAL BIOLOGY Unit 2: Early Embryonic Development Fate maps (including Techniques), Early development of frog and chick up to gastrulation; Embryonic induction and organizers	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		IMMUNOLOGY Unit7: Cytokines :Basic properties and functions of cytokines		

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	Practicals:	DEVELOPMENTAL BIOLOGY Study of whole mounts of developmental stages of chick through permanent slides: Primitive streak (13 and 18 hours), 21, 24, 28, 33, 36, 48, 72, and 96 hours of incubation (Hamilton and Hamburger stages)	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		COMPARATIVE ANATOMY OF VERTEBRATES 3. Disarticulated skeleton of Frog, *Varanus*, (Skull, Limb bones, Vertebral Column, Sternum, Girdles, Ribs). 4. Carapace and plastron of turtle/tortoise.	B.Sc (H) Zoology II year IVsemester (SZH)	**ZH Core-VIII:**
		IMMUNOLOGY 3. Preparation of stained blood film to study various types of blood cells. 4. Oüchterlony's double immuno-diffusion method.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
March	**Theory**	DEVELOPMENTAL BIOLOGY Unit 3: Late Embryonic Development 8 Fate of Germ Layers; Extra-embryonic membranes in birds.Implantation of embryo in humans, Placenta (Structure, types and functions of placenta)	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII

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		IMMUNOLOGY Unit8: Immune System in Health and Diseases Hypersensitivity:Gell and Coombs' classification; Briefly discuss the concepts of Autoimmunity.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	Practical	DEVELOPMENTAL BIOLOGY Study of the developmental stages and life cycle of Drosophila from stock culture	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		COMPARATIVE ANATOMY OF VERTEBRATES 5. Mammalian skulls: One herbivorous and one carnivorous animal. 6. Study of digestive, circulatory and urinogenital system of frog/rat through videos on dissection or through virtual dissections. 7. Study of anatomical details of any two organs (brain, heart, lung, kidney, eye and ear) through videos	B.Sc (H) Zoology II year IVsemester (SZH)	**ZH Core-VIII:**
		IMMUNOLOGY 5. ABO blood group determination. 7. Demonstration of ELISA and Immunoelectrophoresis.	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	<u>Assignment</u>	DEVELOPMENTAL BIOLOGY To Solve and submit questionnaire for the topics covered before mid semester break	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		To Solve and submit questionnaire for the topics covered before mid semester break	B.Sc. Life sciences sem II (FLS)	

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	Mid Term Test	Topics covered before mid semester break and from assingnment		
APRIL	**Theory:**	DEVELOPMENTAL BIOLOGY Unit 4: Post Embryonic Development Metamorphosis: Changes, hormonal regulations in amphibians and insects; Regeneration: Modes of regeneration, epimorphosis, morphallaxis and compensatory regeneration (with one example each); Ageing: Concepts and Theories Unit 5: Implications of Developmental Biology Teratogenesis: Teratogenic agents and their effects on embryonic development; In vitro fertilization, Stem cell (ESC), Amniocentesis	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		IMMUNOLOGY Immune dysfunctions and Immunodeficiency	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
	Practical:	**DEVELOPMENTAL BIOLOGY** **Study of different sections of placenta (photomicropgraph/ slides)**	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII

		Submission of project report on Drosophila culture/chick embryo development ● Revision/ mock exam		
		Immunology Revision/mock exam	B.Sc. (Life Sciences.) VI Semester (TLS)	LS DSE 4: Immunology
		COMPARATIVE ANATOMY OF VERTEBRATES 8. Project on modifications in skeletal structures/GI tract/Respiratory organs in vertebrates. 9. Documentary film show on vertebrates/Visit to Zoological park, Biodiversity park or Sanctuary ● Revision/ mock exam	B.Sc (H) Zoology II year IVsemester (SZH)	**ZH Core-VIII:**

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