



**SRI VENKATESWARA COLLEGE**

**2018-19**

**ODD SEMESTER**

**TEACHING PLANS**



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

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

**Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
		Unit 4: The Genetic code: Introduction	B Sc (H) Biochemistry III Year Semester V	C-12 Gene Expression and Regulation
<b>July</b>	Theory	Unit 6: Introduction to Bioenergetics	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit 2: Classification of proteins	B.Sc (H) Biological Sciences, II Year Semester III	C-5 Proteins and Enzymes
	Practicals	Exercise-1: Safety measures in Laboratory	B Sc (H) Biochemistry I Year Semester I	C-1 Molecules of Life
		Exercise-1: Determination of CMC of detergents by conductivity method	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics



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

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

**Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
		Unit 4: The Genetic Code: Salient features Unit 5: Biosynthesis of proteins: Protein synthesis in prokaryotes	B Sc (H) Biochemistry III Year Semester V	C-12 Gene Expression and Regulation
<b>August</b>	Theory	Unit 6: Introduction to Bioenergetics Unit 7: Oxidative Phosphorylation	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit 2: Structure and classification of amino acids, structure of proteins, primary, secondary tertiary and quaternary	B.Sc (H) Biological Sciences, II Year Semester III	CBCS C-5 Proteins and Enzymes
	Practicals	Exercise-2: Preparation of molar solutions Exercise-3: Titration curve of acetic acid Exercise-4: Preparation of buffers	B Sc (H) Biochemistry I Year Semester I	C-1 Molecules of Life
		Exercise-2: Determination of CMC of SDS using PAN dye Exercise-3: Determination of CMC of Triton using PAN dye Exercise-4: Effect of lipid composition on the permeability of a lipid monolayer	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics



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**Semester I/III/V**

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

**Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
		Unit 5: Biosynthesis of proteins: Protein synthesis in eukaryotes	B Sc (H) Biochemistry III Year Semester V	C-12 Gene Expression and Regulation
<b>September</b>	Theory	Unit 7: Oxidative Phosphorylation	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit 2: Structure of Myoglobin and Hemoglobin, molecular physiology of Myoglobin and Hemoglobin, Bohr effect Hill's coefficient, models for allosteric proteins	B.Sc (H) Biological Sciences, II Year Semester III	C-5 Proteins and Enzymes
	Practicals	Exercise-5: Determination of pKa of Glycine Exercise-6: Qualitative tests for Biomolecules	B Sc (H) Biochemistry I Year Semester I	C-1 Molecules of Life
		Exercise-5: Separation of photosynthetic pigments by TLC Exercise-6: RBC ghost cell preparation Exercise-7: Separation of RBC membrane proteins from SDS-PAGE Exercise 8: To study the effect of detergent on RBC membrane	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics



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

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

**Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
		Unit 6: Protein targeting and degradation Unit 8: Regulation of gene expression in Eukaryotes	B Sc (H) Biochemistry III Year Semester V	C-12 Gene Expression and Regulation
<b>October</b>	Theory	Unit 8: Photophosphorylation	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit 4: Isolation and purification of enzymes Unit 5: Role of metal ions in biology	B.Sc (H) Biological Sciences, II Year Semester III	C-5 Proteins and Enzymes
	Practicals	Exercise 7: Separation by amino acids and sugars on TLC Exercise 8: Estimation of vitamin C	B Sc (H) Biochemistry I Year Semester I	C-1 Molecules of Life
		Exercise-9: Isolation of mitochondria from liver and assay of marker enzyme SDH Exercise-10: To study photosynthetic O <sub>2</sub> evolution in Hydrilla plant Exercise-11: Isolation of Chloroplast from spinach leaves Exercise-12: Estimation of Chlorophyll and photosynthetic activity	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics



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

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

**Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
		Unit 8: Regulation of gene expression in Eukaryotes	B Sc (H) Biochemistry III Year Semester V	C-12 Gene Expression and Regulation
<b>November</b>	Theory	Unit 8: Photophosphorylation	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics
		Unit 5: Role of metal ions in biology	B.Sc (H) Biological Sciences, II Year Semester III	C-5 Proteins and Enzymes
	Practicals	Revision/Mock practical	B Sc (H) Biochemistry I Year Semester I	C-1 Molecules of Life
		Revision/Mock practical	B Sc (H) Biochemistry II Year Semester III	C-6 Membrane Biology and Bioenergetics



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

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

**Department:** Biochemistry

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Receptor study, Scatchard Plot, Binding ,affinity studies, GPCR,Structure and	B Sc. H, Biochemistry	BCH C7
	<b>Practicals</b>	Glucose estimation Glucose tolerance test	B Sc. H, Biochemistry	BCH C7
	<b>Tutorials</b>			
AUGUST	<b>Theory:</b>	Phosphoinositide pathway, phosphatases, diesterases,PKA,PKB, PKC, PKG, NO, MAP Kinase, JAK STATpathways Gel Filtration, principle and applications, Vo& Ve & Vs Historical Background, Antigen &immunogen, Antibody structure and function	B Sc. H, Biochemistry  PGDMB PGDMB	BCH C7  PGDMB 101 PGDMB103
	<b>Practicals:</b>	Serum electrolyteEstimation T3 T4 Analysis DID, SRID, IEP,CIE,	Bsc H Biochemistry  PGDMB	BCH C7  PGDMBL 101
	<b>Tutorials:</b>			

SEPTEMBER	<b>Theory:</b>	Steroid and thyroid hormone receptors and signalling, Thyroid hormones, Goitre, Dwarfisms & other disorders, Anthrax, pertussis toxin and action Affinitychromatography,p rinciple Elution methods, Ligand, Matrix activation ,TLC, GC ELISA, Fluorescent Assays, RIA	B Sc. H, Biochemistry  PGDMB  PGDMB	BCH C7  PGDMB 101  PGDMB103
	<b>Practicals:</b>	Calcium Estimation Agglutination Tests : Direct and Indirect	BSc H Biochemistry PGDMB	BCH C7 PGDMBL 103
	<b>Tutorials:</b>			
	<b><u>Assignment :</u></b>			



OCTOBER	<b>Theory:</b>	Adrenal Cortex : Structure and hormones, Cushing Disease, Conns syndrome Hormones of Medulla & associated pathophysiology Plant tissue culture ,:Hoods, Callus induction Monoclonal Antibodies.	B Sc H Biochemistry  PGDMB	BCH C7  PGDMB 101 PGDMB 103
	<b>Practicals:</b>	Case Studies HCG detection Isolation of PBMC	Bsc H Biochemistry	BCH C7 PGDMDL 103
	<b>Tutorials:</b>			
	<b><u>Test</u></b>			
NOVEMBER	<b>Theory:</b>	PI 3 Kinase, Insulin receptor family, Desensitization Animal tissue culture, primary Secondary culture, cell lines MHC and its significance. Revision assignments	B Sc H Biochemistry PGDMB PGDMB	BCH C7 PGDMB 101 PGDMB 103
	<b>Practicals:</b>	REVISION EXERCISES and FINAL PRACTICAL EXAM	B Sc H Biochemistry PGDMB	BCH C7 PGDMBL 103

Name of the Faculty: Dr. Anju Kaicker



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

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

**Department: Biochemistry**

**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	1. History of Genetics, Unit 1. Model organisms	BSc.(H) Biochemistry	BCH-11/Concepts in Genetics
		2. RNA polymerases, transcription cycle in bacteria.	BSc.(H) Biochemistry	BCH C12/Gene expression and regulation
	<b>Practicals</b>	NA		
AUGUST	<b>Theory:</b>	1. Basic principles of heredity. Unit 2. Laws of probability, binomial expansion, chromosomal basis of Mendalism.	BSc.(H) Biochemistry	BCH-11/Concepts in Genetics
		2. Sigma factor, promoters, DNA footprinting, 3 stages of RNA synthesis, termination, inhibitors of transcription, applications.	BSc.(H) Biochemistry	BCH C12/Gene expression and regulation
		3. Restriction enzymes, properties, nomenclature, DNA manipulation, methylases, DNA polymerases, RNA polymerases	PG Diploma	PGD MB102/RDT

	<b>Practicals:</b>	<p>1. UV, Visible spectrophotometric analysis Of DNA and proteins. Effect of Solvent perturbation on absorption</p> <p>2. Preparation and sterilization of medium, Isolated colonies of E.coli by streak plate and spread plate methods, growth curve of E.coli</p>	<p>PG Diploma</p> <p>PG Diploma</p>	<p>PGD MBL104/ Biophysical techniques</p> <p>PGD MBL105/RDT</p>
SEPTEMBER	<b>Theory:</b>	<p>1. Unit 4. Complementation test, limitations of cis-trans test, intragenic complementation, rII locus, concept of Cistron.</p> <p>Unit 5. Conjugation, Transformation</p>	<p>BSc.(H) Biochemistry</p>	<p>BCH-11/Concepts in Genetics</p>

	<p>2. Comparison between prok and euk transcription, RNA Pol II, core promoters, transcription factors, types of RNA processing, RNAP I, III, Inhibitors, applications, comparison of fidelity of transcription and replication.</p> <p>3. Reverse transcriptase, Ligases. Linkers, adaptors, Homopolymer tailing.</p>	<p>BSc.(H) Biochemistry</p> <p>PG Diploma</p>	<p>BCH C12/Gene expression and regulation</p> <p>PGD MB102/RDT</p>
<b>Practicals:</b>	<p>1. Agarose gel electrophoresis of DNA. Estimation of molecular weight of a DNA sample.</p> <p>2. Isolation of E.coli chromosomal DNA, Plasmid DNA isolation by Alkaline lysis (mini and maxi prep), boiling lysis method.</p>	<p>PG Diploma</p> <p>PG Diploma</p>	<p>PGD MBL104/ Biophysical techniques</p> <p>PGD MBL105/RDT</p>
<b><u>Assignment :</u></b>	Based on theory covered thus far	All courses	

OCTOBER	<b>Theory:</b>	1. Transduction, gene mapping in bacteria. Unit 9 Extra nuclear inheritance, organelle heredity, maternal effect. 2. Unit 3. RNA splicing  3. Genomic libraries, cDNA libraries, limitations of cDNA synthesis.	BSc.(H) Biochemistry  BSc.(H) Biochemistry PG Diploma	BCH-11/Concepts in Genetics  BCH C12/Gene expression and regulation PGD MB102/RDT
	<b>Practicals:</b>	1. Purification of proteins on affinity chromatography  2. Digestion of DNA with restriction enzymes, recovery of DNA from low-melting agarose.	PG Diploma  PG Diploma	PGD MBL104/ Biophysical techniques  PGD MBL105/RDT
	<b><u>Test</u></b>	Based on theory covered thus far	All courses	

NOVEMBER	<b>Theory:</b>	<p>1. Variations in chromosome number. Monosomy, trisomy of autosomes and sex chromosomes; inversions deletions, duplications and translocations.</p> <p>2. Unit 7. Principles of gene expression, negative and positive regulation, concepts of operons regulatory proteins, activators, repressors, DNA binding domains, regulation of lac and trp operons, SOS response, synthesis of ribosomal proteins, regulation by recombination, transcriptional regulation in Lambda.</p> <p>3. Sequence dependent and independent screening.</p>	<p>BSc.(H) Biochemistry</p> <p>BSc.(H) Biochemistry</p> <p>PG Diploma</p>	<p>BCH-11/Concepts in Genetics</p> <p>BCH-11/Concepts in Genetics</p> <p>PGD MB102/RDT</p>
	<b>Practicals:</b>	<p>1. Repetition of practicals and internal assessment</p> <p>2. Repetition of practicals and internal assessment</p>	<p>PG Diploma</p> <p>PG Diploma</p>	<p>PGD MBL104/ Biophysical techniques</p> <p>PGD MBL105/RDT</p>



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

Name of the Faculty: Dr. NITIKA KAUSHAL

Department: **BIOCHEMISTRY**

Semester: I/III/V (2018-19)

Month		Topics	Course	Paper Code/Name
<u>July</u>	<b>Theory</b>	<b>Unit 1:</b> Prokaryotic (archaea and eubacteria) and eukaryotic cell (animal and plant cells), Cells as experimental models	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology
		<b>Overview of the immune system:</b> Introduction	PGDMB	PGDMB-103/ Immunology I
		<b>Unit 5:</b> Overview of The Cell Cycle; Eukaryotic Cell Cycle; Events of Mitotic Phase; Cytokinesis	B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology
	<b>Practical</b>	Introduction to microscope	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology
		Estimation of proteins by UV method Estimation of proteins by Biuret method	B. Sc (H) I Yr Sem I	BCH GE-2: Proteins and Enzymes
		Isolation of organelles by sub cellular fractionation	B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology
<u>August</u>	<b>Theory</b>	<b>Unit 3:</b> Structure of nuclear envelope, nuclear pore complex. Nuclear protein import and export, Structure and functions of mitochondria	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology
		<b>Overview of the immune system:</b> Innate immunity and Toll like receptors <b>Organization of the immune system:</b> cells of the immune system	PGDMB	PGDMB-103/ Immunology I
		<b>Unit 5:</b> Events of Meiosis and Fertilization, Regulation of Cell Division and Cell Growth; Apoptosis and Necrosis	B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology
	<b>Practical</b>	Visualization of animal and plant cell by methylene blue. Visualization of animal and plant cell by safranin. Continuous evaluation I	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology

		<p>Estimation of proteins by Lowry method Ammonium sulphate fractionation of crude homogenate from germinated moong bean</p> <p>Continuous evaluation I</p>	B. Sc (H) I Yr Sem I	BCH GE-2: Proteins and Enzymes
		<p>Identification of subcellular fractions by doing enzyme assays: Acid phosphatase, Succinate dehydrogenase</p> <p>Continuous evaluation I</p>	B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology
<b>September</b>	<b>Theory</b>	<p><b>Unit 3:</b> Chloroplasts and peroxisomes. <b>Unit 5:</b> Prokaryotic and eukaryotic cell wall, cell matrix proteins. Cell-matrix interactions and cell-cell interactions. Adherence junctions, desmosomes, hemidesmosomes, focal adhesions</p>	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology
		<p><b>Organization of the immune system:</b> Organs of the immune system</p>	PGDMB	PGDMB-103/ Immunology I
		<p><b>Unit 5:</b> Stem Cells and Maintenance of Adult Tissues, Hematopoiesis, Embryonic Stem Cells and Therapeutic Cloning <b>Unit 3:</b> Assembly and Dynamics of Microtubules and Intermediate Filaments; Assembly and organization of Cilia and Flagella, Muscle Contractility; Cell Polarization And migration</p>	B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology
	<b>Practical</b>	<p>Study of cell organelles using electron - micrographs Sub cellular fractionation Continuous evaluation II</p>	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology
		<p>Effect of temperature on enzyme activity Effect of pH on enzyme activity Effect of time on enzyme activity Continuous evaluation II</p>	B. Sc (H) I Yr Sem I	BCH GE-2: Proteins and Enzymes
<p>Study of cell viability /death assay by use of trypan blue and MTT assay Identification and study of cancerous cells using permanent slides and photomicrographs. Continuous evaluation II</p>		B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology	



<b>October</b>	<b>Theory</b>	<b>Unit 5 Cell wall and extracellular matrix:</b> Tight junctions, gap junctions and plasmodesmata <b>Unit 6 Cell cycle, cell death and cell renewal:</b> Eukaryotic cell cycle, restriction point, and checkpoints. Cell division	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology
		<b>Generation of antibody diversity:</b> multi gene organization of immunoglobulin genes, mechanism of gene rearrangement <b>The response of B cells to antigen:</b> B cell maturation, activation and proliferation	PGDMB	PGDMB-103/ Immunology I
		<b>Unit 4:</b> Cell-Cell Interactions and Cell-Matrix Interactions; Components of Extracellular Matrix: Collagen and Non-Collagen Components	B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology
	<b>Practicals</b>	Acetocarmine staining of nuclear fraction Janus Green B staining of mitochondrial fraction Meiosis in onion flower bud Continuous evaluation III	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology
		Determination of Km and Vmax of enzyme enriched fraction Continuous evaluation III	B. Sc (H) I Yr Sem I	BCH GE-2: Proteins and Enzymes
		Study of apoptosis through analysis of DNA fragmentation patterns Continuous evaluation III	B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology
<b>November</b>	<b>Theory</b>	Revision	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology
		<b>The response of B cells to antigen:</b> Signaling pathways leading to B cell activation, germinal centers and formation of plasma cells, memory cells, class switching	PGDMB	PGDMB-103/ Immunology I
		<b>Unit 4:</b> Role of Cell Interaction in Development	B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology
	<b>Practical</b>	Mock practical and Practical Examination	B.Sc. Biochemistry (H) I Yr, Sem I	BCH C-2: Cell Biology

	Mock practical and Practical Examination	B. Sc (H) I Yr Sem I	CBCS GE-2: Proteins and Enzymes
	Mock practical and Practical Examination	B.Sc. Biochemistry (H) III Yr, Sem V	BCH DSE-6 Advanced Cell Biology

**Dr. Nitika Kaushal**



## SEMESTER WISE TEACHING PLAN

**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. NIMISHA SINHA**

**Department: BIOCHEMISTRY**

**Semester: I/III/V (2018-19)**

Month		Topics	Course	Paper Code/Name
<b>20<sup>th</sup> July (Monday) to 17<sup>th</sup> (Friday) August, 2018</b>				
<b>REFRESHER COURSE</b>				
20 <sup>th</sup> August Onwards	<b>Theory</b>	Unit 2: Tools of cell biology: Centrifugation for subcellular fractionation: Density gradient and Differential Gradient centrifugation, FACS.	B.Sc. (Hons) BIOCHEMISTRY I Year, Semester I	CBCS C2: Cell Biology
		Unit 1 Basic design of metabolism No. of Hours: 4 Autotrophs, heterotrophs, metabolic pathways, catabolism, anabolism, ATP as energy currency, reducing power of the cell.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS
		Unit 3: Respiration: Overview of glycolysis, Alternative reactions of glycolysis.	B.Sc. (Hons) BIOLOGICAL SCIENCE Hons) III Year	CBCS DSE 9: Plant Biochemistry
	<b>Practical</b>	1. Estimation of RNA by Orcinol Method 2. Extraction of total nucleic acids from plant tissue.	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester VI	CBCS C12: Gene Expression and Regulation
		1. Identification of different stages of meiosis in grasshopper testis.	B.Sc. (Hons) BIOCHEMISTRY I Year, Semester I	CBCS C2: Cell Biology
		1. Drosophila for studying sex linked inheritance	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V1	CBCS C11 Concepts of Genetics
	SEPTEMBER	<b>Theory</b>	Unit 2 (contd) Light microscopy, phase contrast microscopy, fluorescence microscopy, confocal microscopy, electron microscopy	B.Sc. (Hons) BIOCHEMISTRY I Year, Semester I

		Unit 3 Structure of different cell organelles: ER structure. Targeting proteins to ER, smooth ER. Organization of GOLGI, Lysosome. Overview of protein sorting to cell cellular organelles. Endocytosis, Pinocytosis and phagocytosis.		
		Unit 2 Glycolysis No. of Hours: 4 Glycolysis - a universal pathway, reactions of glycolysis, fermentation, fates of pyruvate, feeder pathways for glycolysis, galactosemia Unit 3 Gluconeogenesis and pentose phosphate pathway No. of Hours: 4 Synthesis of glucose from non-carbohydrate sources, reciprocal regulation of glycolysis and gluconeogenesis, pentose phosphate pathway and its importance	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS
		Unit 3: Respiration: Regulation of plant glycolysis, Translocation of metabolites across mitochondrial membrane, TCA cycle, Alternative NAD(P)H oxidative pathways; Cyanide resistant respiration. Unit 3: Biological Nitrogen fixation by free living and in symbiotic association, structure and function of enzyme Nitrogenase. Nitrate assimilation: Nitrate and Nitrite reductase.	B.Sc. (Hons) BIOLOGICAL SCIENCE Hons) III Year Semester VI	CBCS DSE 9: Plant Biochemistry
	<b>Practical</b>	1. Isolation of Total RNA from bacteria/yeast. 2. Growth curve of <i>E. coli</i>	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester VI	CBCS C12: Gene Expression and Regulation
		2. Identification of different stages of mitosis in onion root tip. 3. Identification of different stages of meiosis in grasshopper testis.	B.Sc. (Hons) BIOCHEMISTRY I Year, Semester I	CBCS C2: Cell Biology
		1. Drosophila maintenance, media preparation and Monohybrid crosses in Drosophila for studying sex linked inheritance	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester VI	CBCS C11 Concepts of Genetics

OCTOBER	<b>Theory</b>	Unit 3: Cytoskeletal proteins: Introduction to cytoskeletal proteins Actin, Myosin, Tubulin. Organization of cytoskeletal protein RBC and smooth muscle and skeletal muscles. Structure of cilia and flagella	B.Sc. (Hons) BIOCHEMISTRY I Year, Semester I	CBCS C2: Cell Biology
		Unit 4 Glycogen metabolism No. of Hours: 4 Glycogenesis and glycogenolysis, regulation of glycogen metabolism, glycogen storage diseases Unit 5 Citric acid cycle No. of Hours: 6 Production of acetyl CoA, reactions of citric acid cycle, anaplerotic reactions, amphibolic role, regulation of citric acid cycle, glyoxalate pathway, coordinated regulation of glyoxalate and citric acid pathways.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS
		Primary and secondary ammonia assimilation in plants; ammonia assimilation by Glutamine synthetase-glutamine oxoglutarate amino transferase (GS-GOGAT) pathway. Seed storage proteins in legumes and cereals Unit 3: Cell and tissue culture techniques, types of cultures: organ and explants culture, callus culture, cell suspension culture and protoplast culture.	B.Sc. (Hons) BIOLOGICAL SCIENCE Hons) III Year Semester VI	CBCS DSE 9: Plant Biochemistry
	<b>Practical</b>	1. Diauxic growth curve effect 2. Effect of inhibitors on protein synthesis 3. Continuous evaluation	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester VI	CBCS C12: Gene Expression and Regulation
		1. Sub-cellular fractionation. 2. Visualization of nuclear fraction by acetocarmine stain. 3. Staining and visualization of mitochondria by Janus green stain 4. Continuous evaluation	B.Sc. (Hons) BIOCHEMISTRY I Year, Semester I	CBCS C2: Cell Biology

		<ol style="list-style-type: none"> <li>1. Squash preparation of salivary glands of Dipteran larva to observe polytene chromosomes.</li> <li>2. Smear technique to demonstrate sex chromatin in buccal epithelial cells.</li> <li>3. Study of abnormal human karyotype and pedigrees (dry lab)</li> <li>4. Continuous evaluation</li> </ol>	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester V1	CBCS C11 Concepts of Genetics
	<b>Test</b>	Combined test conducted by teachers teaching this course.	B.Sc. BIOCHEMISTRY Hons.) I Year, Semester I	CBCS C2: Cell Biology
		Combined test conducted by teachers teaching this course.	B.Sc. BIOLOGICAL SCIENCE Hons.) III Year, Semester I	CBCS DSE8: Plant Biochemistry
		Combined test conducted by teachers teaching this course.	B.Sc. BIOCHEMISTRY Hons) II Year, Semester III	C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS
<b>ASSIGNMENTS AND MID TERM EXAMS</b>				
NOVEMBER	<b>Theory</b>	. Unit 6: cell death and cell renewal: Apoptosis and necrosis - brief outline. Salient features of a transformed cell.	B.Sc. (Hons) BIOCHEMISTRY I Year, Semester I	CBCS C2: Cell Biology
		Unit 6 Synthesis of carbohydrates No. of Hours: 8 Calvin cycle, regulation of calvin cycle, regulated synthesis of starch and sucrose, photorespiration. C4 and CAM pathways, synthesis of cell wall polysaccharides, integration of carbohydrate metabolism in plant cell.	B.Sc. (Hons). BIOCHEMISTRY II Year, Semester III	C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS
		Unit 6: Plant regeneration pathways: organogenesis and somatic embryogenesis. Applications of cell and tissue culture and somoclonal variation.	B.Sc. (Hons) BIOLOGICAL SCIENCE Hons) III Year Semester VI	CBCS DSE 9: Plant Biochemistry

	<b>Practical</b>	1. Revision of practicals, Mock Practical Examination	B.Sc. (Hons) BIOCHEMISTRY III Year, Semester VI	CBCS C12: Gene Expression and Regulation
		1. . Revision of practicals, Mock Practical Examination	B.Sc. (Hons) BIOCHEMISTRY I Year, Semester I	CBCS C2: Cell Biology
		1. PTC testing in a population and calculation of allele and genotype frequencies. 2. Continuous evaluation 3. Revision of practicals, Mock Practical Examination	B.Sc (Hons) BIOCHEMISTRY, III Year, Semester VI	CBCS C11 Concepts of Genetics



**SEMESTER WISE TEACHING PLAN-2018**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr.Ravindra Varma Polisetty**

**Assistant Professor**

**Department: Biochemistry**

**Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<ul style="list-style-type: none"><li>• Polypeptides and proteins. Subunit structures, conjugated proteins, diversity of function</li> <li>• Mendel's work on transmission of traits, Genetic Variation, Molecular basis of Genetic Information.</li> <li>• Principles of Inheritance, Chromosome theory of inheritance,</li></ul>	<b>B.Sc(H) Biochemistry Sem I</b>  <b>B.Sc(H) Biological sciences - Sem V</b>	<b>BCH GE-2 : PROTEINS AND ENZYMES</b>  <b>BS-C12: FUNDAMENTALS OF GENETICS</b>



<b>Practicals</b>	<ul style="list-style-type: none"> <li>• Preparation of buffers</li>   <li>• Induction of hydrolytic enzymes proteinases /amylases/lipase during germination</li>   <li>• Estimation of blood glucose.</li> </ul>	<p><b>B.Sc(H) Biological sciences - Sem - III</b></p> <p><b>B.Sc(H) Biological sciences - Sem -V</b></p> <p><b>B.Sc(H) Biochemistry Sem III</b></p>	<p><b>BS-C5: PROTEINS AND ENZYMES</b></p> <p><b>DSE-9: PLANT BIOCHEMISTRY</b></p> <p><b>BCH C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS</b></p>
<b>Tutorials</b>			

AUGUST	<b>Theory:</b>	<ul style="list-style-type: none"> <li>Techniques to isolate and analyze proteins- salt fractionation, ion-exchange chromatography, gel permeation, HPLC, SDS-PAGE, IEF.</li> <li>Laws of probability, Pedigree analysis, Incomplete dominance and co-dominance,</li> <li>Multiple alleles, Lethal alleles, Epistasis, Pleiotropy</li> </ul> <p><b>Principles of Spectrophotometry:</b></p> <ul style="list-style-type: none"> <li>ultraviolet- visible absorption spectrophotometry, visible recording of spectra for proteins and nucleic acids and calculation of concentration of protein and nucleic acids from spectrum.</li> <li>Fluorescence spectroscopy, mass spectrometry</li> </ul>	<b>B.Sc(H) Biochemistry Sem I</b>  <b>B.Sc(H) Biological sciences - Sem V</b>  <b>PG DIPLOMA – SEM I</b>	<b>BCH GE-2 : PROTEINS AND ENZYMES</b>  <b>BS-C12: FUNDAMENTALS OF GENETICS</b>  <b>PAPER - PGD MB 101: BIOPHYSICAL TECHNIQUES-I</b>
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>Determination of PKa value for acetic acid</li> <li>Estimation of proteins by Biuret method</li> <li>Estimation of proteins by Lowry's method</li> <li>Extraction and assay of Urease from Jack bean</li> <li>Estimation of carotene/ascorbic acid/phenols/tannins in fruits and vegetables</li> <li>Sugar fermentation by microorganisms.</li> </ul>	<b>B.Sc(H) Biological sciences - Sem - III</b>  <b>B.Sc(H) Biological sciences - Sem - V</b>  <b>B.Sc(H) Biochemistry Sem I</b>	<b>BS-C5: PROTEINS AND ENZYMES</b>  <b>DSE-9: PLANT BIOCHEMISTRY</b>  <b>BCH C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS</b>

	<b>Tutorials:</b>	Class Tests / assignments		
SEPTEMBER	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• Protein primary structure - sequencing by Edman degradation,</li> <li>• use of enzymes and chemical reagents to obtain overlap peptides.</li> <li>• Synthesis of peptides using Merrifield method.</li> </ul> <p><b><u>Extra chromosomal Inheritance</u></b></p> <ul style="list-style-type: none"> <li>• Chloroplast mutation/Variation in four 'o clock plant and <i>Chlamydomonas</i>,</li> <li>• Mitochondrial mutations in <i>Neurospora</i> and yeast, Maternal effects, Infective heredity-Kappa particles in <i>Paramecium</i></li> </ul> <p><b><u>Ion Exchange chromatography:</u></b></p> <ul style="list-style-type: none"> <li>• Separation based on charge, types of ion exchangers and general properties, selection of ion exchanger, selection of buffer, operating methods, batch operation and column operation packing and development of column, various gradients for elution, effect of flow rate, volume of gradient and fraction size on separation,</li> <li>• high pressure liquid chromatography, fast protein</li> </ul>	<p><b>B.Sc(H) Biochemistry Sem I</b></p> <p><b>B.Sc(H) Biological sciences - Sem V</b></p> <p><b>PG DIPLOMA – SEM I</b></p>	<p><b>BCH GE-2 : PROTEINS AND ENZYMES</b></p> <p><b>BS-C12: FUNDAMENTALS OF GENETICS</b></p> <p><b>PAPER - PGD MB 101: BIOPHYSICAL TECHNIQUES-I</b></p>





	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Effect of pH on the activity of an enzyme</li> <li>• Progress curve of an enzyme</li> <li>• Culture of plant plants (explants).</li> <li>• Isolation of cholesterol from egg yolk and its estimation.</li> </ul>	<b>B.Sc(H) Biological sciences - Sem - III</b>  <b>B.Sc(H) Biological sciences - Sem - V</b>  <b>B.Sc(H) Biochemistry Sem I</b>	<b>BS-C5: PROTEINS AND ENZYMES</b>  <b>DSE-9: PLANT BIOCHEMISTRY</b>  <b>BCH C-5: METABOLISM OF CARBOHYDRATES AND LIPIDS</b>
	<b>Tutorials:</b>			
	<b>Test</b>			
NOVEMBER	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• Regulation of enzyme activity and its importance - aspartate transcarbamoylase</li> <li>• Gene Annotation and analysis of transcription and translation; Posttranslational analysis-Protein interaction.</li> <li>• <b>Enzymes:</b> Basic features of enzymes, catalysis, estimation of Vmax and Km using Lineweaver –Burke plot, enzyme inhibition, specific activity.</li> </ul>	<b>B.Sc(H) Biochemistry Sem I</b>  <b>B.Sc(H) Biological sciences - Sem V</b>  <b>PG DIPLOMA – SEM I</b>	<b>BCH GE-2 : PROTEINS AND ENZYMES</b>  <b>BS-C12: FUNDAMENTALS OF GENETICS</b>  <b>PAPER - PGD MB 101: BIOPHYSICAL TECHNIQUES-I</b>
	<b>Practicals:</b>	Mock practicals / Tests		

Dr. Ravindra Varma Polisetty



**SEMESTER WISE TEACHING  
PLAN  
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr.Nandita Narayanasamy

Department: **BIOCHEMISTRY**

Semester : I/III/V

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction to Genetics and understanding complementation test.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics
		Introduction to Genetics and understanding complementation test	B.Sc. BIOSCIENCES (Hons.) III Year,	BS-C12: Fundamentals Of Genetics)
		Introduction to Nutritional Biochemistry	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE-1: Nutritional Biochemistry
	<b>Practicals</b>	Introduction to Hormone Biochemistry	B.Sc. BIOCHEMISTRY (Hons.) II Year,	BCH C7: Hormone biochemistry and
		Introduction to model organisms in Genetics Drosophila as a model organism	B.Sc. BIOCHEMISTRY (Hons.) III Year,	BCH C-11: Concepts In Genetics
		Orientation for Practical's in Nutritional Biochemistry and Anthropometric assessment	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE-1: Nutritional Biochemistry
AUGUST	<b>Theory</b>	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. Pedigree analysis	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics

		Extentions to Mendalian Genetics; Incomplete dominance, Co dominance, Lethal alleles , Multiple alleles. Concept of monogenic and polygenic traits, phenocopy, Peneterance and Variable expressivity. Pedigree Analysis conventions, characteristics of dominant and recessive inheritance. Applications of pedigree analysis	B.Sc. BIOSCIENCES (Hons.) III Year, Semester V	BS-C12: Fundamentals Of Genetics)
		Review of carbohydrates: Digestion, absorpction ,utilization and storage, hormonal regulation of blood glucose. Dietary requirements Glycemic index and source of carbohydrates, Dietary fiber, role of fibre in lipid metabolism, colon function, blood glucose level and GI tract functions.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE-1: Nutritional Biochemistry
		Hypothalamic and pituitary Axis, Hypothalamicfactors: CRH , TRH, GHRH, GnRH, PIF. Anterior Pituatary hormones: TSH,LH,FSH,GH, ACTH. Posterior Pituatary hormones: Vasopressin and oxytocin. Diabetes Insipidus.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	BCH C 7: Hormone Biochemistry and Function.
	<b>Practicals:</b>	Preparation of Media for maintenance of Drosophila, identification of sex in Drosophila, Mendalian inheritance and Chi square analysis. Isolation of Virgin females in drosophila, learning to transfer Drosophila, Exercises in Epistasis, Pedigree analysis	B.Sc. BIOCHEMISTR Y (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics
		Anthromometric assessment, growth and nutritional indices, Assessment of ROS parameters.	B.Sc. BIOCHEMISTRY (Hons.) IliYear, Semester V	BCH DSE-1: Nutritional Biochemistry
SEPTEMBER	<b>Theory</b>	Gene interactions: additive gene effect, recessive and dominant epistasis, duplicate dominant and recessive epistasis, suppressor and modifier gene. Sex determination: heteromorohic chromosomes , genetic sex determination , temp dependent sex determination. Sex determination in C.elegans, Drosophila and	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics



		humans. Sex linked , sex influenced inheritance, Drosophila development, maternal effect genes, morphogens and zygotic gene activity in development. Dosage compensation, Genetic imprinting		
		. 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 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. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE-1: Nutritional Biochemistry
		Gene interactions: additive gene effect, recessive and dominant epistasis, duplicate dominant and recessive epistasis, suppressor and modifier gene.	B.Sc. BIOSCIENCES (Hons.) III Year, Semester V	BS-C12: Fundamentals Of Genetics)
		Hormones regulating Calcium Homeostasis: PTH, calcitonin, Vitamin D hormone and related pathophysiology. Pancreatic and GIT hormones: gastrin and secretin family of hormones, CCK, incretins related pathophysiology. Regulation of glucose homeostasis: insulin, glucagon, IGF 1&2 and glucocorticoids. Diabetes mellitus I and II. Adipose tissue hormones and regulation of appetite .	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	BCH C7 : Hormone Biochemistry and function.

	<b>Practicals</b>	Setting a reciprocal cross with Drosophila wild type and white eye mutants, Analysis of F2 progeny. Cytological identification of Barr body in cheek cells, identification polytene chromosomes in 3 <sup>rd</sup> instar Larva of drosophila	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics
		Food analysis of vitamin and mineral and antioxidants	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE-1: Nutritional Biochemistry
	<b>Test</b>	Mendelian genetics , extensions to mendelian genetics , pedigree analysis	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics
	<b>Assignment</b>	Assessment of nutrition intake of an adult male/female and asses the adequacy of the diet w.r.t caloric and vitamin intake	BSc BIOCHEMISTRY((H)) III Year Semester V	BCH DSE-1: Nutritional Biochemistry
		Pedigree analysis	B.Sc. BIOSCIENCES(H) III Year, Semester V	BS-C12: Fundamentals Of Genetics)I
		Case studies in Endocrinology	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	BCH C 7: hormone Biochemistry and function
OCTOBER	<b>Theory</b>	Dosage compensation, Genetic imprinting, Quantitative genetics, Linkage analysis and constructing a Genetic map. Inheritance of complex trait, analysis of quantitative traits, narrow and broad sense heritability, quantitative trait loci (QTL) and their identification. Hardy-Weinberg law, predicting allele and genotype frequencies and exceptions to Hardy-Weinberg principle.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics
		Calcium, Phosphorus and Iron - Distribution in the body digestion, Absorption, Utilization , Transport, Excretion, Balance, Deficiency, Toxicity, Sources, RDA. Iodine, Fluoride, Mg, Cu, Zn, Se, Manganese, Chromium,	BSc BIOCHEMISTRY((H)) III Year Semester V	BCH DSE-1: Nutritional Biochemistry

	Molybdenum Distribution in the human body, Physiology, Function, deficiency, Toxicity and Sources		
	Linkage analysis and constructing a Genetic map. Hardy-Weinberg law, predicting allele and genotype frequencies and exceptions to Hardy-Weinberg principle.	B.Sc. BIOSCIENCES (Hons.) III Year, Semester V	BS-C12: Fundamentals Of Genetics)
	Reproductive hormones , role of hormones in gestation, parturition and lactation, adrenal medullary and cortical hormones; Synthesis, physiological effects and pathophysiology.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	BCH C 7: Hormone Biochemistry and function.
<b>Practicals:</b>	Creating a Karyogram and analysis of a Karyogram Karyotyping from colchicine treated onion root tips, separation of eye pigments of Drosophila.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics
	Assessment of Vitamin and mineral status in humans, Understanding load tests.	B.Sc. BIOCHEMISTRY (Hons.) III Year, SemesterV	BCH DSE-1: Nutritional Biochemistry
<b><u>Test</u></b>	Genetic mapping and population genetics AND Role of diet in health and disease management	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics AND BCH DSE-1: Nutritional Biochemistry
	Cell Signalling, Hypothalamic and pituitary hormones, Posterior pituitary hormones, hormones in calcium homeostasis	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	BCH C7: Hormone Biochemistry and function.

NOVEMBER	<b>Theory:</b>	Molecular evolution - analysis of nucleotide and amino acid sequences, molecular phylogenies, homologous sequences, phenotypic evolution and speciation	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics
		Allele frequencies, Genotype frequencies, Hardy-Weinberg Law, role of natural selection, Genetic drift. Speciation	B.Sc. BIOSCIENCES (Hons.) III Year, Semester V	BS-C12: Fundamentals Of Genetics)
		Anatomy of the adrenal gland. Adrenal medullary hormones. Glucocorticoids and mineralocorticoids.	B.Sc. BIOCHEMISTRY (Hons.) II Year,	BCH C7: Hormone Biochemistry and Function
	<b>Practicals:</b>	Revision exercises, value added experiments, Mock Practical Examination and final practical examination	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH C-11: Concepts In Genetics  AND  BCH DSE-1: Nutritional Biochemistry

Dr. Nandita Narayanasamy



**SEMESTER WISE TEACHING PLAN-2018**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Kameshwar Sharma YVR,**  
**Assistant Professor**

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

Month		Topics	Course	Paper
JULY	<b>Theory</b>	<ul style="list-style-type: none"> <li>• Introduction- Protein Purification and Overview</li> </ul>	<b>B.Sc(H) Biochemistry Sem III</b>	<b>BCH SEC-2 : PROTEIN PURIFICATION TECHNIQUES</b>
		<ul style="list-style-type: none"> <li>• Introduction               <ul style="list-style-type: none"> <li>- Photosynthetic Complex</li> <li>- Light Reaction</li> </ul> </li> <li>• Introduction of Biomolecules</li> </ul>	<b>B.Sc(H) Biological sciences - Sem V</b>	<b>BS- DSE-9 PLANT BIOCHEMISTRY</b>
	<b>Practicals</b>	<ul style="list-style-type: none"> <li>• Preparation of buffers</li> </ul>	<b>B.Sc(H) Biological sciences - Sem - III</b>	<b>BS-C5: PROTEINS AND ENZYMES</b>
		<ul style="list-style-type: none"> <li>• Sample Preparation – Crude sample</li> </ul>	<b>B.Sc(H) Biochemistry Sem III</b>	<b>BCH SEC-2 : PROTEIN PURIFICATION TECHNIQUES</b>
<b>Tutorials</b>				

AUGUST	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• Sample Preparation and IEC</li> <li>• Photosystem Continuation... Photophosphorylation, Carbon Assimilation, Photorespiration</li> </ul>	<b>B.Sc(H) Biochemistry Sem III</b>  <b>B.Sc(H) Biological sciences - Sem V</b>  <b>B.Sc(H) Biological sciences - Sem III</b>	<b>BCH SEC-2 : PROTEIN PURIFICATION TECHNIQUES</b>  <b>BS- DSE-9 PLANT BIOCHEMISTRY</b>  <b>BS-C5: PROTEINS AND ENZYMES</b>
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Determination of PKa value for acetic acid</li> <li>• Estimation of proteins by Biuret method</li> <li>• Estimation of proteins by Lowry's method</li> <li>• Sample Preparation</li> <li>• Ion Exchange Chromatography</li> <li>• Sample Preparation</li> <li>• Ion Exchange Chromatography</li> </ul>	<b>B.Sc(H) Biological sciences - Sem - III</b>  <b>B.Sc(H) Biochemistry Sem III</b>  <b>PG Diploma in BCT Sem-I</b>	<b>BS-C5: PROTEINS AND ENZYMES</b>  <b>BCH SEC-2 : PROTEIN PURIFICATION TECHNIQUES</b>
	<b>Tutorials:</b>	Class Tests / assignments		
SEPTEMBER	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• Gel Filtration Chromatography</li> <li>• Affinity Chromatography</li> <li>• Plant Hormones</li> <li>• Plant Morphogenesis</li> <li>• Secondary Metabolites <ul style="list-style-type: none"> <li>- Alkaloids</li> </ul> </li> <li>• Nucleic Acids</li> <li>• Enzymes <ul style="list-style-type: none"> <li>- Introduction</li> <li>- Classification</li> </ul> </li> </ul>	<b>B.Sc(H) Biochemistry Sem III</b>  <b>B.Sc(H) Biological sciences - Sem V</b>  <b>B.Sc(H) Biological sciences - Sem III</b>	<b>BCH SEC-2 : PROTEIN PURIFICATION TECHNIQUES</b>  <b>BS- DSE-9 PLANT BIOCHEMISTRY</b>  <b>BS-C5: PROTEINS AND ENZYMES</b>

	<b>Practicals</b>	<ul style="list-style-type: none"> <li>• Separation of sugars by Thin Layer chromatography</li> <li>• Assay of the enzyme acid phosphatase from germinated mungdal or <math>\beta</math>-amylase from Sweet potato beams</li> <li>• Gel Filtration Chromatography</li> <li>• Gel Filtration Chromatography</li> </ul>	<b>B.Sc(H) Biological sciences - Sem - III</b>  <b>B.Sc(H) Biochemistry Sem III</b>  <b>PG Diploma in BCT Sem-I</b>	<b>BS-C5: PROTEINS AND ENZYMES</b>  <b>BCH SEC-2 : PROTEIN PURIFICATION TECHNIQUES</b>
	<b>Tutorials</b>	Assignments / Tests		

OCTOBER	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• Affinity Chromatography and Electrophoresis</li> <li>• Secondary Metabolites <ul style="list-style-type: none"> <li>- Phenols</li> <li>- Terpenoids</li> </ul> </li> <li>• Enzymes <ul style="list-style-type: none"> <li>- Kinetics</li> <li>- Inhibition</li> </ul> </li> </ul>	<b>B.Sc(H) Biochemistry Sem III</b>  <b>B.Sc(H) Biological sciences - Sem V</b>  <b>B.Sc(H) Biological sciences - Sem III</b>	<b>BCH SEC-2 : PROTEIN PURIFICATION TECHNIQUES</b>  <b>BS- DSE-9 PLANT BIOCHEMISTRY</b>  <b>BS-C5: PROTEINS AND ENZYMES</b>
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Effect of pH on the activity of an enzyme</li> <li>• Progress curve of an enzyme</li> <li>• Gel Filtration Chromatography</li> <li>• Affinity Chromatography</li> <li>• Electrophoresis</li> <li>• Affinity Chromatography</li> </ul>	<b>B.Sc(H) Biological sciences - Sem - III</b>  <b>B.Sc(H) Biochemistry Sem III</b>	<b>BS-C5: PROTEINS AND ENZYMES</b>  <b>BCH SEC-2 : PROTEIN PURIFICATION TECHNIQUES</b>
	<b>Tutorials:</b>			

	<u>Test</u>	MID TERM Exams		
NOVEMBER	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• HPLC – Demonstration</li> <li>• LAB / Industrial Visit (Delhi NCR)</li>   <li>• Secondary Metabolites <ul style="list-style-type: none"> <li>- Phenols</li> <li>- Tannins</li> </ul> </li>   <li>• Enzymes <ul style="list-style-type: none"> <li>- Regulation</li> </ul> </li> </ul>	<b>B.Sc(H) Biochemistry Sem III</b>	<b>BCH SEC-2 : PROTEIN PURIFICATION TECHNIQUES</b>
			<b>B.Sc(H) Biological sciences - Sem V</b>	<b>BS- DSE-9 PLANT BIOCHEMISTRY</b>
			<b>B.Sc(H) Biological sciences - Sem III</b>	<b>BS-C5: PROTEINS AND ENZYMES</b>
	<b>Practicals:</b>	Mock practical and Final Examinations		
	<b>Tutorials:</b>			

Dr. Kameshwar Sharma YVR



## Department of Mathematics

### Sri Venkateswara College

Odd Semester Teaching Plan (July-November 2018)

**Ms. Shakuntla Wadhwa**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Polar representation of complex numbers, nth roots of unity, De Moivre's theorem for rational indices and its	B.Sc(H)Maths Sem-I	Algebra
	<b>Tutorials</b>	Solve various exercises of Polar representation of complex numbers, nth roots of unity, De Moivre's theorem for rational indices and its applications.	B.Sc(H)Maths Sem-I	Algebra
	<b>Practicals</b>	Introduction to Mathematics and Calculus Practical. Plotting of graphs of functions of type $ax$ , $a \in \mathbb{R}$ , $[x]$ (greatest integer function), $x^n$ ( $n$ even and odd positive integer), $x^{-n}$ ( $n$ even and odd positive integer), $x^{1/n}$ ( $n$ a positive integer) , ... $\sin(ax+b)$ , $\cos(ax+b)$ , $\log(ax+b)$ , $1/(ax+b)$ , ... Discuss the effect of $a$ and $b$ on the graph on the graph	B.Sc(H)Maths Sem-I	Calculus

AUGUST	<b>Theory</b>	Systems of linear equations, row reduction and echelon forms, vector equations, the matrix equation $Ax = b$ , solution sets of linear systems, applications of linear systems, linear independence. Introduction to linear transformations, Matrix of linear transformation	B.Sc(H)Math s Sem-I	Algebra
	<b>Tutorials:</b>	Solve various exercise of Systems of linear equations, row reduction and echelon forms, vector equations, the matrix equation $Ax = b$ , solution sets of linear systems, applications of linear systems, linear independence. Introduction to linear transformations and Matrix of a linear transformation, systems, applications of linear	B.Sc(H)Math s Sem-I	Algebra
	<b>Practicals</b>	(2). Plotting the graphs of polynomials of degree 4 and 5, the derivative graph, the second derivative graph and comparing them. (3). Sketching parametric curves.	B.Sc(H)Math s Sem-I	Calculus

	<b>Assignment :</b>	Giving Assignment related to above topics.		
	<b>Practicals</b>	(5). Obtaining surface of revolution of curves. (6). Sketching ellipsoid, hyperboloid of one and two sheets, elliptic cone, elliptic paraboloid, hyperbolic paraboloid using Cartesian co-ordinates. (7). To find numbers between two real numbers and plotting of finite and infinite subset of $\mathbb{R}$ and to	B.Sc(H)Maths Sem-I	Calculus
OCTOBER	<b>Theory:</b>	Equivalence relations, Functions, Composition of functions, Invertible functions, One to one correspondence and cardinality of a set, Well-ordering property of positive integers, Division algorithm, Divisibility and	B.Sc(H)Maths Sem I	Algebra
	<b>Tutorials</b>	Solve questions related to Equivalence relations, Functions, Composition of functions, Invertible functions, One to one correspondence and cardinality of a set, Well-ordering property of positive integers, Division		
	<b>Test</b>	To take internal Test		
	<b>Practicals</b>	(8). Matrix operations (addition, multiplication, inverse, transpose, determinant, rank, eigenvectors, eigenvalues, Characteristic equation and verification of Cayley Hamilton equation, system of linear equations ) (9) Graph of Hyperbolic functions. (10).Computation of limit, differentiation and integration of	B.Sc(H)Maths Sem-I	Calculus

NOVEMBER	<b>Theory:</b>	Principles of Mathematical Induction, Statement of Fundamental Theorem of Arithmetic, Revision of syllabus	B.Sc(H)Maths Sem-I	Algebra
	<b>Tutorials:</b>	To Discuss the Doubt of students and to solve various exercise of Characteristic Equation of a matrix. Solve various exercise of Principles of Mathematical Induction, statement of Fundamental Theorem of Arithmetic, discuss the previous years' questions papers	B.Sc(H)Maths Sem-I	Algebra
	<b>Practicals</b>	(11).Complex numbers and their representations, operations like addition, multiplication, division, modulus. Graphical representation of polar form. (12).Take internal Lab Test (13).Revise practical	B.Sc(H)Maths Sem-I	Calculus

### Dr. R.K. Budhraja

Month		Topics	Course	Paper Code/Name
	<b>Theory</b>	Limits of Functions	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions

JULY	<b>Practicals</b>	Practical No.7- $f$ be any function and $n$ any number. For given $N$ and $\epsilon$ , find a $\delta$ such that for all $x$ satisfying, the inequality holds.	B.Sc.(Hons) Maths Sem III A	C7: Multivariate Calculus
	<b>Tutorials</b>	Questions based on Limits of Functions	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions
AUGUST	<b>Theory</b>	Limits of Functions	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions
	<b>Practicals</b>	Practical No.8-To Discuss the limit of the functions when $n$ tends to zero. Practical No.9- To discuss the limit of the following functions when $n$ tends to infinity. *To take a lab test related to above Practical.	B.Sc.(Hons) Maths Sem III A	C7: Multivariate Calculus
	<b>Tutorials</b>	Questions based on Limits of Functions	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions
SEPTEMBER	<b>Theory</b>	Continuous Functions, Uniform Continuity	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions
	<b>Practicals</b>	Practical No.10-. Discuss the continuity of the functions. Practical No.11- To Illustrate the geometric meaning of Rolle's theorem of the functions on the given interval. Practical No .12-To Illustrate the geometric meaning of Lagrange's mean value theorem of the functions on the given interval.	B.Sc.(Hons) Maths Sem III A	C7: Multivariate Calculus
	<b>Tutorials</b>	Questions based on Continuous Functions & Uniform Continuity	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions

	<b><u>Assignment</u></b>	Based on Limits, Continuity & Uniform Continuity of Functions	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions
OCTOBER	<b>Theory</b>	Differentiability of Functions, Mean Value Theorems, Taylor's Theorems, Maxima & Minima	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions
	<b>Practicals</b>	Practical No .13- To discuss uniform continuity of the functions: Practical No .14-Verification of Maximum –Minimum theorem, boundedness theorem & intermediate value theorem for various functions and the failure of the conclusion in case of any of the hypothesis is weakened. Practical No .15-To locating points of relative & absolute extremum for different functions. Practical No .16- Relation of monotonicity & derivatives along with verification of first derivative test.	B.Sc.(Hons) Maths Sem III A	C7: Multivariate Calculus
	<b>Tutorials</b>	Questions based on Differentiability of Functions, Mean Value Theorems, Taylor's Theorems, Maxima & Minima	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions
	<b><u>Test</u></b>	Based on whatever have been taught at that point of time. ( Oct. 15, 2017 )	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions
NOVEMBER	<b>Theory</b>	Taylor's Series & Maclaurin's Series Expansions	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions

	<b>Practicals</b>	<p>Practical No .16- Relation of monotonicity &amp; derivatives along with verification of first derivative test.</p> <p>Practical No .17- Relation of monotonicity &amp; derivatives along with verification of first derivative test. Taylor's series - visualization by creating graphs:</p> <p>a. Verification of simple inequalities</p> <p>b. Taylor's Polynomials – approximated up to certain degrees</p>	B.Sc.(Hons) Maths Sem III A	C7: Multivariate Calculus
	<b>Tutorials</b>	Questions based on Taylor's Series & Maclaurin's Series Expansions	B.Sc.(Hons) Maths Sem III B	C5 : Theory of Real Functions

**Dr. Mainak Mukherjee**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Metric spaces: definition and examples. Sequences in metric spaces.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	<b>Practicals</b>	NA		
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to Metric spaces: definition and examples. Sequences in metric		

	<b>Practicals</b>	Making basic programs in C++, compilation and execution.	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
		Introduction to Latex and HTML And discuss related software and Practicals.	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML
AUGUEST	<b>Theory:</b>	Cauchy sequences, Complete Metric Spaces, Open and closed balls, neighbourhood, open set, interior of a set, Limit point of a set, closed set, diameter of a set. Cantor's Theorem.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	<b>Practicals:</b>	NA		
	<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to 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		
	<b>Practicals</b>	1. Calculate the Sum of the series $1/1 + 1/2 + 1/3 + \dots + 1/N$ for any positive integer N. 2. Write a user defined function to find the absolute value of an integer. 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.		



<b>Practicals:</b>	Practicals related to Elements of LATEX , Hands-on-training of LATEX.	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML
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September	<b>Theory:</b>	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
	<b>Practicals:</b>	NA		
	<b>Tutorials:</b>	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.		
	<b>Assignments</b>	To be given assignment related to syllabus.		
	<b>Practicals:</b>	7. Write a program that generates Fibonacci numbers. 8. Write a program that prompts the user to input five decimal numbers, converts each decimal number to the nearest integer, prints the sum and average of them. 9. Write a program that uses <b>while</b> 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 <b>smaller</b> to determine the	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
	<b>Practicals:</b>	Practicals related to graphics in LATEX, PSTricks.	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML
OCTOBER	<b>Theory:</b>	Homeomorphism, Contraction mappings, Banach Fixed point Theorem. Connectedness, connected subsets of <b>R</b> , connectedness and continuous mappings. Compactness.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces

<b>Tutorials :</b>	To discuss the doubt of students and various exercise questions and examples related to Homeomorphism, Contraction mappings, Banach Fixed point Theorem. Connectedness, connected subsets of $\mathbf{R}$ , connectedness and continuous mappings. Compactness.		
<b>Test</b>	To take internal Test.		
<b>Practicals:</b>	13. Write a function that takes as a parameter an integer and returns the number of odd, even, and zero digits. 14. Enter 100 integers into an array and sort them in an ascending/ descending order and print the largest/smallest integers. 15. Enter 10 integers into an array and then search for a particular integer in the array. 16. Multiplication/ Addition of two	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
<b>Test</b>	To take internal Lab Test.		
<b>Practicals:</b>	Practicals related to Beamer presentation.	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML
<b>Test</b>	To take internal Lab Test.		

NOVEMBER	<b>Theory:</b>	Compactness and boundedness, continuous functions on compact spaces and to revise whole syllabus, to discuss last previous year questions papers.	B.Sc(H) Maths Sem-V	C 11- Metric Spaces
	<b>Practicals:</b>	NA		
	<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to compactness and boundedness, continuous functions on compact Spaces and to revise whole syllabus, to discuss last previous year		
	<b>Practicals:</b>	19. Write a program to create the grids using for loops: 20. Write a function that takes an integer as a parameter and returns the number with its digits reversed.	B.Sc.(H) Maths Sem-V DSE-I	C++ programming
	<b>Practicals:</b>	Practicals related to complete Latex and revise all Practical	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML

Ms. Pratibha Gaur

Month		Topics	Course	Paper Code/Name
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JULY	<b>Theory</b>	Limit and Continuity	BA(P) Sem-I	Calculus
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to Limit and Continuity	BA(P) Sem-I	Calculus
	<b>Theory</b>	Techniques for sketching parabola	BA(P) Sem-III	Analytic Geometry and Applied Algebra
	<b>Theory</b>	$\epsilon$ - $\delta$ Definition of limit of a function	GE-1	Calculus
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to symmetries of a square, Dihedral groups, definition and examples of groups.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	<b>Practicals</b>	Practical No.7- $f$ be any function and $n$ any number. For given $N$ and $\epsilon$ , find a $\delta$ such that for all $x$ satisfying $ x - a  < \delta$ the inequality $ f(x) - f(a)  < \epsilon$ holds	B.Sc(H) Maths Sem-III A	C 7- Multivariate Calculus
	<b>Practicals</b>	Introduction to Latex and HTML And discuss related software and Practical.	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML
AUGUST	<b>Theory</b>	Differentiability of functions. Successive differentiation, Leibnitz's theorem, Partial differentiation, Euler's theorem on homogeneous functions..	BA(P) Sem-I	Calculus
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to above topics.	BA(P) Sem-I	Calculus
	<b>Theory</b>	Ellipse and hyperbola. Reflection properties of parabola	BA(P) Sem-III	Analytic Geometry and Applied Algebra

<b>Theory</b>	One sided limit, Limits at infinity, Horizontal asymptotes,	GE-1	Calculus
<b>Tutorials</b>	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	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
<b>Practicals:</b>	Practical No.8-To Discuss the limit of the functions when n tends to zero. Practical No.9- To discuss the limit of the following functions when tends n to infinity. *To take a lab test related to above Practical.	B.Sc(H) Maths Sem-III A	C 7- Multivariate Calculus
<b>Practicals:</b>	Practicals related to Elements of LATEX , Hands-on-training of LATEX.	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML

September	<b>Theory</b>	Tangents and normals, Curvature, Asymptotes, Singular points, Tracing of curves.	BA(P) Sem-I	Calculus
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to Limit and Continuity	BA(P) Sem-I	Calculus
	<b>Theory</b>	ellipse and hyperbola	BA(P) Sem-III	Analytic Geometry and Applied Algebra
	<b>Theory</b>	Infinite limits, Vertical asymptotes, Linearization	GE-1	Calculus
	<b>Tutorials</b>	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	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	<b>Assignments</b>	To be given assignment related to syllabus.	BA(P) Sem-I	Calculus
	<b>Practicals:</b>	Practical No.10-. Discuss the continuity of the functions. Practical No.11- To Illustrate the geometric meaning of Rolle's theorem of the functions on the given interval. Practical No .12-To Illustrate the geometric meaning of Lagrange's mean value theorem of the functions on the given interval.	B.Sc(H) Maths Sem-III A	C 7- Multivariate Calculus
	<b>Practicals:</b>	Practicals related to graphics in LATEX, PSTricks.	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML

OCTOBER	<b>Theory</b>	Rolle's theorem, Mean Value Theorems, Taylor's Theorem with Lagrange's & Cauchy's forms of remainder. Taylor's series, Maclaurin's series of $\sin x$ , $\cos x$ , $e^x$ , $\log(1+x)$ , $(1+x)^m$ , Applications of Mean Value theorems to Monotonic functions and inequalities.	BA(P) Sem-I	Calculus
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to above syllabus	BA(P) Sem-I	Calculus
	<b>Theory</b>	ellipse and hyperbola their applications to signals, classification of quadratic equation representing lines.	BA(P) Sem-III	Analytic Geometry and Applied Algebra
	<b>Theory</b>	Differential of a function, Concavity, Points of inflection.	GE-1	Calculus
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related External direct product of a finite number of groups, normal subgroups, factor groups, Cauchy's theorem for finite abelian groups and Group homomorphisms.	B.Sc(H) Maths Sem-III B	C6- Group Theory-I
	<b>Test</b>	To take internal Test.		
	<b>Practicals:</b>	Practicals related to Beamer presentation.	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML
	<b>Test</b>	To take internal Lab Test.		



November	<b>Theory</b>	Maxima & Minima. Indeterminate forms and to discuss last previous year questions papers.	BA(P) Sem-I	Calculus
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to	BA(P) Sem-I	Calculus
	<b>Theory</b>	Parabola, ellipse and hyperbola and to discuss last previous year questions papers.	BA(P) Sem-III	Analytic Geometry and Applied Algebra
	<b>Theory:</b>	Curve sketching, Indeterminate forms, L'Hopital's rule and revise whole syllabus, to discuss last previous year questions papers.	GE-I	Calculus
	<b>Tutorials</b>	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

<b>Practicals:</b>	<p>Practical No .16- Relation of monotonicity &amp; derivatives along with verification of first derivative test.</p> <p>Practical No .17- Relation of monotonicity &amp; derivatives along with verification of first derivative test. Taylor's series - visualization by creating graphs:</p> <p>a. Verification of simple inequalities</p> <p>b. Taylor's Polynomials – approximated up to certain degrees.</p>	B.Sc(H) Maths Sem-III A	C 7- Multivariate Calculus
<b>Practicals:</b>	Practicals related to complete Latex and revise all practical's	B.Sc(H) Maths Sem-III B	SEC-I LATEX AND HTML

Month		Topics	Course	Paper Code/Name	
JULY	<b>Theory:</b>	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 Methods	
	<b>Practicals:</b>	First order exact differential equations including rules for finding integrating factors	B.A.(Prog.) Sem V	DSE1:PaperV:Differential Equations	
		Basic concepts of Mathematica and Practical (i) of the list given in the syllabus: To	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods	
		<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to exact differential	B.A.(Prog.) Sem III	DSE1:PaperV:Differential Equations
			To discuss the doubt of students and various exercise questions and examples related to systems of linear	B.Sc.(Hons.)Maths Sem I	C 2- Algebra
AUGUST	<b>Theory:</b>	False position method, Fixed point iteration method, Newton's method, Secant method, LU decomposition, Gauss- Jacobi method and various problems related to these and to discuss various theorems related to convergence of these methods.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods	
	<b>Practicals:</b>	First order higher degree equations solvable for x, y, p, Wronskian and its properties	B.A.(Prog.) Sem III	DSE1:PaperV:Differential Equations	
		Practicals (ii) to find the absolute value of an integer, (iii) to enter 100 integers into an array and sort them in ascending order and (iv) Bisection method, Newton Raphson Method, Secant method, Regula Falsi Method	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods	
		<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to first order higher degree equations solvable for x, y, p, Wronskian and its properties	B.A.(Prog.) Sem III	DSE1:PaperV:Differential Equations
			To discuss the doubt of students and various exercise questions and examples related to vector equations,	B.Sc.(Hons.)Maths Sem I	C 2- Algebra

		the matrix equation $AX=b$ , solution sets of linear systems, applications of linear systems, linear independence		
SEPTEMBER	<b>Theory:</b>	Gauss-Seidel method, SOR iterative method and various problems related to these and to discuss various theorems related to convergence of these methods.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods
		Linear homogenous equations with constant coefficients, Linear non-homogenous equations	B.A.(Prog.) Sem III	DSE1:PaperV:Differential Equations
	<b>Practicals:</b>	Practicals (v) LU decomposition method and (vi) Gauss-Jacobi method	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods
	<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to Linear homogenous equations with constant coefficients, Linear non-homogenous equations	B.A.(Prog.) Sem III	DSE1:PaperV:Differential Equations
		To discuss the doubt of students and various exercise questions and examples related to introduction to linear transformations, matrix of a linear transformation, inverse of a matrix, characterizations of invertible matrices, subspaces of $R^n$	B.Sc.(Hons.)Maths Sem I	C 2- Algebra
	<b>Assignment</b>	Assignment to be given related to syllabus.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods
		Assignment to be given related to syllabus	B.A.(Prog.) Sem V	DSE1:PaperV:Differential Equations
OCTOBER	<b>Theory</b>	Lagrange and Newton interpolation: linear and higher order, finite difference operators, Numerical differentiation: forward difference, backward difference and central difference	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods

		The method of variation of parameters, Euler's equations	B.A.(Prog.) Sem V	DSE1:PaperV:Differential Equations
	<b>Practicals:</b>	Practicals (vii) SOR method, Gauss Siedel method and (viii) Lagrange Interpolation, Newton Interpolation	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods
	<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to the method of variation of parameters, Euler's equations I	B.A.(Prog.) Sem V	DSE1:PaperV:Differential Equations
		To discuss the doubt of students and various exercise questions and examples related to one to one correspondence and cardinality of a set, well-ordering property of positive integers	B B.Sc.(Hons.)Maths Sem I	C 2- Algebra
	<b><u>Mid Term Test</u></b>	To take internal Test based on the syllabus covered.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods
		To take internal Test based on the syllabus covered.	B.A.(Prog.) Sem V	DSE1:PaperV:Differential Equations
		To take internal Lab Test based on the syllabus covered.	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods
NOVEMBER	<b>Theory:</b>	Integration: trapezoidal rule, Simson's rule, Euler's method and to revise whole syllabus. To discuss previous year questions papers some of which are available on my Blog <a href="https://numericalmaths.wordpress.com/">https://numericalmaths.wordpress.com/</a>	B.Sc.(Hons.)Maths Sem V	DSE-1(i) Numerical Methods
		Simultaneous differential equations, total differential equations	B.A.(Prog.) Sem V	DSE1:PaperV:Differential Equations

<b>Practicals:</b>	Practical (ix):Simpson's rule and revise all practicals	B.Sc.(Hons.)Maths Sem V	DSE-1 Numerical Methods
<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to simultaneous differential equations, total differential equations	B.A.(Prog.) Sem V	DSE1:PaperV:Differential Equations
	To discuss the doubt of students and various exercise questions and examples related to division algorithm, divisibility and Euclidean algorithm	B.Sc.(Hons.)Maths Sem I	C 2- Algebra

**Deepthi Jain**

<b>Month</b>		<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
JULY	<b>Theory</b>	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
	<b>Tutorial</b>	Exercises and doubts based on Hasse diagram and Order-isomorphism,		

	Verification or order-preserving, order-embedding and order-isomorphisms.		
<b>Practical</b>	N/A		
<b>Theory</b>	Order and degree of partial differential equations, Concept of linear and non-linear partial differential equations.	B.A. Prog V Semester	Differential Equations
<b>Practical</b>	N/A		
<b>Practical</b>	Introduction to Mathematica. (1). Plotting of graphs of functions like greatest integer function, even and odd positive integer function, a positive integer etc. Discuss the effect of and on the graph and to solve different questions.	B.Sc.(H) Mathematics I Semester	C1 Calculus
<b>Practical</b>	Use of mathematica for the following Numerical programs: (i) Calculate the sum $1/1 + 1/2 + 1/3 + \dots + 1/N$ .	B.Sc(H) Mathematics V Semester	DSE 1(i) Numerical Methods

AUGUST	<b>Theory</b>	Sums of ordered sets, Product of ordered sets, Order-preserving maps, Order-embedding map and order-isomorphism maps, Lattices as ordered sets, Lattices as algebraic structures, The Connecting Lemma, sublattices, Product of lattices, Lattice homomorphism, Complete Lattices, Distributive and Modular lattices, The M3-N5 Theorem.	B.Sc.(H) Mathematics V Semester	DSE-II(ii) Discrete Mathematics
	<b>Tutorial</b>	Exercises based on join and meet in an ordered set, Examples of lattices and complete lattices, relationship between order-isomorphism and lattice-isomorphism, Construction of ordered sets and lattices satisfying given conditions.		
	<b>Practical</b>	N/A		
	<b>Theory</b>	Formation of first order partial differential equations, Linear partial differential equations of first order.	B.A. Prog V Semester	Differential Equations
	<b>Practical</b>	N/A		
	<b>Practical</b>	(2). Plotting graphs of polynomials of degree 4 and 5, the derivative graph, the second derivative graph and their comparison. (3). Sketching parametric curves. (4). Tracing of conics in Cartesian coordinates. Assignments related to the above topics.	B.Sc.(H) Mathematics I Semester	C1 Calculus
	<b>Practical</b>	(ii) To find the absolute value of an integer. (iii) Enter 100 integers into an array and sort them in an ascending order.	B.Sc.(H) Mathematics V Semester	DSE 1(i) Numerical Methods
SEPTEMBER	<b>Theory</b>	Boolean Algebras Boolean Polynomials	B.Sc.(H)	DSE-II(ii)



	minimal forms of Boolean polynomials, method Quinn-McCluskey , Karnaugh diagrams Switchin g Circuits and applications of switching circuits.	Mathematics V Semester	Discrete Mathematics
<b>Tutorial</b>	Exercises and doubts based on Boolean polynomials and switching circuits.		
<b>Practical</b>	N/A		
<b>Assignment</b>	Question from the topics including ordered sets, Lattices and Boolean Algebras.		
<b>Theory</b>	Lanrange's method, Charpit's method	B.A. Prog V Semester	Differential Equations
<b>Practical</b>	N/A		

	<b>Assignment</b>	Questions from the topics: First order partial differential equations.		
	<b>Practical</b>	(5). Obtaining surface of revolution of curves. (6). Sketching ellipsoid, hyperboloid of one and two sheets, elliptic cone, elliptic paraboloid, hyperbolic paraboloid using Cartesian co-ordinates. (7). To find numbers between two real numbers and plotting of finite and infinite subset of $\mathbb{R}$ and to solve different questions. Lab Test. Assignments related to above topics	B.Sc.(H) Mathmatics  I Semester	C1 Calculus
	<b>Practical</b>	Bisection Method, Newton Raphson Method, Secant Method and RegulaiFalsi Method and LU decomposition Method.	B.Sc.(H) Mathmatics V Semester	DSE 1(i) Numerical Methods
OCTOBER	<b>Theory</b>	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
	<b>Tutorial</b>	Exercises based on isomorphism of graphs, paths and circuits and adjacency matrix.		
	<b>Practical</b>	N/A		
	<b><u>Mid Term Test</u></b>	Ordered Sets, Lattices, Boolean Algebras, Graphs.		
	<b>Theory</b>	Classification of second order partial differential equations into elliptic, parabolic and hyperbolic through illustrations.	B.A. Prog V Semester	Differential Equations
	<b>Practical</b>	N/A		
	<b><u>Mid Term Test</u></b>	Questions based on the topics: First oder and second order partial differential equations.		
	<b>Practical</b>	(8). Matrix operations (addition, multiplication, inverse, transpose, determinant, rank, eigenvectors,	B.Sc.(H) Mathmatics I Semester	C1 Calculus

	eigenvalues, Characteristic equation and verification of Cayley Hamilton equation, system of linear equations) (9). Graphs of Hyperbolic functions. (10). Computation of limit, differentiation and integration of vector functions on R. Mid-term Test based on the topics done.		
<b>Practical</b>	Gauss-Jacobi Method, Gauss-Siedel Method and Langrange Interpolation.	B.Sc.(H) Mathmatics V Semester	DSE 1(i) Numerical Methods

NOVEMBER	<b>Theory</b>	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
	<b>Tutorial</b>	Exercises based on various algorithms mentioned above to find the shortest path in a given weighted graph.		
	<b>Practical</b>	N/A		
	<b>Theory</b>	Revision of the entire syllabus.	B.A. Prog V Semester	Differential Equations
	<b>Practical</b>	N/A		
	<b>Practical</b>	(11). Complex numbers and their representations, operations like addition, multiplication, division, modulus. Graphical representation of polar forms. (12). Revision of all topics. (13). Internal Practical Examination.	B.Sc.(H) Mathmatics  I Semester	C1 Calculus
<b>Practical</b>	Simpson's Rule.  Revision of all topics. Practical Examination.	B.Sc.(H)  Mathmatics V Semester	DSE 1(i) Numerical Methods	

### Ninian Nauneet Kujur

Month		Topics	Course	Paper
July	<b>Theory</b>	Limits of functions (epsilon-delta approach), sequential criterion for limits,	Bsc(H) Maths-Sem III(A)	Theory of real functions (C5)
	<b>Theory</b>	Techniques for sketching parabola,	BA(P) Sem III	Analytic Geometry and Applied Algebra

	<b>Practicals</b>	Introduction to TeX and LaTeX, typesetting a simple document	Bsc(H) Maths-Sem III(A)	SEC-1 LaTeX and HTML
	<b>Practicals</b>	(1).To Draw surfaces and find level curves at the given heights, (2).To draw the surfaces and discuss whether limit exists or not as approaches to the given points. Find the limit, if it exists: <i>Matlab / Mathematica /</i>	B.Sc.(H) Maths-Sem-III(A)	Multivariate Calculus
	<b>Tutorials</b>	Exercise questions related to the concept of limits.	Bsc(H) Maths-Sem III(A)	Theory of real functions (C5)
August	<b>Theory</b>	divergence criteria Limit theorems, one sided limits. Infinite limits & limits at infinity, Continuous functions, sequential criterion for continuity & discontinuity. Algebra of continuous functions, Continuous functions on an interval, intermediate value theorem	Bsc(H) Maths-Sem III(A)	Theory of real functions (C5)
	<b>Theory</b>	Techniques for sketching ellipse and hyperbola.	BA(P) Sem III	Analytic Geometry and Applied Algebra
	<b>Practicals</b>	adding basic information, environments, footnotes, sectioning and displayed material	Bsc(H) Maths-Sem III(A)	SEC-1 LaTeX and HTML

	<b>Practicals</b>	(3.)To Draw the tangent plane to the following surfaces at the given point, (4). Use an incremental approximation to estimate the functions at the given point and compare it with calculated value. (5).To find critical points and identify relative maxima, relative minima or saddle points to surfaces, if it exist. (6).To draw the regions <b>D</b> and check whether these regions are of <b>Type I</b> or <b>Type II</b> : (7). f be any function and be n any number. For given N and epsilon , find a delta such that for all satisfying , the inequality holds .	B.Sc.(H) Maths-Sem III(A)	Multivariate Calculus
	<b>Tutorials</b>	Exercise questions related to limits and continuity	Bsc(H) Maths-Sem III(A)	Theory of real functions (C5)
September	<b>Theory</b>	location of roots theorem, preservation of intervals theorem, Uniform continuity, non-uniform continuity criteria, uniform continuity theorem. Differentiability of a function at a point & in an interval, Carathéodory's theorem, algebra of differentiable functions. Differentiability of a function at a point & in an interval, Carathéodory's theorem, algebra of differentiable functions.	Bsc(H) Maths- SemIII(A)	Theory of real functions (C5)
	<b>Assignment</b>			
	<b>Theory</b>	Reflection properties of parabola, ellipse and hyperbola and their applications to signals,	BA(P) Sem III	Analytic Geometry and Applied Algebra
	<b>Assignment</b>			

	<b>Practicals:</b>	Assents and symbols, Mathematical typesetting, Beamer presentation, Introduction to HTML, creating simple web pages	Bsc(H) Maths-SemIII(A)	SEC-1 LaTeX and HTML
	<b>Practicals</b>	(8).To Discuss the limit of the functions when n tends to zero. (9). To discuss the limit of the following functions when tends n to infinity. (10). Discuss the continuity of the functions. (11). To Illustrate the geometric meaning of Rolle's theorem of the functions on the given interval. (12).To Illustrate the	B.Sc.(H) Maths-SemIII(A)	Multivariate Calculus
	<b>Tutorials</b>	Questions related to Uniform continuity and differentiability.	Bsc(H) Maths-SemIII(A)	Theory of real functions (C5)
October	<b>Theory:</b>	Relative extrema, interior extremum theorem. Rolle's theorem, Mean value theorem, intermediate value property of derivatives - Darboux's theorem. Applications of mean value theorem to inequalities & approximation of polynomials Taylor's theorem to inequalities. Cauchy's mean value theorem. Taylor's theorem with Lagrange's form of remainder, Taylor's theorem with Cauchy's form of remainder, application of Taylor's theorem to convex functions, relative extrema	Bsc(H) Maths-SemIII(A)	Theory of real functions (C5)
	<b>Test</b>			
	<b>Theory</b>	Classification of quadaratic equation representing lines,parabola, ellipse and hyperbola	BA(P) Sem III	Analytic Geometry and Applied Algebra
	<b>Assignment</b>	Based on portion covered		

<b>Practicals</b>	Graphics in LaTeX, use of PS Tricks, Design of web pages	Bsc(H) Maths- SemIII(A)	SEC-1 LaTeX and HTML
<b>Practicals</b>	(13). To discuss uniform continuity of the functions: (14). Verification of Maximum–Minimum theorem, boundedness theorem & intermediate value theorem for various functions and the failure of the conclusion in case of any of the hypothesis is weakened. (15). To locating points of relative & absolute extremum for different functions	B.Sc.(H) Maths- SemIII(A)	Multivariate Calculus
<b>Tutorials</b>	Questions based on mean value theorems, Taylor’s and Lagrange’s theorem	Bsc(H) Maths- SemIII(A)	Theory of real functions (C5)

November	<b>Theory</b>	Taylor’s series & Maclaurin’s series expansions of exponential & trigonometric functions.	Bsc(H) Maths- SemIII(A)	Theory of real functions (C5)
		Revision	BA(P) Sem III	Analytic Geometry and Applied Algebra
	<b>Practicals</b>	Plotting of functions in LaTeX and practice problems	Bsc(H) Maths- SemIII(A)	SEC-1 LaTeX and HTML



<b>Practicals</b>	(17). Taylor's series - visualization by creating graphs: a. Verification of simple inequalities b. Taylor's Polynomials – approximated up to certain degrees c. Convergence of Taylor's series	B.Sc.(H- Maths- SemIII(A)	Multivariate Calculus
<b>Tutorials</b>	Questions based on Cauchy form of remainder, expansions of various functions.	Bsc(H) Maths- SemIII(A)	Theory of real functions (C5)

### Amit Kumar

Month		Topics	Course	Paper Code/Name
July	<b>Theory</b>	Symmetries of a square, Dihedral groups, definition and examples of groups	B.sc Math(H) IIIA	ALGEBRA
	<b>Tutorials</b>	To Discuss the Doubt of students and to solve various exercise of Symmetries of a square, Dihedral groups, definition and examples of groups	B.sc Math(H) IIIA	ALGEBRA

<b>Theory</b>	The first derivative test, concavity and inflection points, Second derivative test, Curve sketching using first and second derivative test	B.Sc(H) Math Sem-I	CALCULUS
<b>Practicals</b>	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) Math Sem-I	CALCULUS

August	<b>Theory:</b>	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 Math(H) IIIA	ALGEBRA
	<b>Tutorias</b>	To Discuss the Doubt of students and to solve various exercise of Quaternion groups (illustration through matrices), elementary properties of groups. Subgroups and examples of subgroups, centralizer, normalizer, center of a group, product of two subgroups, <del>Properties of cyclic groups</del>	B.sc Math(H) IIIA	ALGEBRA
	<b>Theory</b>	limits at infinity, graphs with asymptotes. Graphs with asymptotes, L'Hopital's rule, applications in business, economics and life sciences., Higher order derivatives, Applications of Leibnitz rule Parametric representation of	B.Sc(H) Maths Sem-I	Calculus
	<b>Assignmens</b>	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-I and Sem-III	Calculus /Algebra
	<b>Practicals:</b>	(2). Plotting the graphs of polynomial of degree 4 and 5, the derivative graph, the second derivative graph and comparing them. (3). Sketching parametric curves. (4). Tracing of conics in Cartesian coordinates. Giving Assignment related to above topics.		Calculus
September	<b>Theory</b>	Cycle notation for permutations, properties of permutations, even and odd permutations, alternating group, properties of cosets, Lagrange's theorem and consequences including	B.Sc(H) Maths Sem-III	Algebra

<b>Tutorials</b>	To Discuss the Doubt of students and to solve various exercise of 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	Algebra
<b>Theory</b>	Parametric representation of curves and tracing of parametric curves, Polar coordinates and tracing of curves in polar coordinates, Reduction formulae, derivations and illustrations of reduction formulae of the type, Volumes by slicing; disks and washers methods, Volumes by cylindrical shells. Arc length, arc	B.Sc(H) Maths Sem-I	<b>Calculus</b>
<b>Practicals</b>	5). Obtaining surface of revolution of curves. (6). Sketching ellipsoid, hyperboloid of one and two sheets, elliptic cone, elliptic paraboloid, hyperbolic paraboloid using Cartesian co-ordinates. (7). To find numbers between two real numbers and plotting of finite and infinite subset of	B.Sc(H) Maths Sem-I	Calculus
<b>Test</b>	To take class test related to syllabus And class lab test related to above Practical.	B.Sc(H) Maths Sem-I/IV	Calculus/Algebra

October	<b>Theory</b>	External direct product of a finite number of groups Normal subgroups, factor groups, Cauchy's theorem for finite abelian groups. Group homomorphism, properties of	B.Sc(H) Maths Sem-III	Algebra
	<b>Tutorials</b>	To Discuss the Doubt of students and to solve various exercise of Normal subgroups, factor groups, Cauchy's theorem for finite isomorphism, abelian groups. Group	B.Sc(H) Maths Sem-III	Algebra
	<b>Theory</b>	Introduction to vector functions and their graphs, operations with vector-valued functions, limits and continuity of vector functions, differentiation and integration of vector functions. Modeling ballistics and planetary motion, Kepler's second	B.Sc(H) Maths Sem-I	Calculus
	<b>Practicals</b>	(8). Matrix operations (addition, multiplication, inverse, transpose, determinant, rank, eigenvectors, eigenvalues, Characteristic equation and verification of Cayley Hamilton equation, system of linear equations ) (9) Graph of Hyperbolic functions. (10). Computation of limit, differentiation and	B.Sc(H) Maths Sem-I	Calculus
	<b>Test</b>	To take internal test related to syllabus And internal lab test related to above Practicals.	B.Sc(H) Maths Sem-II/IV	Calculus/Algebra

November	<b>Theory</b>	First, Second and Third isomorphism theorems and To Revised whole syllabus And to Discuss last previous year questions	B.Sc(H) Maths Sem-III	Algebra
	<b>Tutorials:</b>	To Discuss the Doubt of students and to solve various exercise of Properties of isomorphism, First, Second and Third isomorphism theorems	B.Sc(H) Maths Sem-III	Algebra
	<b>Theory:</b>	Conic Section, Rotation of axes and second degree equations, classification into conics using the discriminant, Revise whole syllabus, to Discuss last previous year	B.Sc(H) Maths Sem-I	Calculus
	<b>Practicals:</b>	11).Complex numbers and their representations, operations like addition, multiplication, division, modulus. Graphical representation of polar form. (12). To take internal Lab	B.Sc(H) Maths Sem-I	Calculus

### Nisha Bohra

		<b>Topics</b>	<b>Course</b>	
JULY	<b>Theory</b>	Metric spaces: definition and examples.	B.Sc.(H) Maths Sem-V A	C 11- Metric Spaces
	<b>Theory</b>	Automorphism: Definition and Examples, Inner automorphism.	B.Sc.(H) Maths SEM-V B	C12 Group Theory-II

	<b>Theory</b>	Latin Squares, Table for a finite group as a Latin Square	BA(P) Sem-III	Paper III : Analytic Geometry and Applied Algebra
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions.	B.Sc.(H) Maths Sem-V A, VB	C 11- Metric Spaces, C12 Group Theory-II
	<b>Practicals</b>	Practical No.7- f be any function and n be any number. For given $\epsilon$ and $\delta$ , find a $\delta$ such that for all $x$ satisfying something, the given inequality holds.	B.Sc.(H) Maths Sem-III A	C 7- Multivariate Calculus
	<b>Practicals</b>	Introduction to Mathematica and Calculus Practical. (1) Plotting of graphs of various elementary function. Discuss the effect of some parameters on the graph and to solve different Questions.	B.Sc.(H) Maths Sem-I A	C1- Calculus
AUGUST	<b>Theory:</b>	Cauchy sequences, Complete Metric Spaces, Open and closed balls, neighbourhood, open set, interior of a set, Limit point of a set, closed set, diameter of a set, Cantor's Theorem.	B.Sc.(H) Maths Sem-VA	C 11- Metric Spaces
	<b>Theory</b>	Automorphism, Groups of finite and infinite cyclic groups, Application of factor groups	B.Sc.(H) Maths SEM-V B	C12 Group Theory-II
	<b>Theory</b>	Latin squares as in Design of experiments, Mathematical models for Matching jobs	BA(P) Sem-III	Paper III : Analytic Geometry and Applied Algebra
	<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples.	B.Sc.(H) Maths Sem-V A, V B	C 11- Metric Spaces, C12- Group Theory-II
	<b>Practicals:</b>	Practical No.8-To Discuss the limit of the functions when $n$ tends to zero. Practical No.9- To discuss the limit of the following functions when $n$ tends to infinity. *To take a lab test related to above Practicals.	B.Sc.(H) Maths Sem-III A	C 7- Multivariate Calculus

	<b>Practicals:</b>	(2). Plotting the graphs of polynomial of degree 4 and 5, the derivative graph, the second derivative graph and comparing them. (3). Sketching parametric curves.	B.Sc.(H) Maths Sem-I A	C1- Calculus
September	<b>Theory:</b>	Subspaces, dense sets, separable spaces, Continuous mappings, sequential criterion and other characterizations of continuity, Uniform continuity.	B.Sc.(H) Maths Sem-V A	C 11- Metric Spaces
	<b>Theory</b>	Definition of External direct product (EDP) of finite no. Of subgroups, order of an element in EDP, EDP of cyclic groups.	B.Sc.(H) Maths Sem-V B	C12 Group Theory-II
	<b>Theory:</b>	Spelling Checker, Network Reliability, Street surveillance.	BA(P) Sem-III	Paper III : Analytic Geometry and Applied Algebra
	<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples.	B.Sc.(H) Maths Sem-VA, VB	C 11- Metric Spaces, C12- Group Theory.
	<b>Assignment</b>	Assignment to be given for C11 and C12 related to syllabus. Last date of submission will be last week of September.		
	<b>Practicals:</b>	Practical No.10-. Discuss the continuity of the functions. Practical No.11- To Illustrate the geometric meaning of Rolle's theorem of the functions on the given interval. Practical No .12-To Illustrate the geometric meaning of Lagrange's mean value theorem of the functions on the given interval.	B.Sc.(H) Maths Sem-III A	C 7- Multivariate Calculus
	<b>Practicals:</b>	(4) Tracing of conics (5) obtaining surface of revolution of curves	B.Sc.(H) Maths Sem-I A	C1-Calculus
OCTOBER	<b>Theory:</b>	Homeomorphism, Contraction mappings, Banach Fixed point Theorem. Connectedness, connected subsets of R, connectedness and continuous mappings. Compactness.	B.Sc.(H) Maths Sem-V A	C 11- Metric Spaces



	<b>Theory</b>	Concept of Internal direct product (IDP), Fundamental theorem of finite abelian groups	B.Sc.(H) Maths Sem-V B	C12- Group Theory
	<b>Theory:</b>	Scheduling Meetings, Interval Graph Modelling and Influence Model	BA(P) Sem-III	Paper III : Analytic Geometry and Applied Algebra
	<b>Tutorials:</b>	To discuss the doubts of students and various exercise questions and examples.	B.Sc.(H) Maths Sem-V A, VB	C 11- Metric Spaces, C12- Group Theory
	<b>Test</b>	To take Internal Test of paper C11: Metric spaces and Paper III : Analytic Geometry and Applied Algebra from the material covered till the first week of October.		
	<b>Practicals:</b>	Practical No .13- To discuss uniform continuity of the functions: Practical No .14-Verification of Maximum –Minimum theorem, boundedness theorem & intermediate value theorem for various functions and the failure of the conclusion in case of any of the hypothesis is weakened. Practical No .15- locating points of relative & absolute extremum for different functions. Practical No .16- Relation of monotonicity & derivatives along with verification of first derivative test.	B.Sc.(H) Maths Sem-III A	C 7- Multivariate Calculus
	<b>Practicals:</b>	(6) Sketching of ellipsoid, hyperboloid and other 3D surfaces.	B.Sc.(H) Maths Sem-I A	C1-calculus
	<b>Test</b>	To take internal Lab Test.		
NOVEMBER	<b>Theory:</b>	Compactness and boundedness, continuous functions on compact spaces and to revise whole syllabus, to discuss last previous year questions papers.	B.Sc.(H) Maths Sem-V	C 11- Metric Spaces

	<b>Theory:</b>	Picher Pouring Puzzle and to revise whole syllabus, to discuss last previous year questions papers.	BA(P) Sem-III	Paper III : Analytic Geometry and Applied Algebra
	<b>Tutorials:</b>	To discuss the doubts of students and various exercise questions and revise whole syllabus, to discuss last previous year questions papers.	B.Sc.(H) Maths Sem-VA, VB	C 11- Metric Spaces, C12- Group Theory
	<b>Practicals:</b>	<p>Practical No .16- Relation of monotonicity &amp; derivatives along with verification of first derivative test.</p> <p>Practical No .17- Relation of monotonicity &amp; derivatives along with verification of first derivative test. Taylor's series - visualization by creating graphs:</p> <p>a. Verification of simple inequalities</p> <p>b. Taylor's Polynomials – approximated up to certain degrees.</p>	B.Sc.(H) Maths Sem-III A	C 7- Multivariate Calculus
	<b>Practicals:</b>	(9) Graph of hyperbolic functions	B.Sc.(H) Maths Sem-I A	C1- Calculus

### Mr. Sudhakar Yadav

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction of group theory, symmetries of a square, Dihedral groups, definition and examples of groups.	B.Sc(H) Maths Sem-III A	C6- Group Theory-I

	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to symmetries of a square, Dihedral groups, definition and examples of groups.	B.Sc(H) Maths Sem-III A	C6- Group Theory-I
	<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to theory of equations.	B.Sc(H) Maths Sem-IA	Algebra
	<b>Theory</b>	Introduction of Group Theory –II Group actions and examples	B.Sc(H) Maths Sem-V B	C12- Group Theory-II
	<b>Practicals</b>	Introduction to TeX , LaTeX and Latex and HTML, Typesetting a simple document	B.Sc(H) Maths Sem-III A	Theory of SEC-1: LaTeX and HTML
AUGUEST	<b>Theory</b>	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 A	C6- Group Theory-I
	<b>Tutorials</b>	To discuss the doubt of students, 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 A	C6- Group Theory-I

<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to complex numbers, equivalence relations and	B.Sc(H) Maths Sem-IA	Algebra
<b>Theory</b>	Permutation representations, Stabilizers and kernels of group actions. Groups acting on themselves by left multiplication and consequences, Conjugacy in $S_n$ .	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
<b>Practicals</b>	Adding basic information to a document, Environments, Footnotes, Sectioning and displayed material, Accents of symbols, Mathematical typesetting (elementary and advanced): subscript/superscript, Fractions Roots Ellipsis	B.Sc(H) Maths Sem-III A	Theory of SEC-1: LaTeX and HTML
<b>Test</b>	To take class test related to syllabus and lab test related to above Practical.	B.Sc(H) Maths Sem-III A/V B	C6- Group Theory-I / C12- Group Theory-II/ Theory of SEC-1: LaTeX and HTML

September	<b>Theory</b>	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
	<b>Tutorials</b>	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 A	C6- Group Theory-I
	<b>Tutorials:</b>	To discuss the doubt of students and various exercise questions and examples related to Basic Number Theory.	B.Sc(H) Maths Sem-IA	Algebra
	<b>Theory</b>	Conjugacy classes, The class equation, $p$ -groups, The Sylow theorems and consequences, Applications of Sylow theorems and Finite simple groups.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
	<b>Assignments</b>	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-III A/V B	C6- Group Theory-I / C12- Group Theory-II
	<b>Practicals</b>	Spacing and changing style in math mode, Graphics in LaTeX, Simple pictures using PS Tricks, Plotting of functions and Beamer	B.Sc(H) Maths Sem-III A	Theory of SEC-1: LaTeX and HTML
OCTOBER	<b>Theory</b>	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

<b>Tutorials</b>	To discuss the doubt of students, various exercise questions, and examples related External direct product of a finite number of groups, normal subgroups, factor groups, Cauchy's theorem for finite abelian groups and Group homomorphisms.	B.Sc(H) Maths Sem-III A	C6- Group Theory-I
<b>Tutorials:</b>	To discuss the doubt of students, various exercise questions, and examples related to row echelon form of matrices and applications.	B.Sc(H) Maths Sem-IA	Algebra
<b>Theory</b>	Non-simplicity tests; Generalized Cayley's theorem, Index theorem, Embedding theorem and applications.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
<b>Practicals</b>	Some more portion on Beamer Presentation., HTML basics, Creating simple web pages and Adding images and links.	B.Sc(H) Maths Sem-III A	Theory of SEC-1: LaTeX and HTML
<b>Test</b>	To take internal test related to syllabus and internal lab test related to above Practicals.	B.Sc(H) Maths Sem-III A/V B	C6- Group Theory-I / C12- Group Theory-II/ Theory of

NOVEMBER	<b>Theory</b>	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
	<b>Tutorials</b>	To discuss the doubt of students, various exercise questions, and examples related to Properties of homomorphisms, Cayley's theorem, properties of isomorphism, First, Second and Third	B.Sc(H) Maths Sem-III A	C6- Group Theory-I
	<b>Tutorials:</b>	To discuss the doubt of students, various exercise questions, and examples related to whole syllabus and discuss previous year questions papers	B.Sc(H) Maths Sem-IA	Algebra
	<b>Theory</b>	Simplicity of A5, Fundamental theorem of finite Abelian groups and its isomorphism classes and revise whole syllabus, to discuss last previous year questions	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
	<b>Practicals</b>	Design of web pages and practicals related to complete Latex and revise all practicals.	B.Sc(H) Maths Sem-III A	Theory of SEC-1: LaTeX and HTML

### Ms. Rajni Arora

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction to structured programming: data types- simple data types, floating datatypes, character data types, string data types, arithmetic operators and operator precedence, variables and constant declarations, expressions	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>

		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	<b>SEC-1 LaTeX and HTML</b>
		First order ordinary differential equations: Basic concepts and ideas.	B.Sc.(H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>
	<b>Practicals</b>	Making basic programs in C++, compilation and execution.	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
<b>AUGUST</b>	<b>Theory</b>	Input using the extraction operator and cin, output using the insertion operator and cout, pre-processor directives, increment(++) and decrement(--) operations, creating a C++ program, input/ output, relational operators, logical operators and logical expressions, if and if-else statement, switch and break statements; related problems.	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
		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	<b>SEC-1 LaTeX and HTML</b>
		Exact differential equations, Integrating factors, Bernoulli equations, Orthogonal trajectories of curves, Existence and uniqueness of solutions, Second order differential equations: Homogenous linear equations of second order, Second order homogenous equations with constant coefficients, Differential operator; related problems	B.Sc.(H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>
	<b>Practicals</b>	1. Calculate the Sum of the series $1/1 + 1/2 + 1/3 + \dots + 1/N$ for any positive integer N. 2. Write a user defined function to find the absolute value of an integer. 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.	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>



	<b>Tutorials</b>	To discuss the doubts of students and various exercise questions related to first and second order ordinary differential equations	B.Sc.(H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>
SEPTEMBER	<b>Theory</b>	“for”, “while” and “do-while” loops and continue statement, nested control statement, value returning functions, value versus reference parameters; related problems	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
		Graphics in LaTeX, use of PS Tricks	B.Sc.(H) Mathematics Sem-3	<b>SEC-1 LaTeX and HTML</b>
		Euler-Cauchy equation, Existence and uniqueness theory, Wronskian, Non-homogenous ordinary differential equations, Solution by undetermined coefficients, Solution by variation of parameters, Higher order homogenous equations with constant coefficients, System of differential equations, System of differential equations; related problems	B.Sc.(H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>

	<b>Practicals</b>	<p>7. Write a program that generates Fibonacci numbers.</p> <p>8. Write a program that prompts the user to input five decimal numbers, converts each decimal number to the nearest integer, prints the sum and average of them.</p> <p>9. Write a program that uses <i>while</i> 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.</p> <p>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.</p> <p>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.</p> <p>12. Write a value returning function <i>smaller</i> to determine the smallest number from a set of numbers. Use this function to determine the smallest number from a set of 10 numbers.</p>	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
	<b>Tutorials</b>	To discuss the doubts of students and various exercise questions related to topics done so far.	B.Sc.(H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>
	<b><u>Assignment</u></b>	Problems covering all topics done during July- September	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
		Problems covering all topics done during July- September	B.Sc.(H) Mathematics Sem-3	<b>SEC-1 LaTeX and HTML</b>
		Problems covering all topics done during July- September	B.Sc.(H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>
OCTOBER	<b>Theory</b>	local and global variables, one dimensional array, two-dimensional array, pointer data and pointer variables.	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
		Plotting of functions in LaTeX, Beamer presentation, Introduction to HTML, creating simple web pages	B.Sc.(H) Mathematics Sem-3	<b>SEC-1 LaTeX and HTML</b>

		Conversion of $n$ th order ODEs to a system, Basic concepts and ideas, Homogenous system with constant coefficients, Power series method: Theory of power series methods; related problems	B.Sc.(H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>
	<b>Practicals:</b>	13. Write a function that takes as a parameter an integer and returns the number of odd, even, and zero digits. 14. Enter 100 integers into an array and sort them in an ascending/ descending order and print the largest/ smallest integers. 15. Enter 10 integers into an array and then search for a particular integer in the array. 16. Multiplication/ Addition of two matrices using two dimensional arrays. 17. Using arrays, read the vectors and compute the product and addition of these vectors. 18. Read from a text file and write to a text file.	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
	<b>Tutorials</b>	To discuss the doubts of students and various exercise questions related to partial differential equations	B.Sc.(H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>
	<b><u>Mid Term Test</u></b>	Problems from all the topics covered till date	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
		Problems from all the topics covered in class till that date	B.Sc. (H) Mathematics Sem-3	<b>SEC-1 LaTeX and HTML</b>
		Problems from all the topics covered in class till that date	B.Sc. (H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>
NOVEMBER	<b>Theory:</b>	Revision and doubts sessions	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
		Tricks to customize HTML page and revision of the syllabus	B.Sc. (H) Mathematics Sem-3	<b>SEC-1 LaTeX and HTML</b>
		Legendre's equation, Legendre polynomial related problems	B.Sc. (H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>

<b>Practicals:</b>	19. Write a program to create the grids using for loops: 20. Write a function that takes an integer as a parameter and returns the number with its digits reversed.	B.Sc.(H) Maths Sem-V DSE-I	<b>C++ programming</b>
<b>Tutorials</b>	To discuss the doubts of students and last years' question papers	B.Sc.(H) Physics, Economics, Electronics Sem-3	<b>GE-3 Differential Equations</b>

### Ms. Shahna

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Functions of several variables, limit and continuity of functions of two variables, partial differentiation	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Practicals</b>	Not started yet	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Practicals</b>	Introduction to Mathematica. (1). Plotting of graphs of functions like greatest integer function, even and odd positive integer function, a positive integer etc. Discuss the effect of and on the graph and to solve different questions.	B.Sc(H) Maths Sem-I B	C1- Calculus
	<b>Theory</b>	$\epsilon$ - $\delta$ Definition of limit of a function, One sided limit	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to topics covered.	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus

	<b>Theory</b>	First order ordinary differential equations: Basic concepts and ideas	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to topics covered.	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Assignment</b>	To give assignments to some students of the above courses		
AUGUST	<b>Theory:</b>	Total differentiability, sufficient condition for differentiability. Chain rule for one and two independent parameters, directional derivatives, the gradient, maximal and normal property of the gradient, tangent planes. Extrema of functions of two variables, method of Lagrange multipliers, constrained optimization problems, Definition of vector field, divergence and curl.	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Practicals</b>	(1).To Draw surfaces and find level curves at the given heights, (2).To draw the surfaces and discuss whether limit exists or not as approaches to the given points. Find the limit, if it exists: <i>Matlab / Mathematica / Maple etc.</i>	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Practicals</b>	(2). Plotting graphs of polynomials of degree 4 and 5, the derivative graph, the second derivative graph and their comparison. (3). Sketching parametric curves. (4). Tracing of conics in Cartesian coordinates. Assignments related to the above topics.	B.Sc(H) Maths Sem-I B	C1- Calculus
	<b>Theory</b>	To discuss the doubt of students and various exercise questions and examples related to topics covered.	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus

	<b>Tutorials</b>	Exercise questions related to limits	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus
	<b>Theory</b>	Exact differential equations, Integrating factors, Bernoulli equations, Orthogonal trajectories of curves, Existence and uniqueness of solutions, Second order differential equations: Homogenous linear equations of second order	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to topics covered.	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Assignment</b> :	To give assignment to some students of the above courses		
SEPTEMBER	<b>Theory:</b>	Double integration over rectangular region, double integration over nonrectangular region, Double integrals in polar co-ordinates, Triple integrals, Triple integral over a parallelepiped and solid regions, Volume by triple integrals, cylindrical and spherical co-ordinates, Change of variables in double integrals and triple integrals .	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Practicals:</b>	(3.)To Draw the tangent plane to the following surfaces at the given point, (4). Use an incremental approximation to estimate the functions at the given point and compare it with calculated value.	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Practicals</b>	(5). Obtaining surface of revolution of curves. (6). Sketching ellipsoid, hyperboloid of one and two sheets, elliptic cone, elliptic paraboloid, hyperbolic paraboloid using Cartesian co-ordinates. (7). To find numbers between two real numbers and plotting of finite and infinite subset of R and to solve different questions. Lab Test. Assignments related to above topics	B.Sc(H) Maths Sem-I B	C1- Calculus

	<b>Theory</b>	Concavity , Points of inflection, Curve sketching, Indeterminate forms,L'Hopital's rule, Volumes by slicing	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus
	<b>Tutorials</b>	To discuss the doubts of students and various exercise questions and examples related to the topics covered in the theory class.	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus
	<b>Theory</b>	Second order homogenous equations with constant coefficients, Differential operator, Euler-Cauchy equation. Existence and uniqueness theory, Wronskian, Nonhomogenous ordinary differential equations	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Tutorials</b>	To discuss the doubts of students and various exercise questions and examples related to the topics covered in the theory class.	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Assignment</b> :	To give assignment to some students of the above courses		
OCTOBER	<b>Theory:</b>	Line integrals, Applications of line integrals: Mass and work. Fundamental theorem for line integrals, conservative vector fields, independence of path. Green's theorem, surface integrals, integrals over parametrically defined surfaces.	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Practicals</b>	(5).To find critical points and identify relative maxima, relative minima or saddle points to surfaces, if it exist. (6).To draw the regions <b>D</b> and check whether these regions are of <b>Type I</b> or <b>Type II</b> :	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus

	<b>Practicals</b>	(8). Matrix operations (addition, multiplication, inverse, transpose, determinant, rank, eigenvectors, eigenvalues, Characteristic equation and verification of Cayley Hamilton equation, system of linear equations) (9). Graphs of Hyperbolic functions. (10). Computation of limit, differentiation and integration of vector functions on $\mathbb{R}$ . Mid-term Test based on the topics done.	B.Sc(H) Maths Sem-I B	C1- Calculus
	<b>Test</b>	<b>To take</b> internal lab test of the above Practical.		
	<b>Theory</b>	Volumes of solids of revolution by the disk method, Volumes of solids of revolution by the washer method	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus
	<b>Tutorials</b>	To discuss the doubts of students and various exercise questions and examples related to the topics covered in the theory class.	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus
	<b>Theory</b>	Solution by undetermined coefficients, Solution by variation of parameters, Higher order homogenous equations with constant coefficients,	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Tutorials</b>	To discuss the doubts of students and various exercise questions and examples related to the topics covered in the theory class.	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Assignment</b>	To give assignment to some students of the above courses		
NOVEMBER	<b>Theory</b>	Stokes' theorem, The Divergence theorem	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Practicals</b>	(7). $f$ be any function and be $n$ any number. For given $N$ and $\epsilon$ , find a $\delta$ such that for all satisfying $\delta$ , the inequality holds . <i>Using Matlab / Mathematica / Maple etc.</i>	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus



	<b>Practicals</b>	(11). Complex numbers and their representations, operations like addition, multiplication, division, modulus. Graphical representation of polar forms. (12). Revision of all topics. (13). Internal Practical Examination.	B.Sc(H) Maths Sem-I B	C1- Calculus
	<b>Theory</b>	Volume by cylindrical shells, Length of plane curves.	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus
	<b>Tutorials</b>	To discuss the doubts of students and various exercise questions and examples related to the topics covered in the theory class.	Sem I BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-1 Calculus
	<b>Theory</b>	System of differential equations, Conversion of $n^{\text{th}}$ order ODEs to a system, Basic concepts and ideas, Homogenous system with constant coefficients.	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Tutorials</b>	To discuss the doubts of students and various exercise questions and examples related to the topics covered in the theory class.	Sem III BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-3 Differential Equations
	<b>Assignment</b> :	To give assignment to some students of both the courses		

Dr. Garima V. Arora

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Functions of several variables, limit and continuity of functions of two variables, partial differentiation	B.Sc(H) Maths Sem-III A	C7-Multivariate Calculus
	<b>Practicals</b>	Not started yet	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus

	<b>Theory</b>	Automorphism, Inner Automorphism, Automorphism groups and Examples.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to topics covered.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
	<b>Assignment</b>	To give assignments to some students of both the courses		
AUGUST	<b>Theory:</b>	Total differentiability, sufficient condition for differentiability. Chain rule for one and two independent parameters, directional derivatives, the gradient, maximal and normal property of the gradient, tangent planes. Extrema of functions of two variables, method of Lagrange multipliers, constrained optimization problems, Definition of vector field, divergence and curl.	B.Sc(H) Maths Sem-III A	C7-Multivariate Calculus
	<b>Practicals</b>	Practical 1- To draw surfaces and level curves. Practical 2-To draw surfaces and discuss whether limit exists or not as approaches to the given points. Find the limit, if it exists Practical 3-To Draw the tangent planes Practical 4- Use incremental approximations to estimate functions. Practical 7- Using epsilon-delta definition. Practical 8- To discuss the limit of the functions when $n$ tends to $0$ .	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Theory</b>	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. Internal direct products.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
	<b>Tutorials</b>	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	C12- Group Theory-II
	<b>Assignment :</b>	To give assignment to some students of both the courses		

SEPTEMBER	<b>Theory:</b>	Double integration over rectangular region, double integration over nonrectangular region, Double integrals in polar co-ordinates, Triple integrals, Triple integral over a parallelopiped and solid regions, Volume by triple integrals, cylindrical and spherical co-ordinates, Change of variables in double integrals and triple integrals .	B.Sc(H) Maths Sem-III A	C7-Multivariate Calculus
	<b>Practicals:</b>	<p>Practical 5-To find critical points and identify relative maxima, relative minima or saddle points to surfaces, if it exists.</p> <p>Practical 6- To draw and check type-I and type-II regions</p> <p>Practical 9- To discuss limit of functions when n tends to infinity.</p> <p>Practical10- Todiscuss the continuity of the functions.</p> <p>Practical 11- To Illustratethe geometric meaning of Rolle’s theorem of the functions on the given interval.</p> <p>Practical12-To Illustrate the geometric meaning of Lagrange’s mean value theorem of the functions on the given interval.</p>	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Theory</b>	Fundamental Theorem of finite abelian groups, Group actions, stabilizers and kernels, permutation representation associated with a given group action. Applications of group actions: Generalized Cayley’s theorem, Index theorem.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
	<b>Tutorials</b>	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	C12- Group Theory-II
	<b>Assignment :</b>	To give assignment to some students of both the courses		
OCTOBER	<b>Theory:</b>	Line integrals, Applications of line integrals: Mass and work. Fundamental theorem for line integrals, conservative vector fields, independence of path. Green’s theorem, surface integrals, integrals over parametrically defined surfaces.	B.Sc(H) Maths Sem-III A	C7-Multivariate Calculus

	<b>Practicals</b>	<p>Practical 13- To discuss uniform continuity of the functions:</p> <p>Practical 14-Verification of Maximum –Minimum theorem, boundedness theorem &amp; intermediate value theorem for various functions and the failure of the conclusion in case of any of the hypothesis is weakened.</p> <p>Practical 15-To locate points of relative &amp; absolute extremum for different functions.</p> <p>Practical 16- Relation of monotonicity &amp; derivatives along with verification of first derivative test.</p>	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Test</b>	<b>To take</b> internal lab test of the above Practical.		
	<b>Theory</b>	Groups acting on themselves by conjugation, class equation and consequences, conjugacy in $S_n$ , p-groups, Sylow's theorems and consequence.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
	<b>Tutorials</b>	To discuss the doubt of students and various exercise questions and examples related to topics covered.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
	<b>Assignment</b>	To give assignment to some students of both the courses		
NOVEMBER	<b>Theory</b>	Stokes' theorem, The Divergence theorem	B.Sc(H) Maths Sem-III A	C7-Multivariate Calculus
	<b>Practicals</b>	<p>Practical17-Taylor's series - visualization by creating graphs:</p> <p>a. Verification of simple inequalities</p> <p>b. Taylor's Polynomials – approximated up to certain degrees.</p> <p>c. Convergence of Taylor's series</p> <p>d. Non-existence of Taylor series for certain functions</p> <p>e. Convexity of the curves</p>	B.Sc(H) Maths Sem-III B	C7-Multivariate Calculus
	<b>Theory</b>	Cauchy's theorem, Simplicity of $A_n$ for $n \geq 5$ , non-simplicity tests.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II

	<b>Tutorials</b>	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	C12- Group Theory-II
	<b>Assignment</b> :	To give assignment to some students of both the courses		



**SEMESTER WISE  
TEACHING PLAN (2017-2018)  
SRI VENKATESWARA COLLEGE**

Name of the Faculty: **Dr. Deepika Singh** Department: Political Science  
ODD Semester: **I/III/V**

Name of the paper: **NATIONALISM IN INDIA - GE SEM III**

Month		Topic	Course	Paper Code/Name
<b>July</b>	<b>Theory</b>	Approaches to the study of nationalism	Honours GE Paper	<b>Nationalism in India</b>
	<b>Practicals</b>			
	<b>Tutorials</b>			
<b>August</b>	<b>Theory</b>	Unit 2 Reformist and anti-reformist movement of 19 <sup>th</sup> century: major social and religious movements		
	<b>Practicals</b>			
	<b>Tutorials</b>			
	<b>Assignment</b>			
<b>September</b>	<b>Theory</b>	Unit 3 Nationalist Politics and Expansion of its Social Base. a. Phases of Nationalist Movement: Liberal Constitutionalists, Swadeshi and the Radicals; Beginning of Constitutionalism in India b. Gandhi and Mass Mobilization: Non-Cooperation Movement, Civil Disobedience Movement, and Quit India Movement c. Socialist Alternatives: Congress Socialists, Communists.		
	<b>Practicals</b>			
	<b>Tutorials</b>	Concept of nationalism		
<b>October</b>	<b>Theory</b>	Unit 4 Social Movements (8 lectures) 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		
	<b>Practicals</b>			
	<b>Tutorials</b>			
	<b>Test</b>	Test in Unit I and II		
<b>November</b>	<b>Theory</b>	Unit 5 Partition and Independence a. Communalism in Indian Politics b. The Two-Nation Theory, Negotiations over Partition		
	<b>Practicals</b>			
	<b>Tutorials</b>	Debate on partition ,Was partition inevitable		

Name of the Paper: **Legislative practices and procedures BA Political science H III SEM (SEC) shared paper**

Month		Topic	Course	Paper Code/Name
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<b>July</b>	<b>Theory</b>		BA (H)SEC Paper	<b>Legislative Practices and Procedures</b>
	<b>Practicals</b>			
	<b>Tutorials</b>			
<b>August</b>	<b>Theory</b>			
	<b>Practicals</b>			
	<b>Tutorials</b>			
	<b>Assignment</b>	Critically examine the role of Parliamentary Committees		
<b>September</b>	<b>Theory</b>	<b>Supporting the legislative process:</b> How a Bill becomes a Law, Role of the Standing Committee in reviewing a Bill, Legislative Consultations, amendments to a Bill & The framing of Rules and Regulations.		
	<b>Practicals</b>			
	<b>Tutorials</b>			
<b>October</b>	<b>Theory</b>	Supporting the legislative committees Types of committees, Role of committees in reviewing government finances, policy, programmes, and legislation.		
	<b>Practicals</b>			
	<b>Tutorials</b>			
	<b>Test</b>	Unite-II, III & IV		
<b>November</b>	<b>Theory</b>	<b>Reading the budget document:</b> Overview of Budget Process, Role of Parliament in reviewing the Union Budget, Railway Budget, Examination of Demands for Grants of Ministries, Working of Ministries Support in media monitoring and communication: Types of media and their significance for legislators. Basics of communication in print and electronic media		
	<b>Practicals</b>			
	<b>Tutorials</b>			

Name of the Paper: **Introduction to Comparative Government and Politics**

Month		Topic	Course	Paper Code/Name
<b>July</b>	<b>Theory</b>	Understanding comparative politics	BA Pol SC core paper honours	INTRODUCTION TO COMPARATIVE GOVERNMENT AND POLITICS
	<b>Practicals</b>			
	<b>Tutorials</b>			
<b>August</b>	<b>Theory</b>	Nature and scope of comparative politics  Going beyond eurocentrism		
	<b>Practicals</b>			

	<b>Tutorials</b>			
	<b>Assignment</b>			
<b>September</b>	<b>Theory</b>	HISTORICAL CONTEXT OF MODERN GOVERNMENT B) Socialism; Meaning, growth and development  C) colonialism and decolonization; meaning, context, forms of colonialism, colonial struggle and process of decolonization		
	<b>Practicals</b>			
	<b>Tutorials</b>	Discussion on decolonisation		
<b>October</b>	<b>Theory</b>	Comparative study of constitutional development and political economy in the following countries: Brazil, Britain		
	<b>Practicals</b>			
	<b>Tutorials</b>			
	<b>Test</b>	Unit I & II		
<b>November</b>	<b>Theory</b>	Comparative study of constitutional development and political economy in the following countries: Nigeria and China		
	<b>Practicals</b>			
	<b>Tutorials</b>	Comparing the political system of Nigeria and Brazil		

Dr Deepika Singh  
Assistant Professor (ad hoc)  
Department of political Science





**SEMESTER WISE TEACHING PLAN**

**SRI VENKATESWARA COLLEGE**

**July-November, 2018**

**Name of the Faculty: Dr SANTOSH KUMAR SINGH**

**Department: POLITICAL SCIENCE**

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

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	What is Political Thought, Theory and Philosophy. Debates on Decline and Resurgence of Political Theory  Methods of Interpretation: Textual, Contextual and Postmodern Approach	B.A (Hons) Vth Semester	Paper XI- Classical Political Philosophy
	<b>Tutorials:</b>	Philosophy and Politics Philosophy and science Metaphysics and Epistemology		
AUGUST	<b>Theory:</b>	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 Philosophy
	<b>Tutorials:</b>	Textual, Contextual and Postmodern Approach  Plato’s Philosophy		

SEPTEMBER	<b>Theory:</b>	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
	<b>Assignment</b>	Textual, Contextual and Postmodern Approach Plato's Philosophy Aristotle Philosophy		
OCTOBER	<b>Theory</b>	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
	<b>Tutorials:</b>	Hobbes Philosophy Locke's Philosophy		
	<b><u>Mid Term Test</u></b>			
NOVEMBER	<b>Theory:</b>	Understanding the Political Philosophy – From Plato to Locke  Revision of previous topics	B.A (Hons) Vth Semester	Paper XI- Classical Political Philosophy
	<b>Tutorials:</b>			

*(Dr Santosh Kumar Singh)*



## SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

July-November, 2018

Name of the Faculty: Dr SANTOSH KUMAR SINGH

Department: POLITICAL SCIENCE

Semester: B.A (Prog) Vth Semester  
Paper (DSC)- Administration and Public Policy: Concepts and Theories

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	What is Administration and Management	B.A (Prog) Vth Semester	Paper (DSC)- Administration and Public Policy: Concepts and Theories
	<b>Tutorials:</b>			
AUGUST	<b>Theory:</b>	Development Administration- Concept, Elements of development administration  Study of various Development Administration Theories	B.A (Prog) Vth Semester	Paper (DSC)- Administration and Public Policy: Concepts and Theories
	<b>Tutorials:</b>			
SEPTEMBER	<b>Theory:</b>	Development Administration-Time and space dimensions in the study of development administration, politics of development administration	B.A (Prog) Vth Semester	Paper (DSC)- Administration and Public Policy: Concepts and Theories
	<b>Assignment</b>			

OCTOBER	<b>Theory</b>	Understanding relation and role- Public Administration and public policy	B.A (Prog) Vth Semester	Paper (DSC)- Administration and Public Policy: Concepts and Theories
	<b>Tutorials:</b>			
	<b><u>Mid Term Test</u></b>			
NOVEMBER	<b>Theory:</b>	Understanding the Public Administration concepts and debates  Revision of previous topics	B.A (Prog) Vth Semester	Paper (DSC)- Administration and Public Policy: Concepts and Theories
	<b>Tutorials:</b>			

\* This paper is shared with Dr Lalita Jain, she will cover other topics along with internal assessment in terms of Assignment and Test

*(Dr Santosh Kumar Singh)*



**SEMESTER WISE TEACHING PLAN**

**SRI VENKATESWARA COLLEGE**

**July-November, 2018**

**Name of the Faculty: Dr SANTOSH KUMAR SINGH**

**Department: POLITICAL SCIENCE**

**Semester: B.A (Prog) Ist Semester  
Paper I- Introduction to Political Theory**

<b>Month</b>		<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
JULY	<b>Theory:</b>	Political Theory-Nature and Scope  Theory, Thought and Philosophy	B.A (Prog) Ist Semester	Paper I- Introduction to Political Theory
	<b>Tutorials:</b>			
AUGUST	<b>Theory:</b>	Concepts: Democracy-Theory and Forms Liberty Theory-Locke to Mill Equality-Plato to Mill	B.A (Prog) Ist Semester	Paper I- Introduction to Political Theory
	<b>Tutorials:</b>			
SEPTEMBER	<b>Theory:</b>	Justice Theory-Rawls and Nozic Rights Theory-Locke and Mill, Gender Theory, Citizenship Theory and Civil Society and State	B.A (Prog) Ist Semester	Paper I- Introduction to Political Theory

	<b>Assignment</b>			
OCTOBER	<b>Theory</b>	Discuss major Debates in Political Theory	B.A (Prog) Ist Semester	Paper I- Introduction to Political Theory
	<b>Tutorials:</b>			
	<b><u>Mid Term Test</u></b>			
NOVEMBER	<b>Theory:</b>	Understanding the Political Theory and Concepts Revision of previous topics	B.A (Prog) Ist Semester	Paper I- Introduction to Political Theory
	<b>Tutorials:</b>			

\* This paper is shared with Dr Jita Mishra, she will cover other topics along with internal assessment in terms of Assignment and Test

*(Dr Santosh Kumar Singh)*



**SEMESTER WISE TEACHING PLAN**

**SRI VENKATESWARA COLLEGE**

**July-November, 2018**

**Name of the Faculty: Dr SANTOSH KUMAR SINGH**

**Department: POLITICAL SCIENCE**

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

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	Philosophy Vs Theory, Thought Vs Theory, Thought Vs Philosophy in the context of Gandhi  Approaches of Interpretation: Textual, Contextual and Postmodern Approach	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading Gandhi
	<b>Tutorials:</b>	Philosophy and Politics Philosophy and science Metaphysics and Epistemology		
AUGUST	<b>Theory:</b>	Textual Approach – Terence Ball, and Leo Strauss. Contextual Approach-Quentin Skinner, and Sheldon Wolin Postmodern Approach- Herbert Marcuse, Jurgen Habermas, Michel Foucault, Nietzsche  Gandhi's Philosophy Gandhi in his own words: A close reading of Hind Swaraj	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading Gandhi
	<b>Tutorials:</b>	Textual, Contextual and Postmodern Approach  Gandhi's Philosophy		
SEPTEMBER	<b>Theory:</b>	Commentaries on Hind Swaraj and Gandhian thought by A.J.Parel, B.Parekh, and D.Hardiman	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading Gandhi

	<b>Assignment</b>	Textual, Contextual and Postmodern Approach Gandhi's Philosophy- Modernity, Swaraj, Satyagraha		
OCTOBER	<b>Theory</b>	Gandhi and modern India- Nationalism, Communal unity, Women's Question, and Untouchability	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading Gandhi
	<b>Tutorials:</b>			
	<b><u>Mid Term Test</u></b>			
NOVEMBER	<b>Theory:</b>	Understanding the Overall Gandhi's Philosophy and Contribution  Revision of previous topics	B.A (Prog) Vth Semester	Paper GE (Interdisciplinary): Reading Gandhi
	<b>Tutorials:</b>			

*(Dr Santosh Kumar Singh)*





**SEMESTER WISE TEACHING  
PLAN (2018-2019)  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty:** Namita Pandey

**Department:** Political Science

**Semester :** I/III/V

Month		Topics	Course	Paper Code/Name	
JULY	<b>Theory</b>	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	
	<b>Practicals</b>				
	<b>Tutorials</b>	Discussion on Sylvia Walby - Theorizing Patriarchy			
AUGUST	<b>Theory:</b>	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			
	<b>Practicals:</b>				

	<b>Tutorials:</b>	Understanding Sex/Gender distinctions in day to day living		
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	<b><u>Assignment</u></b> :	Critically Examine the liberal theory of Feminism from Marxian Perspective
SEPTEMBER	<b>Theory:</b>	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
	<b>Practicals:</b>	
	<b>Tutorials:</b>	A discussion on Betty Friedans Feminine Mystique, Simon De Beauvoir's Second Sex
	<b><u>Test</u></b>	A Critical Comparison between Radical and Socialist Feminism
OCTOBER	<b>Theory:</b>	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
	<b>Practicals:</b>	

	<b>Tutorials:</b>	Class Presentation on Women in Indian National Movement
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NOVEMBER	<b>Theory:</b>	<p>Traditional Histiography and Feminist Critiques: A Criticism of Traditional History by Analyzing the Social Reform movement and Indian National Movement &amp; Position of Women in India</p> <p>Family in India: Patrilineal and Matrilineal, Patterns of Consumption, Intra Household Bargaining and Entitlement, Property Rights</p> <p>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</p>
	<b>Practicals:</b>	
	<b>Tutorials:</b>	A discussion on domestic labor debate emerging in the context of unpaid labour





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

Name of the Faculty: **Dr. Haokam Vaiphei**  
 ODD Semester: I/III/IV

Department: Political Science

Name of the paper: **Perspectives of Public Administration III SEM**

Month		Topic	Course	Paper Code/Name
July	<b>Theory</b>	Public Administration as A Discipline Meaning, Dimensions and Significance of the Discipline Public and Private Administration Evolution of Public Administration	Honours Core Paper	<b>12321302</b>
	<b>Practicals</b>			
	<b>Tutorials</b>	Status of PA		
August	<b>Theory</b>	<b>Theoretical Perspectives</b> <b>Classical Theories</b> Scientific management (F.W. Taylor) Administrative Management (Gullick, Urwick and Fayol) Ideal-type bureaucracy (Max Weber) <b>Neo-Classical Theories</b> Human relations theory (Elton Mayo) Rational decision-making (Herbert Simon)		
	<b>Practicals</b>			
	<b>Tutorials</b>	Relating Ideal Type Bureaucracy with the functioning of Indian Bureaucracy today		
	<b>Assignment</b>	Any one topic from the syllabus		
September	<b>Theory</b>	<b>Contemporary Theories</b> Ecological approach (Fred Riggs) Innovation and Entrepreneurship (Peter Drucker)		
	<b>Practicals</b>			
	<b>Tutorials</b>	Ecological Approach & Public Policy		
October	<b>Theory</b>	<b>Public Policy</b> Concept, relevance and approaches Formulation, implementation and evaluation		
	<b>Practicals</b>			
	<b>Tutorials</b>	Good Governance in India		
	<b>Test</b>	Test in Unit I and II		
November	<b>Theory</b>	<b>Major Approaches in Public Administration</b> New Public Administration New Public Management New Public Service Approach Good Governance Feminist Perspectives		

	<b>Practicals</b>			
	<b>Tutorials</b>	Revision		

Name of the Paper: **Legislative Practices and Procedures (SEC) SEM III**

Month		Topic	Course	Paper Code/Name
<b>July</b>	<b>Theory</b>	<i><b>Powers and functions of people's representative at different tiers of governance</b></i> Members of Parliament, State legislative assemblies Functionaries of rural and urban local self-government from Zila Parishad, Municipal Corporation to Panchayat/ward.	Honours SEC Paper	<b>Legislative Practices and Procedures</b>
	<b>Practicals</b>			
	<b>Tutorials</b>	Role of MLAs/MPs		
<b>August</b>	<b>Theory</b>	<i><b>Supporting the legislative process</b></i> How a bill becomes law Role of the Standing committee in reviewing a bill Legislative consultants & the framing of rules and regulations.		
	<b>Practicals</b>			
	<b>Tutorials</b>			
	<b>Assignment</b>	Problems & Prospects of New Farm Acts		
<b>September</b>	<b>Theory</b>	<i><b>Supporting the Legislative Committees</b></i> Types of committees, role of committees in reviewing government finances, policy, programmes, and legislation.		
	<b>Practicals</b>			
	<b>Tutorials</b>	Role of Standing Committees		
<b>October</b>	<b>Theory</b>	<i><b>Reading the Budget Document</b></i> Overview of Budget Process Role of Parliament in reviewing the Union Budget, Examination of Demands for Grants of Ministries, Working of Ministries.		
	<b>Practicals</b>			
	<b>Tutorials</b>	Role of Media in Indian Democracy		
	<b>Test</b>	Unit III, IV & V		
<b>November</b>	<b>Theory</b>	<i><b>Support in media monitoring and communication</b></i> Types of media and their significance for legislators; Basics of communication in print and electronic media.		
	<b>Practicals</b>			
	<b>Tutorials</b>	Revision		

Name of the Paper: **Comparative Government & Politics BA P III SEM**

Month		Topic	Course	Paper Code/Name
<b>July</b>	<b>Theory</b>	Powers and functions of people's representatives at different tiers of governance Members of Parliament,	BA P Paper	<b>Comparative Government &amp; Politics</b>

		State Legislative Assemblies, functionaries of rural and urban local self-government from Zila Parishads/Municipal Corporation to Panchayat/Ward.		
	<b>Practicals</b>			
	<b>Tutorials</b>	Assessing the role of MLAs & MPs		
<b>August</b>	<b>Theory</b>	Supporting the legislative process: How a Bill becomes a Law, Role of the Standing Committee in reviewing a Bill, Legislative Consultations, amendments to a Bill & The framing of Rules and Regulations.		
	<b>Practicals</b>			
	<b>Tutorials</b>	Differences between a bill & Law		
	<b>Assignment</b>	Write a Critique on the role of Parliamentary Committees		
<b>September</b>	<b>Theory</b>	Supporting the legislative committees Types of committees, Role of committees in reviewing government finances, policy, programmes, and legislation.		
	<b>Practicals</b>			
	<b>Tutorials</b>	Critical role of committees in determining an act		
<b>October</b>	<b>Theory</b>	Reading the budget document: Overview of Budget Process, Role of Parliament in reviewing the Union Budget, Railway Budget, Examination of Demands for Grants of Ministries, Working of Ministries		
	<b>Practicals</b>			
	<b>Tutorials</b>	Union Budget		
	<b>Test</b>	Unite-II, III & IV		
<b>November</b>	<b>Theory</b>	Support in media monitoring and communication: Types of media and their significance for legislators. Basics of communication in print and electronic media		
	<b>Practicals</b>			
	<b>Tutorials</b>	Revision		

Name of the Paper: **Legislative Support BA P III SEM (SEC)**

Month		Topic	Course	Paper Code/Name
<b>July</b>	<b>Theory</b>	Comparing Regimes: Authoritarian and Democratic Regime.	BA P SEC Paper	<b>Legislative Support</b>
	<b>Practicals</b>			
	<b>Tutorials</b>	Authoritarian tendencies in democratic countries		
<b>August</b>	<b>Theory</b>	<b>Classifications of political systems:</b> Parliamentary and Presidential: UK and USA		
	<b>Practicals</b>			
	<b>Tutorials</b>	Prime minister government		
	<b>Assignment</b>	Evaluate the state of Democracy in India		
<b>September</b>	<b>Theory</b>	Federal and Unitary: Canada and China		
	<b>Practicals</b>			

	<b>Tutorials</b>	Compare and contrast Indian and Canadian Federalism		
<b>October</b>	<b>Theory</b>	Party Systems: one-party, two-party		
	<b>Practicals</b>			
	<b>Tutorials</b>			
	<b>Test</b>	Unit II & III		
<b>November</b>	<b>Theory</b>	Multi-party systems		
	<b>Practicals</b>			
	<b>Tutorials</b>	Revision		



(Dr. Haokam Vaiphei)  
Assistant Professor  
Department of Political Science





**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Kalyani Krishna**

**Department: Botany**

**Semester : I/III/V 2018-19**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction to paper and discussion about the paper	B.Sc. (H) Botany Semester V	Plant Physiology
		Cereals-wheat and rice: general account	B.Sc. (H) Botany Semester IV	Economic Botany
	<b>Practicals</b>	<ul style="list-style-type: none"> <li>To determine osmotic potential of plant cell sap by plasmolytic method</li> </ul> <p style="text-align: center;">Cereals</p>	B.Sc. (H) Botany Semester V	Plant Physiology
			B.Sc. (H) Botany Semester IV	Economic Botany
	<b>Tutorials</b>	-----		
AUGUST	<b>Theory:</b>	Essential and beneficial elements, macro and micronutrients, methods of study and use, criteria of essentiality, deficiency symptoms, role, chelating agents	B.Sc. (H) Botany Semester V	Plant Physiology
		Cereals: origin, evolution, morphology, post-harvest processing, uses, green revolution, millets and pseudocereals Legumes: general account, importance to man and ecosystem Beverages: tea, coffee, morphology, processing, uses Oils and fats: description, classification, extraction, uses, health implications, groundnut, coconut, linseed, mustard	B.Sc. (H) Botany Semester IV	Economic Botany

	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>To determine water potential of given tissue by weight method.</li> <li>To study the effect of two environmental factors (light and wind) on transpiration by excised twig</li> <li>To calculate stomatal index and stomatal frequency from two surfaces of leaves of a mesophyte and xerophytes.</li> <li>To calculate the area of open stoma and percentage of leaf area open through stomata in a mesophyte and xerophytes (both surfaces).</li> </ul> <ul style="list-style-type: none"> <li>Legumes</li> <li>Fruits</li> <li>Sugar and starches</li> <li>spices</li> </ul>	<p>B.Sc. (H) Botany Semester V</p> <p>B.Sc. (H) Botany Semester IV</p>	<p>Plant Physiology</p> <p>Economic Botany</p>
	<b>Tutorials:</b>	-----		
SEPTEMBER	<b>Theory:</b>	<p>Nutrient uptake, soil as a nutrient reservoir, transport of ions across cell membrane, passive absorption, electrochemical gradient, facilitated diffusion</p> <p>Natural rubber: para-rubber, tapping, processing and uses Drug-yielding plants: <i>Cinchona</i>, <i>Digitalis</i>, <i>Papaver</i>, <i>Cannabis</i></p>	<p>B.Sc. (H) Botany Semester V</p> <p>B.Sc. (H) Botany Semester IV</p>	<p>Plant Physiology</p> <p>Economic Botany</p>

	<p><b>Practicals:</b></p> <ul style="list-style-type: none"> <li>To study the phenomenon of seed germination</li> <li>To study the induction of amylase activity in germinating barley grains</li> <li>To study the effect of different concentrations of IAA on coleoptiles elongation</li> <li>To demonstrate bolting</li> </ul> <ul style="list-style-type: none"> <li>Beverages</li> <li>Oils and fats</li> <li>Essential oil-yielding plants</li> <li>Rubber</li> </ul>	<p>B.Sc. (H) Botany Semester V</p> <p>B.Sc. (H) Botany Semester IV</p>	<p>Plant Physiology</p> <p>Economic Botany</p>
	<b>Tutorials:</b> -----		
	<b>Assignment :</b> Given to all students for respective papers		
OCTOBER	<p><b>Theory:</b> Active absorption, role of ATP, carrier systems, proton ATPase pump, ion flux</p> <p>Tobacco: morphology, Processing, uses Fibres: cotton</p>	<p>B.Sc. (H) Botany Semester V</p> <p>B.Sc. (H) Botany Semester IV</p>	<p>Plant Physiology</p> <p>Economic Botany</p>
	<p><b>Practicals:</b></p> <ul style="list-style-type: none"> <li>To demonstrate effect of auxins on rooting</li> <li>To demonstrate suction due to transpiration</li> <li>To demonstrate fruit ripening</li> </ul> <ul style="list-style-type: none"> <li>Drug-yielding plants</li> <li>Tobacco</li> <li>Fibre-yielding plants</li> </ul>	<p>B.Sc. (H) Botany Semester V</p> <p>B.Sc. (H) Botany Semester IV</p>	<p>Plant Physiology</p> <p>Economic Botany</p>
	<b>Tutorials:</b> -----		
	<b>Test</b> Conducted for all papers		

NOVEMBER	<b>Theory:</b>	Uniport, co-transport, symport, antiport  Fibres: Jute	B.Sc. (H) Botany Semester V	Plant Physiology
			B.Sc. (H) Botany Semester IV	Economic Botany
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Repetitions of experiments which students feel</li> <li>• Revision and test</li>   <li>• Repetitions of experiments which students feel</li> <li>• Revision and test</li> </ul>	B.Sc. (H) Botany Semester V	Plant Physiology
			B.Sc. (H) Botany Semester IV	Economic Botany
	<b>Tutorials:</b>	-----		



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE(2018-19 Odd)**

**Name of the Faculty: Dr. Shukla Saluja**

**Department: Botany**

**Semester :**

**I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Types and significance of chemical bonds, structure and properties of water, pH and buffers	B.Sc. Botany (Sem: I)	CC II, Biomolecules and Cell Biology
		Introduction.	B.Sc. Botany (Sem: V)	DSE-II, Biostatistics
		Introduction, Classification of tissues, Simple and complex tissues	B.Sc. Life Sc. (Sem: III)	CC-3, Plant Anatomy & Embryology
	<b>Practicals</b>	Study of plant cell structure with the help of epidermal peel of Onion/ Crinum/ Rhoeo	B.Sc. Botany (Sem: I)	CC II, Biomolecules and Cell Biology
		T.S. of Stem: Monocot: <i>Zea mays</i> ; Dicot: <i>Helianthus</i> T.S. of root: Monocot: <i>Zea mays</i>	B.Sc. Life Sc. (Sem: III)	CC-3, Plant Anatomy & Embryology
		Study of vegetative and reproductive structures of <i>Oedogonium Rhizopus</i> : Asexual stage from temporary mounts and sexual structures through permanent slides	B.Sc. Life Sc. (Sem: I)	CC-I, Biodiversity
	<b>Tutorials</b>	-----		
AUGUST	<b>Theory:</b>	Carbohydrates: Nomenclature and classification; Role of monosaccharides (glucose, fructose, sugar alcohols – mannitol and sorbitol); Disaccharides (sucrose, maltose, lactose), Oligosaccharides and polysaccharides (structural-cellulose, hemicelluloses, pectin, chitin; storage – starch, inulin); Isomers and derivatives of glucose, glucosamine. Lipids: Definition and major classes of storage and structural lipids. Storage lipids. Fatty acids structure and functions. Essential fatty acids. Triacyl glycerols structure, functions and properties. Saponification.	B.Sc. Botany (Sem: I)	CC II, Biomolecules and Cell Biology
		History, statistical terms, Basic principles of biostatistics	B.Sc. Botany (Sem: V)	DSE-II, Biostatistics
		Meristematic tissues- types and classification, Stem organization of shoot apex , apical cell theory, tunical corpus theory.	B.Sc. Life Sc. (Sem: III)	CC-3/Plant Anatomy & Embryology

	<b>Practicals:</b>	<p>Measurement of cell size by technique of micrometry Qualitative test for carbohydrates, proteins, lipids and proteins Demonstrate the phenomenon of protoplasmic streaming in Hydrilla leaf</p> <p>Leaf: Dicot and Monocot leaf (only Permanent slides). Adaptive anatomy: Xerophyte (<i>Nerium</i> leaf); Hydrophyte (<i>Hydrilla</i> stem). T.S. of Root: Dicot: <i>Helianthus</i> Structure of anther (young and mature), tapetum (amoeboid and secretory) (Permanent slides)</p> <p>Study of morphology, anatomy and V.S/L.S of reproductive organ in <i>Marchantia</i>. <i>Funaria</i>-Morphology, w.m. leaf, rhizoids, operculum, spores and L.S capsule and permanent slides. Study of vegetative and reproductive structure of <i>Nostoc</i>, <i>Polysiphonia</i> &amp; <i>Vaucheria</i>. <i>Alternaria</i>: Specimens/photographs and tease mounts. <i>Puccinia</i>: Herbarium specimens of Black Stem Rust of Wheat and infected Barberry leaves; section/tease mounts of spores on Wheat and permanent slides of both the hosts. <i>Agaricus</i>: Specimens of button stage and full grown mushroom; Sectioning of gills of <i>Agaricus</i>.</p>	B.Sc. Botany (Sem: I)	CC II, Biomolecules and Cell Biology
			B.Sc. Life Sc. (Sem: III)	CC-3/Plant Anatomy & Embryology
			B.Sc. Life Sc. (Sem: I)	CC-I/Biodiversity
	<b>Tutorials:</b>	-----		
SEPTEMBER	<b>Theory:</b>	<p>Structural lipids. Phosphoglycerides: Building blocks, General structure, functions and properties. Structure of phosphatidylethanolamine and phosphatidylcholine, Sphingolipids: building blocks, structure of sphingosine, ceramide. Lipid functions. Proteins: Structure of amino acids; Peptide bonds; Levels of protein structure-primary, secondary, tertiary and quaternary; Isoelectric point; Protein denaturation and biological roles of proteins.</p> <p>Aims of biostatistics, variables- measurements, applications, Limitations and Importance of biostatistics</p> <p>Root Apical meristem Körper-Kappe theory. Structure of dicot and monocot root.</p>	B.Sc. Botany (Sem: I)	CC II, Biomolecules and Cell Biology
			B.Sc. Botany (Sem: V)	DSE-II, Biostatistic
			B.Sc. Life Sc. (Sem: III)	CC-3/Plant Anatomy & Embryology

	<b>Practicals:</b>	Counting the cells per unit volume with the help of haemocytometer Study of cell and its organelles with the help of electron micrographs Study the effect of plasmolysis and deplasmolysis Study the effect of organic solvent on membrane permeability  Study of embryo sac showing egg apparatus by electron micrograph, Study of microsporogenesis through permanent slides, Study of Polygonum type of embryo sac by photographs. Dissection of embryo/endosperm from developing seeds. Calculation of percentage of germinated pollen in a given medium  <i>Selaginella</i> - morphology, w.m. leaf with ligule, T.S. stem, w.m. strobilus, w.m. microsporophyll and megasporophyll (temporary slides), L.S. strobilus (permanent slide). <i>Equisetum</i> - morphology, T.S. internode, L.S. strobilus, T.S. strobilus, w.m. sporangiophore, w.m. spores (wet and dry)(temporary slides); T.S. rhizome (permanent slide). <i>Pteris</i> - morphology, t.s. rachis, v.s. sporophyll, w.m. sporangium, w.m. spores(temporary slides), t.s. rhizome, w.m. prothallus with sex organs and young sporophyte(permanent slide).	B.Sc. Botany (Sem: I)  B.Sc. Life Sc. (Sem: III)  B.Sc. Life Sc. (Sem: I)	CCII, Biomolecules and Cell Biology  CC-3/Plant Anatomy & Embryology  CC-I/Biodiversity
	<b>Tutorials:</b>	-----		
OCTOBER	<b>Theory:</b>	Enzymes: Structure of enzyme: holoenzyme, apoenzyme, cofactors, coenzymes and prosthetic group; Classification of enzymes; Features of active site, substrate specificity, mechanism of action (activation energy, lock and key hypothesis, induced - fit theory), Michaelis – Menten equation, enzyme inhibition and factors affecting enzyme activity.  Importance of biostatistics in modern research.  Structure of Dicot and Monocot stem and root	B.Sc. Botany (Sem: I)  B.Sc. Botany (Sem: V)  B.Sc. Life Sc. (Sem: III)	CCII, Biomolecules and Cell Biology  DSE-II, Biostatistic  CC-3/Plant Anatomy & Embryology
	<b>Practicals:</b>	Study the effect of temperature on membrane permeability Study of cell and its organelles with the help of electron micrographs  Ultrastructure of mature egg apparatus cells through electron micrographs. Pollination types and seed dispersal mechanisms (including appendages, aril, caruncle) Photographs and specimens.  <i>Cycas</i> - morphology (coralloid roots, bulbil, leaf), t.s. coralloid root, t.s. rachis, v.s. leaflet, v.s. microsporophyll, w.m. spores (temporary slides), l.s. ovule, t.s. root (permanent slide). <i>Pinus</i> - morphology (long and dwarf shoots, w.m. dwarf shoot, male and female), w.m. dwarf shoot, t.s. needle, t.s. stem, l.s./t.s. male cone, w.m. microsporophyll, w.m. microspores (temporary slides), l.s. female cone, t.l.s. & r.l.s. stem (permanent slide)	B.Sc. Botany (Sem: I)  B.Sc. Life Sc. (Sem: III)  B.Sc. Life Sc. (Sem: I)	CCII, Biomolecules and Cell Biology  CC-3/Plant Anatomy & Embryology  CC-I/Biodiversity
	<b>Tutorials:</b>	-----		
	<b>Test</b>	Fixed the date after mid sem. break		
NOVEMBER	<b>Theory:</b>	Nucleic acids: Structure of nitrogenous bases; Structure and function of nucleotides; Types of nucleic acids; Structure of A, B, Z types of DNA; Types of RNA; Structure of tRNA.  Parametric and non parametric tests and methods  Structure of Dicot and Monocot leaf	B.Sc. Botany (Sem: I)  B.Sc. Botany (Sem: V)  B.Sc. Life Sc. (Sem: III)	CCII, Biomolecules and Cell Biology  DSE-II, Biostatistic  CC-3/Plant Anatomy & Embryology

<b>Practicals:</b>	<p>Mock test.</p> <p>Study of meristems through permanent slides and photographs. Tissues (parenchyma, collenchyma and sclerenchyma); Macerated xylary elements, Phloem (Permanent slides, photographs) Types of ovules: anatropous, orthotropous, circinotropous, amphitropous/ campylotropous.</p> <p>EM of T4 phage, TMV, and lytic and lysogenic life cycles of virus, Study of vegetative and reproductive structure of <i>Nostoc</i>, <i>Chlamydomonas</i>(EM). Lichens: Study of growth forms of lichens (crustose, foliose and fruticose) . Mycorrhiza: ecto mycorrhiza and endo mycorrhiza (Photographs)</p>	<p>B.Sc. Botany (Sem: I)</p> <p>B.Sc. Life Sc. (Sem: III)</p> <p>B.Sc. Life Sc. (Sem: I)</p>	<p>CCII,Biomolecules and Cell Biology</p> <p>CC-3/Plant Anatomy &amp; Embryology</p> <p>CC-I/Biodiversity</p>
<b>Tutorials:</b>	-----		





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

**Name of the Faculty:** Dr. Amit Vashishtha

**Department:** Botany

**Semester :** I/III/V

Month		Topics	Course	Paper
JULY	<b>Theory</b>	General account about the microbes used as biofertilizers,	B.Sc. Life Sciences III sem.	SEC: Biofertilizers
		Nucleus: Nuclear envelope	B.Sc. (H) Biological Sciences, Semester III	Concept of Cell Biology
		The Cell Theory: Prokaryotic and Eukaryotic cells, Cell size and Shape, Eukaryotic cell components.	B.Sc. Life Sciences (V Sem)	Cell and molecular Biology
		Measures of Central Tendency: Mean (Different Types)	B.Sc. (H) Botany Sem. V	Biostatistics
	<b>Practical</b>	Division of Projects Among Students 1. Growing <i>Azolla</i> as biofertilizer in the lab. 2. Effects of different Bio-compost on growth <i>Brassica</i> sp. 3. Vermicomposting Technology Photograph of Arbuscules/Vesicles.	B.Sc. Life Sciences III sem.	SEC: Bio fertilizers
		Introduction to the paper of Cell and molecular Biology	B.Sc. Life Sciences (V Sem)	Cell and molecular Biology
		Introduction and data collection	B.Sc. (H) Botany Sem. V	Biostatistics
	<b>Tutorials</b>			
AUGUST	<b>Theory:</b>	General account about the microbes used as biofertilizers, Rhizobium-Isolation, identification, mass multiplication, carrier based inoculants,	B.Sc. Life Sciences III sem.	SEC: Biofertilizers
		Nucleus: Structure of Nuclear Pore Complex, Nuclear Lamina, Transport across nuclear Membrane, Nucleolus, rRNA processing. Structure and Functions of Cell Membrane,	B.Sc. (H) Biological Sciences, Semester III	Concept of Cell Biology

		Nucleus: Chromatin and DNA Packaging in Eukaryotes, DNA Miescher to Watson and Crick- historic perspective, DNA Structure, Types of DNA, Types of genetic material, Griffith's and Avery's transformation experiment, Hershey-Chase bacteriophage experiment, Nuclear Envelope, NPC, Euchromatin and Heterochromatin, Nucleolus and Ribosomes (Brief)	B.Sc. Life Sciences (V Sem)	Cell and molecular Biology
		Measures of Central Tendency: Mean , Median and Mode (Different Types)	B.Sc. (H) Botany Sem. V	Biostatistics
	<b>Practicals:</b>	<ol style="list-style-type: none"> <li>1. Study of Rhizobium from root nodules of a leguminous plant by Gram Staining method.</li> <li>2. Specimen/Photograph of earthworm</li> <li>3. Observation of Arbuscular Mycorrhizal fungi from roots.</li> <li>4. Projects <ul style="list-style-type: none"> <li>• Growing Azolla as biofertilizer in the lab.</li> <li>• Effects of different Bio-compost on growth <i>Brassica</i> sp.</li> <li>• Vermicomposting Technology</li> </ul> </li> </ol>	B.Sc. Life Sciences III sem.	SEC: Biofertilizers
		<ol style="list-style-type: none"> <li>1. Study the effect of temperature and organic solvent on semipermeable membrane.</li> <li>2. Study of mitosis and meiosis</li> <li>3. To measure the cell size through micrometry.</li> <li>4. To study structure of plant cell</li> </ol>	BSc.Life Sciences (V Sem)	Cell and molecular Biology
		<ol style="list-style-type: none"> <li>1. Collection of data from field (Number of leaves of <i>Catharanthus</i> sp. of 100 plants)</li> <li>2. Taubate data and calculation of mean.</li> <li>3. Collections of data from field (Number of twigs of <i>Catharanthus</i> sp. of 100 plants )</li> <li>4. Taubate data and calculation of mean.</li> </ol>	B.Sc. (H) Botany Sem. V	Biostatistics
	<b>Tutorials:</b>			
SEPTEMBER	<b>Theory:</b>	Mycorrhizal association, Types of Mycorrhizal, Taxonomy, Occurrence and distribution, Phosphorus nutrition,	B.Sc. Life Sciences III sem.	SEC: Biofertilizers
		Cell Membrane: Active and Passive Transport, Proton Pumps associated (Na-K, Ca-calmodulin etc. and their distribution) , Phagocytosis, Pinocytosis and Exocytosis.	B.Sc. (H) Biological Sciences, Semester III	Concept of Cell Biology

		The functions of membranes, Models of membranes structure, The fluidity of membranes, Membrane proteins and their functions, Carbohydrates in membrane (brief), Faces of the membranes, Selective permeability of the membranes, Cell wall (Primary and Secondary)	B.Sc. Life Sciences (V Sem)	Cell and molecular Biology
		Geometric Mean: Merits and Demerits, Measures of Dispersion- Range	B.Sc. (H) Botany Sem. V	Biostatistics
	<b>Practical:</b>	<ol style="list-style-type: none"> <li>1. Isolation of Anabaena from <i>Azolla</i> leaf.</li> <li>2. Specimen/Photograph of <i>Azolla</i></li> <li>3. Isolation of Arbuscular Mycorrhizal fungi spores from rhizospheric soil.</li> <li>4. Filed Visit</li> <li>5. Projects <ul style="list-style-type: none"> <li>• Growing <i>Azolla</i> as biofertilizer in the lab.</li> <li>• Effects of different Bio-compost on growth <i>Brassica</i> sp.</li> <li>• Vermicomposting Technology</li> </ul> </li> </ol>	B.Sc. Life Sciences III sem.	SEC: Biofertilizers
		<ol style="list-style-type: none"> <li>1. Demonstration of Plasmolysis and Deplasmolysis.</li> <li>2. To study structure of NPC, special chromosomes and study of DNA packaging.</li> <li>3. Preparation of mitochondria from cheek epithelial cells.</li> <li>4. To study structure of Animal cell and striated muscle fibre.</li> </ol>	B.Sc. Life Sciences (V Sem)	Cell and molecular Biology
		<ol style="list-style-type: none"> <li>1. Collection of data from field (Number of flowers of <i>Catharanthus</i> sp. of 100 plants)</li> <li>2. Taubate data and calculation of mean.</li> <li>3. Calculation of standard deviation in previous data</li> <li>4. Calculation of standard error in previous data</li> </ol>	B.Sc. (H) Botany Sem. V	Biostatistics
	<b>Tutorials:</b>			
	<b>Assignment :</b>	Assignment topics will be given to Students	B.Sc. Life Sciences III sem.	SEC: Biofertilizers
	<b>OCTOBER</b>	<b>Theory:</b>	<i>Azospirillum</i> : Isolation, mass multiplication and carrier based inoculum and <i>Azotobactor</i> Isolation, mass multiplication and carrier based inoculum	B.Sc. Life Sciences III sem.
		Cell Wall, Distribution, Chemical composition, functions in Prokaryotic and Eukaryotic cells (Primary and Secondary wall), Glycocalyx, Cell-Cell Interaction/ Junctions.	B.Sc. (H) Biological Sciences, Semester III	Concept of Cell Biology
		DNA replication (Prokaryotes and differences from eukaryotes): Bidirectional replication, semiconservative and Semi-discontinuous, RNA priming, Theta mode of replication, Replication of linear dsDNA, replicating the 5' end of linear chromosome including replication enzymes (in brief). Regulation of Gene Expression: Lac Operon	B.Sc. Life Sciences (V Sem)	Cell and molecular Biology

		Standard Deviation, Mean deviation, Quartile deviation-merits and Demerits	B.Sc. (H) Botany Sem. V	Biostatistics
	<b>Practical:</b>	<ol style="list-style-type: none"> <li>1. Test for pH, SO<sub>4</sub>, NO<sub>3</sub> Cl and Organic matter of different compost;</li> <li>2. Biocontrol Photograph-Pherohormones traps, Trichoderma, Pseudomonas, Neem etc.</li> <li>3. Photograph of Biocompost / vermicompost method.</li> <li>5. Projects <ul style="list-style-type: none"> <li>• Growing Azolla as biofertilizer in the lab.</li> <li>• Effects of different Bio-compost on growth <i>Brassica</i> sp.</li> <li>• Vermicomposting Technology</li> </ul> </li> </ol>	B.Sc. Life Sciences III sem.	SEC: Biofertilizers
		<ol style="list-style-type: none"> <li>1. To study prokaryotic cell and Eukaryotic cell</li> <li>2. Study cell organelles.</li> <li>3. Demonstration of Dialysis</li> <li>4. Preparation of the karyotype and Idiogram from somatic metaphase chromosome.</li> </ol>	B.Sc. Life Sciences (V Sem)	Cell and molecular Biology
		<ol style="list-style-type: none"> <li>1. Calculation of correlation of coefficients value by Karl Pearson in previous data</li> <li>2. Calculation of correlation of coefficients value by Spearman's Rank method in previous data</li> </ol>	B.Sc. (H) Botany Sem. V	Biostatistics
	<b>Tutorials:</b>			
	<b>Test</b>	Unit 1 (Except Actinorrhizal symbiosis) ,2,3,4&5	B.Sc. Life Sciences III sem.	SEC: Biofertilizers
NOVEMBER	<b>Theory:</b>	Actinorrhizal symbiosis	B.Sc. Life Sciences III sem.	SEC: Biofertilizers
		Pit connections in Plants and Animals.	B.Sc. (H) Biological Sciences, Semester III	Concept of Cell Biology
		Regulation of Gene Expression: Tryptophan Operon and in Eukaryotes (Brief account)	B.Sc. Life Sciences (V Sem)	Cell and molecular Biology
		Coefficient of variations.	B.Sc. (H) Botany Sem. V	Biostatistics
	<b>Practical:</b>	Class test and Field Visit Report	B.Sc. Life Sciences III sem.	SEC: Biofertilizers

	Revision and Test for all courses	B.Sc. Life Sciences (V Sem)	Cell and molecular Biology
	<ol style="list-style-type: none"> <li>1. Calculation of statistical inference: student's t test in previous data</li> <li>2. Calculation of F value and testing the hypothesis in previous data</li> </ol>	B.Sc. (H) Botany Sem. V	Biostatistics
<b>Tutorials:</b>			



**SEMESTER WISE TEACHING PLAN**  
**(July-Dec 2018)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty:** Dr. Aditi Kothari-Chhajer

**Department:** BOTANY

**Semester :** I/III/V

Month		Topics	Course	Paper
JULY	<b>Theory</b>	Spices-Introduction , Economic importance with special reference to fennel	B.Sc. (H) Botany Sem III	Economic Botany
		Cell Fractionation- Differential and density Gradient centrifugation, sucrose and CsCl <sub>2</sub> density gradient	B.Sc. (H) Botany Sem V	Analytical Techniques in Plant
		Unit 2 : Photosynthesis –an introduction. Photosynthetic equation, structure of chloroplasts	B.sc. (H) Biol.Sc. Sem I	Light and Life
	<b>Practicals</b>	<ul style="list-style-type: none"> <li>Black Pepper (Habit, Sections)</li> </ul>	B.Sc. (H) Botany Sem III	Economic Botany
		<ul style="list-style-type: none"> <li>Study of different microscopic techniques using photographs- Freeze Fracture, freeze etching, negative staining, positive staining</li> </ul>	B.Sc. (H) Botany Sem V	Analytical Techniques
		<ul style="list-style-type: none"> <li>Demonstration of etiolation and de-etiolation</li> </ul>	B.sc. (H) Biol.Sc. Sem I	Light and Life
<b>Tutorials</b>				
AUGUST	<b>Theory:</b>	Spices-Introduction , Economic importance with special reference to black pepper, clove and saffron	B.Sc. (H) Botany Sem III	Economic Botany
		Analytical centrifugation, ultracentrifugation, marker enzymes Unit 3: Radioisotopes-introduction, autoradiography, pulse-chase experiment, uses of autoradiography in biological research	B.Sc. (H) Botany Sem V	Analytical Techniques in Plant
		Light and Dark Reactions, Mechanism of Photolysis of water and oxygen evolution, Q- cycle, O <sub>2</sub> -evolving complex	B.sc. (H) Biol.Sc. Sem I	Light and Life
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>Clove (Habit, sections)</li> <li>Fennel (Habit, Sections)</li> <li>Coffee (Plant Specimen, beans)</li> <li>Tea (Plant Specimens, Section cutting through tea leaves)</li> <li>Coconut (T.S. Nut, Habit Sketch)</li> </ul>	B.Sc. (H) Botany Sem III	Economic Botany
		<ul style="list-style-type: none"> <li>To separate sugars by thin layer chromatography</li> <li>Isolation of chloroplasts by differential centrifugation</li> </ul>	B.Sc. (H) Botany Sem V	Analytical Techniques in Plant

		<ul style="list-style-type: none"> <li>To separate nitrogenous bases by paper chromatography</li> <li>Study of blotting techniques through photographs- Southern, Northern and Western, PCR</li> </ul>		
		<ul style="list-style-type: none"> <li>Chromatographic Separation of chloroplast pigments</li> <li>Hills reaction and study of the effect of light intensity</li> <li>Molls Half leaf experiment (Light and CO<sub>2</sub>)</li> </ul>	B.sc. (H) Biol.Sc. Sem I	Light and Life
SEPTEMBER	<b>Theory:</b>	Essential Oils- Comparision of Essential Oils with Fatty Oils. General Account, Different types of Extraction Methods and Uses of Essential Oils	B.Sc. (H) Botany Sem III	Economic Botany
		Principles and application of Spectrophotometry (UV and VIS) Principles and applications of Paper Chromatography, Column Chromatography, Thin Layer Chromatography, GLC and HPLC, Ion exchange Chromatography, Molecular sieve and affinity chromatography	B.Sc. (H) Botany Sem V	Analytical Techniques in Plant Sciences
		Reaction Centres ,C <sub>3</sub> , C <sub>4</sub> and CAM plants and their comparative account, Photoautotrophs, Photoheterotrophs and chemoautotrophs	B.sc. (H) Biol.Sc. Sem I	Light and Life

	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>Mustard ( Plant Specimen, Seeds, tests of Fats on Crushed seeds )</li> <li>Potato- Habit Sketch, Tuber Morphology, TS through Tuber to show localization of starch grains, W.M Starch Grains, Micro-chemical tests</li> <li>Soybean (habit, Fruit, seed structure, microchemical tests)</li> <li>Groundnut (habit, Fruit, seed structure, microchemical tests)</li> <li>Sugarcane (Habit Sketch, Cane juice, Microchemical tests)</li> </ul>	B.Sc. (H) Botany Sem III	Econom ic Botany
		<ul style="list-style-type: none"> <li>Demonstration of ELISA (through Photographs)</li> <li>To separate chloroplast pigments by column chromatography</li> <li>To estimate protein concentration through Lowrys methods</li> <li>PAGE, DNA Fingerprinting and DNA sequencing ( through photographs)</li> </ul>	B.Sc. (H) Botany Sem V	Analytic al Techniq ues in Plant Science s
		<ul style="list-style-type: none"> <li>Demonstration of oxygen liberation during photosynthesis using <i>Hydrilla</i>.</li> <li>Mesurement of Light using Luxmeter</li> <li>Blackmanns Law of limiting factors (using <i>Hydrilla</i>)</li> </ul>	B.sc. (H) Biol.Sc. Sem I	Light and Life
	<b>Tutorials:</b>			
OCTOBER	<b>Theory:</b>	Drug yielding plants:therapeutic and habit forming drugs with special reference to <i>Cinchona</i> , <i>Digitalis</i> and <i>Papaver</i>	B.Sc. (H) Botany Sem III	Econom ic Botany
		Mass spectrometry,X-Ray diffraction, X-Ray crystallography, Electrophoresis (AGE, PAGE, SDS-PAGE), Blotting Techniques (Northern, Southern and Western)	B.Sc. (H) Botany Sem V	Analytic al Techniq ues in
		Oxygenic and Anoxygenic Photosynthesis, Photoperiodism: SDP,LDP and DNP plants, Vernalization	B.sc. (H) Biol.Sc. Sem I	Light and Life
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>Cereals – Wheat and Rice- Micro-chemical tests, sections</li> <li>Habit sketch of <i>Rosa</i>, <i>Vetiveria</i>, <i>santalum</i> and <i>Eucalyptus</i></li> <li>Specimens, photographs of tapping of Rubber</li> <li>Tobacco-Specimens and Products</li> </ul>	B.Sc. (H) Botany Sem III	Econom ic Botany
		<ul style="list-style-type: none"> <li>To separate DNA (marker) using AGE</li> <li>Study of Fluorescence (microscopic technique) and FISH (using photographs)</li> <li>To separate chloroplast pigments by Column Chromatography</li> </ul>	B.Sc. (H) Botany Sem V	Analytic al Techniq ues in Plant Science s
		<ul style="list-style-type: none"> <li>Study of red and blue light on seed germination and development of pigments</li> <li>Study of photoautotrophic and photosynthetic bacteria, chloroplast, quantasome, bioluminescent plants</li> </ul>	B.sc. (H) Biol.Sc. Sem I	Light and Life



	<b>Tutorials:</b>			
NOVEMBER	<b>Theory:</b>	Drug yielding plants: with special reference to <i>Cannabis</i>	B.Sc. (H) Botany Sem III	Econom ic Botany
		FISH, Chromosome Banding and Chromosome Painting	B.Sc. (H) Botany Sem V	Analytic al Technia
		Discussion of previous years question papers and revision of concepts	B.sc. (H) Biol.Sc. Sem I	Light and Life
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Specimens of <i>Digitalis</i>, <i>Papaver</i> and <i>Cannabis</i></li> <li>• <i>Tectona</i>, <i>Pinus</i>- Specimen and TS of young stem</li> </ul>	B.Sc. (H) Botany Sem III	Econom ic
		<ul style="list-style-type: none"> <li>• Completion of any unfinished practicals</li> </ul>	B.Sc. (H) Botany Sem V	Analytic al Technia
		<ul style="list-style-type: none"> <li>• Revision of experiments and Mock Practical</li> </ul>	B.sc. (H) Biol.Sc. Sem I	Light and Life
	<b>Tutorials:</b>			



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

**Name of the Faculty: Dr. Pooja Gokhale Sinha**

**Department: Botany**

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

**Paper Title: Reproductive Biology of Angiosperms**

**No. of theory classes: 3**

MONTH		Topics	Course	Paper Code/Name
<b>JULY</b>	<b>Theory</b>	<ul style="list-style-type: none"><li>• Structure of flower</li><li>• Structure and function of Anther and its wall layers</li></ul>	B.Sc. (H) Botany	Reproductive Biology of Angiosperms
	<b>Practicals</b>	<ul style="list-style-type: none"><li>• Observe variation in structure and organization of floral parts of different flowers.</li><li>• Observe stage-wise variation in anatomy and ultrastructure of anther and tapetum through permanent slides and electron micrographs</li></ul>	B. Sc. (H) Botany	Reproductive Biology of Angiosperms
<b>AUGUST</b>	<b>Theory:</b>	<ul style="list-style-type: none"><li>• Pollen Biology: Microsporogenesis, MGU</li><li>• Pollen morphology and NPC system</li><li>• Pollen viability, germination and abnormality</li><li>• Structure of ovule</li><li>• Female gametophyte and megasporogenesis</li><li>• Organization of embryo sac and FGU</li></ul>	B. Sc. (H) Botany	Reproductive Biology of Angiosperms
	<b>Practicals:</b>	<ul style="list-style-type: none"><li>• Observe Pollen grains of various plants</li><li>• Pollen germination by using different medium of germination</li><li>• Structure of female gametophyte by permanent slides and electron micrographs</li></ul>	B. Sc. (H) Botany	Reproductive Biology of Angiosperms

<b>SEPTEMBER</b>	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• Types and pollination and associated adaptations</li> <li>• Pollen-pistil interaction and process of fertilization</li> <li>• Self incompatibility: types and genetic mechanisms</li> <li>• Methods to overcome incompatibility with examples</li> </ul>	B. Sc. (H) Botany	Reproductive Biology of Angiosperms
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	<b>Practicals</b>	<ul style="list-style-type: none"> <li>• Observe intra-ovarian pollination, test tube fertilization through photographs/ videos</li> <li>• Observe different pollination mechanisms through photographs/ videos and field visits</li> </ul>	B. Sc. (H) Botany	Reproductive Biology of Angiosperms
<b>OCTOBER</b>	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• Endosperm: types</li> <li>• Embryo: Types of embryogeny and associated structures</li> <li>• Seed: structure, dispersal mechanism</li> <li>• Polyembryony and apomixis</li> </ul>	B. Sc. (H) Botany	Reproductive Biology of Angiosperms
	<b>Practicals</b>	<ul style="list-style-type: none"> <li>• Dissection of embryo at various stages of development from <i>Cucumis</i> and <i>Calliandra</i></li> <li>• Study of seed dispersal mechanism</li> </ul>	B. Sc. (H) Botany	Reproductive Biology of Angiosperms
<b>NOVEMBER</b>	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• Germline transformation: Techniques</li> <li>• Applications in biotechnology</li> </ul>	B. Sc. (H) Botany	Reproductive Biology of Angiosperms
	<b>Practicals</b>	<ul style="list-style-type: none"> <li>• Dissection of endosperm</li> </ul>	B. Sc. (H) Botany	Reproductive Biology of Angiosperms



**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: Functional Ecology (1 theory class)**

MONTH		Topics	Course	Paper Code/Name
<b>JULY</b>	<b>Theory</b>	Introduction to Ecology History and overview of school of thoughts	B.Sc. (H) Bio. Sci.	Functional Ecology
	<b>Practicals</b>	Introduction to community Analysis and plotting of survivorship curves	B.Sc. (H) Bio. Sci.	Functional Ecology
	<b>Tutorials</b>			
<b>AUGUST</b>	<b>Theory:</b>	Levels of organization Community: Characteristics, structure	B.Sc. (H) Bio. Sci.	Functional Ecology
	<b>Practicals:</b>	<ul style="list-style-type: none"><li>• Plotting of Species- area curve by minimal quadrat size</li><li>• Frequency, density and abundance of herbaceous vegetation of SVC campus</li></ul>	B.Sc. (H) Bio. Sci.	Functional Ecology

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



**SEMESTER WISE  
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**Name of the Faculty: Pooja Gokhale**

**Department: Botany**

**Course: B.Sc. (P) Life Sciences, Semester: V**

**Paper: Cell and Molecular Biology (1 theory class)**

MONTH		Topics	Course	Paper Code/Name
<b>JULY</b>	<b>Theory</b>	Introduction to a cell: structure and function Mitochondria: Structure	B. Sc. (P) Life Science	Cell and Molecular Biology
	<b>Practicals</b>	Study of prokaryotic cell, plant cell, animal cell through photographs, micrographs and slides	B. Sc. (P) Life Science	Cell and Molecular Biology
<b>AUGUST</b>	<b>Theory:</b>	Mitochondria: Function, semi-autonomous nature, protein synthesis, mitochondrial DNA Chloroplasts: Structure	B. Sc. (P) Life Science	Cell and Molecular Biology
	<b>Practicals:</b>	Study of ultrastructure of cell organelles through electron micrographs Study of plant and animal cell through temporary mounts and photographs To prepare temporary mount of cheek epithelial cell to observe mitochondria	B. Sc. (P) Life Science	Cell and Molecular Biology
<b>SEPTEMBER</b>	<b>Theory</b>	Chloroplasts: Function, semi-autonomous nature and DNA ER, Golgi bodies: GERL, structure and function	B. Sc. (P) Life Science	Cell and Molecular Biology
	<b>Practical</b>	To study various stages of mitosis by temporary mount of onion root tips To observe meiosis by permanent slides To study effect of organic solvent and	B. Sc. (P) Life Science	Cell and Molecular Biology

		Temperature on membrane permeability. To demonstrate the process of dialysis and plasmolysis		
<b>OCTOBER</b>	<b>Theory</b>	Glyoxisomes, peroxisome: Structure, functions	B. Sc. (P) Life Science	Cell and Molecular Biology
	<b>Practical</b>	Measure cell size by micrometry Observe NPC, polytene and lampbrush chromosome by photographs	B. Sc. (P) Life Science	Cell and Molecular Biology
<b>NOVEMBER</b>	<b>Theory</b>	Lysosomes: Structure and function	B. Sc. (P) Life Science	Cell and Molecular Biology
	<b>Practical</b>	To observe DNA packaging by photographs Preparation of karyotype and idiogram	B. Sc. (P) Life Science	Cell and Molecular Biology





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

**Name of the Faculty: Dr. Neeti Mehla**

**Department: Botany**

**Semester: I/III/V**

**Academic year – 2018 -2019**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<ul style="list-style-type: none"> <li>❖ Introduction to Transcription in prokaryotes</li> <li>❖ Plant water relations- Concept of water potential</li> <li>❖ Cytoplasmic Inheritance- Chloroplast variegation in Chloroplast , Kappa particles in paramecium</li> </ul>	<ul style="list-style-type: none"> <li>❖ BSc.Life Sciences (V Sem)</li> <li>❖ BSc. Botany (H) (V Sem)</li> <li>❖ BSc. Botany (H) (III Sem)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Cell and molecular Biology</li> <li>❖ Plant Physiology</li> <li>❖ Concepts of Genetics</li> </ul>
	<b>Practicals</b>	<p>Introduction to the paper of Cell and molecular Biology</p> <p>Calculation of Stomatal index and frequency from the two surfaces of leaves of a mesophyte and a xerophyte</p> <p>Introduction to Mendel's Monohybrid and Dihybrid ratio. Study of Gene interactions ratios 9:7,15:1</p>	<p>BSc.Life Sciences (V Sem)</p> <p>BSc. Botany (H) (V Sem)</p> <p>Bsc .Botany (H) III Semester</p>	<p>Cell and molecular Biology</p> <p>Plant Physiology</p> <p>Concepts of Genetics</p>
	<b>Tutorials</b>			

AUGUST	<b>Theory:</b>	<ul style="list-style-type: none"> <li>❖ Transcription in prokaryotes and Eukaryotes and their differences</li> <li>❖ Pathway of Water movement, concept of Symplast and Apoplast, Ascent of Sap and Transpiration. Factors affecting transpiration ,mechanism of stomatal movement,Antitranspirants and Guttation</li> <li>❖ 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.</li> </ul>	<ul style="list-style-type: none"> <li>❖ BSc.Life Sciences (V Sem)</li> <li>❖ BSc. Botany (H) (V Sem)</li> <li>❖ BSc. Botany (H) (III Sem)</li> </ul>	<ul style="list-style-type: none"> <li>❖ Cell and Molecular Biology</li> <li>❖ Plant physioplogy</li> <li>❖ Concepts of Genetics</li> </ul>
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<b>Practicals:</b>	<p>Study the effect of temperature and organic solvent on semipermeable membrane.</p> <p>Study of mitosis and meiosis</p> <p>To measure the cell size through micrometry.</p> <p>To study structure of plant cell</p>	BSc.Life Sciences (V Sem)	Cell and Molecular Biology
	<p>Calculation of area of open stoma and percentage of leaf area.</p> <p>Determination of Osmotic potential of plant cell sap by plasmolytic method.</p> <p>Determination of Osmotic potential of given tissue by weight method.</p>	BSc. Botany (H) (V Sem)	Plant physioplogy
	<p>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</p> <p>Pedigree analysis for dominant and recessive autosomal and sex-linked traits.</p> <p>To study various divisional stages of Meiosis using <i>Allium cepa</i> flower buds</p>	BSc. Botany (H) (III Sem)	Concepts of Genetics
<b>Tutorials:</b>			

SEPTEMBER	<b>Theory:</b>	<p>Different types of RNA and Translation in Prokaryotes and Eukaryotes.</p> <p>Translocation in the phloem- Pressure flow model for translocation of photoassimilates from source to sink cells. Phloem loading and Phloem unloading.</p> <p>Detection of mutations- CLB method of mutation. Transposons, DNA repair mechanisms</p> <p>Structural changes in chromosomes- Deletion-definition, causes, mechanism, genetic effects examples and significance.</p> <p>Duplication, inversion and translocation- definition, causes, mechanism, genetic effects, examples and significance.</p> <p>Numerical changes in chromosomes.</p>	<p>❖ BSc. Life Sciences (V Sem)</p> <p>BSc. Botany (H) (V Sem)</p> <p>❖ BSc. Botany (H) (III Sem)</p>	<p>❖ Cell and molecular biology</p> <p>❖ Plant Physiology</p> <p>❖ Concepts of Genetics</p>
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<p><b>Practicals:</b></p>	<p>Demonstration of Plasmolysis and Deplasmolysis.          To study structure of NPC, special chromosomes and study of DNA packaging.          Preparation of mitochondria from cheek epithelial cells.          To study structure of Animal cell And striated muscle fibre.</p> <p>Study of the effect of various environmental factors (light and velocity) on transpiration in an excised twig or leaf.          Study the phenomenon of seed germination (effect of light and darkness)          To study the effect of different concentrations of IAA on Avena coleoptile elongation (IAA Bioassay)</p> <p>Multiple alleles – concept and mechanism, blood typing (A, B, O and Rh factor). Study of various genetic Disorders like Sickle cell Anemia, Xeroderma pigmentosum, Albinism and Red green color Blindness          To study various divisional stages of Meiosis using <i>Allium cepa</i> flower buds</p>	<p>BSc. Botany (H) (III Sem)</p>	<p>Concepts of Genetics</p>
<p><b>Tutorials:</b></p>			
<p><b><u>Assignment:</u></b></p>		<p>Bsc. Botany (H) III Sem</p>	<p>Concepts of Genetics</p>

OCTOBER	<b>Theory:</b>	<p>Genetic Code and principles of microscopy. Confocal microscopy, phase contrast microscopy and fluorescence microscopy. SEM, TEM</p> <p>Physiology of Flowering- Photoperiodism, vernalization, dormancy and Concept of Flowering</p> <p>Numerical changes in chromosomes- euploidy, polyploidy- auto and allopolyploidy, mechanism, non-disjunction of chromosomes and examples- <i>Triticale</i> <i>Gossypium</i> <i>Raphanobrassica</i>, wheat and modern bread wheat.</p> <p>Aneuploidy- causes and mechanism, examples <i>Datura</i> spp., Down syndrome, Turner syndrome and Klinefelter syndrome.</p>	<p>❖ BSc. Life Sciences (V Sem)</p> <p>BSc. Botany (H) (V Sem)</p> <p>❖ BSc. Botany (H) (III Sem)</p>	<p>❖ Cell and Molecular Biology</p> <p>❖ Plant Physiology</p> <p>❖ Concept of genetics</p>
	<b>Practicals:</b>	<p>To study prokaryotic cell and Eukaryotic cell</p> <p>Study cell organelles.</p> <p>Demonstration of Dialysis</p> <p>Preparation of the karyotype and Idiogram from somatic metaphase chromosome.</p> <p>To demonstrate the phenomenon of bolting in any rosette plant.</p> <p>To demonstrate the phenomenon of suction due to transpiration.</p> <p>Demonstration of Fruit ripening</p> <p>Study of Aneuploidy in humans- Down syndrome, Turner syndrome, Klinefelter syndrome. Study of translocation ring and laggard, inversion bridge and multivalents. Meiosis from onion flower buds</p>	<p>BSc. Life Sciences (V Sem)</p> <p>BSc. Botany (H) (V Sem)</p> <p>BSc. Botany (H) (III Sem)</p>	<p>Cell and Molecular Biology</p> <p>Plant Physiology</p> <p>Concepts of Genetics</p>
	<b>Tutorials:</b>			

	<b><u>Test</u></b>		❖ BSc.Botany (H)III sem	Concept of Genetics
NOVEMBER	<b>Theory:</b>	X-ray diffraction analysis.  Phytochrome- Discovery,structure and its mode of action,role in plant responses.  Classical versus molecular concept of gene, complementation test for functional allelism	❖ BSc.Life Sciences (V Sem)  ❖ BSc. Botany (H) (V Sem)  ❖ BSc. Botany (H) (III Sem)	❖ Cell and Molecular Biology  ❖ Plant Physiology  ❖ Concept of Genetics
	<b>Practicals:</b>	Revision and Test for all courses	BSc.Life Sciences (V Sem)  BSc. Botany (H) (V Sem)  BSc. Botany (H) (III Sem)	Cell and Molecular Biology  Plant physiology  Concepts of Genetics
	<b>Tutorials:</b>			



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

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

**Department: Botany**

**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction, definition and application of biostatistics.	B.Sc. Botany (Sem: V)	DSE-II, Biostatistics
		Introduction and historical background of Mendel.	B.Sc. Botany (Sem: III)	CC-VII/Genetics
		Discovery of Viruses and general structure of viruses.	B.Sc. Botany (Sem: I)	CC-I/Microbiology and Phycology.
		Endosperm: General introduction, development &Types	B.Sc. Life Sc. (Sem: III)	CC-3/Plant Anatomy & Embryology
		Introduction to microbial world	B.Sc. Life Sc. (Sem: I)	CC-I/Biodiversity
	<b>Practicals</b>	T.S. of Stem: Monocot: <i>Zea mays</i> ; Dicot: <i>Helianthus</i> T.S. of root: Monocot: <i>Zea mays</i>	B.Sc. Life Sc. (Sem: III)	CC-3/Plant Anatomy & Embryology
		Introduction and data collection	B.Sc. Botany (Sem: V)	DSE-II, Biostatistics
		Study of vegetative and reproductive structures of <i>Oedogonium</i> <i>Rhizopus</i> : Asexual stage from temporary mounts and sexual structures through permanent slides	B.Sc. Life Sc. (Sem: I)	CC-I/Biodiversity
	<b>Tutorials</b>	-----		
	AUGUST	<b>Theory:</b>	Introduction, definition and application of Regression, simple regression equation, fitting prediction	B.Sc. Botany (Sem: V)
Mendelism: History; Principles of inheritance; Chromosome theory of inheritance; Autosomes and sex chromosomes			B.Sc. Botany (Sem: III)	CC-VII, Genetics
Physiochemical and biological characteristics;classification (Baltimore) of Viruses, general structure with special reference to viroids and prions;			B.Sc. Botany (Sem: I)	CC-I/Microbiology and Phycology.
Structure and functions of endosperm; Dicot and monocot embryo; Embryo- endosperm relationship			B.Sc. Life Sc. (Sem: III)	CC-3/Plant Anatomy & Embryology
Viruses — Discovery, general structure, replication (general account), DNA virus (T-phage); Lytic and lysogenic cycle, RNA virus (TMV); Economic importance			B.Sc. Life Sc. (Sem: I)	CC-I/Biodiversity



	<b>Practicals:</b>	<p>Leaf: Dicot and Monocot leaf (only Permanent slides). Adaptive anatomy: Xerophyte (<i>Nerium</i> leaf); Hydrophyte (<i>Hydrilla</i> stem). T.S. of Root: Dicot: <i>Helianthus</i> Structure of anther (young and mature), tapetum (amoeboid and secretory) (Permanent lides)</p> <p>Study of morphology, anatomy and V.S/L.S of reproductive organ in <i>Marchantia</i> .<i>Funaria</i>-Morphology,w.m. leaf,rhizoids, operculum, spores and L.S capsule and permanent slides. Study of vegetative and reproductive structure of <i>Nostoc</i>, <i>Polysiphonia</i> &amp; <i>Vaucheria</i>. <i>Alternaria</i>: Specimens/photographs and tease mounts. <i>Puccinia</i>: Herbarium specimens of Black Stem Rust of Wheat and infected Barberry leaves; section/tease mounts of spores on Wheat and permanent slides of both the hosts. <i>Agaricus</i>: Specimens of button stage and full grown mushroom; Sectioning of gills of <i>Agaricus</i>.</p> <ol style="list-style-type: none"> <li>1. Collection of data from field (Number of leaves of <i>Catharanthus</i> sp. of 100 plants)</li> <li>2. Taubate data and calculation of mean.</li> <li>3. Collections of data from field (Number of twigs of <i>Catharanthus</i> sp. of 100 plants )</li> <li>4. Taubate data and calculation of mean.</li> </ol>	<p>B.Sc. Life Sc. (Sem: III)</p> <p>B.Sc. Life Sc. (Sem: I)</p> <p>B.Sc. Botany (Sem: V)</p>	<p>CC-3/Plant Anatomy &amp; Embryology</p> <p>CC-I/Biodiversity</p> <p>DSE-II, Biostatistic</p>
	<b>Tutorials:</b>	-----		
SEPTEM BER	<b>Theory:</b>	<p>Correlation - types and methods of correlation, similarities and dissimilarities of correlation and regression.</p> <p>Probability and pedigree analysis; Incomplete dominance and codominance; Multiple alleles, Lethal alleles</p> <p>Discovery, general characteristics, types-archaebacteria, eubacteria, cell structure, nutritional types, vegetative and asexual reproduction.</p> <p>Vascular cambium – structure and function, seasonal activity.</p> <p>Bacteria — Discovery, General characteristics and cell structure; Reproduction — vegetative, asexual and recombination (conjugation, transformation and transduction); Economic importance.</p>	<p>B.Sc. Botany (Sem: V)</p> <p>B.Sc. Botany (Sem: III)</p> <p>B.Sc. Botany (Sem: I)</p> <p>B.Sc. Life Sc. (Sem: III)</p> <p>B.Sc. Life Sc. (Sem: I)</p>	<p>DSE-II, Biostatistic</p> <p>CC-VII, Genetics</p> <p>CC-I/Microbiology and Phycology.</p> <p>CC-3/Plant Anatomy &amp; Embryology</p> <p>CC-I/Biodiversity</p>
	<b>Practicals:</b>			

	<b>Practicals:</b>	Study of embryo sac showing egg apparatus by electron micrograph, Study of microsporogenesis through permanent slides, Study of Polygonum type of embryo sac by photographs. Dissection of embryo/endosperm from developing seeds. Calculation of percentage of germinated pollen in a given medium  <i>Selaginella</i> - morphology, w.m. leaf with ligule, T.S. stem, w.m. strobilus, w.m. microsporophyll and megasporophyll (temporary slides), L.S. strobilus (permanent slide). <i>Equisetum</i> - morphology, T.S. internode, L.S. strobilus, T.S. strobilus, w.m. sporangiophore, w.m. spores (wet and dry) (temporary slides); T.S. rhizome (permanent slide). <i>Peris</i> - morphology, t.s. rachis, v.s. sporophyll, w.m. sporangium, w.m. spores (temporary slides), t.s. rhizome, w.m. prothallus with sex organs and young sporophyte (permanent slide).  1. Collection of data from field (Number of flowers of <i>Catharanthus</i> sp. of 100 plants) 2. Tabulate data and calculation of mean. 3. Calculation of standard deviation in previous data 4. Calculation of standard error in previous data	B.Sc. Life Sc. (Sem: III)  B.Sc. Life Sc. (Sem: I)  B.Sc. Botany (Sem: V)	CC-3/Plant Anatomy & Embryology  CC-I/Biodiversity  DSE-II, Biostatistic
	<b>Tutorials:</b>	-----		
	<b>Assignment :</b>	Allotted to students from whole the syllabus.		
OCTOBER	<b>Theory:</b>	Correlation - types and methods of correlation, Similarities and dissimilarities of correlation and regression.  Epistasis, Pleiotropy, Recessive and Dominant traits Penetrance and Expressivity,  Genetic recombination (conjugation, transformation and transduction). Economic importance of viruses with reference to vaccine production, role in research, medicine and diagnostics, as causal organisms of plant diseases  Wood (heartwood and sapwood)  Introduction- General characteristics, ecology and significance, range of thallus organization, cell wall composition, nutrition, reproduction and classification	B.Sc. Botany (Sem: V)  B.Sc. Botany (Sem: III)  B.Sc. Botany (Sem: I)  B.Sc. Life Sc. (Sem: III)  B.Sc. Life Sc. (Sem: I)	DSE-II, Biostatistic  CC-VII, Genetics  CC-I/Microbiology and Phycology.  CC-3/Plant Anatomy & Embryology  CC-I/Biodiversity
	<b>Practicals:</b>	Ultrastructure of mature egg apparatus cells through electron micrographs. Pollination types and seed dispersal mechanisms (including appendages, aril, caruncle) Photographs and specimens.  <i>Cycas</i> - morphology (coralloid roots, bulbil, leaf), t.s. coralloid root, t.s. rachis, v.s. leaflet, v.s. microsporophyll, w.m. spores (temporary slides), l.s. ovule, t.s. root (permanent slide). <i>Pinus</i> - morphology (long and dwarf shoots, w.m. dwarf shoot, male and female), w.m. dwarf shoot, t.s. needle, t.s. stem, l.s./t.s. male cone, w.m. microsporophyll, w.m. microspores (temporary slides), l.s. female cone, t.l.s. & r.l.s. stem (permanent slide)  1. Calculation of correlation of coefficient value by Karl Pearson in previous data 2. Calculation of correlation of coefficients value by Spearman's Rank method in previous data	B.Sc. Life Sc. (Sem: III)  B.Sc. Life Sc. (Sem: I)  B.Sc. Botany (Sem: V)	CC-3/Plant Anatomy & Embryology  CC-I/Biodiversity  DSE-II, Biostatistic
	<b>Tutorials:</b>	-----		

	<b>Test</b>	Fixed the date after mid sem. break		
NOVEMBER	<b>Theory:</b>	<p>student 't' test</p> <p>Polygenic inheritance. Numericals;</p> <p>Economic importance of bacteria with reference to their role in agriculture and industry (fermentation and medicine)</p> <p>Secondary growth in root and stem,</p> <p>True Fungi- General characteristics, ecology and significance, life cycle of <i>Rhizopus</i>. (Zygomycota) <i>Penicillium</i>, <i>Alternaria</i> (Ascomycota), <i>Puccinia</i>, <i>Agaricus</i> (Basidiomycota);</p>	<p>B.Sc. Botany (Sem: V)</p> <p>B.Sc. Botany (Sem: III)</p> <p>B.Sc. Botany (Sem: I)</p> <p>B.Sc. Life Sc. (Sem: III)</p> <p>B.Sc. Life Sc. (Sem: I)</p>	<p>DSE-II, Biostatistic</p> <p>CC-VII, Genetics</p> <p>CC-I/Microbiology and Phycology.</p> <p>CC-3/Plant Anatomy &amp; Embryology</p> <p>CC-I/Biodiversity</p>
	<b>Practicals:</b>	<p>Study of meristems through permanent slides and photographs. Tissues (parenchyma, collenchyma and sclerenchyma); Macerated xylary elements, Phloem (Permanent slides, photographs)</p> <p>Types of ovules: anatropous, orthotropous, circinotropous, amphitropous/ campylotropous.</p> <p>EM of T4 phage, TMV, and lytic and lysogenic life cycles of virus, Study of vegetative and reproductive structure of <i>Nostoc</i>, <i>Chlamydomonas</i>(EM). Lichens: Study of growth forms of lichens (crustose, foliose and fruticose) . Mycorrhiza: ecto mycorrhiza and endo mycorrhiza (Photographs)</p> <ol style="list-style-type: none"> <li>1. Calculation of statistical inference: student's t test in previous data</li> <li>2. Calculation of F value and testing the hypothesis in previous data</li> </ol>	<p>B.Sc. Life Sc. (Sem: III)</p> <p>B.Sc. Life Sc. (Sem: I)</p> <p>B.Sc. Botany (Sem: V)</p>	<p>CC-3/Plant Anatomy &amp; Embryology</p> <p>CC-I/Biodiversity</p> <p>DSE-II, Biostatistic</p>
	<b>Tutorials:</b>	-----		



**SEMESTER WISE  
TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Tabassum Afshan**

**Department: Botany**

**Semester : I/III**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	1. Classification of tissues, Simple and Complex Tissues	B.Sc. Botany (Hons)	CC – V (Anatomy of Angiosperms)
		2. Methodology of Ethnobotanical studies : a). Field work b). Herbarium c). Ancient literature d). Archaeological findings e). Temples and sacred places	B.Sc. Botany (Hons)	SEC - Ethnobotany
		3. General characteristics of Algae	B.Sc. Life Science	CC – 1 / Biodiversity
	<b>Practicals</b>	1. Dicot, Monocot Stem—T.S. Dicot, Monocot Root—T.S.	B.Sc. Botany (Hons)	CC – V (Anatomy of Angiosperms)
		2. Collection methods of plants from the field	B.Sc. Botany (Hons)	SEC - Ethnobotany
		3. <i>Polysphonia</i> , <i>Vaucheria</i> , <i>Oedogonium</i> —temporary preparations and permanent slides	B.Sc. Life Science	CC – 1 / Biodiversity
<b>Tutorials</b>				

AUGUST	<b>Theory:</b>	<p>1. Cytodifferentiation of tracheary elements and Sieve elements, pits and plasmodesmata, Wall ingrowths and transfer cells, adcrustation and incrustation, Ergastic substances.</p> <p>2. Stem : Organisation of shoot apex(Apical cell theory, Histogen theory, Tunica Corpus theory, Continuing meristematic residue, Cytohistological zonation.</p> <p>3.Role of Ethnobotany in modern medicine : Medico Ethnobotanical sources in India, significance of the following plants in Ethnobotanical practices(along with their habitat and morphology)a)<i>Azadirachta indica</i>, b)<i>Ocimum sanctum</i>, c)<i>Vitex negundo</i>, d)<i>Gloriosa superba</i></p> <p>4. Algae -Ecology and distribution, Range of Thallus, Reproduction, Life cycles of <i>Nostoc</i>, <i>Chlamydomonas</i>, <i>Oedogonium</i>, <i>Vaucheria</i></p>	<p>B.Sc. Botany (Hons)</p> <p>B.Sc. Botany (Hons)</p> <p>B.Sc. Life Science</p>	<p>CC – V / Anatomy of Angiosperms</p> <p>SEC : Ethnobotany</p> <p>CC-1 / Biodiversity</p>
	<b>Practicals:</b>	<p>1. Parenchyma, Collenchyma, Sclerenchyma – P.S.</p> <p>2.Periderm,Lenticels, Trichomes, Stomata.</p> <p>3. Dicot, Monocot leaf -T.S.</p> <p>4. Preparation and labelling of Herbarium specimens(10 plants)</p> <p>5. Extraction of crude extracts from various ethnobotanically related plant material</p> <p>6. <i>Nostoc</i>, <i>Chlamydomonas</i> (E.M.)</p> <p><i>Marchantia</i>-morphology of thallus, w.m. rhizoids and scales, v.s. thallus through gemma cup, w.m. gemmae (all temporary slides), v.s. antheridiophore, archegoniophore, l.s. sporophyte (all permanent slides), <i>Funaria</i>-morphology, w.m. leaf, rhizoids, operculum, peristome, annulus, spores (temporary slides), permanent slides showing antheridial and archegonial heads, L.s. capsule and protonema (permanent slides), EM—T-phage, TMV, Bacteria, Binary fission, Conjugation</p>	<p>B.Sc. Botany (Hons.)</p> <p>B.Sc. Botany (Hons.)</p> <p>B.Sc. Life Science</p>	<p>CC – V / Anatomy of Angiosperms</p> <p>SEC : Ethnobotany</p> <p>CC-1 / Biodiversity</p>
	<b>Tutorials:</b>			

SEPTEMBER	<b>Theory:</b>	<p>1. Structure of Dicot and Monocot leaf, Kranz anatomy, Exodermis, Endodermis, Origin of lateral root</p> <p>2. Types of vascular bundles, structure of Dicot and Monocot Stem</p> <p>3. Leaf : Structure of Dicot and Monocot leaf, Kranz Anatomy</p> <p>4. 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</p> <p>5. Significance of following plants e) <i>Tribulus terrestris</i>, f) <i>Pongamia pinnata</i>, g) <i>Cassia auriculata</i>, h) <i>Indigofera tinctoria</i></p> <p>6. Role of Ethnobotany in modern medicine with special example – <i>Rauwolfia serpentine</i>, <i>Trichopus zeylanicus</i>, <i>Artemesia</i>, <i>Withania</i></p> <p>7. Life cycle of <i>Fucus</i>, <i>Polysiphonia</i>, Economic importance of algae, Gymnosperms—general characteristics</p>	B.Sc. Botany (Hons.)	CC – V / Anatomy of Angiosperms
			B.Sc. Botany (Hons.)	SEC : Ethnobotany
			B.Sc. Life Science	CC-1 / Biodiversity

<p><b>Practicals:</b></p>	<p>1. Kranz anatomy, Hydrophytes, Xerophytes, Heartwood, Sapwood, Tyloses, Secretory tissues –Lithocyst, Cavities, Laticifers</p> <p>2. Field Survey and collection of information on Ethnobotanical uses from traditional healers (any 2)</p> <p>3. To develop scientific knowledge of plants used for treatment of various purposes in ancient literature.</p> <p>4. <i>Cycas</i>—morphology (coralloid roots, bulbil, leaf), t.s coralloid roots, v.s. leaflets, v.s. microsporophyll, w.m. spores (temporary slides), t.s. rachis, L.s. ovule, t.s. root (permanent slide), Photograph of Lytic and Lysogenic Cycle, <i>Rhizopus</i> and <i>Penicillium</i>—Asexual stage from temporary mounts and sexual structures through permanent slides, <i>Alternaria</i>—specimen and tease mounts, <i>Puccinia</i>—Herbarium specimen of Black Stem Rust of Wheat and infected Barberry leaves, section, tease mounts of spores on wheat and permanent slides of both the hosts, <i>Agaricus</i>—specimens of button stage and full grown Mushrooms, section of gills of <i>Agaricus</i></p>	<p>B.Sc. Botany (Hons.)</p> <p>B.Sc. Botany (Hons.)</p> <p>B.Sc. Life Science</p>	<p>CC – V / Anatomy of Angiosperms</p> <p>SEC Ethnobotany</p> <p>CC-1 / Biodiversity</p>
<p><b>Tutorials:</b></p>			
<p><b><u>Assignment :</u></b></p>	<p>Entire syllabus</p>		

OCTOBER	<b>Theory:</b>	<p>1. Vascular Cambium – Structure, Function and Seasonal Activity of Cambium, Secondary growth in root and Stem.</p> <p>2. Wood – Axially and radially oriented elements, types of rays and axial Parenchyma, cyclic aspects and reaction wood, sap wood and heart wood, ring and diffuse porous wood, early and late wood, tyloses, dendrochronology</p> <p>3. 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</p> <p>4. Gymnosperms—classification, morphology, anatomy and reproduction of <i>Cycas</i> and <i>Pinus</i> Ecological and economical importance</p>	<p>B.Sc. Botany(Hons.)</p> <p>B.Sc. Botany (Hons)</p> <p>B.Sc. Life Science</p>	<p>CC – V / Anatomy of Angiosperms</p> <p>SEC : Ethnobotany</p> <p>CC-1 / Biodiversity</p>
	<b>Practicals:</b>	<p>1. Epidermal hairs, Trichomes, Maceration, Ring porous, Diffuse porous (Photographs)</p> <p>2. Knowledge of some plants used in various ceremonies</p> <p>3. <i>Selaginella</i>—morphology, w.m. leaf with ligule, w.m. strobilus, w.m. microsporophyll, megasporophyll (temporary slides), t.s. stem, l.s. strobilus (permanent slides), <i>Pteris</i>—Morphology, V.s sporophyll, w.m. sporangium, w.m. spores (temporary slides), t.s. rachis, t.s. rhizome, w.m. prothallus with sex organs (permanent slides), <i>Pinus</i>—morphology, t.s. needle, l.s./t.s. male cone, w.m. microsporophyll, w.m. microspores (temporary slides), t.s. stem, t.l.s. and r.l.s. stem, l.s. female cone (permanent slides), <i>Equisetum</i>—morphology, l.s. strobilus/ t.s. strobilus, w.m. sporangiophore, w.m. spores (wet and dry), t.s. internode, t.s. rhizome (permanent slide), Gram staining, structure of root nodule</p>	<p>B.Sc. Botany(Hons.)</p> <p>B.Sc. Botany (Hons)</p> <p>B.Sc. Life Science</p>	<p>CC – V / Anatomy of Angiosperms</p> <p>SEC : Ethnobotany</p> <p>CC-1 / Biodiversity</p>
	<b>Tutorials:</b>			



	<b><u>Test</u></b>	Entire syllabus			
NOVEMBER	<b>Theory:</b>	1.Periderm – Development and composition of Periderm, Rhytidome and lenticels  2.Ethnobotany and legal aspects – Biopiracy, Intellectual property rights and traditional knowledge  3. Gymnosperm –ecological and economic importance, classification of Algae—Fritsch	B.Sc. Botany (Hons)  B.Sc. Botany (Hons)  B.Sc. Life Science	CC—V/Anatomy of Angiosperms  SEC :Ethnobotany  CC-1 / Biodiversity	
	<b>Practicals:</b>	1.Apical meristem of root, shoot (Photographs), Vascular cambium  2. <i>Fucus</i> —specimen and permanent slides, lichen –specimen, mycorrhiza—ecto and endo(photographs), structure of root nodule	B.Sc. Botany (Hons)  B.Sc. Life Science	CC—V/Anatomy of Angiosperms  CC-1 / Biodiversity	
	<b>Tutorials:</b>				



**SEMESTER WISE  
TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty:**

**Department:**

**Semester : II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	<b>Theory</b>			
	<b>Practicals</b>			
	<b>Tutorials</b>			
FEBRUARY	<b>Theory:</b>			
	<b>Practicals:</b>			
	<b>Tutorials:</b>			

	<b><u>Assignment :</u></b>			
MARCH	<b>Theory:</b>			
	<b>Practicals:</b>			
	<b>Tutorials:</b>			
	<b><u>Test</u></b>			
APRIL	<b>Theory:</b>			
	<b>Practicals:</b>			
	<b>Tutorials:</b>			

MAY	<b>Theory:</b>			
	<b>Practicals:</b>			
	<b>Tutorials:</b>			



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Sunita Yadav**

**Department: Botany**

**Semester : I/III/V 2018**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Unit 4: Introduction to syllabus and paper, Introduction to epidermis, cuticle	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
		Unit 4: Introduction to archegoniatae, unifying features of archegoniatae, transition to land habit	B.Sc. (P) Life Science Semester I	Biodiversity
		Unit 6: Structure and properties of enzymes	GE-III	Plant physiology and metabolism
	<b>Practicals</b>	Study of monocot stem ( <i>Zea mays</i> ) and dicot stem ( <i>Helianthus annuus</i> ) through temporary stained preparation	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
		Study of prokaryotic cell, plant cell, animal cell through photographs, micrographs and slides	B.Sc. (P) Life Science Semester V	Cell and Molecular Biology
		Classes started from July 31, 2018	GE-III	Plant physiology and metabolism
	<b>Tutorials</b>	-----		
AUGUST	<b>Theory:</b>	Unit 4: Trichomes, hairs, stomata (types, Metcalfe and Chalk classification)	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
		Unit 4: Alternation of generations Unit 6: General characteristics, classification, early land plants ( <i>Cooksonia</i> and <i>Rhynia</i> ); Classification till family, morphology, anatomy, reproduction of <i>Selaginella</i> , <i>Equisetum</i> , <i>Pteris</i>	B.Sc. (P) Life Science Semester I	Biodiversity
		Unit 6: Mechanism of enzyme catalysis and inhibition Unit 7: Biological nitrogen fixation, nitrate and ammonium assimilation Unit 8: Physiological roles of auxins, gibberellins	GE-III	Plant physiology and metabolism

	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>Study of monocot root (<i>Zea mays</i>) and dicot root (<i>Helianthus annuus</i>) through temporary stained preparation</li> <li>Study of secondary growth in stem and root of <i>Helianthus</i> through temporary stained preparation</li> <li>Study of monocot, dicot leaf, meristems, tissues (parenchyma, collenchyma and sclerenchyma), xerophyte (<i>Nerium</i>), hydrophyte (<i>Hydrilla</i>) through permanent slides</li> </ul> <ul style="list-style-type: none"> <li>Study of ultrastructure of cell organelles through electron micrographs</li> <li>Study of plant and animal cell through temporary mounts and photographs</li> <li>To prepare temporary mount of cheek epithelial cell to observe mitochondria</li> </ul> <ul style="list-style-type: none"> <li>Comparison of the rate of respiration in any two parts of a plant.</li> <li>To study the effect of two environmental factors (light and wind) on transpiration by excised twig</li> <li>To demonstrate hill reaction</li> <li>To determine osmotic potential of plant cell sap by plasmolytic method.</li> </ul>	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
	<b>Tutorials:</b>	-----		
SEPTEMBER	<b>Theory:</b>	Unit 4, 6: General account of adaptations in xerophytes and hydrophytes ( <i>Nerium</i> , <i>Opuntia</i> , <i>Hydrilla</i> , <i>Nymphaea</i> ), pollination mechanisms and adaptation	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
		Unit 6: Heterospory and seed habit, stellar evolution, ecological and economic importance of pteridophytes	B.Sc. (P) Life Science Semester I	Biodiversity
		Unit 8: Physiological roles of cytokinins, ABA, ethylene Unit 9: Photoperiodism, phytochrome, red and far red responses on photomorphogenesis, vernalization Unit 1: Importance of water, water potential and its components, Transpiration, Root pressure, Guttation	GE-III	Plant physiology and metabolism

	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Study of macerated xylary and phloem elements through temporary stained preparations</li> <li>• Calculation of percentage of germinated pollen in a given medium</li> <li>• Dissection of embryo and endosperm from developing seeds</li> </ul> <ul style="list-style-type: none"> <li>• To study various stages of mitosis by temporary mount of onion root tips</li> <li>• To observe meiosis by permanent slides</li> <li>• To study effect of organic solvent and temperature on membrane permeability.</li> <li>• To demonstrate the process of dialysis and plasmolysis</li> </ul> <ul style="list-style-type: none"> <li>• To study the activity of catalase</li> <li>• To study the effect of pH on catalase</li> <li>• To study the effect of enzyme concentration on catalase</li> </ul>	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
	<b>Tutorials:</b>	-----		
	<b>Assignment :</b>	Given to all students for respective papers		
OCTOBER	<b>Theory:</b>	Unit 6: Double fertilization, seed structure and appendages	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
		Unit 3: Symbiotic association (Lichens), Mycorrhiza, ectomycorrhiza and endomycorrhiza and their significance	B.Sc. (P) Life Science Semester I	Biodiversity
		Unit 2: Essential elements, macro and micronutrients, criteria of essentiality of elements, role of essential elements Unit 3: Composition of phloem sap, girdling experiment, pressure flow model, phloem loading and unloading Unit 5: Glycolysis, anaerobic respiration	GE-III	Plant physiology and metabolism
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Study of structure of young and mature anther, amoeboid and secretory tapetum through permanent slides</li> <li>• Study of types of ovules, <i>Polygonum</i> type of embryo sac development, pollination types and seed dispersal mechanisms (aril, caruncle) through photographs and specimens</li> <li>• Study of ultrastructure of mature egg apparatus cells through EM</li> </ul> <ul style="list-style-type: none"> <li>• Measure cell size by micrometry</li> <li>• Observe NPC, polytene and lampbrush chromosome by photographs</li> </ul> <ul style="list-style-type: none"> <li>• To demonstrate bolting</li> <li>• To demonstrate effect of auxins on rooting</li> <li>• To demonstrate suction due to transpiration</li> </ul>	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
			B.Sc. (P) Life Science Semester V	Cell and Molecular Biology
			GE-III	Plant physiology and metabolism
	<b>Tutorials:</b>	-----		
	<b>Test</b>	Conducted for all papers		

NOVEMBER	<b>Theory:</b>	Breif account of dispersal mechanisms	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
		Doubts and revision of syllabus	B.Sc. (P) Life Science Semester I	Biodiversity
		Unit 5: TCA cycle, oxidative phosphorylation	GE-III	Plant physiology and metabolism
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Revision and test</li> <li>• To observe DNA packaging by photographs</li> <li>• Preparation of karyotype and idiogram</li> <li>• Repetitions of experiments which students feel</li> <li>• Revision and test</li> </ul>	B.Sc. (P) Life Science Semester III	Plant Anatomy and embryology
			B.Sc. (P) Life Science Semester V	Cell and Molecular Biology
			GE-III	Plant physiology and metabolism
	<b>Tutorials:</b>	-----		



**CHEMISTRY TEACHING  
PLAN**

**ALL TEACHERS**

**2018-19- ODD SEMESTER**



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE-2018-19**

Name of the Faculty: **Dr. R. P. SINGH**      Department: **CHEMISTRY**

Semester : **I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<b>Carbonyl Compounds:</b> Structure, reactivity, preparation and properties; Nucleophilic additions, Nucleophilic addition-elimination reactions with ammonia derivatives with mechanism;	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II
	<b>Practicals</b>			
AUGUST	<b>Theory</b>	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, $\alpha$ -substitution reactions, oxidations and reductions (Clemmensen, Wolff-Kishner, $\text{LiAlH}_4$ , $\text{NaBH}_4$ , MPV, PDC), Addition reactions of unsaturated carbonyl compounds: Michael addition.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II
	<b>Practicals:</b>	Acetylation of amines and phenols Benzoylation of amines and phenols.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II LAB
		To perform quantitative estimation of protein using Lowry's method Study of the action of salivary amylase on starch at optimum conditions.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	Determination of the critical solution temperature and composition of the phenol water system and study of the effect of impurities on it.  2.Perform the following conductometric titrations: i.Strong acid vs. strong base ii.Weak acid vs. strong base	B.Sc. life science (prog.) II Year, Semester III	CHEMISTRY CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY	
SEPTEMBER	<b>Theory</b>	Active methylene compounds: Keto-enol tautomerism. Preparation and synthetic applications of diethyl malonate and ethyl acetoacetate.  <b>Carboxylic acids and their Derivatives:</b>  General methods of preparation, physical properties and reactions of monocarboxylic acids, effect of substituents on acidic strength.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II

	<b>Practicals</b>	Selective reduction of <i>meta</i> dinitrobenzene to <i>m</i> -nitroaniline Hydrolysis of amides and esters	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II LAB
		Effect of temperature on the action of salivary amylase. Study of the titration curve of glycine.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Perform the following potentiometric titrations: (i).Strong acid vs. strong base (ii)Weak acid versus strong base. Determination of the concentration of glycine solution by formylation method. Differentiation between a reducing and non-reducing sugar.	B.Sc. life science (prog.) II Year, Semester III	CHEMISTRY CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY
	<b>Assignment</b>	Halogenated Hydrocarbons and Carbonyl Compounds	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II
OCTOBER	<b>Theory</b>	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.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II
	<b>Practicals:</b>	Semicarbazone preparation S-Benzylisothiuronium salt of water soluble and water insoluble acids Nitration of nitrobenzene, Iodoform reaction, Aldol condensation.  Estimation of glycine by Sorenson's formalin method. Saponification value of an oil or a fat. Determination of Iodine number of an oil/ fat.  Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons)	B.Sc. CHEMISTRY (Hons.) II Year, Semester III  B.Sc. CHEMISTRY (Hons.) III Year, Semester V  B.Sc. life science (prog.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II LAB  CHEMISTRY - C XI: ORGANIC CHEMISTRY IV  CHEMISTRY CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY
	<b>Test</b>	Halogenated Hydrocarbons and Carbonyl Compounds	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II
NOVEMBER	<b>Theory:</b>	Mechanism of acidic and alkaline hydrolysis of esters. Claisen condensation, Dieckmann and Reformatsky reactions, Hofmann-bromamide degradation and Curtius rearrangement.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II

<b>Practicals:</b>	Functional group tests for alcohols, phenols, carbonyl and carboxylic acid group	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CC-VI : ORGANIC CHEMISTRY-II LAB
	Isolation and characterization of DNA from onion/ cauliflower/peas.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons)	B.Sc. life science (prog.) II Year, Semester III	CHEMISTRY CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY



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

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

Department: **Chemistry**

Semester : **I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	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 <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Practicals</b>	(A) Titrimetric Analysis (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality	B.Sc. (H) Chemistry I <sup>st</sup> Year, Semester-I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Inorganic preparations (i) Cuprous Chloride, Cu <sub>2</sub> Cl <sub>2</sub>	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Tutorials</b>			
AUGUST	<b>Theory:</b>	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 <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Practicals:</b>	(B) Acid-Base Titrations Principles of acid-base titrations to be discussed. (i) Estimation of sodium carbonate using standardized HCl. (ii) Estimation of carbonate and hydroxide present together in a mixture. (iii) Estimation of carbonate and bicarbonate present together in a mixture.	B.Sc. (H) Chemistry I <sup>st</sup> Year, Semester-I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Preparations: (ii) Manganese(III) phosphate, MnPO <sub>4</sub> .H <sub>2</sub> O  (iii) Aluminium potassium sulphate KAl(SO <sub>4</sub> ) <sub>2</sub> .12H <sub>2</sub> O (Potash alum)  Estimation of Zn <sup>2+</sup> Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Tutorials:</b>			

SEPTEMBER	<b>Theory:</b>	Chemistry of <i>p</i> -Block Elements: Electronic configuration, atomic and ionic size, metallic/non-metallic character, melting point, ionization enthalpy, electron gain enthalpy, electronegativity, Catenation, Allotropy of C, P, S; inert pair effect, diagonal relationship between B and Si and anomalous	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Practicals:</b>	(iv) Estimation of free alkali present in different soaps/detergents (C) Oxidation-Reduction Titrimetry Principles of oxidation-reduction titrations (electrode potentials) to be discussed. (i) Estimation of Fe(II) and oxalic acid using standardized KMnO <sub>4</sub> solution	B.Sc. (H) Chemistry I <sup>st</sup> Year, Semester-I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Estimation of Mg <sup>2+</sup> Complexometric titrations using disodium salt of EDTA  Estimation of Ca <sup>2+</sup> Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Tutorials:</b>			
	<b>Assignment</b> :	Chemistry of <i>s</i> and <i>p</i> block elements	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
OCTOBER	<b>Theory:</b>	Structure, bonding and properties: Acidic/basic nature, stability, ionic/covalent nature, oxidation/reduction, hydrolysis, action of heat of the following: • Hydrides: hydrides of Group 13 (only diborane), Group 14, Group 15 (EH <sub>3</sub> where E = N, P, As, Sb, Bi), Group 16 and Group 17. • Oxides: oxides of phosphorus, sulphur and chlorine	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Practicals:</b>	(ii) Estimation of oxalic acid and sodium oxalate in a given mixture	B.Sc. (H) Chemistry I <sup>st</sup> Year, Semester-I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Estimation of Cu(II) and K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> using sodium thiosulphate solution (Iodometrically)	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Tutorials:</b>			

	<b><u>Test</u></b>	Chemistry of <i>s</i> and <i>p</i> block elements	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
NOVEMBER	<b>Theory:</b>	<ul style="list-style-type: none"> <li>• Oxoacids: oxoacids of phosphorus and chlorine; peroxyacids of sulphur</li> <li>• Halides: halides of silicon and phosphorus</li> </ul>	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Practicals:</b>	(iii) Estimation of Fe(II) with K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> using internal indicator (diphenylamine, Nphenylanthranilic acid) and discussion of external indicator	B.Sc. (H) Chemistry I <sup>st</sup> Year, Semester-I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Estimation of antimony in tartar-emetie iodimetrically	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Tutorials:</b>			



**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	<b>Theory</b>	(iii) <i>Metallic Bond</i> : Qualitative idea of valence bond and band theories.	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		<i>Section A: Inorganic Chemistry-3</i> (30 Lectures) Transition Elements (3d series) General group trends	B.Sc.(P) Life Science III year	<b>DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCKELEMENTS, QUANTUM CHEMISTRY &amp; SPECTROSCOPY</b>
	<b>Practicals</b>	(A) Titrimetric Analysis (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
		(iii) Aluminium potassium sulphate $KAl(SO_4)_2 \cdot 12H_2O$ (Potash alum) or Chrome alum.	B.Sc. (H) Chemistry II Year	<b>Practical C – V Lab:</b>
		Synthesis of silver nanoparticles	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
	<b>Tutorials</b>			
AUGUST	<b>Theory:</b>	Semiconductors and insulators, defects in solids. (iv) <i>Weak Chemical Forces</i> : van der Waals	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		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	<b>DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCKELEMENTS, QUANTUM CHEMISTRY &amp; SPECTROSCOPY</b>



	<b>Practicals:</b>	(B) Acid-Base Titrations Principles of acid-base titrations to be discussed. (i) Estimation of sodium carbonate using standardized HCl. (ii)	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
		Sol-gel methods, Hydrothermal method, Ion-exchange and Intercalation methods. Inorganic solids of technological importance: Solid	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
		<b>B) Complexometric titrations using disodium salt of EDTA</b> (i) Estimation of Mg <sup>2+</sup> ,	B.Sc. (H) Chemistry II Year	<b>Practical C – V Lab:</b>
	<b>Tutorials:</b>			
SEPTEMBER	<b>Theory:</b>	induced dipole interaction. Hydrogen bonding (theories of	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Lanthanoids and actinoids: Electronic configurations,	B.Sc.(P) Life Science III year	<b>DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCKELEMENTS, QUANTUM</b>
	<b>Practicals:</b>	(iv) Estimation of free alkali present in different soaps/detergents (C) Oxidation-Reduction Titrimetry Principles of oxidation-reduction titrations (electrode potentials) to be discussed. (i) Estimation of Fe(II) and oxalic acid using standardized KMnO <sub>4</sub> solution	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab

		<b>C) Inorganic preparations</b> (i) Cuprous Chloride, $\text{Cu}_2\text{Cl}_2$ <b>A) Iodo / Iodimetric Titrations</b> (i) Estimation of Cu(II) using sodium thiosulphate	B.Sc. (H) Chemistry II Year	<b>Practical C – V Lab:</b>
		Determination of total difference of solids.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
	<b>Tutorials:</b>			
	<b>Assignment :</b>			
OCTOBER	<b>Theory:</b>	Effects of weak chemical forces, melting and boiling points, solubility,	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		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	B.Sc.(P) Life Science III year	<b>DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCKELEMENTS, QUANTUM CHEMISTRY &amp; SPECTROSCOPY</b>
	<b>Practicals:</b>	(ii) Estimation of oxalic acid and sodium oxalate in a given mixture	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
		(ii) Estimation of antimony in tartar- emetic iodimetrically	B.Sc. (H) Chemistry II Year	<b>Practical C – V Lab:</b>
		Synthesis of hydrogel by co-precipitation method.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS

	<b>Tutorials:</b>			
	<b>Test</b>			
NOVEMBER	<b>Theory:</b>	energetics of dissolution process.	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Factors affecting the magnitude of D. Spectrochemical series. Comparison of CFSE for <i>Oh</i> and <i>Td</i> complexes, Tetragonal distortion of	B.Sc.(P) Life Science III year	<b>DSE CHEMISTRY 11 CHEMISTRY OF d-BLOCKELEMENTS, QUANTUM CHEMISTRY &amp; SPECTROSCOPY</b>
	<b>Practicals:</b>	(iii) Estimation of Fe(II) with K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> using internal indicator (diphenylamine, Nphenylanthranilic acid) and discussion of external	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
		(ii) Manganese(III) phosphate, MnPO <sub>4</sub> .H <sub>2</sub> O	B.Sc. (H) Chemistry II Year	CHEMISTRY - C V: INORGANIC CHEMISTRY II
		Synthesis of gold metal nanoparticles	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
	<b>Tutorials:</b>			



**SEMESTER WISE TEACHING PLAN**  
**Academic year 2018-2019 (Odd Semester)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Sanjay Kumar**

**Department: CHEMISTRY**

**Semester: I/IIIV**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<b>Gaseous state:</b> Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path and viscosity of gases, including their temperature and pressure dependence, relation between mean free path and coefficient of viscosity, Calculation of $\sigma$ from $\eta$ ; variation of viscosity with temperature and pressure. Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat	B.Sc. CHEMISTRY (Hons.) II Year, Semester I	C II: PHYSICAL CHEMISTRY - I: States of Matter & Ionic Equilibrium
	<b>Practical</b>	Determination of the Critical Solution temperature and composition of the phenol water system.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III
		Introductory class	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	Paper 19-CHHP 513: Physical Chemistry -IV
		Introductory class	B.Sc. CHEMISTRY (Hons.) III Year, Semester I	C II: PHYSICAL CHEMISTRY I - States of Matter & Ionic Equilibrium
AUGUST	<b>Theory:</b>	<b>Gaseous state:</b> 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. Equation of states for real gases; van der Waals equation of state, its derivation and application in explaining real gas behaviour, Virial coefficients, calculation of Boyle temperature. Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical	B.Sc.(P) LIFE SCIENCES, Semester III	C II: PHYSICAL CHEMISTRY - I: States of Matter & Ionic Equilibrium

	<b>Practical:</b>	<p>Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it</p> <p>To study changes in conductance in the following systems:</p> <p>(i) strong acid-strong base (ii) weak acid-strong base (iii) mixture of strong acid and weak acid-strong base</p> <p><b>1. Surface tension measurements using Stalagmometer.</b> (i) Determine the surface tension of aqueous solutions by (i) drop number (ii) drop weight method. (ii) Study the variation of surface tension with different concentration of detergent solutions. Determine CMC.</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. CHEMISTRY (Hons.) III Year Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) III Year Semester I</p>	<p>CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III</p> <p>Paper 19-CHHP 513: Physical Chemistry -IV</p> <p>C II: PHYSICAL CHEMISTRY I - States of Matter &amp; Ionic Equilibrium</p>
SEPTEMBER	<b>Theory:</b>	<p><b>Ionic equilibria:</b> 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; dissociation constants of mono and diprotic acids. Salt hydrolysis- calculation of hydrolysis constant, degree of hydrolysis and pH for different salts.</p>	B.Sc.(P) LIFE SCIENCES, Semester III	C II: PHYSICAL CHEMISTRY - I: States of Matter & Ionic Equilibrium
	<b>Practical</b>	<p>Construction of the phase diagram using cooling curves or ignition tube method: a. simple eutectic and b. congruently melting systems</p> <p>(i) Study the kinetics of Acid hydrolysis of methyl acetate with hydrochloric acid, volumetrically. (ii) Study the kinetics of Acid hydrolysis of methyl acetate with sulphuric acid, volumetrically (iii) Study the kinetics of alkaline hydrolysis of ethyl acetate (saponification)</p> <p><b>Viscosity measurement using Ostwald's viscometer.</b> (i) Determination of co-efficient of viscosity of an unknown aqueous solution. (ii) Study the variation of co-efficient of viscosity with different concentration of Poly Vinyl Alcohol (PVA) and determine molar mass of PVA.</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. CHEMISTRY (Hons.) III Year Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) III Year Semester I</p>	<p>CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III</p> <p>Paper 19-CHHP 513: Physical Chemistry -IV</p> <p>C II: PHYSICAL CHEMISTRY I - States of Matter &amp; Ionic Equilibrium</p>

		(iii) Study the variation of viscosity with different concentration of sugar solutions.		
	<b><u>Assignment</u></b>			
OCTOBER	<b>Theory:</b>	<b>Ionic equilibria:</b> Buffer solutions; derivation of Henderson equation and its applications. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.	B.Sc.(P) LIFE SCIENCES, Semester III	C II: PHYSICAL CHEMISTRY - I: States of Matter & Ionic Equilibrium

	<p><b>Practicals:</b></p>	<p>Perform the following potentiometric titrations: i. Strong acid vs. strong base ii. Weak acid vs. strong base</p> <p>Study the kinetics Iodide-persulphate reaction using Initial rate method and Integrated rate method.</p> <p>Revisionary exercises.</p> <p><b>pH-metry:</b> (i) Study the effect of addition of HCl/NaOH on pH to the solutions of acetic acid, sodium acetate and their mixtures. (ii) Preparation of buffer solutions of different pH values (a) Sodium acetate-acetic acid (b) Ammonium chloride-ammonium hydroxide</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. CHEMISTRY (Hons.) III Year Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) III Year Semester I</p>	<p>CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III</p> <p>Paper 19-CHHP 513: Physical Chemistry -IV</p> <p>C II: PHYSICAL CHEMISTRY I - States of Matter &amp; Ionic Equilibrium</p>
	<p><b><u>Test</u></b></p>			
<p>NOVEMBER</p>	<p><b>Theory:</b></p>	<p><b>Ionic equilibria:</b> Qualitative treatment of acid – base titration curves (calculation of pH at various stages). Theory of acid–base indicators; selection of indicators and their limitations.</p>	<p>B.Sc. Life Science (prog.) II Year, Semester III</p>	<p>C II: PHYSICAL CHEMISTRY - I: States of Matter &amp; Ionic Equilibrium</p>

	<b>Practicals:</b>	Perform the potentiometric titration of Dibasic acid vs. strong base  Mock Practical   Revisionary exercise and Mock practical	B.Sc. CHEMISTRY (Hons.) III Year, Semester III   B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III   Paper 19-CHHP 513: Physical Chemistry -IV
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**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**

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

Semester: **I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<b>Amino acids, Polypeptides and Proteins:</b> Preparations, properties and reactions of amino acids. Correlation of Configuration. ( 5 lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	<b>Practical</b>	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.) IIIrd Year, Semester V	CHEMISTRY PRACTICAL – DSE II LAB: GREEN CHEMISTRY
		<b>Organic preparations:</b> i. Acetylation of one of the following compounds: amines (aniline, o-, m-, p-toluidines and o-, m-, p-anisidine) and phenols ( $\beta$ -naphthol, vanillin, salicylic acid) by any one method:  a. Using conventional method. b. Using green approach	B.Sc. CHEMISTRY (Hons.) IIInd Year, Semester III	CHEMISTRY -CVI: Organic Chemistry II
AUGUST	<b>Theory:</b>	<b>Amino acids, PolyPeptides and Proteins:</b> 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(12 Lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV

	<b>Practical:</b>	<p>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</p>	<p>B.Sc.  CHEMISTRY  (Hons.) III Year,  Semester V</p>	<p>CHEMISTRY - C XI:  ORGANIC CHEMISTRY  IV</p>
		<p>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.</p>	<p>B.Sc.  CHEMISTRY  (Hons.) IIIrd  Year,  Semester V</p>	<p>CHEMISTRY  PRACTICAL – DSE II  LAB: GREEN  CHEMISTRY</p>
		<p><b>Functional group tests:</b>  for Alcohols, phenols, Carbonyl and carboxylic acid group</p> <p>ii. Benzoylation of one of the following amines (aniline, o-, m-, p- toluidines and o-, m, p-anisidine) and one of the following phenols (<math>\beta</math>-naphthol, resorcinol, p- cresol) by Schotten-Baumann reaction.</p> <p>iii)Hydrolysis of esters and amides  iv). Oxidation of ethanol/ isopropanol (Iodoform reaction).</p>	<p>B.Sc.  CHEMISTRY  (Hons.) IIInd  Year,  Semester III</p>	<p>CHEMISTRY -CVI:  Organic Chemistry II</p>

SEPTEMBER	<b>Theory:</b>	<p><b>Enzymes :</b> 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)</p> <p><b>Nucleic Acids:</b> Components of nucleic acids, Nucleosides and nucleotides;</p> <p>Structure, synthesis and reactions of: Adenine, Guanine, Cytosine, Uracil and Thymine.(6 Lectures)</p>	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
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	<b>Practicals:</b>	<p>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.</p> <p>Preparation and characterization of nano particles of gold using tea leaves.</p> <p>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<sup>-</sup> → propene + trimethylpropene + water</p> <p>iv. Selective reduction of meta dinitrobenzene to m-nitroaniline. v. Semicarbazone of any one of the following compounds:</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) IIInd Year,</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY</p> <p>CHEMISTRY - C VI:</p>

		acetone, ethyl methyl ketone, cyclohexanone, benzaldehyde. Any pending Work From previous Month. vi) <b>S-Benzylisothiuronium salt of one each of water soluble and water insoluble acids (benzoic acid, oxalic acid, phenyl acetic acid and phthalic acid).</b>	Semester III	ORGANIC CHEMISTRY III
	<b><u>Assignment :</u></b>			
OCTOBER	<b>Theory:</b>	<b>Structure of polynucleotides (DNA and RNA). (2 Lectures)</b> <b>Concept of Energy in Biosystems:</b> 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 <sup>+</sup> , FAD. Conversion of food to energy: Outline of catabolic pathways of carbohydrate- glycolysis, fermentation, Krebs cycle. Caloric value of food, standard caloric content of food types. (8 Lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	<b>Practicals:</b>	Determination of Iodine number of an oil/ fat. Any pending work  Extraction of D-limonene from orange peel using liquid CO <sub>2</sub> prepared from dry ice.  Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II).	B.Sc. CHEMISTRY (Hons.) III Year, Semester V  B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV  CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY

		viii. Aldol condensation using either conventional or green method Any pending Work from previous Month	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester III	CHEMISTRY - C VI: ORGANIC CHEMISTRY III
	<b><u>Test</u></b>			
NOVEMBER	<b>Theory:</b>	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
	<b>Practicals:</b>	Mock Practicals	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Mock Practicals	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C VI: ORGANIC CHEMISTRY III
		Mock Practicals	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester III	CHEMISTRY - C VI: ORGANIC CHEMISTRY III

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**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr.SHEFALI SHUKLA**

**Department: CHEMISTRY**

**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction to Green Chemistry.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	<b>Practicals</b>	To perform quantitative estimation of protein using Lowry's method	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Benzoylation of one of the following amines (aniline, o-, m-, p- toluidines and o-, m, p-anisidine) and one of the following phenols ( $\beta$ -naphthol, resorcinol, p- cresol) by Schotten-Baumann reaction.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C VI: ORGANIC CHEMISTRY II
		Estimation of oxalic acid by titrating it with $KMnO_4$	B.Sc. life science (prog.) I Year, Semester I	Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry & Aliphatic hydrocarbons.
Estimation of oxalic acid by titrating it with $KMnO_4$	GE-I: Atomic structure, Bonding, General Organic Chemistry	Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry & Aliphatic hydrocarbons.		
AUGUST	<b>Theory:</b>	<b>Principles of Green Chemistry</b> (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

	<b>Practicals:</b>	<p>Estimation of glycine by Sorenson's formalin method.</p> <p>Study of the titration curve of glycine.</p> <p>Isolation and characterization of DNA from cauliflower/peas.</p> <p><b>Organic preparations:</b></p> <p>i. Acetylation of one of the following compounds: amines (aniline, o-, m-, p-toluidines and o-, m-, p-anisidine) and phenols (<math>\beta</math>-naphthol, vanillin, salicylic acid) by any one method:</p> <p>a. Using conventional method. b. Using green approach</p> <p>ii. hydrolysis of amides and esters</p> <p>i. Estimation of Fe(II) ions by titrating it with <math>K_2Cr_2O_7</math> using internal indicator. ii. Estimation of water of crystallization of Mohr salt by titrating with <math>KMnO_4</math> iii. Purification of organic compound by crystallisation</p> <p>i. Estimation of Fe(II) ions by titrating it with <math>K_2Cr_2O_7</math> using internal indicator. ii. Estimation of water of crystallization of Mohr salt by titrating with <math>KMnO_4</math> iii. Purification of organic compound by crystallisation</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. life science (prog.) I Year, Semester I</p> <p>GE-I: Atomic structure, Bonding, General Organic Chemistry</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>C VI: ORGANIC CHEMISTRY II</p> <p>Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry &amp; Aliphatic hydrocarbons.</p> <p>Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry &amp; Aliphatic hydrocarbons.</p>
SEPTEMBER	<b>Theory:</b>	<p>Prevention of chemical accidents</p> <p>Strengthening/ development of analytical techniques</p> <p>Examples of Green Synthesis/ Reactions</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p>	<p>CHEMISTRY-DSE: GREEN CHEMISTRY</p>
	<b>Practicals:</b>	<p>Study of the action of salivary amylase on starch at optimum conditions.</p> <p>Effect of temperature on the action of salivary amylase.</p> <p>Saponification value of an oil or a fat.</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p>



	<p>i. Selective reduction of meta dinitrobenzene to m-nitroaniline.</p> <p>ii. <b>Semicarbazone of any one of the following compounds:</b> acetone, ethyl methyl ketone, cyclohexanone, benzaldehyde.</p> <p>iii Oxidation of ethanol/ isopropanol (Iodoform reaction).</p> <p>Any pending Work From previous Month.</p>	B.Sc. (Hons) Chemistry II Year, Semester III	C VI: ORGANIC CHEMISTRY II
	<p>i. Criteria of Purity: Determination of Melting point and Boiling point</p> <p>ii. Detection of extra elements in organic compounds</p> <p>iii. Estimation of sodium carbonate and sodium hydrogen carbonate in the given mixture</p>	B.Sc. life science (prog.) I Year, Semester I	Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry & Aliphatic hydrocarbons.
	<p>i. Criteria of Purity: Determination of Melting point and Boiling point</p> <p>ii. Detection of extra elements in organic compounds</p> <p>iii. Estimation of sodium carbonate and sodium hydrogen carbonate in the given mixture</p>	GE-I: Atomic structure, Bonding, General Organic Chemistry	Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry & Aliphatic hydrocarbons.
<b><u>Assignment :</u></b>	Principles of Green Chemistry	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY

OCTOBER	<b>Theory:</b>	Future Trends in Green Chemistry	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY-DSE: GREEN CHEMISTRY
	<b>Practicals:</b>	<p>Determination of Iodine number of an oil/ fat.</p> <p>Any pending work from the previous months</p> <p>S-Benzylisothiuronium salt of one each of water soluble and water insoluble acids (benzoic acid, oxalic acid, phenyl acetic acid and phthalic acid).</p> <p>Functional group tests for alcohols, phenols, carbonyl and carboxylic acid group.</p> <p>i. Estimation of Cu(II) ions iodometrically using <math>\text{Na}_2\text{S}_2\text{O}_3</math>.</p> <p>ii. Separation of mixtures by Chromatography: a) Identify and separate the components of the given mixture of two amino acids by paper chromatography b) Identify and separate the components of the given mixture of two sugars by paper chromatography</p> <p>i. Estimation of Cu(II) ions iodometrically using <math>\text{Na}_2\text{S}_2\text{O}_3</math>.</p> <p>ii. Separation of mixtures by Chromatography: a) Identify and separate the components of the given mixture of two amino acids by paper chromatography</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. life science (prog.) I Year, Semester I</p> <p>GE-I: Atomic structure, Bonding, General Organic Chemistry</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>C VI: ORGANIC CHEMISTRY II</p> <p>Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry &amp; Aliphatic hydrocarbons.</p> <p>Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry &amp; Aliphatic hydrocarbons.</p>

		b) Identify and separate the components of the given mixture of two sugars by paper chromatography		
	<b><u>Test</u></b>	Principles of Green Chemistry Atom economy, green solvents	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	DSE: GREEN CHEMISTRY
NOVEMBER	<b>Theory:</b>	Green chemistry in sustainable development	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
	<b>Practicals:</b>	Practice Exercise	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Aldol condensation using either conventional or green method	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C VI: ORGANIC CHEMISTRY II
		Practice Exercise		
		Practice Exercise	B.Sc. life science (prog.) I Year, Semester I	Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry & Aliphatic hydrocarbons.
		Practice Exercise	GE-I: Atomic structure, Bonding, General Organic Chemistry	Chemistry Lab: Atomic structure, Bonding, General Organic Chemistry & Aliphatic hydrocarbons.



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

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

Department: **CHEMISTRY**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<b>Phase Equilibria:</b> Concept of phases, components and degrees of freedom, derivation of Gibbs Phase Rule for nonreactive and reactive systems	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
	<b>Practicals</b>	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
		Determination of critical solution temperature and composition at CST of the phenol water	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III Lab
		Determine the surface tension by (i) drop number	B.Sc. CHEMISTRY (Hons.) I Year, Semester I	C II: PHYSICAL CHEMISTRY I lab
AUGUST	<b>Theory:</b>	Clausius-Clapeyron equation and its applications. Phase diagram for one component systems. Phase diagrams for systems of solid-liquid equilibria involving eutectic, congruent and incongruent melting points.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
		Phases, components and degrees of freedom of a system, criteria of phase equilibrium. Gibbs Phase	GE III, II Year, Semester III	GE III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES

	<b>Practicals:</b>	<p>Handling numeric data: Spreadsheet software (Excel) Plotting graphs using a spreadsheet. Graphical solution of equations. Numeric modelling</p> <p>To study the effect of impurities of sodium chloride and succinic acid on critical solution</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p>	<p>SEC: IT SKILLS FOR CHEMISTS</p> <p>C – VII: PHYSICAL CHEMISTRY III Lab</p>
SEPTEMBER	<b>Theory:</b>	<p>Three component systems: triangular plots, water-chloroform-acetic acid system. Binary solutions: Gibbs-Duhem- Margules equation, its derivation and applications to fractional distillation of binary miscible liquids (ideal and non ideal), azeotropes,</p> <p>Derivation of Clausius – Clapeyron equation and its importance in phase equilibria.</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>GE III, II Year, Semester III</p>	<p>C – VII: PHYSICAL CHEMISTRY III</p> <p>GE III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; BIOMOLECULES</p>
	<b>Practicals:</b>	<p>Numerical curve fitting, linear regression numerical differentiation integration</p> <p>Phase equilibria: Construction of the phase diagram using cooling curves or ignition tube method: b. congruently melting systems. Perform the following potentiometric titrations ii. Weak acid vs. strong base iii. Dibasic acid vs. strong base</p> <p><b>Viscosity measurement using Ostwald's viscometer.</b> a. Determination of coefficient of viscosity of an unknown aqueous solution. b. Study the variation of coefficient of viscosity with different concentration of Poly</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. CHEMISTRY (Hons.) I Year, Semester I</p>	<p>SEC: IT SKILLS FOR CHEMISTS</p> <p>C – VII: PHYSICAL CHEMISTRY III Lab</p> <p>C II: PHYSICAL CHEMISTRY I lab</p>

	<b><u>Assignment</u></b> :		B.Sc. CHEMISTRY (Hons.) II Year, Semester III  GE III, II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III  GE III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
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OCTOBER	<b>Theory:</b>	Lever rule, partial miscibility of liquids, CST, miscible pairs, steam distillation. Nernst distribution law: its derivation and applications	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III
		Phase Diagram of two component systems involving eutectics, congruent and points (leadsilver, FeCl <sub>3</sub> -H <sub>2</sub> O)	GE III, II Year, Semester III	GE III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
	<b>Practicals:</b>	<p>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.</p> <p>Study the equilibrium of at least one of the following reactions by the distribution method: (i) I<sub>2</sub> (aq) + I<sup>-</sup> (aq) → I<sub>3</sub><sup>-</sup> Perform the following potentiometric titrations: iv. Potassium dichromate vs. Mohr's salt</p> <p><b>pH metry:</b> a. Study the effect of addition of HCl/NaOH on pH to the solutions of acetic acid, sodium acetate and their mixtures. b. Preparation of buffer solutions of different pH values i. Sodium acetate-acetic acid ii. Ammonium chloride-ammonium hydroxide c. pH metric titration of (i) strong acid with strong base, (ii) weak acid with strong base.</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>B.Sc. CHEMISTRY (Hons.) I Year, Semester I</p>	<p>SEC: IT SKILLS FOR CHEMISTS</p> <p>C – VII: PHYSICAL CHEMISTRY III Lab</p> <p>C II: PHYSICAL CHEMISTRY I lab</p>

	<b><u>Test</u></b>		B.Sc. CHEMISTRY (Hons.) II Year, Semester III  GE III, II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III  GE III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
NOVEMBER	<b>Theory:</b>	<b>Surface chemistry</b>  Phase Diagram of incongruent melting system (Na-K)	B.Sc. CHEMISTRY (Hons.) II Year, Semester III  GE III, II	C – VII: PHYSICAL CHEMISTRY III  GE III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &
	<b>Practicals:</b>	Presentation: Presentation graphics  Practice Exercise  Determination of dissociation constant of a weak acid.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III  B.Sc. CHEMISTRY (Hons.) II Year, Semester III  B.Sc. CHEMISTRY (Hons.) I Year, Semester I	SEC: IT SKILLS FOR CHEMISTS  C – VII: PHYSICAL CHEMISTRY III Lab  C II: PHYSICAL CHEMISTRY I lab





**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	<b>Theory</b>	Liquid state: Qualitative treatment of the structure of the liquid state; physical properties of liquids	B.Sc. (Hons.) Chemistry sem 1	CC-II: Physical chemistry-I
	<b>Theory</b>	Postulates of quantum mechanics, Wave-particle duality	B.Sc. (P) Life Sci. sem 5	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
	<b>Practicals</b>	1. Determination of co-efficient of viscosity of an unknown aqueous solution	B.Sc. (Hons.) Chemistry sem 1	CC-II: Physical chemistry-I
	<b>Practicals</b>	General instructions, theory of complexometric titrations	BSc (P) Life Sci. Semester V	Chemistry DSE-11
	<b>Practicals</b>	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

AUGUST	<b>Theory:</b>	<ol style="list-style-type: none"> <li>1. coefficient of viscosity, and its determination.</li> <li>2. Effect of addition of various solutes on viscosity.</li> <li>3. Temperature variation of viscosity of liquids and comparison with that of gases.</li> <li>4. surface tension and its determination.</li> <li>5. Effect of addition of various solutes on surface tension</li> <li>6. Explanation of cleansing action of detergents.</li> <li>7. vapour pressure and its determination</li> </ol>	B.Sc. (Hons.) Chemistry sem 1	CC-II: Physical chemistry-I
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<p><b>Theory</b></p>	<p>quantum mechanical operators, Free particle. Particle in a 1-D box (complete solution), quantization, normalization of wavefunctions, concept of zero-point energy. Spectroscopy and its importance in chemistry. Wave-particle duality. Link between spectroscopy and quantum chemistry. Electromagnetic radiation and its interaction with matter. Types of spectroscopy. Difference between atomic and molecular spectra. Born-Oppenheimer approximation: Separation of molecular energies into translational, rotational, vibrational and electronic components  <i>Rotational Motion:</i> Schrodinger equation of a rigid rotator and brief discussion of its results (solution not required). Quantization of rotational energy levels. Microwave (pure rotational) spectra of diatomic molecules. Selection rules. Structural information derived from rotational spectroscopy</p>	<p>B.Sc. (P) Life Sci. sem 5</p>	<p>DSE Chemistry -11  CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY &amp; SPECTROSCOPY</p>
<p><b>Practicals:</b></p>	<ol style="list-style-type: none"> <li>1. Study the variation of co-efficient of viscosity with different concentration of Poly Vinyl Alcohol (PVA) and determine molar of PVA.</li> <li>2. Study the variation of viscosity with different concentration of sugar solutions.</li> <li>3. Determination of surface tension by drop weight method</li> </ol>	<p>B.Sc. (Hons.) Chemistry sem 1</p>	<p>CC-II: Physical chemistry-I</p>

	<b>Practicals</b>	<ol style="list-style-type: none"> <li>1. Estimation of Zn<sup>+</sup> ions by complexometric titrations using EDTA</li> <li>2. Estimation of the amount of nickel present in a given solution as bis(dimethylglyoximate) nickel(II) or aluminium as oxinate in a given solution gravimetrically</li> </ol>	BSc (P) Life Sci. Semester V	Chemistry DSE-11
	<b>Practicals</b>	<p>study of the effect of impurities on <i>cst.</i></p> <p>c) Study of the variation of mutual solubility temperature with concentration for the phenol water system and determination of the critical solubility temperature</p> <p>I. Determination of cell constant, equivalent conductance, degree of dissociation and dissociation constant of a weak acid.</p> <p>11. Perform the following conductometric titrations:</p> <p>i. Strong acid vs. strong base</p>	BSc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY-H
SEPTEMBER	<b>Theory:</b>	<b>Solid state:</b> 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	B.Sc. (Hons.) Chemistry sem 1	CC-II: Physical chemistry-I

	<b>Theory</b>	<i>Vibrational Motion:</i> Schrodinger equation of a linear harmonic oscillator and brief discussion of its results (solution not required). Quantization of vibrational energy levels. Selection rules, IR spectra of diatomic molecules. Structural information derived from vibrational spectra. Vibrations of polyatomic molecules. Group frequencies. Effect of hydrogen bonding (inter- and intramolecular) and substitution on vibrational frequencies.	B.Sc. (P) Life Sci. sem 5	DSE Chemistry -11  CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
	<b>Practicals:</b>	1. Determination of surface tension by drop number method 2. Study the variation of surface tension of detergent solution with different concentration. 3. Study the effect of addition of HCl/NaOH on pH to the solutions of acetic acid, sodium acetate and their mixtures.	B.Sc. (Hons.) Chemistry sem 1	CC-II: Physical chemistry-I
	<b>Practicals</b>	1. - Lambert Beer Law for Potassium permanganate 2. Lambert Beer Law for potassium dichromate 3. Job's method for iron-salicylic acid complex	BSc (P) Life Sci. Semester V	Chemistry DSE-11

	<b>Practicals</b>	ii. Weak acid vs. strong base conductometry Potentiometry Perform the following potentiometric titrations: i. Strong acid vs. strong base Weak acid vs. strong base I Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons) and preparation of one derivative.	B.Sc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY - H
	<b>Assignment :</b>	Assignment no. 1 to be given		
OCTOBER	<b>Theory:</b>	qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law, a simple account of rotating crystal method and powder pattern method. Analysis of powder diffraction patterns of NaCl, CsCl and KCl	B.Sc. (Hons.) Chemistry sem 1	CC-II: Physical chemistry-I
	<b>Theory</b>	<i>Electronic Spectroscopy:</i> Electronic excited states. Free Electron model and its application to electronic spectra of polyenes. Colour and constitution, chromophores, auxochromes, bathochromic and hypsochromic shifts.	B.Sc. (P) Life Sci. sem 5	DSE Chemistry -11 CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY

	<b>Practicals:</b>	<p>1. Preparation of buffer solutions of different pH values i. Sodium acetate-acetic acid ii. Ammonium chloride-ammonium hydroxide</p> <p>2. pH metric titration of (i) strong acid with strong base, (ii) weak acid with strong base.</p> <p>3. Determination of dissociation constant of a weak acid.</p>	B.Sc. (Hons.) Chemistry sem 1	CC-II: Physical chemistry-I
	<b>Practicals:</b>	<ol style="list-style-type: none"> <li>vibration-rotation spectrum of HCl(g)</li> <li>Study the 200-500 nm absorbance spectra of <math>\text{KMnO}_4</math> and <math>\text{K}_2\text{Cr}_2\text{O}_7</math> (in 0.1 M <math>\text{H}_2\text{SO}_4</math>) and determine the <math>\lambda_{\text{max}}</math> values. Calculate the energies of the two transitions in different units (J molecule<sup>-1</sup>, kJ mol<sup>-1</sup>, cm<sup>-1</sup>, eV).</li> <li>Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of <math>\text{K}_2\text{Cr}_2\text{O}_7</math>.</li> <li>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.</li> </ol>	BSc (P) Life Sci. Semester V	Chemistry DSE-11

	<b>Practicals</b>	I Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons) and preparation of one derivative. II 1. Determination of the concentration of glycine solution by formylation method 2. Action of salivary amylase on starch	BSc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY
	<b>Test</b>	To be Scheduled after mid-sem break		
NOVEMBER	<b>Theory:</b>	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 5	DSE Chemistry -11  CHEMISTRY OF d-BLOCK ELEMENTS, QUANTUM CHEMISTRY & SPECTROSCOPY
	<b>Practicals:</b>	Differentiation between a reducing and non-reducing sugar	BSc (P) Life Sci. Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP ORGANIC CHEMISTRY





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

Name of the Faculty: Dr. Shikha Gulati

Department: Chemistry

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Conventional heat and beat methods, Co-precipitation method,	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
	<b>Practicals</b>	Synthesis of silver nanoparticles	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
		Estimation of (i) Mg <sup>2+</sup> or (ii) Zn <sup>2+</sup> by complexometric titrations using EDTA.	B.Sc. (P) Life Science III year	Chemistry Lab
		Determination of pH of soil samples.	B.Sc. (P) Life Science III year SEC	Basic Analytical Chemistry Lab
	<b>Tutorials</b>	NA	NA	NA
AUGUST	<b>Theory:</b>	Sol-gel methods, Hydrothermal method, Ion-exchange and Intercalation methods. (10 Lectures) Inorganic solids of technological importance:	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
	<b>Practicals:</b>	Determination of cation exchange method	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
		Estimation of the amount of nickel present in a given solution as bis(dimethylglyoximate) nickel(II) or aluminium as oxinate in a given solution gravimetrically.  Estimation of total hardness of a given	B.Sc. (P) Life Science III year	Chemistry Lab

		Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration	B.Sc. (P) Life Science III year SEC	Basic Analytical Chemistry Lab
	<b>Tutorials:</b>	NA	NA	NA
SEPTEMBER	<b>Theory:</b>	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 antisical nanomaterials, bionano composites. (10 Lectures) Introduction to engineering materials for mechanical construction: Composition, mechanical and fabricating characteristics and applications of various types of cast irons, plain carbon and alloy steels, copper, aluminum and their alloys like duralumin, brasses and bronzes cutting tool materials, super alloys thermoplastics, thermosets and composite materials.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
	<b>Practicals:</b>	Determination of total difference of solids.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS

		Study the 200-500 nm absorbance spectra of $\text{KMnO}_4$ and $\text{K}_2\text{Cr}_2\text{O}_7$ (in 0.1 M $\text{H}_2\text{SO}_4$ ) and determine the $\lambda_{\text{max}}$ values. Calculate the energies of the two transitions in different units (J molecule <sup>-1</sup> , kJ mol <sup>-1</sup> , cm <sup>-1</sup> , eV). II. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of $\text{K}_2\text{Cr}_2\text{O}_7$ . III. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde,	B.Sc. (P) Life Science III year	Chemistry Lab
		Determination of pH, acidity and alkalinity of a water sample. Determination of dissolved oxygen (DO) of a water sample.	B.Sc. (P) Life Science III year SEC	Basic Analytical Chemistry Lab
	<b>Tutorials:</b>	NA	NA	NA
	<b>Assignment :</b>	NOVEL INORGANIC SOLIDS	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
OCTOBER	<b>Theory:</b>	Composite materials: Introduction, limitations of conventional engineering materials, role of matrix in composites, classification, matrix materials, reinforcements, metal-matrix composites, polymer-matrix composites, fibre-reinforced composites, environmental effects on composites, applications of composites. Speciality polymers: Conducting polymers - Introduction, conduction mechanism, polyacetylene, polyparaphenylene and polypyrrole,	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS

	<b>Practicals:</b>	Synthesis of hydrogel by co-precipitation method.	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
		Verify Lambert-Beer's law and determine the concentration of CuSO <sub>4</sub> /KMnO <sub>4</sub> /K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> in a solution of unknown	B.Sc. (P) Life Science III year	Chemistry Lab
		Paper chromatographic separation of mixture of metal ion (Ni <sup>2+</sup> and Co <sup>2+</sup> ). Spectrophotometric determination of Iron in Vitamin / Dietary Tablets.  Determination of ion exchange capacity of <del>anion / cation exchange</del>	B.Sc. (P) Life Science III year SEC	Analytical Chemistry Lab
	<b>Tutorials:</b>	NA	NA	NA
	<b>Test</b>	NOVEL INORGANIC SOLIDS	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
NOVEMBER	<b>Theory:</b>	Applications of conducting polymers, Ion-exchange resins and their applications. Ceramic & Refractory: Introduction, classification, properties, raw materials,	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY-DSE 1: NOVEL INORGANIC SOLIDS
	<b>Practicals:</b>	Synthesis of gold metal nanoparticles	B.Sc. (Hons.) Chemistry III Year	CHEMISTRY PRACTICAL - DSE LAB: NOVEL INORGANIC SOLIDS
		Analyse the given vibration-rotation spectrum of HCl(g)	B.Sc. (P) Life Science III year	Chemistry Lab
		To study the use of phenolphthalein in trap cases. To carry out analysis of gasoline.	B.Sc. (P) Life Science III year SEC	Analytical Chemistry Lab
	<b>Tutorials:</b>	NA	NA	NA



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

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

**Department: Chemistry**

**Semester: I/III/V**

Month		Topic	Course	Paper
July	<b>Theory:</b>	Carboxylic Acid: <i>Preparation:</i> Acidic and Alkaline hydrolysis of esters.	B.Sc (P) Life Science Semester III	Solution Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II Phase
		Carboxylic Acid: <i>Preparation:</i> Acidic and Alkaline hydrolysis of esters.	B.Sc (H) Generic Elective Semester III	Solution Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II Phase
	<b>Practicals:</b>	Perform the following potentiometric titrations: Strong acid vs. strong base	B. Sc. (P) Life Sciences II year, Semester III	Solution Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II Phase
		Sharda Maam		
		Harsh		
		Determination of pH of soil samples.	B.Sc. (P) Life Science III year, Semester V, SEC	Basic Analytical Chemistry Lab
<b>Tutorials:</b>	NA	NA	NA	
August	<b>Theory:</b>	Carboxylic Acid: <i>Reactions:</i> Hell — Vohlard - Zelinsky Reaction, Acidity of carboxylic acid, effect of substitution on acid strength.	B. Sc (P) Life Science Semester III	Solution Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II Phase
		Carboxylic Acid: <i>Reactions:</i> Hell — Vohlard - Zelinsky Reaction, Acidity of carboxylic acid, effect of substitution on acid strength.  Amines and Diazonium Salts: <i>Preparation:</i> from alkyl halides, Gabriel's Phthalimide synthesis, Hofmann Bromamide reaction. <i>Reactions:</i> Hofmann vs. Saytzeff elimination, Carbylamine test, Hinsberg test, reaction with HNO <sub>2</sub> , Schotten — Baumann	B. Sc (H) Generic Elective Semester III	Solution Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II Phase

		<p>Reaction. Electrophilic substitution (case aniline): nitration, bromination, sulphonation basic character of amines..</p> <p>Diazonium salts: <i>Preparation:</i> from aromatic amines.</p> <p><i>Reactions:</i> conversion to benzene, phenol, dyes.</p>		
	<b>Practicals:</b>	<p>Determination of CST of phenol-water system. Effect of impurities on CST of phenol-water system.</p> <p>Potentiometric titrations Weak acid vs. strong base Functional group determination.</p>	B. Sc. Life Sciences II year, Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		Sharda Maam		
		Harsh		
		Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration	B.Sc. (P) Life Science III year , Semester V, SEC	Basic Analytical Chemistry Lab
	<b>Tutorials:</b>	NA	NA	NA
September	<b>Theory:</b>	<p>Amines and Diazonium Salts: <i>Preparation:</i> from alkyl halides, Gabriel's Phthalimide synthesis, Hofmann Bromamide reaction.</p> <p><i>Reactions:</i> Hofmann vs. Saytzeff elimination,</p>	B. Sc (P) Life Science Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		<p>Amino Acids, Peptides and Proteins: Zwitterion, Isoelectric point and Electrophoresis, <i>Preparation of Amino Acids:</i> Strecker synthesis using Gabriel's phthalimide synthesis. <i>Reactions of Amino acids:</i> ester of -COON group, acetylation of —NH<sub>2</sub> group, complexation with Cu<sup>2+</sup> 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-</p>	B. Sc (H) Generic Elective Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II

		protection (t-butyloxycarbonyl and phthaloyl) t C- activating groups and Merrifield solid-phase synthesis.		
	<b>Practicals:</b>	Conductometric titrations of strong acid vs strong base, Functional group analysis. Cooling curves	B. Sc. Life Sciences II year, Semester III	CHEMISTRY LAB: Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		Sharda Maam		
		Harsh		
		Determination of pH, acidity and alkalinity of a water sample. Determination of dissolved oxygen (DO) of a water sample.	B.Sc. (P) Life Science III year, Semester V, SEC	Basic Analytical Chemistry Lab
	<b>Tutorials:</b>	NA	NA	NA
	<b>Assignment</b>		B. Sc. Life Sciences II year, Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	<b>Assignment</b>	Assignment-I	B.Sc (H) Generic Elective Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
October	<b>Theory:</b>	Amines and Diazonium Salts cont.: Carbylamine test, Hinsberg test, reaction with HNO <sub>2</sub> , Schotten — Baumann Reaction. Electrophilic substitution (case aniline): nitration, bromination, sulphonation basic character of amines.. Diazonium salts: <i>Preparation:</i> from aromatic amines. <i>Reactions:</i> conversion to benzene, phenol, dyes.	B. Sc. Life Sciences II year, Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		Carbohydrates: Classification, and General Properties, Glucose and Fructose (open chain and cyclic structure), Determination of configuration of monosaccharides, absolute configuration of Glucose and Fructose,	B.Sc (H) Generic Elective Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II

		Mutarotation, ascending and descending in monosaccharides. Structure of disaccharides (sucrose, cellobiose, maltose, lactose) and polysaccharides (starch and cellulose) excluding their structure elucidation.		
	<b>Practicals:</b>	Determination of the concentration of glycine solution by formylation method Action of salivary amylase on starch Differentiation between a reducing and non-reducing sugar	B. Sc. Life Sciences II year, Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		Sharda Maam		
		Harsh		
		Paper chromatographic separation of mixture of metal ion (Ni <sup>2+</sup> and Co <sup>2+</sup> ). Spectrophotometric determination of Iron in Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible).	B.Sc. (P) Life Science III year, Semester V, SEC	Basic Analytical Chemistry Lab
	<b>Tutorials:</b>	NA	NA	NA
	<b>Test</b>		B. Sc. Life Sciences II year, Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
	<b>Test</b>		B.Sc (H) Generic Elective Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
November	<b>Theory:</b>		B. Sc. Life Sciences II year, Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
			B.Sc (H) Generic Elective Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II



	<b>Practicals:</b>	Practice Exercise	B. Sc. Life Sciences II year, Semester III	Solution Phase Equilibrium, Conductance, Electrochemistry and Functional Group Organic Chemistry-II
		To study the use of phenolphthalein in trap cases. To carry out analysis of gasoline.	B.Sc. (P) Life Science III year, Semester V, SEC	Basic Analytical Chemistry Lab
	<b>Tutorials:</b>	NA	NA	NA



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE-2018-19**

Name of the Faculty: Dr. POOJA

Department: CHEMISTRY

Semester: I/III/V

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<p><b>Lipids:</b> Introduction to oils and fats; common fatty acids present in oils and fats,</p> <p>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,</p> <p>Amino Acids, Peptides and Proteins: Zwitterion, Isoelectric point and Electrophoresis</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. Biological sciences, I Year, Semester I</p> <p>B.Sc. Life Sciences, II Year, Semester III</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>BS-C1: CHEMISTRY ORGANIC CHEMISTRY</p> <p>SOLUTIONS, PHASE EQUILIBRIUM..... &amp; FUNCTIONAL GROUP ORGANIC CHEMISTRY-II</p>
	<b>Practicals</b>	<p>Isolation and characterization of DNA from onion/ cauliflower/peas.</p> <p>Preparation and characterization of biodiesel from vegetable oil/ waste cooking oil.</p> <p>Estimation of Mohr's salt by titrating with <math>KMnO_4</math></p> <p>Determination of pH of soil samples.</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. life science (prog.) I Year, Semester I</p> <p>B.Sc. (P) Life Science III year, Semester V</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY</p> <p>CHEMISTRY LAB: ATOMIC STRUCTURE, BONDING, GENERAL ORGANIC CHEMISTRY &amp; ALIPHATIC HYDROCARBONS</p> <p>SEC: ANALYTICAL METHODS IN CHEMISTRY</p>

AUGUST	<b>Theory:</b>	<p>Hydrogenation of fats and oils, Saponification value, acid value, iodine number. Reversion and rancidity.</p> <p>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.</p> <p><i>Preparation of Amino Acids:</i> Strecker synthesis using Gabriel's phthalimide synthesis. <i>Reactions of Amino acids:</i> ester of -COON group, acetylation of -NH<sub>2</sub> group, complexation with Cu<sup>2+</sup>- ions, ninhydrin test.</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. Biological sciences, I Year, Semester I</p> <p>B.Sc. Life Sciences, II Year, Semester III</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>BS-C1: CHEMISTRY ORGANIC CHEMISTRY</p> <p>SOLUTIONS, PHASE EQUILIBRIUM..... &amp; FUNCTIONAL GROUP ORGANIC CHEMISTRY-II</p>
	<b>Practicals:</b>	<p>Study of the titration curve of glycine. Estimation of glycine by Sorenson's formalin method. Estimation of Protein by Lowry's method</p> <p>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.</p> <p>Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration</p> <p>Estimation of water of crystallization in Mohr's salt by titrating with KMnO<sub>4</sub>. Estimation of oxalic acid by titrating it with KMnO<sub>4</sub>. Purification of OC by crystallisation (from water and alcohol) and distillation.</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. life science (prog.) III Year, Semester V</p> <p>B.Sc. life science (prog.) I Year, Semester I</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY</p> <p>SEC: ANALYTICAL METHODS IN CHEMISTRY</p> <p>CHEMISTRY LAB: ATOMIC STRUCTURE, BONDING, GENERAL ORGANIC CHEMISTRY &amp; ALIPHATIC HYDROCARBONS</p>

SEPTEMBER	<b>Theory:</b>	Pharmaceutical Compounds: Structure and Importance: Classification. Structure and Importance: structure and therapeutic uses of antipyretics: Paracetamol (with synthesis), Analgesics: Ibuprofen (with synthesis),	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		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
		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) and C- activating groups and Merrifield solid-phase synthesis.	B.Sc. Life Sciences, II Year, Semester III	SOLUTIONS, PHASE EQUILIBRIUM..... & FUNCTIONAL GROUP ORGANIC CHEMISTRY-II

	<b>Practicals:</b>	Study of the action of salivary amylase on starch at optimum conditions. Effect of temperature on the action of salivary amylase. 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
		Determination of pH, acidity	B.Sc. life science	SEC: ANALYTICAL

		<p>and alkalinity of a water sample. Determination of dissolved oxygen (DO) of a water sample.</p> <p>Estimation of Fe (II) ions by titrating it with <math>K_2Cr_2O_7</math> using internal indicator.</p> <p>Estimation of Cu (II) ions iodometrically using <math>Na_2S_2O_3</math>.</p> <p>Criteria of purity: Determination of Mpt/Bpt</p>	<p>(prog.) III Year, Semester V</p> <p>B.Sc. life science (prog.) I Year, Semester I</p>	<p>METHODS IN CHEMISTRY</p> <p>CHEMISTRY LAB: ATOMIC STRUCTURE, BONDING, GENERAL ORGANIC CHEMISTRY &amp; ALIPHATIC HYDROCARBONS</p>
	<b>Assignment :</b>	<p>Pharmaceutical Compounds: Structure and Importance:</p> <p>Unit 3: Fundamentals of Organic Chemistry: Aromaticity</p> <p>Amino Acids, Peptides and Proteins: Zwitterion, Isoelectric point and Electrophoresis</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. Biological sciences, I Year, Semester I</p> <p>B.Sc. Life Sciences, II Year, Semester III</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>BS-C1: CHEMISTRY ORGANIC CHEMISTRY</p> <p>SOLUTIONS, PHASE EQUILIBRIUM..... &amp; FUNCTIONAL GROUP ORGANIC CHEMISTRY- II</p>
OCTOBER	<b>Theory:</b>	<p>Pharmaceutical Compounds: Structure and Importance: Antimalarials: Chloroquine (with synthesis). An elementary treatment of Antibiotics and detailed study of chloramphenicol,</p> <p>Stereoisomerism with two chiral centres : 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.</p> <p>Carbohydrates: Classification, and General Properties, Glucose and Fructose (open chain and cyclic structure), Determination of configuration of monosaccharides, absolute configuration of Glucose and Fructose.</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. Biological sciences, I Year, Semester I</p> <p>B.Sc. Life Sciences, II Year, Semester III</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>BS-C1: CHEMISTRY ORGANIC CHEMISTRY</p> <p>SOLUTIONS, PHASE EQUILIBRIUM..... &amp; FUNCTIONAL GROUP ORGANIC CHEMISTRY- II</p>

	<b>Practicals:</b>	Saponification value of an oil or a fat. Determination of Iodine number of an oil/ fat.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV
		Extraction of D-limonene from orange peel using liquid CO <sub>2</sub> prepared from dry ice.	B.Sc. CHEMISTRY (Hons.) III Year, Semester V	CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY
		Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II).		
		Paper chromatographic separation of mixture of metal ion (Ni <sup>2+</sup> and Co <sup>2+</sup> ). Spectrophotometric determination of Iron in Vitamin / Dietary Tablets.	B.Sc. life science (prog.) III Year, Semester V	SEC: ANALYTICAL METHODS IN CHEMISTRY
		Determination of ion exchange capacity of anion /cation exchange resin (using batch procedure if use of column is not feasible).		
		Detection of extra elements (N, S, Br, I) in organic compounds. Separation of mixtures by Chromatography: Measure the R <sub>f</sub> 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)Identify and separate the sugars present in the given mixture by paper chromatography.	B.Sc. life science (prog.) I Year, Semester I	CHEMISTRY LAB: ATOMIC STRUCTURE, BONDING, GENERAL ORGANIC CHEMISTRY & ALIPHATIC HYDROCARBONS

	<b>Test</b>	<p>Pharmaceutical Compounds: Structure and Importance: Antimalarials: Chloroquine (with synthesis).</p> <p>Stereoisomerism with two chiral centres : Diastereomers, mesoisomers, Resolution of racemic modification. Unit 4: Stereochemistry: Projection diagrams of stereoisomers: Fischer, Newman and Sawhorse projections.</p> <p>Carbohydrates: Classification, and General Properties, Glucose and Fructose (open chain and cyclic structure),</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. Biological sciences, I Year, Semester I</p> <p>B.Sc. Life Sciences, II Year, Semester III</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>BS-C1: CHEMISTRY ORGANIC CHEMISTRY</p> <p>SOLUTIONS, PHASE EQUILIBRIUM..... &amp; FUNCTIONAL GROUP ORGANIC CHEMISTRY- II</p>
NOVEMBER	<b>Theory:</b>	<p>Pharmaceutical Compounds: Structure and Importance: Medicinal values of curcumin (haldi), azadirachtin (neem), vitamin C and antacid (ranitidine).</p> <p>Conformational isomerism – ethane, butane and cyclohexane, diagrams and relative stability of conformers.</p> <p>Mutarotation, ascending and descending in monosaccharides. Structure of disaccharides (sucrose, cellobiose, maltose, lactose) and polysaccharides (starch and cellulose) excluding their structure elucidation.</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. Biological sciences, I Year, Semester I</p> <p>B.Sc. Life Sciences, II Year, Semester III</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>BS-C1: CHEMISTRY ORGANIC CHEMISTRY</p> <p>SOLUTIONS, PHASE EQUILIBRIUM..... &amp; FUNCTIONAL GROUP ORGANIC CHEMISTRY- II</p>
	<b>Practicals:</b>	<p>Determination of Iodine number of an oil/ fat. Any pending work</p> <p>Practice Exercise</p> <p>To study the use of phenolphthalein in trap cases. To carry out analysis of gasoline.</p> <p>Detection of extra elements (N, S, Br, I) in organic compounds.</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. CHEMISTRY (Hons.) III Year, Semester V</p> <p>B.Sc. life science (prog.) III Year, Semester V</p> <p>B.Sc. life science (prog.) I Year, Semester I</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY</p> <p>ANALYTICAL METHODS IN CHEMISTRY</p> <p>CHEMISTRY LAB: ATOMIC STRUCTURE, BONDING, GENERAL ORGANIC CHEMISTRY &amp; ALIPHATIC</p>

		Practice Exercise		HYDROCARBONS
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**SEMESTER WISE TEACHING PLAN**  
**Academic year 2018-2019 (Odd Semester)**  
**SRI VENKATESWARA COLLEGE**

Name of the Faculty: Ms. Laishram Saya Devi

Department: CHEMISTRY

Semester: I/IIIV

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<p><b>PHASE EQUILIBRIUM:</b> Phases, components and degrees of freedom of a system, criteria of phase equilibrium. Gibbs Phase Rule and its thermodynamic derivation</p> <p><b>CONDUCTANCE:</b> Conductivity, equivalent and molar conductivity</p>	<p>B.Sc.(P) LIFE SCIENCES, Semester III</p> <p>GE III</p>	<p>CHEMISTRY – CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p> <p>SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY</p>
	<b>Practical</b>	<p>Determination of the Critical Solution temperature and composition of the phenol water system.</p> <p>Introductory class(very few students turned up as they haven't opted for GE paper by that time)</p> <p>Introductory class</p> <p>Introductory class</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>GE III</p> <p>B.Sc. Life Science (prog.) II Year, Semester III</p> <p>B.Sc(H) Biological Sciences, Semester I</p>	<p>CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III</p> <p>SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p> <p>CHEMISTRY CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p> <p>ORGANIC CHEMISTRY</p> <p>BS-C1: CHEMISTRY (PRACTICALS)</p>

AUGUST	<b>Theory:</b>	<p><b>PHASE EQUILIBRIUM:</b> Derivation of Clausius — Clapeyron equation and its importance in phase equilibria. Phase diagrams of one-component systems (water and sulphur) and two component systems involving eutectics, congruent and incongruent melting points (lead, silver, FeC13-H20 and Na-K only).</p> <p><b>CONDUCTANCE:</b> Variation of conductance and molar conductance with dilution for weak and strong electrolytes. Kohlrausch law of independent migration of ions. Transference number and its experimental determination using Hittorf and Moving boundary methods. Ionic mobility.</p>	<p>B.Sc.(P) LIFE SCIENCES, Semester III</p> <p>GE III</p>	<p>CHEMISTRY – CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p> <p>SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p>
	<b>Practical:</b>	<p>Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it</p> <p>Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it. Perform the following Conductometric titrations: i.Strong acid vs. strong base</p> <p>1.Determination of the critical solution temperature and composition of the phenol water system and study of the effect of impurities on it.</p> <p>2.Perform the following conductometric titrations: i.Strong acid vs. strong base ii.Weak acid vs. strong base</p> <p>Determination of melting and boiling points of organic compounds Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald's viscometer</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>GE III</p> <p>B.Sc. Life Science (prog.) II Year, Semester III</p> <p>B.Sc.(H) Biological Sciences, Semester I</p>	<p>CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III</p> <p>SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p> <p>CHEMISTRY CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP ORGANICCHEMISTRY</p> <p>BS-C1: CHEMISTRY (PRACTICALS)</p>

SEPTEMBER	<b>Theory:</b>	<p><b>SOLUTIONS:</b> Thermodynamics of ideal solutions: Ideal solutions and Raoult's law, deviations from Raoult's law — non-ideal solutions. Vapour pressure-composition and temperature-composition curves of ideal and non-ideal solutions. Distillation of solutions, Lever rule. Azeotropes. Partial miscibility of liquids: Critical solution temperature; effect of impurity on partial miscibility of liquids. Immiscibility of liquids- Principle of steam distillation. Nernst distribution law and its applications, solvent extraction.</p> <p><b>CONDUCTANCE:</b> Applications of conductance measurements: determination of degree of ionization of weak electrolyte, solubility and solubility products of sparingly soluble salts, ionic product of water, hydrolysis constant of a salt. Conductometric titrations (only acid-base).</p>	<p>B.Sc.(P) LIFE SCIENCES, Semester III</p> <p>GE III</p>	<p>CHEMISTRY – CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p> <p>SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p>
	<b>Practicals:</b>	<p>Construction of the phase diagram using cooling curves or ignition tube method: a. simple eutectic and b. congruently melting systems</p> <p>Perform the following Conductometric titrations: i.Strong acid vs. strong base ii.Weak acid vs. strong base</p> <p>Perform the following potentiometric titrations: i.Strong acid vs. strong base ii.Weak acid vs. strong base</p> <p>Perform the following potentiometric titrations: (i).Strong acid vs. strong base (ii)Weak acid versus strong base. Determination of the concentration of glycine solution by formylation method. Differentiation between a reducing and non reducing sugar.</p> <p>Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.</p> <p>Separation of the components of a given mixture of two amino acids by paper chromatography. Separation of sugars present in the given mixture by paper chromatography.</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester Semester III</p> <p>GE III</p> <p>B.Sc. Life Science (prog.) II Year, Semester III</p> <p>B.Sc.(H) Biological Sciences, Semester I</p>	<p>CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III</p> <p>SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p> <p>CHEMISTRY CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP ORGANICCHEMISTRY</p> <p>BS-C1: CHEMISTRY (PRACTICALS)</p>
	<b>Assignment</b>			

OCTOBER	<b>Theory:</b>	<p><b>CONDUCTANCE:</b> Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes. Kohlrausch law of independent migration of ions. Transference number and its experimental determination using Hittorf and Moving boundary methods. Ionic mobility. Applications of conductance measurements: determination of degree of ionization of weak electrolyte, solubility and solubility products of sparingly soluble salts, ionic product of water, hydrolysis constant of a salt. Conductometric titrations (only acid-base).</p> <p><b>ELECTROCHEMISTRY:</b> Reversible and irreversible cells. Concept of EMF of a cell. Measurement of EMF of a cell. Nernst equation and its importance. Types of electrodes. Standard electrode potential. Electrochemical series. Thermodynamics of a reversible cell, calculation of thermodynamic properties: G, H and S</p>	B.Sc.(P) LIFE SCIENCES, Semester III	CHEMISTRY – CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP
			GE III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP
	<b>Practicals:</b>	<p>Perform the following potentiometric titrations: i. Strong acid vs. strong base ii. Weak acid vs. strong base</p> <p>Determination of the concentration of glycine solution by formylation method. Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons)</p> <p>Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons)</p> <p>Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture .</p> <p>Estimation of oxalic acid by titrating it with KMnO<sub>4</sub>.</p>	<p>B.Sc. CHEMISTRY (Hons.) II Year, Semester III</p> <p>GE III</p> <p>B.Sc. Life Science (prog.) II Year, Semester III</p> <p>B.Sc.(H) Biological Sciences, Semester I</p>	<p>CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III</p> <p>SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p> <p>CHEMISTRY CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP ORGANIC CHEMISTRY</p> <p>BS-C1: CHEMISTRY (PRACTICALS)</p>
<b>Test</b>				

NOVEMBER Ok	<b>Theory:</b>	<p><b>ELECTROCHEMISTRY:</b>          Concept of EMF of a cell. Measurement of EMF of a cell. Nernst equation and its importance. Types of electrodes. Standard electrode potential. Electrochemical series. Thermodynamics of a reversible cell, calculation of thermodynamic properties: G, H and S from EMF data.          Calculation of equilibrium constant from EMF data. Concentration cells with transference and without transference. Liquid junction potential and salt bridge. pH determination using hydrogen electrode and quinhydrone electrode.          Potentiometric titrations-qualitative treatment (acid-base and oxidation-reduction only).</p> <p><b>ELECTROCHEMISTRY:</b>          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)</p>	<p>B.Sc. Life Science (prog.) II Year, Semester III</p> <p>GE III</p>	<p>CHEMISTRY CC III: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP</p> <p>SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP ORGANIC CHEMISTRY</p>
	<b>Practicals:</b>	<p>Perform the potentiometric titration of . Dibasic acid vs. strong base</p> <p>Mock Practicals</p> <p>Differentiation between a reducing and nonreducing sugar.          Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons)</p> <p>Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons)</p> <p>Estimation of Fe (II) ions by titrating it with K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> using internal indicator</p> <p>Practice exercises</p>	<p>B.Sc. CHEMISTRY (Hons.) III Year, Semester III</p> <p>GE III</p> <p>B.Sc. life science (prog.) II Year, Semester III</p> <p>B.Sc.(H) Biological Sciences, Semester I</p>	<p>CHEMISTRY – CC VII; PHYSICAL CHEMISTRY III</p> <p>CHEMISTRY LAB: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; BIOMOLECULES</p> <p>CHEMISTRY LAB: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; BIOMOLECULES</p> <p>BS-C1: CHEMISTRY (PRACTICALS)</p>



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

**Academic Year 2018-2019**

**Name of the Faculty: Dr. Rekha Yadav**

**Department: Chemistry**

**Semester: I/III/V**

Month		Topic	Course	Paper
July	<b>Theory:</b>	<b>Molecular Spectroscopy:</b> Interaction of electromagnetic radiation with molecules and various types of spectra; Born Oppenheimer approximation.	B. Sc. (H) Chemistry III year, Semester V	C XII: PHYSICAL CHEMISTRY V
		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
	<b>Practicals:</b>	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
		Perform the following potentiometric titrations: i. Strong acid vs. strong base	B. Sc. Life Sciences II year, Semester III	CHEMISTRY LAB: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		Verify the Freundlich and Langmuir isotherms for adsorption of acetic acid on activated charcoal.	B. Sc. (H) Chemistry III year, Semester V	Practical C – XII Lab: PHYSICAL CHEMISTRY V

	<b>Tutorials:</b>	NA	NA	NA
August	<b>Theory:</b>	Rotation spectroscopy	B. Sc. (H) Chemistry III year, Semester V	C XII: PHYSICAL CHEMISTRY V
		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
	<b>Practicals:</b>	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
		Determination of CST of phenol-water system. Effect of impurities on CST of phenol-water system. Potentiometric titrations ii. Weak acid vs. strong base Functional group determination.	B. Sc. Life Sciences II year, Semester III	CHEMISTRY LAB: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		Verify the Freundlich and Langmuir isotherms for adsorption of acetic acid on activated charcoal. Verify Lambert-Beer's law and determine the concentration of CuSO <sub>4</sub> /KMnO <sub>4</sub> /K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> in a solution of unknown concentration Determine the concentrations of KMnO <sub>4</sub> and K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> in a mixture.	B. Sc. (H) Chemistry III year, Semester V	Practical C – XII Lab: PHYSICAL CHEMISTRY V
<b>Tutorials:</b>	NA	NA	NA	
September	<b>Theory:</b>	Rotational spectroscopy	B. Sc. (H)	C XII: PHYSICAL

		and Vibrational spectroscopy	Chemistry III year, Semester V	CHEMISTRY V
		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
	<b>Practicals:</b>	Numerical curve fitting, linear regression numerical differentiation integration	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Conductometric titrations of strong acid vs strong base, Functional group analysis Cooling curves	B. Sc. Life Sciences II year, Semester III	CHEMISTRY LAB: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		Study the kinetics of iodination of propanone in acidic medium. Determine the amount of iron present in a sample using 1, 10-phenanthroline.	B. Sc. (H) Chemistry III year, Semester V	Practical C – XII Lab: PHYSICAL CHEMISTRY V
	<b>Tutorials:</b>	NA	NA	NA
	<b>Assignment</b>	Molecular Spectroscopy	B. Sc. (H) Chemistry III year, Semester V	C XII: PHYSICAL CHEMISTRY V
	<b>Assignment</b>	Assignment-I	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
October	<b>Theory:</b>	Vibration-rotation spectroscopy	B. Sc. (H) Chemistry III year, Semester V	C XII: PHYSICAL CHEMISTRY V
		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. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
	<b>Practicals:</b>	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
		Determination of the	B. Sc. Life	CHEMISTRY LAB:



		<p>concentration of glycine solution by formylation method</p> <p>Action of salivary amylase on starch</p> <p>Differentiation between a reducing and non-reducing sugar</p>	Sciences II year, Semester III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		<p>Study the 200-500 nm absorbance spectra of <math>KMnO_4</math> and <math>K_2Cr_2O_7</math> (in 0.1 M <math>H_2SO_4</math>) and determine the <math>\lambda_{max}</math> values. Calculate the energies of the two transitions in different units (J molecule<sup>-1</sup>, kJ mol<sup>-1</sup>, cm<sup>-1</sup>, eV).</p> <p>Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of <math>K_2Cr_2O_7</math>. 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.</p>	B. Sc. (H) Chemistry III year, Semester V	Practical C – XII Lab: PHYSICAL CHEMISTRY V
	<b>Tutorials:</b>	NA	NA	NA
	<b>Test</b>	Molecular Spectroscopy	B. Sc. (H) Chemistry III year, Semester V	C XII: PHYSICAL CHEMISTRY V
	<b>Test</b>	Test-I	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
November	<b>Theory:</b>	Vibrational Raman spectra, Stokes and anti-Stokes lines; their intensity difference, rule of mutual exclusion.	B. Sc. (H) Chemistry III year, Semester V	C XII: PHYSICAL CHEMISTRY V
		Constants, variables, bits, bytes, binary and ASCII formats, arithmetic expressions, hierarchy of operations, inbuilt functions. Elements of the BASIC language.	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
	<b>Practicals:</b>	Presentation: Presentation graphics	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Practice Exercise	B. Sc. Life Sciences II year, Semester III	CHEMISTRY LAB: SOLUTIONS, PHASE EQUILIBRIUM,

				CONDUCTANCE, ELECTROCHEMISTRY & BIOMOLECULES
		Practice Exercise	B. Sc. (H) Chemistry III year, Semester V	Practical C – XII Lab: PHYSICAL CHEMISTRY V
	<b>Tutorials:</b>	NA	NA	NA



**SEMESTER WISE TEACHING PLAN 2018-2019 ODD**  
**SEMESTER**  
**SRI VENKATESWARA COLLEGE**

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

**Department: Chemistry**

**Semester: I/III/V**

Month		Topic	Course	Paper
July	<b>Theory:</b>	Electronic Displacements: Inductive Effect, Electromeric Effect	B. Sc. (P) Life Science-I year And B.Sc (H) Generic Elective Semester-I	Atomic Structure, Bonding, General Organic Chemistry (Section B: Organic Chemistry -1)
	<b>Practicals:</b>	Preparation and characterization of biodiesel from vegetable oil/ waste cooking oil.	B.Sc. (H) Chemistry, 3 <sup>rd</sup> Year, Semester – V	CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY
	<b>Practicals:</b>	Determination of pH of soil samples.	B.Sc. (P) Life Science II year, Semester III, SEC	Basic Analytical Chemistry Lab
	<b>Practicals:</b>	Introductory class(very few students turned up as they haven't opted for GE paper by that time)	B.Sc (H) Generic Elective, 2 <sup>nd</sup> Year, Semester-III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP
	<b>Practicals:</b>	Introductory class	B.Sc. (H) Biological Sciences, 1 <sup>st</sup> Year, Semester I	BS-C1: CHEMISTRY (PRACTICALS)
	<b>Tutorials:</b>	NA	NA	NA
August	<b>Theory:</b>	Resonance and Hyperconjugation. Cleavage of Bonds: Homolysis and Heterolysis. Reaction intermediates: Carbocations, Carbanions and free radicals. Electrophiles and nucleophiles Aromaticity: Benzenoids and Huckel's rule.	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)
	<b>Practicals:</b>	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. (H) Chemistry, 3 <sup>rd</sup> Year, Semester – V	CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY
		Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration	B.Sc. (P) Life Science II year, Semester III, SEC	Basic Analytical Chemistry Lab
		Determination of the Critical Solution temperature and	B.Sc (H) Generic Elective, 2 <sup>nd</sup> Year,	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE,

		composition of the phenol water system and study the effect of impurities on it. Perform the following Conductometric titrations: i. Strong acid vs. strong base	Semester-III	ELECTROCHEMISTRY & FUNCTIONAL GROUP
		Determination of melting and boiling points of organic compounds Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald's viscometer	B.Sc. (H) Biological Sciences, 1 <sup>st</sup> Year, Semester I	BS-C1: CHEMISTRY (PRACTICALS)
	<b>Tutorials:</b>	NA	NA	NA
September	<b>Theory:</b>	Functional group approach for the following reactions (preparations physical property & chemical reactions) to be studied with mechanism in context to their structure. <b>Alkanes: Preparation:</b> Catalytic hydrogenation, Wurtz reaction, Kolbe's synthesis, Grignard reagent. <b>Reactions:</b> Free radical Substitution: Halogenation. <b>Alkenes: Preparation:</b> Elimination reactions: Dehydration of alcohols and dehydrohalogenation of alkyl halides (Saytzeff's rule); cis alkenes (Partial catalytic hydrogenation) and trans alkenes (Birch reduction).	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)
	<b>Practicals:</b>	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 <sup>-</sup> → propene + trimethylpropene + water	B.Sc. (H) Chemistry, 3 <sup>rd</sup> Year, Semester – V	CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY
		Determination of pH, acidity and alkalinity of a water sample. Determination of dissolved oxygen (DO) of a water sample.	B.Sc. (P) Life Science II year, Semester III, SEC	Basic Analytical Chemistry Lab

		<p>Perform the following Conductometric titrations:</p> <p>i.Strong acid vs. strong base</p> <p>ii.Weak acid vs. strong base</p> <p>Perform the following potentiometric titrations:</p> <p>i.Strong acid vs. strong base</p> <p>ii.Weak acid vs. strong base</p>	B.Sc (H) Generic Elective, 2 <sup>nd</sup> Year, Semester-III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP
		<p>Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.</p> <p>Separation of the components of a given mixture of two amino acids by paper chromatography.</p> <p>Separation of sugars present in the given mixture by paper chromatography.</p>	B.Sc. (H) Biological Sciences, 1 <sup>st</sup> Year, Semester I	BS-C1: CHEMISTRY (PRACTICALS)
	<b>Tutorials:</b>	NA	NA	NA
	<b>Assignment</b>	<b>Assignment-I</b>	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)
October	<b>Theory:</b>	<p><i>Reactions:</i> cis-addition (alk. KMnO<sub>4</sub>) and trans-addition (bromine), Addition of HX (Markownikoff's and anti-Markownikoff's addition), Hydration, Ozonolysis, oxymercuration-demercuration, Hydroboration-oxidation.</p> <p><b>Stereochemistry:</b> Conformations with respect to ethane, butane and cyclohexane. Interconversion of Wedge Formula, Newmann, Sawhorse and Fischer representations.</p>	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)
	<b>Practicals:</b>	<p>Extraction of D-limonene from orange peel using liquid CO<sub>2</sub> prepared from dry ice.</p> <p>Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II).</p>	B.Sc. (H) Chemistry, 3 <sup>rd</sup> Year, Semester – V	CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY
		Paper chromatographic separation of mixture of metal ion (Ni <sup>2+</sup> and Co <sup>2+</sup> ). Spectrophotometric	B.Sc. (P) Life Science II year, Semester III, SEC	Basic Analytical Chemistry Lab

		determination of Iron in Determination of ion exchange capacity of anion / cation exchange resin.		
		Determination of the concentration of glycine solution by formylation method. Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons)	B.Sc (H) Generic Elective, 2 <sup>nd</sup> Year, Semester-III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP
		Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture .  Estimation of oxalic acid by titrating it with KMnO <sub>4</sub> .	B.Sc. (H) Biological Sciences, 1 <sup>st</sup> Year, Semester I	BS-C1: CHEMISTRY (PRACTICALS)
	<b>Tutorials:</b>	NA	NA	NA
	<b>Test</b>	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)
November	<b>Theory:</b>	Concept of chirality (upto two carbon atoms). Configuration: Geometrical and Optical isomerism; Enantiomerism, Diastereomerism and Meso compounds). Threo and erythro; D and L; <i>cis</i> - <i>trans</i> nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and E / Z Nomenclature (for upto two C=C systems).	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)
	<b>Practicals:</b>	Practice Exercise	B.Sc. (H) Chemistry, 3 <sup>rd</sup> Year, Semester – V	CHEMISTRY PRACTICAL - DSE LAB: GREEN CHEMISTRY
		Practice Exercise	B.Sc. (P) Life Science II year, Semester III, SEC	Basic Analytical Chemistry Lab
		Differentiation between a reducing and nonreducing sugar. Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines, Hydrocarbons, Halo Hydrocarbons)	B.Sc (H) Generic Elective, 2 <sup>nd</sup> Year, Semester-III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP
		Estimation of Fe (II) ions by titrating it with	B.Sc. (H) Biological	BS-C1: CHEMISTRY (PRACTICALS)

		K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> using internal indicator Practice exercises	Sciences, 1 <sup>st</sup> Year, Semester I	
	<b>Tutorials:</b>	NA	NA	NA



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**odd semester**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. DEVENDRA KUMAR VERMA**

**Department: CHEMISTRY**

**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Rules of oxidation/reduction of ions based on half cell potentials, application of electrolysis in metallurgy and industry. Chemical cells- reversible and irreversible cells with examples.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY
		Analysis of soil: concept of pH, composition of soil.	B. Sc. (H) Life Science III	SEC: Basic Analytical Chemistry
		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	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2- chemical thermodynamics
	<b>Practicals</b>	Determination of critical solution temperature and composition at CST of the phenol water	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III Lab
		Introductory class(very few students turned up as they haven't opted for GE paper by that time)	GE III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP
		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
	AUGUST	<b>Theory:</b>	Electromotive force and its measurement, Nerst equation, Standard electrode potential, and its applications to different kind of half cells. Applications of EMF measurements in	B.Sc. CHEMISTRY (Hons.) II Year, Semester III
		Complexometric titrations, chelating agent and use of indicators.	B. Sc. (H) Life Science III semester	SEC: Basic Analytical Chemistry



	Calculation of $w$ , $q$ , $\Delta E$ , $\Delta H$ for process involving change in physical states. Important principles and definition of thermochemistry. Concept of standard state and standard enthalpies of formation, integral and differential enthalpies of solution and dilutions. Calculation of bond energy, bond dissociation	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2- chemical thermodynamics
<b>Practicals</b>	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.)	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
	To study the effect of impurities of sodium chloride and succinic acid on critical solution temperature and composition at CST of the phenol water system Phase equilibria: Construction of the phase diagram using cooling curves or ignition tube method: a. simple eutectic <del>Perform the following</del>	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III Lab
	<b>Surface tension measurements using stalagmometer.</b> a. Determine the surface tension by (i) drop number (ii) drop weight method. b. Study the variation of surface tension with different concentration of detergent solutions. Determine CMC.	B.Sc. CHEMISTRY (Hons.) I Year, Semester I	C II: PHYSICAL CHEMISTRY I lab
	Determination of the Critical Solution temperature and composition of the phenol water system and study the effect of impurities on it. Perform the following Conductometric titrations: i.Strong acid vs. strong base.  1.Determination of the critical solution temperature and composition of the phenol water system and study of the effect of impurities on it.  2 Perform the following	GE III	SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY & FUNCTIONAL GROUP

SEPTEMBER	<b>Theory:</b>	Application of EMF in measurements of Enthalpy and entropy of a cell, equilibrium constant and using hydrogen, quinone- hydroquinone glass and SbO/Sb <sub>2</sub> O <sub>3</sub> electrodes. Concentration cells. With and without transference.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY
		Determination of pH of soil samples. Estimation of calcium and magnesium ions as calcium carbonate by complexometric titration. Analysis of water: definition of pure water, sources responsible for contaminating water, Water sampling methods.	B. Sc. (H) Life Science III Sem	SEC: Basic Analytical Chemistry
		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.	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2- chemical thermodynamics
	<b>Practicals:</b>	Phase equilibria: Construction of the phase diagram using cooling curves or ignition tube method: b. congruently melting systems. Perform the following potentiometric titrations ii. Weak acid vs. strong base iii. Dibasic	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III Lab
	<b>Practicals:</b>	Study the pH- dependence of the UV-vis spectrum (200-500 nm) of K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> . 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	B. Sc. (H) Chemistry III year, Semester V	Practical C –XII Lab:
OCTOBER	<b>Theory:</b>	Liquid junction potential, Determination of activity coefficient and transference numbers.	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY
		Water purification methods. Determination of pH, acidity and alkalinity of a water sample, determination of dissolved oxygen of a water sample	B. Sc. (H) Life Science III sem.	SEC: Basic Analytical Chemistry

		Calculations of absolute entropy of substances. Discussion on problems	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2- chemical thermodynamics
	<b>Practicals:</b>	Study the equilibrium of at least one of the following reactions by the distribution method: (i) $I_2(aq) + I^-(aq) \rightarrow I_3^-$ Perform the following potentiometric titrations: iv. Potassium dichromate vs. Mohr's salt	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III Lab
		Statistical analysis: Gaussian distribution and Errors in measurements and their effect on data sets. Descriptive statistics using Excel. Statistical significance testing: The t test.	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Study the kinetics of iodination of propanone in acidic medium. Determine the amount of iron present in sample using 1, 10	B. Sc. (H) Chemistry III year, Semester V	Practical C –XII Lab:
NOVEMBER	<b>Theory:</b>	Qualitative discussion of potentiometric titrations (Acid-base, redox, precipitation).	B.Sc. CHEMISTRY (Hons.) II Year,	C – VII: PHYSICAL CHEMISTRY
		Problems from last year questions	B. Sc. (H) Biological Science I Semester	BS-C1:Chemistry (theory) unit 2- chemical thermodynamics
	<b>Practicals:</b>	Practice Exercise	B.Sc. CHEMISTRY (Hons.) II Year, Semester III	C – VII: PHYSICAL CHEMISTRY III Lab
		Presentation: Presentation graphics	B. Sc. (H) Chemistry II year, Semester III	SEC: IT SKILLS FOR CHEMISTS
		Analysis of the given vibration – rotation spectra of HCl	B. Sc. (H) Chemistry III year, Semester V	Practical C –XII Lab:



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

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

**Department: Chemistry**

**Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Atomic Structure: Recapitulation of Bohr's theory, its limitations and atomic spectrum of hydrogen atom. Wave mechanics: de Broglie equation, Heisenberg's Uncertainty Principle and its significance. Schrödinger's wave equation, significance of $\psi$ and $\psi^2$ . Quantum mechanical treatment of H- atom, Quantum numbers and their significance.	B.Sc. (H) Chemistry I <sup>st</sup> Year, Semester-I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Chemistry of <i>s</i> -Block Elements General characteristics: melting point, flame colour, reducing nature, diagonal relationships and anomalous behavior of first member of each group.	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Practicals</b>	Inorganic preparations (i) Cuprous Chloride, $\text{Cu}_2\text{Cl}_2$	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year, Sem III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		Calibration and use of apparatus Preparation of solutions of titrants of different Molarity/Normality	B.Sc. (Hons.) Chemistry I <sup>st</sup> Year, Sem I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Purification of OC by crystallisation (from water and alcohol) and distillation. Criteria of purity: Determination of Mpt/Bpt Detection of extra elements (N, S) in organic compounds	B.Sc. Life Science I <sup>st</sup> year, Sem I	Atomic structure, bonding, general organic chemistry & aliphatic hydrocarbons
		Estimation of $\text{Zn}^{2+}$ by complexometric titrations using EDTA.	B.Sc. Life Science III <sup>rd</sup> year, Sem V	Chemistry of d-block elements, quantum chemistry & spectroscopy
		<b>Tutorials</b>		
AUGUST	<b>Theory:</b>	Normalized and orthogonal wave functions. Sign of wave functions. Radial and angular wave functions for hydrogen atom. Radial and angular distribution curves. Shapes of <i>s</i> , <i>p</i> , and <i>d</i> orbitals, Relative energies of orbitals. Pauli's Exclusion Principle, Hund's rule of maximum spin multiplicity, Aufbau principle	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I

	and its limitations. 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.		
	Reactions of alkali and alkaline earth metals with oxygen, hydrogen, nitrogen and water. Common features such as ease of formation, thermal stability and solubility of the following alkali and alkaline earth metal compounds: hydrides, oxides, peroxides, superoxides, carbonates, nitrates, sulphates.	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
<b>Practicals:</b>	Preparations: (ii) Manganese(III) phosphate, MnPO <sub>4</sub> .H <sub>2</sub> O (iii) Aluminium potassium sulphate KAl(SO <sub>4</sub> ) <sub>2</sub> .12H <sub>2</sub> O (Potash alum)  Estimation of Zn <sup>2+</sup> Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	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. (Hons.) Chemistry I <sup>st</sup> Year, Sem I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
	Separation of mixtures by Chromatography: Measure the R <sub>f</sub> 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) Identify and separate the sugars present in the given mixture by paper chromatography.	B.Sc. (P) Life Science I <sup>st</sup> year, Sem I	Atomic structure, bonding, general organic chemistry & aliphatic hydrocarbons
	Estimation of Mg <sup>2+</sup> 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
<b>Tutorials:</b>			
<b>Assignment</b>	Atomic structure and chemical bonding	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
<b>Assignment</b>	Chemistry of <i>s</i> and <i>p</i> block elements	B.Sc. (Hons.) Chemistry	CHEMISTRY - CV: INORGANIC

			II <sup>nd</sup> Year	CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
SEPTEMBER	<b>Theory:</b>	(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. Chemical Bonding: Ionic bond: General characteristics, types of ions, size effects, radius ratio rule and its limitations. Packing of ions in crystals. Born-Landé equation with derivation and importance of Kapustinskii expression for lattice energy.	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Complex formation tendency of <i>s</i> -block elements; structure of the following complexes: crown ethers and cryptates of Group I; basic beryllium acetate, beryllium nitrate, EDTA complexes of calcium and magnesium. Solutions of alkali metals in liquid ammonia and their properties	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements

	<b>Practicals:</b>	Estimation of Mg <sup>2+</sup> Complexometric titrations using disodium salt of EDTA Estimation of Ca <sup>2+</sup> Complexometric titrations using disodium salt of EDTA	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		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. (Hons.) Chemistry I <sup>st</sup> Year, Sem I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Estimation of carbonate and bicarbonate present together in a mixture. Oxidation-Reduction Titrimetry Principles of oxidation-reduction titrations (electrode potentials) to be discussed	B.Sc. (P) Life Science I <sup>st</sup> year, Sem I	Atomic structure, bonding, general organic chemistry & aliphatic hydrocarbons
		Estimation of the amount of nickel present in a given solution as bis(dimethylglyoximate) nickel(II) or in a given solution gravimetrically Study the 200-500 nm absorbance spectra of KMnO <sub>4</sub> and K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> (in 0.1 M H <sub>2</sub> SO <sub>4</sub> ) and determine the λ <sub>max</sub> 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

	<b>Tutorials:</b>			
OCTOBER	<b>Theory:</b>	<p>Covalent bond: Madelung constant, Born-Haber cycle and its application, Solvation energy.</p> <p>Covalent character in ionic compounds, polarizing power and polarizability. Fajan's rules and consequences of polarization.</p> <p>Valence Bond theory (Heitler-London approach). Energetics of hybridization, equivalent and non-equivalent hybrid orbitals. Bent's rule, Resonance and resonance energy.</p> <p>Ionic character in covalent compounds: Bond moment and dipole moment. Percentage ionic character from dipole moment and electronegativity difference.</p>	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		<p>Preparation, properties, structure and uses of the following compounds:</p> <ul style="list-style-type: none"> <li>• Borazine</li> <li>• Silicates, silicones,</li> <li>• Phosphonitrilic halides {(PNCl<sub>2</sub>)<sub>n</sub> where n = 3 and 4}</li> </ul>	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Practicals:</b>	Estimation of Cu(II) and K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> using sodium thiosulphate solution (Iodometrically)	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		<p>Estimation of Fe(II) and oxalic acid using standardized KMnO<sub>4</sub> solution</p> <p>Estimation of oxalic acid and sodium oxalate in a given mixture.</p>	B.Sc. (Hons.) Chemistry	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		<p>Estimation of Fe(2+) ions by titrating it with K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> using internal indicator.</p> <p>Estimation of Cu(+2) ions iodometrically using Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>.</p>	B.Sc. (P) Life Science 1 <sup>st</sup> year, Sem I	Atomic structure, bonding, general organic chemistry & aliphatic
		<p>Verify Lambert-Beer's law and determine the concentration of CuSO<sub>4</sub>/KMnO<sub>4</sub>/K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> in a solution of unknown concentration</p> <p>Determination of the composition of the Fe<sup>3+</sup>-salicylic acid complex in solution by Job's method.</p>	B.Sc. (P) Life Science I year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	<b>Tutorials:</b>			
	<b>Test</b>	Atomic structure	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
	<b>Test</b>	Chemistry of <i>s</i> and <i>p</i> block elements	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements

NOVEMBER	<b>Theory:</b>	Molecular orbital theory. Molecular orbital diagrams of diatomic Lewis structure, Valence shell electron pair repulsion theory (VSEPR), shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons: H <sub>2</sub> O, NH <sub>3</sub> , PCl <sub>3</sub> , PCl <sub>5</sub> , SF <sub>6</sub> , ClF <sub>3</sub> , I <sup>3-</sup> , BrF <sub>2</sub> <sup>+</sup> , PCl <sub>6</sub> <sup>-</sup> , ICl <sub>2</sub> <sup>-</sup> , ICl <sub>4</sub> <sup>-</sup> , and SO <sub>4</sub> <sup>2-</sup> .	B.Sc. (Hons.) Chemistry I Year	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		<ul style="list-style-type: none"> <li>• Interhalogen and pseudohalogen compounds</li> <li>• Clathrate compounds of noble gases, xenon fluorides (MO treatment of XeF<sub>2</sub>)</li> </ul>	B.Sc. (H) Chemistry II <sup>nd</sup> Year, Semester-III	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
	<b>Practicals:</b>	Estimation of antimony in tartar-emeti iodimetrically	B.Sc. (Hons.) Chemistry II <sup>nd</sup> Year	CHEMISTRY - CV: INORGANIC CHEMISTRY – II <i>s</i> - and <i>p</i> -Block Elements
		Estimation of Fe(II) with K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> using internal indicator (diphenylamine, Nphenylanthranilic acid) and discussion of external indicator.	B.Sc. (Hons.) Chemistry I <sup>st</sup> Year, Sem I	CHEMISTRY - C I: INORGANIC CHEMISTRY-I
		Estimation of water of crystallization in Mohr's salt by titrating with KMnO <sub>4</sub> .	B.Sc. (P) Life Science I <sup>st</sup> year, Sem I	Atomic structure, bonding, general organic chemistry & aliphatic
		Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> .	B.Sc. (P) Life Science III year	Chemistry of d-block elements, quantum chemistry & spectroscopy
	<b>Tutorials:</b>			





**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	<b>Theory</b>	<b>Introduction:</b> Introduction to Analytical Chemistry and its interdisciplinary nature.	B.Sc. (P) Life Science III Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>
		<b>Introduction:</b> Introduction to Analytical Chemistry and its interdisciplinary nature.	B.Sc. (P) Life Science II Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>
	<b>Practicals</b>	1. Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture.	B.Sc.(P) Life Science I year	<b>Practical CC- I ATOMIC STRUCTURE, BONDING, GENERAL ORGANIC</b>
		(A) Titrimetric Analysis (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
	<b>Tutorials</b>	NA	NA	NA
AUGUST	<b>Theory:</b>	Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures. <b>Analysis of soil:</b> Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators a. Determination of pH of soil samples. b. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	B.Sc. (P) Life Science III Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>

		Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures.	B.Sc. (P) Life Science II Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>
	<b>Practicals:</b>	2. Estimation of oxalic acid by titrating it with $\text{KMnO}_4$ . 3. Estimation of water of crystallization in Mohr's salt by titrating with $\text{KMnO}_4$ .	B.Sc. (P) Life Science I year	Chemistry Lab
		(B) Acid-Base Titrations Principles of acid-base titrations to be discussed. (i) Estimation of sodium carbonate using standardized HCl. (ii) Estimation of carbonate and hydroxide present together in a mixture. (iii) Estimation of carbonate and bicarbonate present together in a mixture.	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
	<b>Tutorials:</b>	NA	NA	NA
SEPTEMBER	<b>Theory:</b>	<b>Analysis of water:</b> Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods. a. Determination of pH, acidity and alkalinity of a water sample. b. Determination of dissolved oxygen (DO) of a water sample. <b>Chromatography:</b> Definition, general introduction on principles of chromatography, paper chromatography, TLC etc.	B.Sc. (P) Life Science III Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>

		<b>Analysis of soil:</b> Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators a. Determination of pH of soil samples. b. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.	BSc. (P) Life Science II Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>
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	<b>Practicals:</b>	Estimation of Fe (II) ions by titrating it with $K_2Cr_2O_7$ using internal indicator. Estimation of Cu (II) ions iodometrically using $Na_2S_2O_3$ . Purification of OC by crystallisation (from water and alcohol) and distillation. Criteria of purity: Determination of Mpt/Bpt	B.Sc. (P) Life Sciences I Year	Practical CC – I Lab
		Estimation of free alkali present in different soaps/detergents. Oxidation-Reduction Titrimetry Principles of oxidation-reduction titrations (electrode potentials) to be discussed. (i) Estimation of Fe(II) and oxalic acid using	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
	<b>Tutorials:</b>	NA	NA	NA
	<b>Assignment :</b>	Basic Analytical Chemistry	BSc. (P) Life Science III Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>
		Basic Analytical Chemistry	BSc. (P) Life Science I Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>

OCTOBER	<b>Theory:</b>	Paper chromatographic separation of mixture of metal ion (Ni <sup>2+</sup> and Co <sup>2+</sup> ). <b>Ion-exchange:</b> Column, ion-exchange chromatography etc. Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible).	BSc. (P) Life Science III Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>
		<b>Analysis of water:</b> Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods. a. Determination of pH, acidity and alkalinity of a water sample.	BSc. (P) Life Science II Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>
	<b>Practicals:</b>	Detection of extra elements (N, S, Cl, Br, I) in organic compounds 4. Separation of mixtures by Chromatography: Measure the R <sub>f</sub> 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 II year	Practical CC – I Lab

		Estimation of oxalic acid and sodium oxalate in a given mixture. (iii) Estimation of Fe(II) with K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> using internal indicator (diphenylamine, Nphenylanthranilic acid) and discussion of external indicator.	B.Sc. (Hons.) Chemistry I Year	Practical C – I Lab
	<b>Tutorials:</b>	NA	NA	NA
	<b>Test</b>	Basic Analytical Chemistry	BSc. (P) Life Science III Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>
NOVEMBER	<b>Theory:</b>	Suggested Applications (Any one): a. To study the use of phenolphthalein in trap cases. b. To analyze arson accelerants. c. To carry out analysis of gasoline. Suggested Instrumental demonstrations: a. Estimation of macro nutrients: Potassium, Calcium, Magnesium in soil samples by flame photometry. b. Spectrophotometric determination of Iron in Vitamin / Dietary Tablets. c. Spectrophotometric Identification and Determination of Caffeine and Benzoic Acid in Soft Drink.	BSc. (P) Life Science III Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>

		Determination of dissolved oxygen (DO) of a water sample.	B.Sc. (P) Life Science II Year	Skill Enhancement Course <b>BASIC ANALYTICAL CHEMISTRY</b>
	<b>Practicals:</b>	(b)Identify and separate the sugars present in the given mixture by paper chromatography.	B.Sc. (P) Life Science I year	Practical CC – I Lab
		Practical exercise test	B.Sc. (Hons) Chemistry I year	Chemistry Lab
	<b>Tutorials:</b>	NA	NA	NA



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. S. Venkata Kumar**

**Department: Commerce**

**Semester: I/III/V**

Month	Type of Class	Topics	Course	Paper Code/Name
<b>JULY-2018</b>	<b>Theory</b>	1. <b>The Indian Contract Act 1872:</b> (a) Meaning, characteristics and kinds. (b) Essentials of a valid contracts- offer and acceptance,	1. B.Com. (Hons) – IA	1. BCH 1.3: Business Laws
	<b>Practicals</b>			
	<b>Tutorials</b>	1. Case laws of offer and acceptance presented by students.	1. B.Com. (Hons) - IA	1. BCH 1.3: Business Laws
Month	Type of Class	Topics	Course	Paper Code/Name
<b>AUGUST-2018</b>	<b>Theory</b>	1. The Indian contract Act 1872: consideration, contractual capacity, free consent, legality of objects, void agreements,	1.Com. (Hons) – IA	1. BCH 1.3: Business Laws
	<b>Practicals</b>			
	<b>Tutorials</b>	1. Presentation of case studies vis-à-vis rules.	1. B.Com. (Hons) - IA	1. BCH 1.3: Business Laws
Month	Type of Class	Topics	Course	Paper Code/Name
<b>SEPTEMBER-2018</b>	<b>Theory</b>	1. <b>The Indian contract Act, 1872:</b> discharge of contracts- modes of discharge including breach and its remedies, contingent contracts, quasi contracts, contract of indemnity and guarantee, contract of bailment and contract of Agency. 2. <b>The sales of goods Act, 1930:</b> the contract of sale, meaning and difference between sale and agreement to sell,	1. B.Com. (Hons) – IA	1. BCH1.3: Business Laws
	<b>Practicals</b>			
	<b>Tutorials</b>	1. Case study on contractual capacity & legality of objects. .	1. B.Com. (Hons) - IA	1. Business Laws

	<b>Assignment</b>	1. Topic allots for 1st assignment and collect it and topic allot for 2 <sup>nd</sup> Assignment also.	1. B.Com. (Hons) – IA	1.BCH 1.3: Business Laws
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>OCTOBER-2018</b>	<b>Theory</b>	1. <b>The sales of goods Act, 1930:</b> Conditions and warranties, transfer of ownerships in goods including sale by non-owners, performance of contract of sale.	1.B.Com. (Hons) – IA	1. BCH 1.3 Business Laws
	<b>Practicals</b>			
	<b>Tutorials</b>	1. Case study presentation by student on sale of Goods Act 1930.	1. B.Com. (Hons) - IA	1. BCH 1.3: Business Laws
	<b>Test</b>	1. 2nd week of October give Notice for conducting Internal Examination date Schedule and collect 2 <sup>nd</sup> Assignment also.	1 B.Com. (Hons) - IA	1. BCH 1.3: Business Laws
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>NOVEMBER-2018</b>	<b>Theory</b>	1. <b>The sales of goods Act, 1930:</b> unpaid seller: meaning and rights of unpaid seller against the goods and the buyer.	1. B.Com. (Hons) – IA	1. BCH 1.3: Business Laws
	<b>Practicals</b>			
	<b>Tutorials</b>	1. Case study presentation by student on sale of Goods Act 1930.	1. B.Com. (Hons) - IA	1.BCH 1.3: Business Laws
	<b>Test</b>	1. Conduct internal examination and finalize the internal Assessment.	1.B.Com (Hons)-IA	1. BCH 1.3: Business Laws.



Month	Type of Class	Topics	Course	Paper Code/Name
July & August 2018	Theory	UNIT: 1 Organisational Theories: Classical, Neo-Classical and Contemporary, OB: Concepts, determinants, challenges, and formal & informal structures; flat and Tall structures, Opportunities of OB; contributing disciplines of OB; Organisational behaviour models. UNIT: 2 Personality – Type A and B, Big Five Personality types, factors influencing personality; values and attitudes – concept and types of values: terminal and Instrumental value; Component of attitude, job related attitudes, measurement of attitude; Learning- concept and learning theories and reinforcement, schedules of reinforcement; Perception and emotion – concept, perceptual process, importance, factors influencing perception, perceptual errors and distortions, emotional intelligence.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour
	Tutorials	Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour
	Assignment -I	Topics allotment for making the assignments.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour
Month	Type of Class	Topics	Course	Paper Code/Name
September 2018	Theory	UNIT – 3 Concept and nature of decision-making process, individual versus group decision-making, Nominal group technique and Delphi technique, communication and feedback, models of communication, transactional analysis, Johari Window. UNIT – 4 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. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour

	<b>Tutorials</b>	Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour
	<b>Assignment- II</b>	Topics allotment for making the assignments.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>October 2018</b>	<b>Theory</b>	UNIT – 5 Concept and theories, styles of leadership, Behavioural approach, situational approach, leadership effectiveness, power and conflict, bases of power, power tactics, sources of conflict, conflict resolution strategies.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour
	<b>Tutorials</b>	Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour
	<b>Test</b>	Test would be conducted on the concerned subject after mid-semester break.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>November 2018</b>	<b>Theory</b>	UNIT – 6 Organisational culture and climate- concept and determinants of organisational culture, Developing organisational culture, Organisational change – importance, stability vs change, Proactive vs Reaction change, Change process, Managing change, Individual and organisational factors to stress; work stressors, consequences of stress on individual and organization; Prevention and management of stress.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour
	<b>Tutorials</b>	Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it.	B.Com. (Hons) - V	BCH-5.4 DSE Group A (h): Organisational Behaviour



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

**Name of the Faculty: Mrs. Sunita Chhabra**  
**Department: Commerce**  
**Semester: 5<sup>th</sup>**

Month		Topics	Course	Paper Code/Name
July - August	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Introduction: Meaning, Nature and scope of marketing; Evolution of marketing concept and modern marketing concept; Marketing mix.</li> <li>2. Marketing Environment- macro and micro environmental concepts; Consumer buying process; Factors influencing consumer buying decisions.</li> <li>3. Market segmentation – meaning, benefits, and Bases of segmentation; Positioning – meaning and importance; Major bases of positioning a product</li> </ol>	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
	<b>Tutorials</b>	<ol style="list-style-type: none"> <li>1. Nature of marketing.</li> <li>2. Difference between marketing and selling.</li> <li>3. Marketing mix and its components.</li> <li>4. Marketing Environment – explain customer supplier, social cultural technological environment.</li> </ol>		
September	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Product: Concept, Product classification; Major product decisions: Product attributes Branding, Packaging and labeling; After-sales service; Product life cycle, new product development.</li> <li>2. Pricing: Significance, factors affecting price determination, major pricing methods; pricing policies and strategies.</li> <li>3. Promotion: Nature and importance, promotion mix, Promotion tools, advertising personal selling, public relation, sales promotion and publicity.</li> </ol>	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
	<b>Tutorials</b>	<ol style="list-style-type: none"> <li>1. Dimensions of product in 5 layers.</li> <li>2. Branding.</li> <li>3. Product life cycle.</li> <li>4. Pricing</li> </ol>		

	<b>Assignment</b>	<ol style="list-style-type: none"> <li>1. Consumer Behaviour.</li> <li>2. Write note on marketing and selling, significance of marketing.</li> </ol>		
<b>October</b>	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Factors affecting promotion mix, integrated marketing communication approach.</li> <li>2. Distribution: Channels of distribution – Meaning, importance, and functions; Factors affecting choice of distribution channel; Distribution logistics: Meaning, importance and decisions.</li> <li>3. Retailing: Store based, Non store based, specialty store, super market, retail vending machine, mail order house.</li> </ol>	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
	<b>Tutorials</b>	<ol style="list-style-type: none"> <li>1. Pricing policies and factors affecting pricing.</li> <li>2. Skimming and penetration pricing.</li> <li>3. Distribution logistics.</li> <li>4. Retailing – store based and non-store based.</li> </ol>		
	<b>Test</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Consumer Behavior</li> <li>3. Market selection</li> <li>4. Product</li> </ol>		
<b>November</b>	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Management of Retailing; an overview in India changing scenario.</li> <li>2. Development and Issues in Marketing: Rural, Social, Online, Direct, Services, Green and relationship marketing, marketing ethics.</li> </ol>	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
	<b>Tutorials</b>	<ol style="list-style-type: none"> <li>1. Promotion mix</li> <li>2. Relationship, green, online and direct marketing.</li> </ol>		

Semester-3<sup>rd</sup>

<b>Month</b>		<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>July – August</b>	<b>Theory</b>	<ul style="list-style-type: none"> <li>• Concept; Management functions; Coordination.</li> <li>• Types of Plans; Strategic Planning: Process, Importance, Limitations, Growth Strategies – Internal and External.</li> <li>• Environmental Analysis – Internal and External, SWOT/TOWS/WOTS-UP, BCG Matrix, Competitor Analysis</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Semester – III Management Principles and Applications
	<b>Tutorials</b>	<ul style="list-style-type: none"> <li>• Process of Planning</li> <li>• Nature of Management</li> <li>• Single use plan and their Significance</li> <li>• Horizontal and Vertical Integration</li> </ul>		

<b>September</b>	<b>Theory</b>	<ul style="list-style-type: none"> <li>• Decision Making: Concept, Importance, Group Decision Making, Process, Individual Decision Making, Perfect and Bonded Rationality, Techniques (Qualitative, Quantitative, MIS, DSS)</li> <li>• Organising: Process, Span of Management, Different types of Authority, Line Staff Functional, Decentralisation, and Delegation</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Semester – III Management Principles and Applications
	<b>Tutorials</b>	<ul style="list-style-type: none"> <li>• SWOT, TOWS, BCG Matrix</li> <li>• Business Environment - External factor</li> <li>• Bonded Rationality</li> <li>• MIS, DSS</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Semester – III Management Principles and Applications
<b>October</b>	<b>Theory</b>	<ul style="list-style-type: none"> <li>• Formal and Informal organization; Principles of Organising; Types of Organising structure.</li> <li>• Motivation: Concept, Importance, Intrinsic and Extrinsic, Major Motivation Theories – Maslow’s, Herzberg’s, McGregor’s X and Y, Ouchi’s Z</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Semester – III Management Principles and Applications



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

**Name of the Faculty: Dr. Mamta Arora**

**Department: Commerce**

**Semester : I/III/V**

Month		Topics	Course	Paper
JULY	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Introduction: Nature, Scope and objectives of Financial Management. Agency Problems</li> <li>2. Time Value of Money – Theory and Practical Problems</li> </ol>	B.Com(H)-III A & IIIB	BCH-5.2/ Fundamentals of Financial Management
	<b>Practicals</b>	Not Applicable		
	<b>Tutorials</b>	<ol style="list-style-type: none"> <li>1. Interactive session with students on scope and objectives of Financial Management</li> </ol>		
AUGUST	<b>Theory:</b>	<ol style="list-style-type: none"> <li>1. Risk and Return – Concepts and Calculation ( including Capital Asset Pricing Model</li> <li>2. Capital Budgeting Process and Cash Flow estimation – Meaning, Significance and Limitations of Capital Budgeting</li> <li>3. Problems based on replacement and incremental techniques</li> <li>4. Evaluation Techniques of Capital Budgeting – Non Discounting Methods ( Payback Period Method and Accounting rate of Return). Discounting Methods ( NPV method, Internal rate of Return, Profitability Index, Net terminal value)</li> </ol>	B.Com(H)-III A & IIIB	BCH – 5.2/ Fundamentals of Financial Management
	<b>Practicals:</b>	Not Applicable		
	<b>Tutorials:</b>	<ol style="list-style-type: none"> <li>1. Practical Problems of Time Value of Money discussed</li> <li>2. Discussion on Practical Problems based on Cash Flow estimates and evaluation techniques of Capital Budgeting and Capital Budgeting under Risk</li> </ol>		

SEPTEMBER	<b>Theory:</b>	<ol style="list-style-type: none"> <li>1. Financial Decisions- Meaning, Sources of Long Term Financing, Estimation of Cost of Components of Cost of Capital</li> <li>2. Methods for Calculating Specific Costs – Cost of Equity, Capital, Cost of Debt, Cost of preference Capital and Cost of Retained Earnings</li> <li>3. Concept of assignment of Weights, Market Value and Book Value weights. Calculation of weighted average cost of capital ( WACC) and Marginal cost of Capital</li> <li>4. Theories of Capital Structure, Net Income and Net Operating Income Approach. MM Hypothesis and Traditional Approach</li> <li>5. Determinants of Capital Structure</li> </ol>	B.Com(H)- III A & IIIB	BCH – 5.2/ Fundamentals of Financial Management
	<b>Practicals:</b>	Not Applicable		
	<b>Tutorials:</b>	<ol style="list-style-type: none"> <li>1. Practical problems based on Calculation of Cost of Capital and Capital Structure theories.</li> </ol>		
	<b><u>Assignment :</u></b>	Assignment on Capital Budgeting Evaluation Techniques		
OCTOBER	<b>Theory:</b>	<ol style="list-style-type: none"> <li>1 Operating, Financial and Total Leverage .</li> <li>2 EBIT / EPS Analysis, Financial Break even Level and Calculation of Indifference Point in Capital Structure.</li> <li>3 Working Capital Decisions : Concept of Working Capital, Operating and Cash Cycles, Risk Return trade-off. Sources of short term finance and working capital estimation.</li> <li>4 Cash management, receivable management and inventory management.</li> </ol>	B.Com(H)- III A & IIIB	BCH – 5.2/ Fundamentals of Financial Management
	<b>Practicals:</b>	Not Applicable		
	<b>Tutorials:</b>	<ol style="list-style-type: none"> <li>1. Assignment on Working Capital Management.</li> <li>2. Discussion on Practical problems of Leverage, Calculation of EPS.</li> <li>3. Discussion on Practical problems of Cash management and receivable management</li> </ol>		
	<b><u>Test</u></b>	Class Test on Capital Budgeting decision, Cost of Capital and capital structure theories.		

NOVEMBER	<b>Theory:</b>	<ol style="list-style-type: none"> <li>1. Meaning and Significance of Dividend Decision.</li> <li>2. Theories of Relevance and Irrelevance of Dividend Decision for Corporate valuation (MM Theory, Walter's Model and Gordon's Model etc.)</li> <li>3. Cash and Stock Dividends and Dividend Policy in Practice.</li> <li>4. Determinants of Dividend</li> </ol>	B.Com(H)- III A & IIIB	BCH – 5.2/ Fundamentals of Financial Management
	<b>Practicals:</b>	Not Applicable		
	<b>Tutorials:</b>	<ol style="list-style-type: none"> <li>1. Discussion on Problems of Dividend Decisions.</li> <li>2. To clear doubts of the syllabus</li> </ol>		





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

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

**Department: Commerce**

**Semester: 3<sup>rd</sup>**

Month		Topics	Course	Paper Code/Name
July – August	<b>Theory</b>	<b>Unit 1- Introduction</b> <ul style="list-style-type: none"> <li>• Concept; Management functions; Coordination.</li> <li>• Trends &amp; Challenges of mngt. Emerging Issues in mngt</li> </ul> <b>Unit 2- Planning</b> <ul style="list-style-type: none"> <li>• Types of Plans;</li> <li>• Strategic Planning: Process, Importance, Limitations, Growth Strategies – Internal and External.</li> <li>• Environmental Analysis – Internal and External, SWOT/TOWS/WOTS-UP, BCG Matrix, Competitor Analysis; business environment</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	<b>Tutorials</b>	<ul style="list-style-type: none"> <li>• Case studies/ presentations/ management games related to the topics done in theory</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
September	<b>Theory</b>	<b>Unit 2- Planning</b> <ul style="list-style-type: none"> <li>• Decision Making: Concept, Importance, Group Decision Making, Individual vs group Decision Making, Process, Perfect and Bounded Rationality, Techniques (Qualitative, Quantitative, MIS, DSS)</li> </ul> <b>Unit 4 – Staffing &amp; Directing</b> <ul style="list-style-type: none"> <li>• Motivation: Concept, Importance, Intrinsic and Extrinsic, Major Motivation Theories – Maslow’s, Herzberg’s, McGregor’s X and Y, Ouchi’s Z</li> <li>• Leadership- concept, importance, major leadership theories (Likert’s theory, Blake &amp; Mouton’s Grid, House Path Goal theory, Fielder’s situational leadership), Transactional &amp; Transformational leadership</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	<b>Tutorials</b>	<ul style="list-style-type: none"> <li>• Case studies/ presentations/ management games related to the topics done in theory</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	<b>Assignment</b>	<ul style="list-style-type: none"> <li>• Assignment on various topics from the course</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
October	<b>Theory</b>	<b>Unit 4- Staffing &amp; Directing</b> <ul style="list-style-type: none"> <li>• Communication: Concept, purpose, process, oral &amp; written communication, formal, informal communication networks, barriers to communication, overcoming barriers</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications

		<b>Unit 3 - Organising</b> <ul style="list-style-type: none"> <li>• Concept</li> <li>• Process, Span of Management, Different types of Authority, Line Staff Functional, Decentralisation, and Delegation</li> <li>• Formal and Informal organization</li> <li>• Principles of Organising;</li> <li>• Types of Organising structure.</li> </ul>		
	<b>Tutorials</b>	<ul style="list-style-type: none"> <li>• Case studies/ presentations/ management games related to the topics done in theory</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	<b>Test</b>	<ul style="list-style-type: none"> <li>• Unit II – Planning</li> <li>• Unit IV – Staffing &amp; Directing</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
<b>November</b>	<b>Theory</b>	<b>Unit 5- Control</b> <ul style="list-style-type: none"> <li>• Control, Process, Principles, Major Techniques, Ratio Analysis, ROI, Budgetary Control, EVA, MVA, PERT, CPM.</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications
	<b>Tutorials</b>	<ul style="list-style-type: none"> <li>• Case studies/ presentations/ management games related to the topics done in theory</li> </ul>	B.Com. (Hons.)	Paper BCH 3.3: Management Principles and Applications



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

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

**Semester: 5<sup>th</sup>**

Month		Topics	Course	Paper Code/Name
<b>July - August</b>	<b>Theory</b>	1. Introduction: Meaning, Nature and scope of marketing; Evolution of marketing concept and modern marketing concept; Marketing mix. Marketing Environment- macro and micro environmental concepts; 2. Consumer buying process; Factors influencing consumer buying decisions. 3. Market segmentation – meaning, benefits, and Bases of segmentation; Positioning – meaning and importance; Major bases of positioning a product	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
	<b>Tutorials</b>	Case studies/ presentations/ activities based on the theory chapters	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
<b>September</b>	<b>Theory</b>	4. Product: Concept, Product classification; Major product decisions: Product attributes Branding, Packaging and labeling; After-sales service; Product life cycle, new product development. 5. Pricing: Significance, factors affecting price determination, major pricing methods; pricing policies and strategies. 6. Promotion: Nature and importance, promotion mix, Promotion tools, advertising, personal selling, public relation, sales promotion and publicity. Factors affecting promotion mix, integrated marketing communication approach	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
	<b>Tutorials</b>	Case studies/ presentations/ activities based on the theory chapters	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing

	<b>Assignment</b>	Assignment on various topics in the syllabus		
<b>October</b>	<b>Theory</b>	<p>7. Distribution: Channels of distribution – Meaning, importance, and functions; Factors affecting choice of distribution channel; Distribution logistics: Meaning, importance and decisions.</p> <p>8. Retailing: Store based, Non store based, specialty store, super market, retail vending machine, mail order house. Management of Retailing; an overview in India changing scenario.</p>	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
	<b>Tutorials</b>	Case studies/ presentations/ activities based on the theory chapters	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
	<b>Test</b>	<p>1. Introduction</p> <p>2. Consumer Behavior</p> <p>3. Market selection</p> <p>4. Product</p>		
<b>November</b>	<b>Theory</b>	9. Development and Issues in Marketing: Rural, Social, Online, Direct, Services, Green and relationship marketing, marketing ethics.	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing
	<b>Tutorials</b>	Case studies/ presentations/ activities based on the theory chapters	B.Com. (Hons.) 5 <sup>th</sup> Semester CBCS	Paper BCH 5.1 Principles of Marketing



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE  
JULY-DEC 2018**

**Name of the Faculty: Ms Pooja Jain**

**Department: Commerce**

**Semester: I/III/V**

Month	Type of Class	Topics	Course	Paper Code/Name
JULY	Theory	<p><b>1. Unit I:</b> 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.</p> <p><b>2. Unit 1: Introduction:</b> Meaning, nature, concepts, advantages, disadvantages and reasons for transacting online, types of E-commerce</p> <p><b>3. Unit 1: Introduction:</b> Meaning of computers and functions of computer</p>	<p><b>1. B.Com. (Hons) – V A+B</b></p> <p><b>2. B.Com. (Hons) – III A+B</b></p> <p><b>3. B.Com III</b></p>	<p>1. BCH 5.3/Management Accounting</p> <p>2. BCH 3.5 E-Commerce</p> <p>3. BC 3.4 Computer Applications in business</p>
	Practicals	Introduction to HTML, Creating and viewing a Webpage and basic HTML tags.	<p><b>1. B.Com. (Hons) – V A</b></p> <p><b>2. B.Com. (Hons) – V B</b></p>	1. BCH 3.5 E-Commerce Practical Part C
	Tutorials	Basics and significance of Management Accounting will be discussed	<b>1. B.Com. (Hons) – V A+B</b>	1. BCH 5.3/Management Accounting
Month	Type of Class	Topics	Course	Paper Code/Name
AUGUST	Theory	<p><b>1. Unit IV:</b> 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.</p> <p><b>Unit II:</b> Budgeting and budgetary control: Concept of budget and budgetary control, objectives, merits, and limitations</p>	<p><b>1. B.Com. (Hons) – V A+B</b></p> <p><b>2. B.Com. (Hons) – III A+B</b></p> <p><b>3. B.Com III</b></p>	<p>1. BCH 5.3/Management Accounting</p> <p>2. BCH 3.5 E-Commerce</p> <p>3. BC 3.4 Computer Applications in business</p>

		<p><b>2. UNIT 1: Introduction: E-commerce business models</b> (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.)</p> <p><b>UNIT 2: Security and Encryption</b> Needs and concepts, the e-commerce security environment : (dimension, definition and scope of e-security )</p> <p><b>3. Unit 1: Introduction:</b> Characteristics of computers, advantages and disadvantages of computers, basic computer operations, organization of computer, computer hardware setup, configuration</p>		
	<b>Practicals</b>	Text Formatting tags, Images and hyperlinks	<p><b>1. B.Com. (Hons) – V A</b> <b>2. B.Com. (Hons) – V B</b></p>	1. BCH 3.5 E-Commerce Practical Part C
	<b>Tutorials</b>	<p>Practical problems will be discussed related to following topics:</p> <p>a. Absorption versus variable costing: Distinctive features and income determination.</p> <p>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.</p>	<b>2. B.Com. (Hons) – V A+B</b>	1. BCH 5.3/Management Accounting
	<b>Assignment</b>	One home assignment will be given from the topic: Absorption and variable Costing and CVP analysis	<p><b>1. B.Com. (Hons) – V A</b> <b>2. B.Com. (Hons) – V B</b></p>	BCH 5.3/Management Accounting

Month	Type of Class	Topics	Course	Paper Code/Name
SEPTEMBER	Theory	<p><b>Unit II:</b> Budgeting and budgetary control: Budget administration, Functional budgets, Fixed and flexible budgets, Zero base budget, Programme and performance budgets.</p> <p><b>Unit VI:</b> Responsibility Accounting: Concept, Significance, Different Responsibility Centres, Divisional Performance Measurement – Financial Measures.</p> <p><b>Unit V:</b> Decision making: Costs for decision making, variable costing and differential analysis as aids in making decisions – fixation of selling price, exploring new markets</p> <p><b>2. UNIT 2: Security and Encryption</b> 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).</p> <p><b>UNIT 6 : Security and legal aspects of e-commerce</b> Threats in E-commerce , security of clients and service provider; cyber laws – Relevant provisions of information technology act 2000, offences , secure electronic records and digital signatures penalties and adjudication.</p> <p><b>3.Unit 1:</b> Introduction to networking, distributed computing, basic hardware for networks, network security, types of networks by scale</p>	<p><b>1. B.Com. (Hons) – V A+B</b></p> <p><b>2. B.Com. (Hons) – III A+B</b></p> <p><b>3. B.Com III</b></p>	<p>1. BCH 5.3/Management Accounting</p> <p>2. BCH 3.5 E-Commerce</p> <p>3. BC 3.4 Computer Applications in business</p>
	Practicals	Lists, Tables and Forms	<p><b>1. B.Com. (Hons) – V A</b></p> <p><b>2. B.Com. (Hons) – V B</b></p>	1.BCH 3.5 E-Commerce Practical Part C

	<b>Tutorials</b>	Practical questions and Presentation will be taken from the following topics: a. Budgeting and budgetary control: Budget administration, Functional budgets, Fixed and flexible budgets b. Decision making: Costs for decision making, variable costing and differential analysis as aids in making decisions – fixation of selling price, exploring new market	<b>3. B.Com. (Hons) – V A+B</b>	1. BCH 5.3/Management Accounting
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>OCTOBER</b>	<b>Theory</b>	<p><b>1. Unit V:</b> Decision making: make or buy, product mix, operate or shut down, sell or process further</p> <p><b>Unit III:</b> 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.</p> <p><b>2. UNIT IV:</b> 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.</p> <p><b>UNIT V :On-line business transactions:</b> Meaning, purposes, advantages and disadvantages of transacting online, E-commerce application in various industries like {banking, insurance, payment of utility bills, online marketing</p> <p><b>3. Unit 1:</b> Types of networks by organisation scope, types of networks by communication media, types of networks by topology</p>	<p><b>1. B.Com. (Hons) – V A+B</b></p> <p><b>2. B.Com. (Hons) – III A+B</b></p> <p><b>3. B.Com III</b></p>	<p>1. BCH 5.3/Management Accounting</p> <p>2. BCH 3.5 E-Commerce</p> <p>3. BC 3.4 Computer Applications in business</p>



	<b>Practicals</b>	Forms, Frames and Cascading style sheets	<b>1. B.Com. (Hons) – V A</b> <b>2. B.Com. (Hons) – V B</b>	1. BCH 3.5 E-Commerce Practical Part C
	<b>Tutorials</b>	Practical questions and Presentation will be taken from the following topics: a. Decision making: make or buy, product mix, operate or shut down, sell or process further b Standard costing and variance analysis: Meaning of standard cost and standard costing: advantages, limitations and applications, Variance analysis – material, labour, and sales variances, Disposition of variances, Control ratios.	<b>1. B.Com. (Hons) – V A+B</b>	1. BCH 5.3/Management Accounting
	<b>Test</b>	1. Class Test will be conducted in the middle of the month from these topics: a. Nature and scope of management accounting b. Absorption and variable costing c. C-V-P Analysis d. Budgeting 2. Class Test will be conducted in the middle of the month from these topics: <b>a. Introduction to E-commerce</b> <b>b. Security and Encryption</b> <b>c. E-payment system models and methods of e-payments</b> 3. Class Test will be conducted in the middle of the month from these topics: <b>a. Introduction to computers</b> <b>b. Networking</b>	<b>1. B.Com. (Hons) – V A+B</b> <b>2. B.Com. (Hons) – III A+B</b> <b>3. B.Com III</b>	1. BCH 5.3/Management Accounting 2. BCH 3.5 E-Commerce 3. BC 3.4 Computer Applications in business

Month	Type of Class	Topics	Course	Paper Code/Name
NOVEMBER	Theory	<p><b>1.Unit III:</b> Standard Costing and Variance analysis: Overhead variance b. Revision will be taken from each unit.</p> <p><b>2. UNIT V :On-line business transactions:</b> a.E-tailing (popularity ,benefits ,problems ,and features), online services (financial, travel and career ), auctions (online portal ,online learning, publishing and entertainment) online shopping (amazon ,snapdeal, alibaba, flipkart , etc) b. Revision will be taken from above topics 3. Revision will be taken from each unit.</p>	<p><b>1. B.Com. (Hons) – V A+B</b></p> <p><b>2. B.Com. (Hons) – III A+B</b></p> <p><b>3. B.Com III</b></p>	<p>1. BCH 5.3/Management Accounting</p> <p>2. BCH 3.5 E-Commerce</p> <p>3. BC 3.4 Computer Applications in business</p>
	Practicals	Miscellaneous questions will be discussed from examination point of view.	<p><b>1. B.Com. (Hons) – V A</b></p> <p><b>2. B.Com. (Hons) – V B</b></p>	1. BCH 3.5 E-Commerce Practical Part C
	Tutorials	<p>a. Standard Costing and Variance analysis: Overhead variance</p> <p>b. Miscellaneous questions will be discussed from examination point of view.</p>	<b>1. B.Com. (Hons) – V A+B</b>	1. BCH 5.3/Management Accounting



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Sindhu Mani Bag**

**Department: Commerce**

**Semester: I/III/V**

Month	Type of Class	Topics	Course	Paper Code/Name
JULY-2018	Theory	1. Introduction, meaning and features, Administration of company laws, kinds of companies. 2. <b>Limited Liability partnership-2008</b> :Introduction to LLP. 3. <b>Limited Liability partnership-2008</b> :Introduction to LLP.	1. B.Com(P)-III 2. B.Com (Hons)-IA 3. B.Com (H) –IB	1.BC 3.1: Company Laws 2.BCH 1.3: Business Laws. 3. BCH 1.3: Business Laws
	Computer Lab	1. Income Tax Return	1.B,com (H) III(A&B)	1. BCH 3.2: Income Tax Laws & Practices
	Tutorials	1. Case laws present by the students. 2. Case laws present by the students. 3. Case laws present by the students.	1. B.Com. (P) – III 2.B.Com. (Hons) – IA 3. B.Com(H)-IB	1. BC 3.1:Company Laws 2. BCH 1.3:Business Laws. 3. BCH 1.3: Business Laws
Month	Type of Class	Topics	Course	Paper Code/Name
August -2018	Theory	1. Formation of Companies, Memorandum of Association, Articles of Association. Prospectus and Shares and share capital. 2. <b>The Limited Liability Partnership-2008</b> :Formation and Incorporation of LLP, partners and their relations in LLP 3. <b>The Limited Liability Partnership-2008</b> :Formation and Incorporation of LLP, partners and their relations in LLP	1. B.Com. (P) – III 2. B.Com (H)-IA 3. B.Com (H)-IB	1. BC 3.1:Company Laws 2. BCH 1.3:Business Laws. 3. BCH1.3: Business Laws

	<b>Computer Lab</b>	1. Income Tax Practical: Income tax Return Filing	B.Com (H)-III(A&B)	1. BCH 3.2: Income Tax Laws and Practice.
	<b>Tutorials</b>	1. Case study present by the students. 2. Case study present by the students. 3. Case study present by the students.	1. B.Com. (P) – III 2. B.Com. (H) – IA 3. B.Com (H)-IB	1. BC 3.1 Company Laws 2. BCH- 1.3:Business Laws 3. BCH 1.3: Business Laws
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>September-2018</b>	<b>Theory</b>	1. Members and Shareholders, Director and Key Managerial Personnel, Shareholders Meeting, Accounts and Audit.  <b>2. The Limited Liability Partnership-2008:</b> Financial Disclosures and Taxation of LLP, Conversion to LLP, Winding up and dissolution.  <b>3. The Limited Liability Partnership-2008:</b> Financial Disclosures and Taxation of LLP, Conversion to LLP Winding up and dissolution..	1. B.Com. (P) – III  2. B.Com. (Hons) – IA  3. B.Com (H)-IB	1.BC 3.1:Company Laws  2.BCH 1.3:Business Laws.  3. BCH1.3: Business Laws
	<b>Computer Lab</b>	1.Income tax Practical: Income tax Return Filing	1.B.Com(H)-III (A&B)	1, BCH 3.2: Income Tax Laws & Practices
	<b>Tutorials</b>	1. Case laws present by the students. 2. Case laws present by the students. 3. Case laws present by the students.	1. B.Com. (P) – III 2. B.Com. (Hons) – IA 3. B.Com. (H) - IB	1. BC 3.1 Company Laws 2. BCH 1.3: Business Laws 3. BCH 1.3: Business Laws

Month	Type of Class	Topics	Course	Paper Code/Name
October-2018	<b>Theory</b>	<p>1. Dividend Provisions, Winding up of Companies, Tribunal and Court</p> <p><b>2.The contract Act 1872:</b> Contract of Agency, <b>The Information Technology Act 2000: Introduction to IT Act,</b> Digital signature, electronic governance, attribution, acknowledgement, and dispatch of electronic records.</p> <p><b>3. The contract Act 1872:</b> Contract of Agency, <b>The Information Technology Act 2000: Introduction to IT Act,</b> Digital signature, electronic governance, attribution, acknowledgement, and dispatch of electronic records.</p>	<p>1. B.Com. (P) – III</p> <p>2. B.Com (Hons) –IA</p> <p>3.B.Com (H)-IB</p>	<p>1. BC 3.1: Company Laws</p> <p>2. BCH1.3:Business Laws</p> <p>. BCH 1.3: Business Laws</p>
	<b>Computer lab.</b>	1. Income Tax Practical: Income tax Return Filing	1. B.Com (H)-III(A&B)	1. BCH 3.2: Income Tax Laws & Practices
	<b>Tutorials</b>	<p>1. Case laws present by the students.</p> <p>2. Case laws present by the students.</p> <p>3. Case laws present by the students.</p>	<p>1. B.Com. (P) – III</p> <p>2. B.Com. (Hons) – IA</p> <p>3. B.Com (H) – IB</p>	<p>1.BC 3.1: Company Laws</p> <p>2.BCH 1.3:Business Laws</p> <p>3. BCH-1.3: Business Law</p>
	<b>Assignment</b>	<p>1.Topic allotment for 1<sup>st</sup>assignment &amp; collect it and topic allotment for 2<sup>nd</sup> assignment.</p> <p>2. Topics allotment and collect of 1<sup>st</sup> Assignment and Topic allotment for 2<sup>nd</sup> Assignment (sharing with Dr. S. Venkata kumar).</p> <p>3. Topic allotment for 1<sup>st</sup>assignment &amp; collect it and topic allotment for 2<sup>nd</sup> assignment(sharing with Mrs. Priyanka &amp;Miss. Simran).</p>	<p>B.Com. (P) – III</p> <p>2. B.Com. (Hons) – IA</p> <p>3.B.Com (H)-IB</p>	<p>1.BC 3.1:Company Laws</p> <p>2.BCH 2.3: Business Laws.</p> <p>3. BCH-2.2: Business Laws</p>

	<b>Test</b>	<p>1. Notification of date schedule and conduct of the Internal Examination.</p> <p>2. Notification of date schedule and conduct of the Internal Examination.</p> <p>3. Notification of date schedule and conduct of the Internal Examination.</p>	<p>1. B.Com. (P) – III</p> <p>2. B.Com. (Hons) – IA</p> <p>3. B.Com (H) -IB</p>	<p>1.BC 3.1:Company Laws</p> <p>2.BCH 1.3:Business Laws</p> <p>3.BCH 1.3:Business Laws</p>
<b>November-2018</b>	<b>Theory</b>	<p>1. The Depository System</p> <p>2. <b>The Information Technology Act 2000:</b> Regulation of certifying authorities, digital signature certificate, duties of subscribers, penalties and adjudication, appellate tribunal, offences.</p> <p>3. <b>The Information Technology Act 2000:</b> Regulation of certifying authorities, digital signature certificate, duties of subscribers, penalties and adjudication, appellate tribunal, offences.</p>	<p>1. B.Com. (P) – III</p> <p>2. B.Com. (Hons) – IA</p> <p>3. B.Com (H) -IB</p>	<p>1. BC 3.1: Company Laws</p> <p>2.BCH 1.3:Business Laws</p> <p>3.BCH 1.3:Business Laws</p>
	<b>Tutorial</b>	Discussion relating to assessment of Assignment and Test.		
	<b>Computer Lab</b>	Conducting of Practical Examination	B.Com (H)-III (A&B)	1. BCH 3.2: Income Tax Laws & Practices
		Finalisation of Internal Assessment		



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Vinod Kumar**

**Department: Commerce**

**Semester: I/V**

Month	Type of Class	Topics	Course	Paper Code/Name
<b>JULY &amp; AUGUST 2018</b>	<b>Theory</b>	1. Nature, Scope and Objectives of financial management, Time value of money, Risk & Return – (including Capital Asset Pricing Model); Long-term investment decisions: The capital budgeting process, cash flow estimation, pay-back period method, Accounting rate of return, net present value, net terminal value, internal rate of return and Profitability Index 2. Concept of risk; Types of Risk; Managing Risk, Sources and measurement of risk; risk evaluation and prediction; Disaster risk management; Risk retention and transfer; concept of insurance; need for insurance; nature of insurance contract; principle of utmost good faith, insurable interest; proximate cause; contribution and subrogation; indemnity; legal aspects of insurance contract	1. B.Com - V 2. B.Com. (Hons) - I	1. BC 5.2(a)/Fundamental of Financial Management 2. BCH 1.4 (b)/Insurance and Risk Management
	<b>Practical</b>	1. Capital Budgeting methods with MS-EXCEL Software	1. B.Com. – (H) - V	1. BCH 5.2: Fundamentals of Financial Management
	<b>Tutorials</b>	1. Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it.	2. B.Com - V 3. B.Com. (H) - I	2. BC 5.2(a)/Fundamental of Financial Management 3. BCH 1.4 (b)/Insurance and Risk Management
Month	Type of Class	Topics	Course	Paper Code/Name
<b>SEPTEMBER 2018</b>	<b>Theory</b>	1. Financing Decisions: Sources of long-term financing, Estimation of components of cost of capital, methods of calculating cost of equity, cost of retained earnings, cost of debt and preference	1. B.Com - V 2. B.Com. (Hons) - I	1. BC 5.2(a)/Fundamental of Financial Management 2. BCH 1.4 (b)/Insurance and Risk Management

		capital, weighted average cost of capital, capital structure: theories of capital structure (Net Income, Net Operating Income, MM Hypothesis, Traditional approach), Operating and Financing Leverage, Determinants of capital structure. 2. Types of insurance; Regulatory framework of insurance: role, power and functions of IRDA, composition of IRDA, IRDA Act, 1999;		
	<b>Practical</b>	1. Capital Budgeting methods with MS-EXCEL Software	1. B.Com. – (H) - V	1. BCH 5.2: Fundamentals of Financial Management
	<b>Tutorials</b>	1. Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it.	1. B.Com – V 2. B.Com. (H) - I	1. BC 5.2(a)/Fundamental of Financial Management 2. BCH 1.4 (b)/Insurance and Risk Management
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>OCTOBER 2018</b>	<b>Theory</b>	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. Fire and Motor Insurance; Health Insurance	1. B.Com. - V 2. B.Com. (Hons) - I	1. CH 5.2 (a)/Fundamental of Financial Management 2. BCH 1.4 (b)/Insurance and Risk Management
	<b>Practicals</b>	1. Cost of capital and financing decisions	1. B.Com. (H) -V	1. BCH 5.2: Fundamentals of Financial Management
	<b>Tutorials</b>	1. Out of the topics covered in the class to be issued to the students for discussion and problem-solving with analytical thinking on it.	1. B.Com.- V 2. B.Com. (Hons) - I	1. BC 5.2 (a)/Fundamentals of Financial Management 2. BCH 1.4 (b)/Insurance and Risk Management
	<b>Assignment</b>	1. Topics were allotted for making the assignments. 2. Topics were allotted for giving presentation in PPT format.	1. B.Com - V 2. B.Com. (Hons) - I	1. BC 5.2 (a)/Fundamentals of Financial Management 2. BCH 1.4 (b)/Insurance and Risk Management



<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>NOVEMBER 2018</b>	<b>Theory</b>	<ol style="list-style-type: none"> <li>Working capital decisions: concepts of working capital, operating &amp; cash cycles, sources of short-term finance, working capital estimation, cash management, receivables management, inventory management</li> <li>Globalisation of insurance sector; Reinsurance; Co-insurance; Assignment; Endowment; Control of malpractices; Negligence; Loss assessment and loss control; exclusion of perils; computation of insurance premium, Actuaries</li> </ol>	<ol style="list-style-type: none"> <li>B.Com - V</li> <li>B.Com. (Hons) - I</li> </ol>	<ol style="list-style-type: none"> <li>BC 5.2 (a)/Fundamentals of Financial Management</li> <li>BCH 1.4 (b)/Insurance and Risk Management</li> </ol>
	<b>Practicals</b>	<ol style="list-style-type: none"> <li>Capital Budgeting methods , cost of capital and financing decisions</li> </ol>	<ol style="list-style-type: none"> <li>B.Com. (H) -V</li> </ol>	<ol style="list-style-type: none"> <li>BC 5.2(a): Fundamentals of Financial Management</li> </ol>
	<b>Tutorials</b>	<ol style="list-style-type: none"> <li>Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it.</li> </ol>	<ol style="list-style-type: none"> <li>B.Com.- V</li> <li>B.Com. (Hons) - I</li> </ol>	<ol style="list-style-type: none"> <li>BC 5.2 (a)/Fundamentals of Financial Management</li> <li>BCH 1.4 (b)/Insurance and Risk Management</li> </ol>
	<b>Test</b>	<ol style="list-style-type: none"> <li>Test would be conducted on the concerned subject.</li> <li>Test would be conducted on the concerned subject.</li> </ol>	<ol style="list-style-type: none"> <li>B.Com - V</li> <li>B.Com. (Hons) - I</li> </ol>	<ol style="list-style-type: none"> <li>BC 5.2 (a)/Fundamentals of Financial Management</li> <li>BCH 1.4 (b)/Insurance and Risk Management</li> </ol>



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Neha Singhal**

**Department: Commerce**

**Semester: III/V**

<b>Month</b>		<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>JULY</b>	<b>Theory</b>	1. An Introduction to Income Tax-Sections 1 to 4, Scope of Total Income and Residential Status. 2. Deductions to be made in computing Total Income. 3. Introduction, Types of Audit, Audit Planning and Documentation, Internal Control System.	1) B.Com-III 2) B.com -V	1. BC-3.2/Income Tax 2. BC-5.1 (c) Auditing and CG
	<b>Practicals</b>	1. Types of ITR	1.B.com-III	1. BC-3.2/Income Tax
	<b>Tutorials</b>	1. Scope of Total Income and Residential Status.	1. B.Com-III	1. BC-3.2/ Income tax Law and Practice
<b>AUGUST</b>	<b>Theory:</b>	1. Scope of Total Income and Residential Status, Income under the Head Salaries. 2. Deductions to be made in computing Total Income, Income under the Head House Property. 3. Vouching, Verification of Assets, Verification of Liabilities, Appointment and Removal of Auditor, Rights and Duties of a Company Auditor.	1. B.Com-V 2. B.com -III	1. BC-3.2/Income Tax 2. BC-5.1 (c) Auditing and CG
	<b>Practicals:</b>	1. Introduction to the software, Filing of ITR	1.B.com-III	1. BC-3.2/ Income tax Law and Practice
	<b>Tutorials:</b>	1. Income Under the Head Salary.	1. B.Com-III	1. BC-3.2/ Income tax Law and Practice

	<b>Assignment</b>	<ol style="list-style-type: none"> <li>1. Assignment form Chapter –Income under the head Salary.</li> <li>2. Assignment from Chapter- Verification, Appointment, Rights and Duties of an Auditor</li> </ol>	<ol style="list-style-type: none"> <li>1) B.Com-III</li> <li>2) B.Com -V</li> </ol>	<ol style="list-style-type: none"> <li>1. BC-3.2/ Income Tax Law and Practice\</li> <li>2. BC-5.1 (c) Auditing</li> </ol>
<b>SEPTEMBER</b>	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Income under the head House Property, Income under the head Business/ Profession.</li> <li>2. Auditor’s Report, Liabilities of Auditor, Cost Audit, Management Audit, Tax Audit and Introduction to EDP Auditing.</li> <li>3. CG-Theories, Models and Committees.</li> </ol>	<ol style="list-style-type: none"> <li>1. B.Com-V</li> <li>2. B.com-III</li> </ol>	<ol style="list-style-type: none"> <li>1. BC-3.2/Income Tax</li> <li>2. BC-5.1(c) Auditing and CG</li> </ol>
	<b>Practicals</b>	1. Questions on ITR Filing	1.B.com-III	1. BC-3.2/Income Tax
	<b>Tutorials</b>	<ol style="list-style-type: none"> <li>1. Income under the head House Property, Income under the head Business/ Profession.</li> <li>2. Cases in Verification of Assets and Verification of Liabilities</li> </ol>	1. B.Com-III	1. BC-3.2/ Income tax Law and Practice
<b>OCTOBER</b>	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Income under the head Business/ Profession, Income under the head Capital Gains, Income under the head Other Sources.</li> <li>2. Set off or Carry forwards and set off of losses.</li> <li>3. CG-Insider Trading, Rating Agencies, Clause 49, Green Governance, Whistle Blowing and Introduction to scams</li> </ol>	<ol style="list-style-type: none"> <li>1. B.Com-V</li> <li>2. B.com-III</li> </ol>	<ol style="list-style-type: none"> <li>1. BC-3.2/Income Tax</li> <li>2. BC-5.1 (c) Auditing and CG</li> </ol>
	<b>Practicals</b>	1. Questions on ITR Filing	1.B.com-III	1. BC-3.2/Income Tax
	<b>Tutorials</b>	<ol style="list-style-type: none"> <li>1. Income under the head Business/ Profession, Income under the head Capital Gains, Income under the head Other Sources.</li> <li>2. Liabilities of Auditor</li> </ol>	1. B.Com -III	1. BC-3.2/ Income tax Law and Practice
	<b>Test</b>	<ol style="list-style-type: none"> <li>1. Test from Chapter- Residential Status and Income under the head Salary.</li> <li>2. Test from Chapter- Types of Audit, Internal Control System, Appointment and Removal of an Auditor, Rights and Duties of Auditor.</li> </ol>	<ol style="list-style-type: none"> <li>1. B.com -III</li> <li>2. B.Com -V</li> </ol>	<ol style="list-style-type: none"> <li>1. BC-3.2/Income Tax Law and Practices</li> <li>2. BC-5.1 (c) Auditing and CG</li> </ol>

	<b>Assignment</b>	1. Assignment from Chapter- Income under the head Business/ Profession	1. B.Com-III	1. BC-3.2/Income Tax Law and Practice
<b>NOVEMBER</b>	<b>Theory</b>	1. Clubbing of Income, Set off or Carry forwards and set off of losses, Deductions to be made in computing Total Income, Agricultural Income, Assessment of Individuals. 2. Clubbing of Income, Leading case of Supreme Court. 3. Corporate Scams, Business Ethics and CSR	1. B.Com-V 2. B.com -III	1. BC-3.2/Income Tax 2. BC-5.1 (c) Auditing and CG
	<b>Practicals</b>	1. Questions on ITR Filing	1.B.com-III	1. BC-3.2/Income Tax
	<b>Tutorials</b>	1. Clubbing of Income, Agricultural Income, Assessment of Individuals.	1. B.Com -III	1. BC-3.2/ Income tax Law and Practice



**SEMESTER WISE  
TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: SHILPA**  
**Department: COMMERCE**  
**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	1.Introduction to the basic accounting concepts , Financial accounting standards and the relevance of international financial reporting standards.  2.Employee welfare	B.com(H) semester I (A+B)  B.com(H) semester III(A+B)	BCH1.2/ Financial Accounting  BCH3.1/Human Resource Management
	<b>Practicals</b>	Microsoft word	B.com (P) semester III	BC3.4(a)/Computer Application in Business
	<b>Tutorials</b>	Doubt session and taught students who joined late in this academic session the topics that they skipped.	B.com(H) semester I (A+B)	BCH1.2/ Financial Accounting
AUGUST	<b>Theory:</b>	1.Dissolution of Partnership Firm ,Inland Branches  2.Employee health and Safety	B.com(H) semester I (A+B)  B.com(H) semester III(A+B)	BCH1.2/ Financial Accounting  BCH3.1/Human Resource Management
	<b>Practicals:</b>	Microsoft word and Microsoft excel	B.com (P) semester III	BC3.4(a)/Computer Application in Business
	<b>Tutorials:</b>	Doubt session and taught students who joined late in this academic session the topics that they skipped	B.com(H) semester I (A+B)	BCH1.2/ Financial Accounting
SEPTEMBER	<b>Theory:</b>	1.Inland Branches , Final Accounts and Hire Purchase System	B.com(H) semester I (A+B)	BCH1.2/ Financial Accounting
		2.Industrial Disputes - causes and settlement machinery	B.com(H) semester III(A+B)	BCH3.1/Human Resource Management
	<b>Practicals:</b>	Microsoft excel and continuous evaluation of Microsoft word	B.com (P) semester III	BC3.4(a)/Computer Application in Business
	<b>Tutorials:</b>	Doubt session and taught students who joined late in this academic session the topics that they skipped	B.com(H) semester I (A+B)	BCH1.2/ Financial Accounting
	<b>Assignment :</b>	Topic- Dissolution and Inland branches  Employee Welfare	B.com(H) semester I (B)  B.com(H) semester III(A+B)	BCH1.2/ Financial Accounting  BCH3.1/Human Resource Management

OCTOBER	<b>Theory:</b>	1.Hire Purchase System , NPO,Single entry system	B.com(H) semester I (A+B)	BCH1.2/ Financial Accounting
		Performance Appraisal	B.com(H) semester III(A+B)	BCH3.1/Human Resource Management
	<b>Practicals:</b>	Microsoft Excel and continuous evaluation	B.com (P) semester III	BC3.4(a)/Computer Application in Business
	<b>Tutorials:</b>	Doubt session and taught students who joined late in this academic session the topics that they skipped	B.com(H) semester I (A+B)	BCH1.2/ Financial Accounting
	<b><u>Test</u></b>	Topic-NPO and Hire Purchase system	B.com(H) semester I (B)	BCH1.2/ Financial Accounting
	Topic-Dissolution and Inland Branches	B.com(H) semester I (A)	BCH1.2/ Financial Accounting	
	Topic-Industrial disputes	B.com(H) semester III(A+B)	BCH3.1/Human Resource Management	
	<b><u>Assignment</u></b>	Topic-Hire purchase system and final accounts	B.com(H) semester I (A)	BCH1.2/ Financial Accounting
NOVEMBER	<b>Theory:</b>	1.Depreciation and Inventory	B.com(H) semester I (A+B)	BCH1.2/ Financial Accounting
		Current issues in Hrm	B.com(H) semester III(A+B)	BCH3.1/Human Resource Management
	<b>Practicals:</b>	Continuous evaluation of Microsoft word and Microsoft excel	B.com (P) semester III	BC3.4(a)/Computer Application in Business
	<b>Tutorials:</b>	Doubt session and signature of the students on the final assessment	B.com(H) semester I (A+B)	BCH1.2/ Financial Accounting



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Arpita Kaul  
Semester: III**

**Department: Commerce**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Concept and functions, role, status and competencies of HR manager.  Development of management thought: Classical theories: Scientific management, Administrative theory, Bureaucracy	B.Com H  B.Com H	BCH 3.1 Human Resource Management  BCH 3.3 Management Principles and applications
	<b>Practicals</b>	MS Access : Creating Tables.	B.Com	BC 3.4(a) Computer Applications in Business
	<b>Tutorials</b>	Case Study: Case Incident 1, Essentials of Human Resource Management, T.N.Chhabra and Monica Chhabra, Sun India Publications, Second Revised Edition, 2016, New	B.Com H	BCH 3.1 Human Resource Management
AUGUST	<b>Theory:</b>	HR Policies, Evolution of HRM, Emerging challenges of HRM- workforce diversity, empowerment, vrs, work life balance. Human resource planning: quantitative and qualitative dimesions, job analysis-job description & job specification, recruitment-concept	B.com H	BCH 3.1 Human Resource Management

	<b>Practicals:</b>	Neoclassical Theories: Hawthorne experiment, Human Relations, Behavioral. System approach, contingency approach, MBO, Reengineering, Five force analysis, Learning Organization, Fortune at the bottom of Pyramid.(with cases)	B.Com H  B.Com	BCH 3.3 Management Principles and applications
	<b>Tutorials:</b>	Case Study:Case Study Incident 2, , Essentials of Human Resource Management, T.N.Chhabra and Monica Chhabra, Sun India Publications, Second Revised	B.Com H	BCH 3.1 Human Resource Management
<b>September</b>	<b>Theory</b>	Induction, Socialization. T&D: Concept, methods. Performance Appraisal: nature, objectives, process, methods , potential appraisal, employee counseling, job changes- transfers and promotion. HR Audit	B.Com H	BCH 3.1 Human Resource Management
		Staffing: Concept, recruitment, selection, orientation, training and development, career development, Performance appraisal.(with cases)	B.Com H	BCH 3.3 Management Principles and applications
	<b>Practicals</b>	Powerpoint: preparing presentation, slides, handouts, adding transition to slide shows-special effects in detail-setting, slide timings.	B.Com	BC 3.4(a) Computer Applications in Business



	<b>Tutorial</b>	All the students have been given one month time to prepare their introduction for their job interviews, they will sit on the teacher's chair and introduce themselves on by one and then feedback will be given to them.	B.Com H	BCH 3.1 Human Resource Management
	<b>Assignment</b>	Students have been given two options for assessment, option a – giving a powerpoint presentation on topics approved by the faculty on first come first basis like training, challenges of hrm, compensation etc or to collect 5 news on human resource related topics make a scrap file and paste these followed by a write up analyzing the application in human resource theory.	B.Com H	BCH 3.1 Human Resource Management
<b>OCTOBER</b>	<b>Theory:</b>	Compensation- concept & policies, fringe benefits, employee stock option, job evaluation.	B.Com H	BCH 3.1 Human Resource Management
		Leadership: Concept and importance	B.Com H	BCH 3.3 Management Principles and applications
	<b>Practicals:</b>	Review documents. Word: working with word document, inserting, filling and formatting a table. Mail merge, creating macros	B.Com	BC 3.4(a) Computer Applications in Business
	<b>Tutorials:</b>	A training program on business etiquettes.	B.Com H	BCH 3.1 Human Resource Management
	<b>TEST</b>	To be held on the date as per the date sheet.		

<b>NOVEMBER</b>	<b>Theory:</b>	E hrm, hris, contemporary issues in hrm.  Case studies on Management	B.Com H  B.Com H	BCH 3.1 Human Resource Management  BCH 3.3 Management Principles and applications
	<b>Practicals:</b>	Converting word document to pdf, , hyperlinks. Protection of document- password. Referencing, manage sources and citations, creating bibliography.	B.Com	BC 3.4(a) Computer Applications in Business
	<b>Tutorials:</b>	Group presentations by students on different topics of hrm and its practical applications.	B.Com H	BCH 3.1 Human Resource Management



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**Department of Commerce**  
**(Year 2018-19)**

**Name of the Faculty: Mr. Ajit Singh**

**Department: Commerce**

**Semester: I, III and V**

Month	Type of Class	Topics	Course	Paper Code/Name
July-August	Theory	<p>1. Employee's Health and Safety.</p> <p>2. Introduction Advertising-meaning, nature and importance of Advertising, types and objectives. Audience selection; Setting of advertising budget: determinants and major methods. Major media types : their merits and demerits; advertising through internet and interactive media. Issues and considerations: Factors influencing media choice; media selection, media scheduling.</p> <p>3. Concept and functions of Human Resource Management : Essence of training and development in human resource management. Training and learning: Concept of training and learning, the learning process, learning curve, principles of learning, training guidelines, experience versus training, kinds of training, system approach of training, programmed instruction, transfer of training.</p>	<p>1. B.Com – (H) II Semester-III</p> <p>2. B.Com-(P)III Semester-V</p> <p>3. B.Com(H)II Semester-III</p>	<p>1. CH 4.4 H.R.M</p> <p>2.BC 5.3(b) Advertising</p> <p>3.BCH 3.5(b) Training and Development</p>
	Practicals	<p>1. Creation of Vouchers, Recording of Transactions;</p>	<p>1. B.Com. (Hons.) I</p>	<p>1. BCH 1.2: Financial Accounting.</p>
	Tutorials	<p>1. <b>Health and Safety cases.</b></p> <p>2. Problems of advertising and case studies</p>	<p>1. B.Com. (Hons.) II</p> <p>2. B.Com. (P) V</p>	<p>1. CH: 4.4 H.R.M</p> <p>2.BC 5.3(b) Advertising</p>

<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>SEPTEMBER</b>	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Employee's Welfare and Social Security.</li> <li>2. Message Development Advertising creativity; Advertising appeals; Advertising copy and elements of print advertisement creativity; Tactics for print advertisement</li> <li>3. Identification of Training and Development needs, training needs assessment-various approaches (the job and the Individua)), Advantages and disadvantages of basic needs assessment techniques, Assessing curriculum needs, curriculum standards, matching organisational training needs, Developing training materials.</li> </ol>	<ol style="list-style-type: none"> <li>1. B.Com – (H) II Semester-III</li> <li>2. B.Com-(P)III Semester-V</li> <li>3. B.Com(H)II Semester-III</li> </ol>	<ol style="list-style-type: none"> <li>1. CH 4.4 H.R.M</li> <li>2.BC 5.3(b) Advertising</li> <li>3.BCH 3.5(b) Training and Development</li> </ol>
	<b>Practicals</b>	<ol style="list-style-type: none"> <li>1. Preparing reports, cash book, bank book,</li> </ol>	<ol style="list-style-type: none"> <li>1. B.Com. (Hons.) I</li> </ol>	BCH 1.2: Financial Accounting
	<b>Tutorials</b>	<ol style="list-style-type: none"> <li>1. Problems in Welfare issue cases.</li> <li>2. Problems of Message Development.</li> </ol>	<ol style="list-style-type: none"> <li>1. B.Com. (Hons) III</li> <li>2. B.Com. (P) V</li> </ol>	<ol style="list-style-type: none"> <li>1. C.H 4.4 H.R.M</li> <li>2.BC 5.3(b) Avertising</li> </ol>
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>OCTOBER</b>	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Grievance Handling and Redressal.</li> <li>2. Measuring Advertising Effectiveness Arguments for and against measuring effectiveness; Advertising testing process: Evaluating communication and sales effects: Prc- and post-testing techniques Base shifting, splicing &amp; deflating.</li> <li>3. Three Stages of training (Preparatory, implementation and followup stage), On the</li> </ol>	<ol style="list-style-type: none"> <li>1. B.Com – (H) II Semester-III</li> <li>2. B.Com-(P)III Semester-V</li> <li>3. B.Com(H)II Semester-III</li> </ol>	<ol style="list-style-type: none"> <li>1.CH 4.4 H.R.M</li> <li>2.BC 5.3(b) Advertising</li> <li>3.BCH 3.5(b) Training and Development</li> </ol>

		job.and off-the job methods, experiential versus non-experiential methods.		
	<b>Practicals</b>	1. Preparation of Ledger accounts, trial balance,	1. B.Com. (Hons.) I	BCH 1.2: Financial Accounting.
	<b>Tutorials</b>	1. Problems and Grievance cases. 2. Problems and case studies related to Measuring Advertising Effectiveness.	1. B.Com. (H) II 2. B.Com. ( P ) V	1.CH 4.4 H.R.M 2.BC 5.3(b) Advertising
	<b>Assignment</b>	1. Topics allotment for making the assignments. 2. Topics allotment for making the assignments. 3. Topics allotment for making the assignments.	1. B.Com – (H) II Semester-III 2. B.Com-(P)III Semester-V 3. B.Com(H)II Semester-III	1.CH 4.4 H.R.M 2.BC 5.3(b) Advertising 3.BCH 3.5(b) Training and Development
	<b>Test</b>	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. 3. Test would be conducted on the concerned subject after mid-semester break.	1. B.Com – (H) II Semester-III 2. B.Com-(P)III Semester-V 3. B.Com(H)II Semester-III	1.CH 4.4 H.R.M 2.BC 5.3(b) Advertising 3.BCH 3.5(b) Training and Development
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>November</b>	<b>Theory</b>	<b>1. Performance Appraisal and employee and counselling.</b>  2. Organisational Arrangements Advertising Agency: Role, types and selection of advertising Social agency: Reasons for evaluating advertising agencies. Ethical and legal aspects of advertising in India; Recent developments and issues in advertising.	1. B.Com – (H) II Semester-III 2. B.Com-(P)III Semester-V 3. B.Com(H)II Semester-III	1.CH 4.4 H.R.M 2.BC 5.3(b) Advertising 3.BCH 3.5(b) Training and Development

		3.Reasons of evaluating training, Criteria for evaluation, problems of evaluation, steps involved in evaluation, methods for training evaluation, analysis and costing of training. Emerging Pattern of Training and development in India. Two Indian case studies to be discussed in the class.		
	<b>Practicals</b>	1. Preparation of profit and loss account and balance sheet.	1. B.Com. (H) 1	BCH 1.2: Financial Accounting
	<b>Tutorials</b>	1. Problems and cases in Performance Appraisal. 2. Problems and caes studies of Organisational Arrangements.	1. B.Com. (H) III 2. B.Com. (P) V	1. CH 4.4 H.R.M 2.BC 5.3(b) Advertising



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

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

**Department:** Commerce

**Semester :** I/III/V

Month		Topics	Course	Paper Code/Name
JULY/AUGUST	<b>Theory:</b>	1.Nature of contract, kinds of contract,consideration , capacity of parties, free consent,quasi contract. 2.Residential status, income under the head of house property , income under the head of capital gain	1. B.COM(H) – I  2. B.COM(HONS) – III  (A+B)	1. BCH 1.3/Business Law  2. BCH-3.2/Income tax law and practice
	<b>Practicals:</b>	1 Practical question on excel sheet of Capital budgeting and loan sheet.	1. B.COM - III	1.B.Com - 3.4(a)/Computer practical and application.
	<b>Tutorials:</b>	1.Problem Class on Residential status, house property	1.B.COM(H) -III	1.BCH 3.2/ income tax law and practice
SEPTEMBER	<b>Theory:</b>	1.Void agreement, Doctrine of public policy, and illegal agreement  2.Capital gain , and income under the head of salary	1.B.COM(H) – I  2.B.COM(HONS) – III  (A+B)	1.BCH-1.3/Business law  2.BCH 3.2/income tax law and practice
	<b>Practicals:</b>	1 practical questions on depreciation , Ratio analysis, frequency distribution, and what if analysis, some portion of	1.B.COM -III	1.B.COM -3.4(a)/computer application and business.
	<b>Tutorials:</b>	1.Problem class on capital gain and salary	1.B.COM(H) -III	1.BCH -3.2/Income tax law and practice
	<b>Assignment :</b>	1.Topics were allotted for making the Assignment  2. Topics were allotted for making the Assignment	1.B.COM(H) –III (A+B)  2. B.COM (H) -I	1.BCH 3.2 /Income tax law and practice  2. BCH -1.3/ Business law
OCTOBER	<b>Theory:</b>	1. Discharge of contract, and Remedies of Breach of contract  2. Income under the head of PGBP, and income from other sources.	1B.COM(H) -I  2.B.COM(HONS) – III  (A+B)	1.BCH -1.3/Business law  2.BCH-3.2/Income tax law and practice
	<b>Practicals:</b>	1.Practical question on Payroll statement , and Regression some portion of MS word	1. B.COM -III	1. B.COM-3.4(a)/Computer Application and Business

	<b>Tutorials:</b>	1.Problems class on PGBP, income from other sources	1.B.COM (H) –III (A+B)	1. BCH 3.2/ Income tax law and practice
	<b><u>Test</u></b>	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) –I 2. B.COM(HONS) -III	1. BCH 1.3/Business law 2. BCH 3.2/Income tax law and practice
NOVEMBER	<b>Theory:</b>	1.Special kinds of contract , Contract of bailment, contract of indemnity and guarantee and contract of agency.  2.Agricultural income, Assessment of individual and Revision	1B.COM(H) – I 2.B.COM(H) - III	.BCH 1.3/ Business law 2.BCH 3.2/ Income tax law and practice
	<b>Practicals:</b>	1.Practical question on Depreciation , Solver, n Revision	1. B.COM -III	1. B.COM 3.4 (a)/Computer application and Business
	<b>Tutorials:</b>	1. Problem Class on PGBP	1.B.COM (H)-III	1. BCH 3.2/ Income tax law and practice





**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**Department of Commerce**  
**(Year 2018-19)**

**Name of the Faculty: Dr. Raman Deep Singh**

**Department: Commerce**

**Semester: I and V**

Month	Type of Class	Topics	Course	Paper Code/Name
July-August	<b>Theory</b>	1. An Introduction to Financial System, its Components - financial markets and institutions. Financial intermediation. Flow of funds matrix. Financial system and Economic development. An overview of Indian financial system. 2. Basic functions of government; Market efficiency; Market failure; the meaning & cause; public policy towards monopoly and competition.	1. B.Com. (Hons) V 2. B.Com – (P) V	1. BCH 5.4 (a): Financial markets, institutions and financial services 2. BC 5.4 (b) : Economics of Regulation of Domestic and Foreign Exchange Markets
	<b>Practicals</b>	1. Creation of Vouchers, Recording of Transactions;	1. B.Com. (P) I	1. BC 1.2: Financial Accounting
	<b>Tutorials</b>	1. An Introduction to Financial System, its Components - financial markets and institutions. Financial intermediation. Flow of funds matrix. Financial system and Economic development. An overview of Indian financial system. 2. Basic functions of government; Market efficiency; Market failure; the meaning & cause; public policy towards monopoly and competition.	1. B.Com. (Hons.) V 2. B.Com. (P) V	3. BCH 5.4 (a): Financial markets, institutions and financial services 4. BC 5.4 (b) : Economics of Regulation of Domestic and Foreign Exchange Markets
Month	Type of Class	Topics	Course	Paper Code/Name
SEPTEMBER	<b>Theory</b>	1. Financial Markets: Money market – functions, organization and instruments. Role of central bank in money market. Indian money market – an overview. Capital Markets – functions, organization and instruments. Indian debt market. Indian equity market – primary and secondary markets. Role of stock exchanges in India. SEBI	1. B.Com. (Hons) V 2. B.Com – (P) V	1. BCH 5.4 (a): Financial markets, institutions and financial services 2. BC 5.4 (b) : Economics of Regulation of Domestic and Foreign Exchange Markets

		and investor protection. 2. Foreign Trade Policy and Procedures: Served from India Scheme; export promotion council; Vishesh Krishi and Gram Udyog Yojana; focus market scheme, duty exemption and remission scheme, advance authorization scheme and DFRC, DEPB, EPCG, etc; EOUs, EHTPs, STPs, BPTs, and SEZs.		
	<b>Practicals</b>	1. Preparing reports, cash book, bank book,	1. B.Com. (P) I	1. BC 1.2: Financial Accounting
	<b>Tutorials</b>	1. Financial Institutions: Commercial banking – introduction, its role in project finance and working capital finance. Development Financial institutions (DFIs) – overview and role in Indian economy. Life and non-life insurance organizations in India. Mutual Funds – Introduction and their role in capital market development. Non-banking financial companies (NBFCs). 2. Foreign Trade Policy and Procedures: Served from India Scheme; export promotion council; Vishesh Krishi and Gram Udyog Yojana; focus market scheme, duty exemption and remission scheme, advance authorization scheme and DFRC, DEPB, EPCG, etc; EOUs, EHTPs, STPs, BPTs, and SEZs.	1. B.Com. (Hons) V 2. B.Com. (P) V	1. BCH 5.4 (a): Financial markets, institutions and financial services 2. BC 5.4 (b) : Economics of Regulation of Domestic and Foreign Exchange Markets
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>OCTOBER</b>	<b>Theory</b>	1. Overview of financial services industry. Merchant banking – pre and post issue management, underwriting. Regulatory framework relating to merchant banking in India. 2. Industries Development Regulation Act: An overview of current Industrial Policy; Regulatory Mechanism under Industries Development and Regulation Act., 1951. The Micro, Small and Medium Enterprises Development Act, 2006. Term of office of Chairperson and other Members, Duties, Powers and Functions of Commission. Foreign Exchange Market: Balance of Payments; Market for Foreign Exchange; Determination of	1. B.Com. (Hons) V 2. B.Com – (P) V	1. BCH 5.4 (a): Financial markets, institutions and financial services 2. BC 5.4 (b) : Economics of Regulation of Domestic and Foreign Exchange Markets

		Exchange Rates.		
	<b>Practicals</b>	1. Preparation of Ledger accounts, trial balance,	1. B.Com. (P) I	<b>1. BC 1.2: Financial Accounting</b>
	<b>Tutorials</b>	1. Overview of financial services industry. Merchant banking – pre and post issue management, underwriting. Regulatory framework relating to merchant banking in India. 2. Industries Development Regulation Act: An overview of current Industrial Policy; Regulatory Mechanism under Industries Development and Regulation Act., 1951. The Micro, Small and Medium Enterprises Development Act, 2006. Term of office of Chairperson and other Members, Duties, Powers and Functions of Commission. Foreign Exchange Market: Balance of Payments; Market for Foreign Exchange; Determination of Exchange Rates.	1. B.Com. (Hons) V 2. B.Com. (P) V	<b>1. BCH 5.4 (a): Financial markets, institutions and financial services</b> <b>2. BC 5.4 (b) : Economics of Regulation of Domestic and Foreign Exchange Markets</b>
	<b>Assignment</b>	1. Topics allotment for making the assignments. 2. Topics allotment for making the assignments.	1. B.Com. (Hons) V 2. B.Com – (P) V	1. BCH 5.4 (a): Financial markets, institutions and financial services 2. BC 5.4(b): Economics of Regulation of Domestic and Foreign Exchange Markets
	<b>Test</b>	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. 3. Test would be conducted on the concerned subject after mid-semester break.	3. B.Com. (Hons) V 4. B.Com – (P) V	1. BCH 5.4(a): Financial markets, institutions and financial services 2. BC 5.4(b): Economics of Regulation of Domestic and Foreign Exchange Markets
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>November</b>	<b>Theory</b>	1. Leasing and hire – purchase. Consumer and housing finance. Venture capital finance.	1. B.Com. (Hons) V	<b>1. BCH 5.4 (a): Financial markets, institutions and</b>

		<p>Factoring services, bank guarantees and letter of credit. Credit rating. Financial counseling.</p> <p>2. The Foreign Exchange Management Act, 1999: Definitions; Authorized Person, Capital Account Transaction Currency, Current Account Transaction, Foreign Exchange, Person, Person Resident in India, Repatriate to India. Regulation and Management of Foreign Exchange: Dealing in Foreign Exchange, Holding of Foreign Exchange, current Account Transactions, Capital Account Transactions, Export of Goods and Services, Realization and Repatriation of Foreign Exchange, Contravention and Penalties, Enforcement of the Orders of Adjudicating Authority, Adjudication and Appeal.</p>	2. B.Com – (P) V	<p>financial services</p> <p>2. BC 5.4 b) : Economics of Regulation of Domestic and Foreign Exchange Markets</p>
	<b>Practicals</b>	1. Preparation of profit and loss account and balance sheet	1. B.Com. (P) I	1. BC 1.2: Financial Accounting
	<b>Tutorials</b>	<p>1. Leasing and hire – purchase. Consumer and housing finance. Venture capital finance. Factoring services, bank guarantees and letter of credit. Credit rating. Financial counseling.</p> <p>2. The Foreign Exchange Management Act, 1999: Definitions; Authorized Person, Capital Account Transaction Currency, Current Account Transaction, Foreign Exchange, Person, Person Resident in India, Repatriate to India. Regulation and Management of Foreign Exchange: Dealing in Foreign Exchange, Holding of Foreign Exchange, current Account Transactions, Capital Account Transactions, Export of Goods and Services, Realization and Repatriation of Foreign Exchange, Contravention and Penalties, Enforcement of the Orders of Adjudicating Authority, Adjudication and Appeal.</p>	<p>1. B.Com. (Hons.) V</p> <p>2. B.Com. (P) V</p>	<p>1. BCH 5.4 (a): Financial markets, institutions and financial services</p> <p>2. BC 5.4 (b) : Economics of Regulation of Domestic and Foreign Exchange Markets</p>



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Ms. Simranjeet Kaur

Department: Commerce

Semester: I/III/IV

Month	Type of Class	Topics	Course	Paper Code/Name
July and August	Theory	1.Leadership, Motivation:concept and styles, Control, Communication, Johari Window, Change management: resistance to change and management of change. 2. Measures of Central Tendency, Measures of variation,Skewness, Moments and kurtosis. 3. Sale of Goods Act:nature and formation of contract of sale 4.Cash flow estimation, payback period, accounting rate of return, NPV,IRR	1.B.Com.Prog.-I 2. B.Com (Hons)-III GE 3. B.Com (Hons.)-I 4.B.Com Prog.-V	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics 3. BCH 1.3:Business Laws 4.BC 5.2 :Fundamentals of Financial Management
	Tutorials and Practicals	Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it. <u>Practical</u> - Formation of frequency Distribution using pivot tables	1.B.Com Prog.-I 2. B.Com (Hons)-III GE	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics
	Assignment -I	Topics allotment for making the assignments.	1.B.Com prog.-I 2. B.Com (Hons)-III GE	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics
Month	Type of Class	Topics	Course	Paper Code/Name
September	Theory	1.Conflict level, causes and resolution, Emerging issues in management, spectrum of business activities, Liberalization, Gloabalization, make in india movement. 2. Probability and probability distribution, Simple correlation and regression analysis 3. Sale of goods act:condition and warranties. 4. Profitability index, equivalent approach and risk-adjusted	1.B.Com.Prog.-I 2. B.Com (Hons)-III GE 3. B.Com (Hons.)-I 4.B.Com Prog.-V	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics 3. BCH 1.3:Business Laws

		return		4.BC 5.2 :Fundamentals of Financial Management
	<b>Tutorials and Practicals</b>	Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it. <u>Practical-</u> Calculation of averages	1.B.Com Prog.-I 2. B.Com (Hons)-III GE	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics
	<b>Assignment- II</b>	Topics allotment for making the assignments.	1.B.Com prog.-I 2. B.Com (Hons)-III GE	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>October</b>	<b>Theory</b>	1.Social responsibility and ethics, franchising, outsourcing and e-commerce,forms of organization and their choice,entrepreneurial process, basic considerations in setting up an enterprise. 2. Regression analysis continued, Index numbers 3.Sale of goods Act: transfer of property. 4.methods for calculation cost of equity and debt, weighted average cost of capital	1.B.Com.Prog.-I 2. B.Com (Hons)-III GE 3. B.Com (Hons.)-I 4.B.Com Prog.-V	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics 3. BCH 1.3:Business Laws 4.BC 5.2 :Fundamentals of Financial Management
	<b>Tutorials and Practicals</b>	Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it. <u>Practicals-</u> Measures of variation	1.B.Com Prog.-I 2. B.Com (Hons)-III GE	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics

	<b>Test</b>	Test would be conducted on the concerned subject after mid-semester break.	1.B.Com.Prog.-I 2. B.Com (Hons)-III GE 3. B.Com (Hons.)-I 4.B.Com Prog.-V	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics 3. BCH 1.3:Business Laws 4.BC 5.2 :Fundamentals of Financial Management
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>November</b>	<b>Theory</b>	1.Planning, organizing, delegation, dynamics of group behavior,conceptual framework of marketing management, financial management and HRM 2. Time series analysis, sampling concepts, sampling distribution and analysis 3.Sale of goods act: performance of contract, unpaid seller and his rights. 4.Operating and financial leverage	1.B.Com.Prog.-I 2. B.Com (Hons)-III GE 3. B.Com (Hons.)-I 4.B.Com Prog.-V	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics 3. BCH 1.3:Business Laws 4.BC 5.2 :Fundamentals of Financial Management
	<b>Tutorials and Practicals</b>	Out of the topics covered in the class to be issued to the students for discussion and analytical thinking on it. <u>Practicals-</u> Correlation and regression co-efficient	1.B.Com Prog.-I 2. B.Com (Hons)-III GE	1.BC 1.3: Business Organisation and Management 2.BCH 3.4 GE :Business Statistics



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**Department of Commerce (Year 2018-19)**  
**TEACHING PLAN**

Name of the Faculty: Aashish Jain

Department: Commerce

Semester: Odd

Month	Type of Class	Topics	Course	Paper Code/Name
July-August	Theory	<p><b>1. Measures of Central Tendency:</b></p> <p>a) Mathematical averages including arithmetic mean, geometric mean &amp; harmonic mean. Properties &amp; applications.</p> <p>b) Positional averages: absolute &amp; relative Range, quartile deviation, mean deviation, standard deviation &amp; their coefficient, properties of standard deviation/variance. Moments:- calculation &amp; significance. Skewness, meaning, measurement using karl pearson &amp; bowley's measures, concept of kurtosis.</p> <p><b>2. Business Income</b></p> <p>(a) Measurement of business income-Net income: the accounting period, the continuity doctrine and matching concept. Objectives of measurement.</p> <p>(b) Revenue: concept, revenue recognition principles, recognition of expenses.</p> <p>(c) The nature of depreciation. The accounting concept of depreciation. Factors in the measurement of depreciation. Methods of computing depreciation: straight line method and diminishing balance method; Disposal of depreciable assets-change of method.</p> <p>(d) Inventories: Meaning. Significance of</p>	<p>1. B.Com – (H) III Semester-v</p> <p>2. B.Com- I Semester</p>	<p>1. BCH 5.4 (e): Business Statistics</p> <p>2. BC 1.2: Financial Accounting</p>



		inventory valuation. Inventory Record Systems: periodic and perpetual. Methods: FIFO, LIFO and Weighted Average. (e)		
	<b>Practicals</b>	1. Frequency distribution	1. B.Com – (H) III Semester-v	1. BCH 5.4 (e): Business Statistics
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>SEPTEMBER</b>	<b>Theory</b>	<p><b>Probability &amp; its distribution</b></p> <ol style="list-style-type: none"> <li>1) Theory of probability, approaches to calculate probability</li> <li>2) Calculation of event probabilities. Addition &amp; multiplication laws of probability.</li> <li>3) Conditional probability &amp; bayes' theorem</li> <li>4) Expectation &amp; variance of a random variable</li> <li>5) Probability distribution: <ol style="list-style-type: none"> <li>a) Binomial distribution: probability distribution function, constants, shape, fitting of binomial distribution</li> <li>b) Poisson distribution: probability function</li> <li>c) Normal distribution, properties of normal curve.</li> </ol> </li> <li>6) <b>Accounting for Hire Purchase Transactions</b>, Journal entries and ledger accounts in the books of Hire Vendors and Hire purchaser for large value items including default and repossession, stock and debtors system.</li> <li>7) Consignment: Features, Accounting treatment in the books of the consignor and consignee.</li> <li>8)</li> <li>9) Joint Venture: Accounting procedures: Joint Bank Account, Records Maintained by Co-venturer of</li> <li>10) all transactions (b) only his own transactions. (Memorandum joint venture account).</li> </ol>	<ol style="list-style-type: none"> <li>1 B.Com – (H) III Semester-v</li> <li>2. B.Com-(I) Semester-I</li> </ol>	<ol style="list-style-type: none"> <li>1. BCH 5.4 (e): Business Statistics</li> <li>2. BC 1.2: Financial Accounting</li> </ol>
	<b>Practicals</b>	Calculation of averages, standard deviation	1. B.Com – (H) III	1. BCH 5.4 (e):

Month	Type of Class	Topics	Course	Paper Code/Name
OCTOBER	Theory	<p><b>Simple correlation &amp; regression analysis</b></p> <p>a) Correlation analysis: meaning of correlation- simple , multiple &amp; partial:linear &amp; non-linear, scatter diagram, pearson's co-efficient of correlation: calculation &amp; properties. Probable &amp; standard errors, rank correlation.</p> <p>b) Regression analysis. Principle of least squares &amp; regression lines, regression equations &amp; estimation. Standard error of estimates.</p> <p><b>Accounting for Inland Branches</b> Inland Branches; Dependent branches only and Ascertainment of Profit by Debtors Method &amp; Stock and Debtors Method.</p> <p><b>Theoretical Framework</b></p> <p>i. Accounting as an information system, the users of financial accounting information and their needs. Qualitative characteristics of accounting, information. Functions, advantages and limitations of accounting. Branches of accounting. Bases of accounting; cash basis and accrual basis.</p> <p>ii. The nature of financial accounting principles – Basic concepts and conventions: entity, money measurement, going concern, cost, realization, accruals, periodicity, consistency, prudence (conservatism), materiality and full disclosures.</p> <p>iii. Financial accounting standards: Concept, benefits, procedure for issuing accounting standards in India. International Financial Reporting Standards (IFRS): - Need and procedures, Convergence to IFRS, Distinction</p>	<p>1 B.Com – (H) III Semester-v</p> <p>2. B.Com-(I) Semester-I</p>	<p>1. BCH 5.4 (e): Business Statistics</p> <p>2. BC 1.2: Financial Accounting</p>

		between Indian Accounting Standards (Ind ASs) and Accounting Standards (ASs).		
	<b>Practicals</b>	Calculation of variance, analysis of performance of various companies through variance	1. B.Com – (H) III Semester-v	1. BCH 5.4 (e): Business Statistics
	<b>Assignment</b>	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
	<b>Test</b>	1. Test would be conducted on the concerned subject after mid-semester break.	1. B.Com – (H) III Semester-v	1. BCH 5.4 (e): Business Statistics
<b>Month</b>	<b>Type of Class</b>	<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
<b>November</b>	<b>Theory</b>	<p><b>Time series analysis</b></p> <p>a) Components of time series. Additive &amp; multiplicative models</p> <p>b) trend analysis, fitting of trend line using principle of least squares- linear, second degree parabola &amp; exponential. Conversion of annual linear trend equation to quarterly/monthly basis &amp; vice-versa. Moving averages.</p> <p>c) Seasonal variations- calculation &amp; uses. Simple averages, ratio to trend, ratio to moving averages &amp; link-relatives methods. Uses of seasonal indices.</p> <p><b>(b) Accounting Process</b></p> <p>From recording of a business transaction to preparation of trial balance including adjustments: Capital and Revenue expenditure &amp; receipts, Preparation trial balance, Profit and Loss Account and Balance Sheet(Sole Proprietorship only).</p> <p><b>Accounting for Dissolution of Partnership Firm</b></p>	<p>1. B.Com – (H) III Semester-v</p> <p>2. B.Com-(I) Semester-I</p>	<p>1. BCH 5.4 (e): Business Statistics</p> <p>2. BC 1.2: Financial Accounting</p>

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**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Mohini Yadav**

**Department: Commerce**

**Semester: Odd (AY 2018-19)**

Month		Topics	Course	Paper Code/Name
<b>September 2018</b>	<b>Theory</b>	Unit 1: Regulations of Domestic Market Unit 2: Foreign Trade Policy and Procedures	B.COM – Sem V	BC 5.4 b – Economics Regulation of Domestic and Foreign Exchange Markets
		Unit 3: Financial Insitutions	B.COM Hons – Sem V	BCH 5.4 f – Financial Markets, Insitutions and Financial Services
	<b>Practical</b>	Unit-5: Introduction to tally	B.COM – Sem 1	BC 1.2 - Financial Accounting
	<b>Tutorials</b>	Unit 1: Regulations of Domestic Market Unit 2: Foreign Trade Policy and Procedures	B.COM – Sem V	BC 5.4 b – Economics Regulation of Domestic and Foreign Exchange Markets
Unit 3: Financial Insitutions		B.COM Hons – Sem V	BCH 5.4f – Financial Markets, Insitutions and Financial Services	
<b>October 2018</b>	<b>Assignment</b>	Unit 1: Regulations of Domestic Market Unit 2: Foreign Trade Policy and Procedures	B.COM – Sem V	BC 5.4 b – Economics Regulation of Domestic and Foreign Exchange Markets
		Unit 3: Financial Insitutions	B.COM Hons – Sem V	BCH 5.4f – Financial Markets, Insitutions and Financial Services
	<b>Theory</b>	Unit 4: Foreign Exchange Market	B.COM – Sem V	BC 5.4 b – Economics Regulation of Domestic and Foreign Exchange Markets
Unit 4: Financial Services		B.COM Hons – Sem V	BCH 5.4 f – Financial Markets, Insitutions and Financial Services	
<b>Tutorials</b>		Unit 4: Foreign Exchange Market	B.COM – Sem V	BC 5.4 b – Economics Regulation of Domestic and Foreign Exchange Markets
	Unit 4: Financial Services	B.COM Hons – Sem V	BCH 5.4 f – Financial Markets, Insitutions and Financial Services	
	<b>Practical</b>	Unit-5: Practical questions on tally	B.COM – Sem 1	BC 1.2 - Financial Accounting

	<b>Test</b>	Unit 1: Regulations of Domestic Market Unit 2: Foreign Trade Policy and Procedures Unit 4: Foreign Exchange Market  Unit 3 and 4	B.COM – Sem V  B.COM Hons – Sem V	BC 5.4 b – Economics Regulation of Domestic and Foreign Exchange Markets  BCH 5.4 f – Financial Markets, Insitutions and Financial Services
<b>November 2018</b>	<b>Theory</b>	Unit 5: FEMA 1999  Unit 5: Leasing and Hire Purchase	B.COM – Sem V  B.COM Hons – Sem V	BC 5.4 b – Economics Regulation of Domestic and Foreign Exchange Markets  BCH 5.4 f – Financial Markets, Insitutions and Financial Services
	<b>Practicals</b>	Unit-5: Practical questions on tally (External Exam)	B.COM – Sem 1	BC 1.2 - Financial Accounting
	<b>Tutorials</b>	Unit 5: FEMA 1999  Unit 5: Leasing and Hire Purchase	B.COM – Sem V  B.COM Hons – Sem V	BC 5.4 b – Economics Regulation of Domestic and Foreign Exchange Markets  BCH 5.4 f – Financial Markets, Insitutions and Financial Services



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

**Name of the Faculty: Dr. Sunita Jain**

**Department: Electronics**

**Semester: V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction to microprocessor, Different types, Difference between microprocessor and microcontroller, Introduction to 8085 microprocessors	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	<b>Practical</b>	Sem V: Program for addition and subtraction using 8085 microprocessors  Sem I: a) Resistance in series, parallel and series – Parallel. b) Capacitors & Inductors in series & Parallel. c) Multimeter – Checking of components. d) Voltage sources in series, parallel and series – Parallel e) Voltage and Current dividers  Sem III: Clipping and Clamping Circuits, Half Wave Rectifiers with	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers  Core Course I  Core Course V
AUGUST	<b>Theory</b>	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
	<b>Practical</b>	Sem V: Program for multibyte addition and subtraction, Program for block movement of data, Program for ascending and descending order  Sem I: Verification of Kirchoff's Law. Verification of Norton's theorem. Verification of Thevenin's Theorem  Sem III : Full Wave (Bridge and center tapped) Rectifiers with C-filter, and Zener and load Regulation , Clipping and Clamping networks	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers  Core Course I  Core Course V

SEPTEMBER	<b>Theory</b>	Interrupt structure of 8085 microprocessors, Various interrupts, Latency and response time, Concept of interfacing of various devices with 8085 microprocessors using interrupt  Introduction to microcontrollers, Different types of microcontrollers, CISC & RISC architecture, Introduction to PIC16F887 microcontroller	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	<b>Practical</b>	Sem V: Program for GCD, Program for truth table of logic gates, Fibonacci series, Program to find minimum and maximum among N numbers, Division of 16-bit number  Sem I: Verification of Superposition Theorem. Verification of the Maximum Power Transfer Theorem. Measurement of Amplitude, Frequency & Phase difference using CRO  Sem III: DC Biasing: Fixed Bias, Collector to base feedback and Voltage divider, CE Amplifier Design its and frequency response	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers  Core Course I  Core Course V
	<b><u>Assignment</u></b>	Programs based on 8085 microprocessors	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
OCTOBER	<b>Theory</b>	Instruction set of PIC microcontrollers, I/O ports, Timer and interrupts, Addressing modes and Introduction to interfacing	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	<b>Practical</b>	Sem V: Interfacing of PIC microcontroller with LEDs, Stepper motor, Generation of different waveforms, A/D converter  Sem I: RC Circuits: Time Constant, Differentiator, Integrator. Designing of a Low Pass RC Filter and study of its Frequency Response. Designing of a High Pass RC Filter and study of its Frequency Response  Sem III: Power Amplifiers: Class A, B and C, Hartley, Colpitts and, Phase Shift Oscillator	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers  Core Course I  Core Course V



	<b><u>Mid Term Test</u></b>	Complete 8085 microprocessors, Introduction to PIC microcontroller	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
NOVEMBER	<b>Theory</b>	Interfacing of various I/O devices with PIC microcontroller	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers
	<b>Practical</b>	Sem V: Serial communication between microcontroller and PC  Sem I: Study of the Frequency Response of a Series LCR Circuit and determination of its (a) Resonant Frequency (b) Impedance at Resonance (c) Quality Factor Q (d) Band Width.  Sem III : Common Source FET Amplifier	B.Sc. (H)	Core Course-XI Microprocessor and microcontrollers  Core Course I  Core Course V



## Sri Venkateswara College Semester Wise Teaching Plan

Name of Faculty : Dr. Lalita Josyyula  
Course : B.Sc(Hons) / II yr

Department : Electronics  
Semester : III

JULY	<b>Theory</b>	Introduction, Importance of C	B.Sc(Hons), Electronic Science / CBCS	<b>C Programming and Data Structures</b>
	<b>Practicals</b>	Introduction to Programming		<b>C Programming and Data Structures</b>

AUGUST	<b>Theory:</b>	Character set, Tokens, keywords, identifier, constants, basic data types, variables: declaration & assigning values. Structure of C program Arithmetic operators, relational operators, logical operators, assignment operators, increment and decrement operators, conditional operators, bit wise operators, expressions and evaluation of expressions, type cast operator, implicit conversions, precedence of operators. 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), Electronic Science / CBCS	<b>C Programming and Data Structures</b>
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<p><b>Practicals:</b></p>	<ol style="list-style-type: none"> <li>1. Generate the Fibonacci series up to the given limit N and also print the number of elements in the series.</li> <li>2. Find minimum and maximum of N numbers.</li> <li>3. Find the GCD of two integer numbers.</li> <li>4. Calculate factorial of a given number.</li> <li>5. Find all the roots of a quadratic equation <math>Ax^2 + Bx + C = 0</math> for non-zero coefficients A, B and C. Else report error.</li> <li>6. Calculate the value of <math>\sin(x)</math> and <math>\cos(x)</math> using the series. Also print <math>\sin(x)</math> and <math>\cos(x)</math> value using library function.</li> <li>7. Generate and print prime numbers up to an integer N.</li> </ol>		<p><b>C Programming and Data Structures</b></p>
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<p>SEPTEMBER</p>	<p><b>Theory:</b></p>	<p><b>Decision making, branching &amp; looping:</b> Decision making, branching and looping: if, if-else, else-if, switch statement, break, for loop, while loop and do loop. Functions: Defining functions, function arguments and passing, returning values from functions.</p> <p><b>Structures:</b> 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.</p> <p><b>Pointers.</b></p>	<p>B.Sc(Hons), Electronic Science / CBCS</p>	<p><b>C Programming and Data Structures</b></p>
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<b>Practicals:</b>	<p>8. Sort given N numbers in ascending order.</p> <p>9. Find the sum &amp; difference of two matrices of order MxN and PxQ.</p> <p>10. Find the product of two matrices of order MxN and PxQ.</p> <p>11. Find the transpose of given MxN matrix.</p> <p>12. Find the sum of principle and secondary diagonal elements of the given MxN matrix.</p> <p>13. Calculate the subject wise and student wise totals and store them as a part of the structure.</p>		<b>C Programming and Data Structures</b>
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OCTOBER	<b>Theory:</b>	<p>Introduction to C++: Object oriented programming, characteristics of an object-oriented language. Unit-3 (15 Lectures) 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.</p>	B.Sc(Hons), Electronic Science / CBCS	<b>C Programming and Data Structures</b>
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<p><b>Practicals:</b></p>	<p>14. Maintain an account of a customer using classes. 15. Implement linear and circular linked lists using single and double pointers. 16. Create a stack and perform Pop, Push, Traverse operations on the stack using Linear Linked list</p> <p>17. Create circular linked list having information about a college and perform Insertion at front, Deletion at end.</p> <p>18. Create a Linear Queue using Linked List and implement different operations such as Insert, Delete, and Display the queue elements.</p> <p>19. Implement polynomial addition and subtraction using linked lists.</p> <p>20. Implement sparse matrices using arrays and linked lists.</p>		<p><b>C Programming and Data Structures</b></p>
<p><b><u>Written Test :</u></b></p>			

NOVEMBER	<b>Theory:</b>	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), Electronic Science / CBCS	<b>C Programming and Data Structures</b>
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	<b>Practicals:</b>	<p>21. Create a Binary Tree to perform Tree traversals (Preorder, Postorder, Inorder) using the concept of recursion.</p> <p>22. Implement binary search tree using linked lists. Compare its time complexity over that of linear search.</p> <p>23. Implement Insertion sort, Merge sort, Bubble sort, Selection sort.</p>		<b>C Programming and Data Structures</b>
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**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty:** Dr. Nutan Kala Joshi

**Department:** Electronics

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

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

Month		Topics	Course	Paper Code/Name
JULY/August -2018	<b>Theory</b>	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  Plus Unit –II Poisson's Equation and Laplace's Equation ( Introduction ) Divergence and Stoke Theorem Maxwells 1 <sup>st</sup> and 2 <sup>nd</sup> Equation Scaler Potential	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics

	<b>Practical</b>	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
		Starting with MATLAB, arithmetic operations with scalars, order of precedence, display formats, elementary built in functions, defining scalar variables.  Creating arrays: Creating a 1D array(vector), 2D array(matrix), array addressing, built in functions for handling arrays, mathematical operations with arrays, script files, functions and function files, programming in matlab: conditional statements(if-end, if-else-end, if-elseif-else-end), switch case, loops(for-end and while-end), break and continue commands.  Programs on arrays, matrices and Loops Programs to create user defined Function files. Solution of First Order Differential Equations	B.Sc(H) Electronics Sem-I	Core-Course II/ Mathematics Foundation for Electronics Lab
		Familiarization with a) Resistance in series, parallel and series – Parallel. b) Capacitors & Inductors in series & Parallel. c) Multimeter – Checking of components. d) Voltage sources in series, parallel and series – Parallel e) Voltage and Current dividers  Verification of Kirchoff’s Law. Verification of Norton’s theorem. Verification of Thevenin’s Theorem.	B.Sc.(Hons) Electronics, Sem I	Core-Course-I/ Basic Circuit Theory and Network Analysis Lab
SEPTEMBER	<b>Theory</b>	Boundary Conditions, Method of Images. Dielectric materials, Polarization, Dielectric Constant, Isotropic and Anisotropic dielectrics  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 SphericalCoordinates.Magnetostatics: BiotSavert’s lawand 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
		<b>Practicals</b>	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.	B.Sc(H) Electronics Sem-V



		6. Plots of Magnetic Flux Density due to current carrying wire.		
		Solution of Second Order homogeneous Differential Equations. Solution of Second Order non-homogeneous Differential Equations Solution of linear system of equations using Gauss Elimination method.	B.Sc(H) Electronics Sem-I	Core Course II/ Mathematics for foundation for Electronics Lab
		Verification of Superposition Theorem. Verification of the Maximum Power Transfer Theorem. Measurement of Amplitude, Frequency & Phase difference using CRO.	B.Sc.(Hons) Electronics, Sem I	Core-Course-I/ Basic Circuit Theory and Network Analysis Lab
	<b><u>Assignment</u></b>			
OCTOBER	<b>Theory</b>	Unit-3  Varying Fields and Maxwell's Equations: Faraday's Law of Electromagnetic Induction, Stationary Circuit in Time  - Varying Magnetic Field, Transformer and Motional EMF, Displacement Current, Maxwell's Equations in differential and integral form and Constitutive Relations. Potential Functions, Lorentz gauge and the Wave Equation for Potentials, Concept of Retarded Potentials. Electromagnetic Boundary Conditions. Time-Harmonic Electromagnetic Fields and use of Phasors  Unit-4 Electromagnetic Wave Propagation:  Harmonic Electromagnetic Fields and use of Phasors, the Electromagnetic Spectrum, Wave Equation in a source free isotropic homogeneous media.	B.Sc(H) Electronics Sem-V	Core-Course-XII/ Electromagnetics
	<b>Practicals:</b>	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
		Solution of linear system of equations using Gauss – Seidel method. Solution of linear system of equations using L-U decomposition method.	B.Sc (H) Electronics Sem-I	Core-Course II/ Mathematics Foundation for Electronics Lab
		RC Circuits: Time Constant, Differentiator, Integrator. Designing of a Low Pass RC Filter and study of its Frequency Response. Designing of a High Pass RC Filter and study of its Frequency Response.	B.Sc.(Hons) Electronics, Sem I	Core-Course-I/ Basic Circuit Theory and Network Analysis Lab

	<b><u>Mid Term Test</u></b>			
NOVEMBER	<b>Theory:</b>	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
	<b>Practicals:</b>	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
		Convergence of a given series. Divergence of a given series.	B.Sc (H) Electronics Sem-I	Core-Course II/ Mathematics Foundation for Electronics Lab
		Study of the Frequency Response of a Series LCR Circuit and determination of its (a) Resonant Frequency (b) Impedance at Resonance (c) Quality Factor Q (d) Band Width.	B.Sc.(Hons) Electronics, Sem I	Core-Course-I/ Basic Circuit Theory and Network Analysis Lab



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**July-November, 2018**

**Name of the Faculty:** Dr. Neeru Kumar

**Department:** Electronics

**Semester:** Third

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	Number System and Codes	<b>B.Sc. Electronics</b>	CC VI/ Digital Electronics and VHDL
	<b>Practicals:</b>	<b>Sem III:</b> To verify and design AND, OR, NOT and XOR gates using NAND gates.  <b>Sem III:</b> 1. Generate the Fibonacci series up to the given limit N and also print the number of elements in the series. 2. Find minimum and maximum of N numbers.		CC VI/ Digital Electronics and VHDL Lab  CCVII/ C Programming and Data Structures
	<b>Tutorials:</b>			
AUGUST	<b>Theory:</b>	Logic Gates and Boolean algebra Combinational Logic Analysis and Design	<b>B.Sc. Electronics</b>	CC VI/ Digital Electronics and VHDL
	<b>Practicals:</b>	<b>Sem III:</b> 1.To convert a Boolean expression into logic gate circuit and assemble it using logic gate IC's. 2.Design a Half and Full Adder. 3.Design a Half and Full Subtractor.  <b>Sem III:</b> 3. Find the GCD of two integer numbers. 4. Calculate factorial of a given number. 5. Find all the roots of a quadratic equation $Ax^2 + Bx + C = 0$ for non – zero coefficients		CC VI/ Digital Electronics and VHDL Lab  CCVII/ C Programming and Data Structures

		A, B and C. Else report error. 6. Calculate the value of $\sin(x)$ and $\cos(x)$ using the series. Also print $\sin(x)$ and $\cos(x)$ value using library function. 7. Generate and print prime numbers up to an integer N.		
	<b>Tutorials:</b>			
<b>SEPTEMBER</b>	<b>Theory:</b>	Sequential logic design Programmable Logic Devices	<b>B.Sc. Electronics</b>	CC VI/ Digital Electronics and VHDL
	<b>Practicals:</b>	<b>Sem III:</b> 1.Design a seven segment display driver. 2. Design a 4 X 1 Multiplexer using gates 3.To build a Flip- Flop Circuits using elementary gates. (RS, Clocked RS, D-type).  <b>Sem III:</b> 8. Sort given N numbers in ascending order. 9. Find the sum & difference of two matrices of order MxN and PxQ. 10. Find the product of two matrices of order MxN and PxQ. 11. Find the transpose of given MxN matrix. 12. Find the sum of principle and secondary diagonal elements of the given MxN matrix. 13. Calculate the subject wise and student wise totals and store them as a part of the structure. 14. Maintain an account of a customer using classes 23. Implement Insertion sort, Merge sort, Bubble sort, Selection sort.		CC VI/ Digital Electronics and VHDL Lab  CCVII/ C Programming and Data Structures
	<b>Assignment</b>			
	<b>Tutorials:</b>			
<b>OCTOBER</b>	<b>Theory</b>	Introduction to VHDL Behavioral Modeling Sequential Processing	<b>B.Sc. Electronics</b>	CC VI/ Digital Electronics and VHDL

	<b>Practicals:</b>	<p><b>Sem III:</b> 1.Design a counter using D/T/JK Flip-Flop. 2.Design a shift register and study Serial and parallel shifting of data.</p> <p><b>Sem III:</b> Designing of the PCB layout of Full Wave Bridge Rectifier. Designing of the PCB layout of Half and Full Adder. Designing of the PCB layout of Half and Full Subtractor.</p> <p><b>Sem III:</b> 15. Implement linear and circular linked lists using single and double pointers. 16. Create a stack and perform Pop, Push, Traverse operations on the stack using Linear Linked list 17. Create circular linked list having information about a college and perform Insertion at front, Deletion at end. 18. Create a Linear Queue using Linked List and implement different operations such as Insert, Delete, and Display the queue elements. 19. Implement polynomial addition and subtraction using linked lists. 20. Implement sparse matrices using arrays and linked lists. 21. Create a Binary Tree to perform Tree traversals (Preorder, Postorder, Inorder) using the concept of recursion. 22. Implement binary search tree using linked lists. Compare its time complexity over that of linear search.</p>		<p>CC VI/ Digital Electronics and VHDL Lab</p> <p>SEC/Design and Fabrication of PrintedCircuit Boards</p> <p>CCVII/ C Programming and Data Structures</p>
	<b>Tutorials:</b>			
	<b><u>Mid Term Test</u></b>			
<b>NOVEMBER</b>	<b>Theory:</b>	Data types of VHDL	<b>B.Sc. Electronics</b>	CC VI/ Digital Electronics and VHDL

<b>Practicals:</b>	<b>Sem III:</b> To implement all the hardware experiments in VHDL software.		<b>CC VI/ Digital Electronics and VHDL Lab</b>  <b>CCVII/ C Programming and Data Structures</b>
<b>Tutorials:</b>			



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**Academic Session 2018-2019 (Odd Semester)**

**Name of the Faculty** : **Mr. Hari Singh**  
**Department** : **Electronics**

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

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

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Basic Circuit Concepts: Voltage and Current Sources, Resistors: Fixed and Variable resistors, Construction and Characteristics, Color coding of Resistors, Resistors in Series and Parallel. Basic Circuit Concepts: Inductors: Fixed and Variable inductors, Self and mutual inductance, Faraday's law and Lenz's law of electromagnetic induction, Energy stored in an inductor, Inductance in series and parallel, Testing of resistance and inductance using Multimeter.	B.Sc.(Hons) Electronics, Sem I	Core-Course-I/ Basic Circuit Theory and Network Analysis
		PCB Fundamentals: PCB Advantages, components of PCB	B.Sc.(Hons) Electronics, Sem III	SEC-I/ Design and Fabrication of Printed Circuit Boards
	<b>Practical</b>	Familiarization with a) Resistance in series, parallel and series – Parallel. b) Capacitors & Inductors in series & Parallel. c) Multimeter – Checking of components. d) Voltage sources in series, parallel and series – Parallel e) Voltage and Current dividers  Introduction to PCB designing and various CAD software.	B.Sc.(Hons) Electronics, Sem I  B.Sc.(Hons) Electronics, Sem III	Core-Course-I/ Basic Circuit Theory and Network Analysis Lab  SEC-I/ Design and Fabrication of Printed Circuit Boards
AUGUST	<b>Theory</b>	Capacitors: Principles of capacitance, Parallel plate capacitor, Permittivity, Definition of Dielectric Constant, Dielectric strength, Energy stored in a capacitor, Air, Paper, Mica, Teflon, Ceramic, Plastic and Electrolytic capacitor, Construction and application, capacitors in series and parallel, factors governing the value of capacitors,	B.Sc.(Hons) Electronics, Sem I	Core-Course-I/ Basic Circuit Theory and Network Analysis

		<p>testing of capacitors using multimeter. Dielectric Constant, Dielectric strength, Energy stored in a capacitor, Air, Paper, Mica, Teflon, Ceramic, Plastic and Electrolytic capacitor, Construction and application, capacitors in series and parallel, factors governing the value of capacitors, testing of capacitors using multimeter.</p> <p>Circuit Analysis: Kirchoff's Current Law (KCL), Kirchoff's Voltage Law (KVL), Node Analysis</p> <p>Electronic components, Microprocessors and Microcontrollers, IC's, Surface Mount Devices (SMD). Classification of PCB - single, double, multilayer and flexible boards, Manufacturing of PCB, PCB standards. Schematic &amp; Layout Design: Schematic diagram, General</p>	B.Sc.(Hons) Electronics, Sem III	SEC-I/ Design and Fabrication of Printed Circuit Boards Lab
	<b>Practical</b>	<p>Verification of Kirchoff's Law. Verification of Norton's theorem. Verification of Thevenin's Theorem.</p> <p>Installation and introduction to EAGLE. Designing of the PCB layout of Blinky Box using IC 555 Timer. Designing of the PCB layout of Low Pass Filter using IC 741. Designing of the PCB layout of High Pass Filter using IC 741.</p>	<p>B.Sc.(Hons) Electronics, Sem I</p> <p>B.Sc.(Hons) Electronics, Sem III</p>	<p>Core-Course-I/ Basic Circuit Theory and Network Analysis Lab</p> <p>SEC-I/ Design and Fabrication of Printed Circuit Boards</p>
SEPTEMBER	<b>Theory</b>	<p>Mesh Analysis, Star-Delta Conversion</p> <p>Network Theorems: Principal of Duality, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Reciprocity Theorem, Millman's Theorem, Maximum Power Transfer Theorem. AC circuit analysis using Network theorems</p> <p>Mechanical and Electrical design considerations, Placing and Mounting of components, Conductor spacing, routing guidelines, heat sinks and package density, Net list, creating components for library, Tracks, Pads, Vias, power plane, grounding. Technology OF PCB: Design automation, Design Rule Checking</p>	<p>B.Sc.(Hons) Electronics, Sem I</p> <p>B.Sc.(Hons) Electronics, Sem III</p>	<p>Core-Course-I/ Basic Circuit Theory and Network Analysis</p> <p>SEC-I/ Design and Fabrication of Printed Circuit Boards</p>



	<b>Practical</b>	<p>Verification of Superposition Theorem. Verification of the Maximum Power Transfer Theorem. Measurement of Amplitude, Frequency &amp; Phase difference using CRO.</p> <p>Designing of the PCB layout of Band Pass Filter using IC 741 Designing of the PCB layout of Differentiator. Designing of the PCB layout of Integrator.</p>	<p>B.Sc.(Hons) Electronics, Sem I</p> <p>B.Sc.(Hons) Electronics, Sem III</p>	<p>Core-Course-I/ Basic Circuit Theory and Network Analysis Lab</p> <p>SEC-I/ Design and Fabrication of Printed Circuit Boards</p>
	<b>Assignment</b>	As per the syllabus covered		
OCTOBER	<b>Theory</b>	<p>Two Port Networks: Impedance (Z) Parameters, Admittance (Y) Parameters, Transmission (ABCD) Parameters.</p> <p>AC Circuit Analysis: Sinusoidal Voltage and Current, Definition of Instantaneous, Peak, Peak to Peak, Root Mean Square and Average Values. Voltage-Current relationship in Resistor, Inductor and Capacitor, Phasor, Complex Impedance, Power in AC Circuits: Instantaneous Power, Average Power, Reactive Power, Power Factor. Sinusoidal Circuit Analysis for RL, RC and RLC Circuits. Resonance in Series and Parallel RLC Circuits, Frequency Response of Series and Parallel RLC Circuits, Quality (Q) Factor and Bandwidth. Passive Filters: Low Pass, High Pass, Band Pass and Band Stop.</p> <p>Exporting Drill and Gerber Files; Drills; Footprints and Libraries Adding and Editing Pins, copper clad laminates materials of copper clad laminates, properties of laminates (electrical &amp; physical), types of laminates, soldering techniques. Film master preparation, Image transfer, photo printing, Screen Printing, Plating techniques etching techniques, Mechanical Machining operations, Lead cutting and Soldering Techniques, Testing and quality controls</p>	<p>B.Sc.(Hons) Electronics, Sem I</p> <p>B.Sc.(Hons) Electronics, Sem III</p>	<p>Core-Course-I/ Basic Circuit Theory and Network Analysis</p> <p>SEC-I/ Design and Fabrication of Printed Circuit Boards</p>

	<b>Practical</b>	RC Circuits: Time Constant, Differentiator, Integrator. Designing of a Low Pass RC Filter and study of its Frequency Response. Designing of a High Pass RC Filter and study of its Frequency Response.  Designing of the PCB layout of Full Wave Bridge Rectifier. Designing of the PCB layout of Half and Full Adder. Designing of the PCB layout of Half and Full Subtractor.	B.Sc.(Hons) Electronics, Sem I  B.Sc.(Hons) Electronics, Sem III	Core-Course-I/ Basic Circuit Theory and Network Analysis Lab  SEC-I/ Design and Fabrication of Printed Circuit Boards
	<b>Tutorials</b>	NA	NA	NA
	<b>Mid Term Test</b>	As per the syllabus covered		
NOVEMBER	<b>Theory</b>	DC Transient Analysis: RC Circuit- Charging and discharging with initial charge, RL Circuit with Initial Current, Time Constant, RL and RC Circuits With Sources, DC Response of Series RLC Circuits.  PCB Technology: Trends, Environmental concerns in PCB industry	B.Sc.(Hons) Electronics, Sem I  B.Sc.(Hons) Electronics, Sem III	Core-Course-I/ Basic Circuit Theory and Network Analysis  SEC-I/ Design and Fabrication of Printed Circuit Boards
	<b>Practical</b>	Study of the Frequency Response of a Series LCR Circuit and determination of its (a) Resonant Frequency (b) Impedance at Resonance (c) Quality Factor Q (d) Band Width.  Designing of the PCB layout of 4×1 Multiplexer.	B.Sc.(Hons) Electronics, Sem I  B.Sc.(Hons) Electronics, Sem III	Core-Course-I/ Basic Circuit Theory and Network Analysis Lab  SEC-I/ Design and Fabrication of Printed Circuit Boards



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Ms. Shubhra Gupta**

**Department Electronics**

**Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<b>SEM V</b> : Unit 1: Numerical Methods: Floating point, Round-off error, Error propagation, Stability, Programming errors.	Bsc (Hons) Electronics	<b>DSE-4</b> : Numerical Techniques
	<b>Practicals</b>	<b>SEM V</b> : Introductory Lab <b>SEM V</b> : Program for addition and subtraction using 8085 microprocessors <b>SEM I</b> : Starting with MATLAB, arithmetic operations with scalars, order of precedence, display formats, elementary built in functions, defining scalar variables.	Bsc (Hons) Electronics	<b>DSE-4 Lab</b> : Numerical Techniques <b>CC-XI Lab</b> : Microprocessor and Microcontroller <b>CC-II Lab</b> : Mathematics Foundation for Electronics
	<b>Tutorials</b>			
AUGUST	<b>Theory:</b>	<b>SEM V:</b> 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	<b>DSE-4</b> : Numerical Techniques

	<b>Practicals:</b>	<p><b>SEM V :</b> Program to implement Bisection Method , Secant Method and Regula falsi method.</p> <p><b>SEM V :</b> Program for multibyte addition and subtraction, Program for block movement of data, Program for ascending and descending order</p> <p><b>SEM I :</b>Creating arrays: Creating a 1D array(vector), 2D array(matrix), array addressing, built in functions for handling arrays, mathematical operations with arrays, script files, functions and function files, programming in matlab: conditional statements(if-end, if-else-end, if-elseif-else-end), switch case, loops(for-end and while-end), break and continue commands. Programs on arrays, matrices and Loops  Programs to create user defined Function files.  Solution of First Order Differential Equations</p>	Bsc (Hons) Electronics	<p><b>DSE-4 Lab :</b> Numerical Techniques</p> <p><b>CC-XI Lab :</b> Microprocessor and Microcontroller</p> <p><b>CC-II Lab :</b> Mathematics Foundation for Electronics</p>
	<b>Tutorials:</b>			
SEPTEMBER	<b>Theory:</b>	<p><b>SEM V :</b> 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.</p> <p>Unit 3 : Numerical Integration: Trapezoidal Rule, Error bounds and estimate for the Trapezoidal rule, Simpson’s Rule, Error of Simpson’s rule. Numerical Differentiation</p>	Bsc (Hons) Electronics	<b>DSE-4 :</b> Numerical Techniques

	<b>Practicals:</b>	<p><b>SEM V :</b> Program to implement Newton Raphson Method , Trapezoidal rule , Simpson’s rule and Runge Kutta Method.</p> <p><b>SEM V :</b> 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</p> <p><b>SEM I :</b> Solution of Second Order homogeneous Differential Equations. Solution of Second Order non-homogeneous Differential Equations Solution of linear system of equations using Gauss Elimination method.</p>	Bsc (Hons) Electronics	<p><b>DSE-4 Lab :</b> Numerical Techniques</p> <p><b>CC-XI Lab :</b> Microprocessor and Microcontroller</p> <p><b>CC-II Lab :</b> Mathematics Foundation for Electronics</p>
	<b>Tutorials:</b>			
	<b><u>Assignment :</u></b>	Based on Unit 1 and Unit 2		
OCTOBER	<b>Theory:</b>	<p><b>SEM V :</b> 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.</p> <p>Unit 4: Numerical Methods in Linear Algebra: Linear systems <math>Ax=B</math>, Gauss Elimination, Partial Pivoting, LU factorization, Doolittle’s</p>	Bsc (Hons) Electronics	<b>DSE-4 :</b> Numerical Techniques
	<b>Practicals:</b>	<p><b>SEM V :</b> Program to implement Euler-Cauchy Method and Gauss-Jordan Method</p> <p><b>SEM V :</b> Interfacing of PIC microcontroller with LEDs, Stepper motor, Generation of different waveforms, A/D converter</p> <p><b>SEM I :</b> Solution of linear system of equations using Gauss – Seidel method. Solution of linear system of equations using L-U decomposition method.</p>	Bsc (Hons) Electronics	<p><b>DSE-4 Lab :</b> Numerical Techniques</p> <p><b>CC-XI Lab :</b> Microprocessor and Microcontroller</p> <p><b>CC-II Lab :</b> Mathematics Foundation for Electronics</p>
	<b>Tutorials:</b>			
	<b><u>Test</u></b>	Based on Unit 1 , Unit 2 and part of Unit 3.		

NOVEMBER	<b>Theory:</b>	<b>SEM V :</b> 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	<b>DSE-4 :</b> Numerical Techniques
	<b>Practicals:</b>	<b>SEM V :</b> Program to implement Gauss-Seidel Iteration <b>SEM V :</b> Serial communication between microcontroller and PC <b>SEM I :</b> Convergence of a given series. Divergence of a given series.	Bsc (Hons) Electronics	<b>DSE-4 Lab :</b> Numerical Techniques <b>CC-XI Lab :</b> Microprocessor and Microcontroller <b>CC-II Lab :</b> Mathematics Foundation for Electronics
	<b>Tutorials:</b>			



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

**Name of the Faculty: Dr. Rakhi Narang**

**Department: Electronics**

**Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	<b>Sem V:</b> Discrete sequences	BSc Electronics	DSE- Digital Signal Processing
	<b>Practicals</b>	<b>Sem V:</b> Generation of unit sample sequence, unit step, ramp function, discrete time sequence, real sinusoidal sequence.	BSc Electronics	DSE- Digital Signal Processing Lab
		<b>Sem III:</b> : Clipping and Clamping Circuits, Half Wave/Full Wave Rectifiers	BSc Electronics	CC – V/ Electronic Circuit Lab
		<b>Sem V:</b> Introduction to MATLAB functions	BSc Electronics	CC-XII : Electromagnetics Lab
<b>Tutorials</b>				
AUGUST	<b>Theory:</b>	<b>Sem III:</b> linear coefficient difference equation, Representation of DTS, LSI Systems. Stability and causality, frequency domain representations and Fourier transform of DT sequences, Z transform and its properties, Inverse Z transform	BSc Electronics	DSE- Digital Signal Processing
	<b>Practicals:</b>	<b>Sem V:</b> 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	DSE- Digital Signal Processing Lab
		<b>Sem III :</b> Full Wave (Bridge and center tapped) Rectifiers with C-filter, and Zener and load Regulation, Clipping and Clamping networks, Biasing of transistor	BSc Electronics	CC – V/ Electronic Circuit Lab
		<b>Sem V:</b> Understanding and Plotting Vectors. 2. Transformation of vectors into various coordinate systems. 3. 2D and 3D Graphical plotting with change of view and rotation Representation of the Gradient of a scalar field, Divergence and Curl of Vector Fields.	BSc Electronics	CC-XII : Electromagnetics Lab
<b>Tutorials:</b>				

SEPTEMBER	<b>Theory:</b>	<b>Sem V: System Function:</b> signal flow graph, its use in representation and analysis of Discrete Time Systems. Techniques of representations. Matrix generation and solution for DTS evaluations. DFT assumptions and Inverse DFT. Matrix relations, relationship with FT and its inverse, circular convolution, DFT theorems, DCT. Computation of DFT.	BSc Electronics	DSE- Digital Signal Processing
	<b>Practicals:</b>	<b>Sem V:</b> Fourier Transform, Discrete Fourier Transform and Fast Fourier Transform  <b>Sem III:</b> DC Biasing: Fixed Bias, Collector to base feedback and Voltage divider, CE Amplifier Design and frequency response  <b>Sem V:</b> Plots of Electric field and Electric Potential due to charge distributions. Plots of Magnetic Flux Density due to current carrying wire. Programs and Contour Plots to illustrate Method of Images	BSc Electronics  BSc Electronics  BSc Electronics	DSE- Digital Signal Processing Lab  CC – V/ Electronic Circuit Lab  CC-XII : Electromagnetics Lab
	<b>Tutorials:</b>			
	<b>Assignment</b>	<b>Sem V:</b> Assignment based on Unit-I		
OCTOBER	<b>Theory:</b>	<b>Sem V:</b> FFT Algorithms and processing gain, Discrimination, interpolation and extrapolation. Gibbs phenomena. FFT of real functions interleaving and resolution improvement. Word length effects. <b>Digital Filters:</b> Analog filter review. System function for IIR and FIR filters, network representation. Canonical and decomposition networks.	BSc Electronics	DSE- Digital Signal Processing
	<b>Practicals:</b>	<b>Sem V:</b> Design of a Butterworth analog filter for low pass and high pass.  <b>Sem III:</b> Common Source FET Amplifier  <b>Sem V:</b> Solutions of Poisson and Laplace Equations – contour plots of charge and potential distributions	BSc Electronics  BSc Electronics  BSc Electronics	DSE- Digital Signal Processing Lab  CC – V/ Electronic Circuit Lab  CC-XII : Electromagnetics Lab
	<b>Mid term Test</b>	Test based on Unit I and II for DSE		
NOVEMBER	<b>Theory:</b>	<b>Sem V:</b> IIR filter realization methods and their limitations. FIR filter realization techniques. Discrete correlation and convolution; Properties and limitations	BSc Electronics	DSE- Digital Signal Processing Lab



	<b>Practicals:</b>	<p><b>Sem V:</b> Design of digital filters</p> <p><b>Sem III :</b> Common Source FET Amplifier</p> <p>Sem V: Introduction to Computational Electromagnetics: Simple Boundary Value Problems by Finite Difference/Finite Element Methods.</p>	<p>BSc Electronics</p> <p>BSc Electronics</p> <p>BSc Electronics</p>	<p>DSE- Digital Signal Processing Lab</p> <p>CC – V/ Electronic Circuit Lab</p> <p>CC-XII : Electromagnetics Lab</p>
	<b>Tutorials:</b>			



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

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

**Department** : **Electronics**

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

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

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Unit-1:First Order Ordinary Differential Equations: Basic Concepts and Definitions, Variables Separable, Homogenous Equations-reduction to Separable form	B.Sc.(Hons) Electronics, Sem I	Core-Course-II/ Mathematics Foundation for Electronics
		Diode Circuits: Ideal Diode, piecewise linear equivalent circuit.	B.Sc.(Hons) Electronics, Sem III	Core-Course-V/ Electronics Circuits
	<b>Practicals</b>	Introduction to PCB designing and various CAD software.	B.Sc.(Hons) Electronics, Sem III	SEC/ Design and Fabrication of Printed Circuit Boards
Introduction Lab		B.Sc.(Hons) Electronics, Sem V	DSE/ Numerical Techniques	
AUGUST	<b>Theory</b>	Unit-1: Non Homogenous Equations reducible to Homogenous form, Exact DE. Reduction of Non-exact DE: using Integrating factors, Linear Ordinary DE, Linear DE of Second Order: Linear Independence and Dependence, Linear DE of second order with variable coefficients, second order with constant coefficients: Homogenous and Non-homogenous Equations, Series Solution of DE and Special functions: Classification of Singularities, Power series solution, Frobenius Method, Bessel's equation and Bessel's functions of first and second kind, Error functions and Gamma function.	B.Sc.(Hons) Electronics, Sem I	Core-Course-II/ Mathematics Foundation for Electronics
		Diode Circuits: dc load line analysis, Quiescent point, Clipping and Clamping	B.Sc.(Hons) Electronics,	Core-Course-V/ Electronics

		<p>Circuits, Rectifiers Working and Ripple factor, efficiency Analysis, filter, DC Power supply, Zener voltage Regulator</p> <p>BJT: CE, CB, CC configurations, h-parameters, Transistor biasing, DC load line, operating point, thermal runaway, stability and stability factor, Fixed bias without and with RE, collector to base bias, voltage divider bias and emitter bias (+VCC and -VEE bias), circuit diagrams and their working.</p>	Sem III	Circuits
	<b>Practicals</b>	<p>Installation and introduction to EAGLE.          Designing of the PCB layout of Blinky Box using IC 555 Timer.          Designing of the PCB layout of Low Pass Filter using IC 741.          Designing of the PCB layout of High Pass Filter using IC 741.</p> <p>Program to implement:          Bisection          Secant Method,          Regula falsi method</p>	<p>B.Sc.(Hons) Electronics, Sem III</p> <p>B.Sc.(Hons) Electronics, Sem V</p>	<p>SEC/ Design and Fabrication of Printed Circuit Boards</p> <p>DSE/ Numerical Techniques</p>
SEPTEMBER	<b>Theory</b>	<p>Unit-2: Matrices: Introduction to Matrices, Types of Matrices, Rank of a Matrix, System of Algebraic Equations, Gaussian Elimination Method, Gauss-Seidel Method, LU decomposition, Solution of Linear System by LU decomposition. Eigen values and Eigen Vectors, Cayley-Hamiltonian Theorem, Diagonalization, Powers of a Matrix, Real and Complex Matrices, Symmetric, skew symmetric, Orthogonal Quadratic form, Hermitian, Skew Hermitian, Unitary matrices.</p> <p>Unit-3: Sequence and Series: Sequences, Limit of Limit of a sequence, Convergence, Divergence and Oscillation of a sequence, Infinite series, Necessary condition for Convergence.</p> <p>BJT: Transistor as a switch, circuit and working, Darlington pair and its applications. BJT amplifier (CE), dc and ac load line analysis, hybrid model of CE configuration, Quantitative study of the frequency response of a CE amplifier, Effect on gain and bandwidth for Cascaded CE amplifiers (RC coupled).</p> <p><b>MOSFET Circuits:</b> Review of Depletion and Enhancement MOSFET, Biasing of MOSFETs, Small Signal Parameters, Common Source amplifier circuit analysis, CMOS circuits.</p> <p><b>Power Amplifiers:</b> Difference between voltage and power amplifier, classification of power amplifiers, Class A, Class B, Class C and their comparisons. Operation of a Class A single ended power amplifier.</p>	<p>B.Sc.(Hons) Electronics, Sem I</p> <p>B.Sc.(Hons) Electronics, Sem III</p>	<p>Core-Course-II/ Mathematics Foundation for Electronics</p> <p>Core-Course-V/ Electronics Circuits</p>

		Operation of Transformer coupled Class A power amplifier, overall efficiency.		
	<b>Practicals</b>	Designing of the PCB layout of Band Pass Filter using IC 741 Designing of the PCB layout of Differentiator. Designing of the PCB layout of Integrator.  Programs to implement: Newton Raphson Method, Trapezoidal rule, Simpson's rule, Runge Kutta Method	B.Sc.(Hons) Electronics, Sem III  B.Sc.(Hons) Electronics, Sem V	SEC/ Design and Fabrication of Printed Circuit Boards  DSE/ Numerical Techniques
	<b>Assignment</b>	Assignment: Questions based on topics covered.  Assignment: Questions based on topics covered.	B.Sc.(Hons) Electronics, Sem I  B.Sc.(Hons) Electronics, Sem III	Core-Course-II/ Mathematics Foundation for Electronics  Core-Course-V/ Electronics Circuits
OCTOBER	<b>Theory</b>	Cauchy's Integral Test, D'Alembert's Ratio Test, Cauchy's nth Root Test, Alternating Series, Leibnitz's Theorem, Absolute Convergence and Conditional Convergence, Power Series.  Unit4: Complex Variables and Functions: Complex Variable, Complex Function, Continuity, Differentiability, Analyticity.  <b>Power Amplifiers:</b> Circuit operation of complementary symmetry Class B push pull power amplifier, crossover distortion, heat sinks. <b>Single tuned amplifiers:</b> Circuit diagram, Working and Frequency Response for each, Limitations of single tuned amplifier, Applications of tuned amplifiers in communication circuits. <b>Feedback Amplifiers:</b> Concept of feedback, negative and positive feedback, advantages and disadvantages of negative feedback.	B.Sc.(Hons) Electronics, Sem I  B.Sc.(Hons) Electronics, Sem III	Core-Course-II/ Mathematics Foundation for Electronics  Core-Course-V/ Electronics Circuits
	<b>Practicals</b>	Designing of the PCB layout of Full Wave Bridge Rectifier. Designing of the PCB layout of Half and Full Adder. Designing of the PCB layout of Half and Full Subtractor.  Programs to implement: Euler-Cauchy Method, Gauss-Jordan Method	B.Sc.(Hons) Electronics, Sem III  B.Sc.(Hons) Electronics, Sem V	SEC/ Design and Fabrication of Printed Circuit Boards  DSE/ Numerical Techniques
	<b>Tutorials</b>	NA	NA	NA
	<b>Mid Term Test</b>	Test: As per the covered topics.		
NOVEMBER	<b>Theory</b>	Unit4: Cauchy-Riemann (C- R) Equations, Harmonic and Conjugate Harmonic Functions, Exponential Function,	B.Sc.(Hons) Electronics, Sem I	Core-Course-II/ Mathematics Foundation for

		<p>Trigonometric Functions, Hyperbolic Functions. Line Integral in Complex Plane, Cauchy's Integral Theorem, Cauchy's Integral Formula, Derivative of Analytic Functions. Sequences, Series and Power Series, Taylor's Series, Laurent Series, Zeroes and Poles. Residue integration method, Residue integration of real Integrals.</p> <p><b>Feedback Amplifiers:</b> voltage (series and shunt), current (series and shunt) feedback amplifiers, gain, input and output impedances. Barkhausen criteria for oscillations, Study of phase shift oscillator, Colpitts oscillator and Hartley oscillator.</p>	B.Sc.(Hons) Electronics, Sem III	Electronics  Core-Course-V/ Electronics Circuits
	<b>Practicals</b>	<p>Designing of the PCB layout of 4×1 Multiplexer.</p> <p>Program to implement Gauss-Seidel Iteration</p>	<p>B.Sc.(Hons) Electronics, Sem III</p> <p>B.Sc.(Hons) Electronics, Sem V</p>	<p>SEC/ Design and Fabrication of Printed Circuit Boards</p> <p>DSE/ Numerical Techniques</p>



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

Name of the Faculty : Dr. S. Vivekananthan

Department : Tamil

CBCS Semester : I

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

Month	Theory/Practical	Topics	Course	Paper code/Name
September	Theory	<u>History of Indian Language (Tamil)</u> Syntactical Changes	B.A Prog Tamil Language	62081104
	Assignment	History of Tamil Language (I Part)		
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Myth and literature	B.A Prog Tamil Discipline	62081108
	Assignment	<u>Folk Songs and Myth</u>		
	Theory	<u>MIL Communications (Tamil)</u> Letter writing	B.A Prog Tamil AECC	72082807
	Assignment	Interview and Letter writing		
October	Theory	<u>History of Indian Language (Tamil)</u> History of Scripts	B.A Prog Tamil Language	62081104
	Mid-Term Test	<u>History of Tamil Language</u>		
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Mythology	B.A Prog Tamil Discipline	62081108
	Mid-Term Test	<u>Oral Traditions</u>		
	Theory	<u>MIL Communications (Tamil)</u> Comprehension	B.A Prog Tamil AECC	72082807
	Mid-Term Test	<u>Tamil Communications</u>		
November	Theory	<u>History of Indian Language (Tamil)</u> History of Tamil Scripts	B.A Prog Tamil Language	62081104
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Growth of literature from Myth		
	Theory	<u>MIL Communications (Tamil)</u> <u>Practical writing of Tamil Communications</u>	B.A Prog Tamil AECC	72082807



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

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

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



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



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

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

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



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

Name of the Faculty : Dr. S. Vivekananthan

Department : Tamil

CBCS Semester : V

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	<u>Language in advertisement</u> History of advertisement and theories of communications	B.A Hons Tamil G.E	
August	Theory	<u>Language in advertisement</u> History of advertisement and theories of communications	B.A Hons Tamil G.E	
September	Theory Assignment	<u>Language in advertisement</u> Materials of advertisement, Institutions, History of Indian advertisement Institutions History of advertisement	B.A Hons Tamil G.E	
October	Theory Mid Term Test	<u>Language in advertisement</u> Advertisement and Laws	B.A Hons Tamil G.E	
November	Theory	<u>Language in advertisement</u> Technical Terms of advertisement	B.A Hons Tamil G.E	



**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
July	Theory	<u>History of Indian Language (Tamil)</u> Sources of Tamil Language History	B.A Prog Tamil Language	62081104
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> <u>Folk Traditions in Tamil</u>	B.A Prog Tamil Discipline	62081108
	Theory	<u>MIL Communications (Tamil)</u> History of Translation	B.A Prog Tamil AECC	72082807
August	Theory	<u>History of Indian Language (Tamil)</u> Dravidian Languages and Tamil	B.A Prog Tamil Language	62081104
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Definition and Types of Folk Tales	B.A Prog Tamil Discipline	62081108
	Theory	<u>MIL Communications (Tamil)</u> History and Types of Public Speech	B.A Prog Tamil AECC	72082807

Month	Theory/Practical	Topics	Course	Paper code/Name
September	Theory	<u>History of Indian Language (Tamil)</u> Special Features in South Dravidian Languages	B.A Prog Tamil Language	62081104
	Assignment	History of Tamil Language (II Part)		
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Folk-lore and Culture of Tamils	B.A Prog Tamil Discipline	62081108
	Assignment	<u>Folk Tales and Culture of the Tamils</u>		
	Theory	<u>MIL Communications (Tamil)</u> Business Letter writing in Tamil	B.A Prog Tamil AECC	72082807
	Assignment	Public Speech in Tamil		
October	Theory	<u>History of Indian Language (Tamil)</u> Dialects in Tamil	B.A Prog Tamil Language	62081104
	Mid-Term Test	<u>History of Tamil Language</u>		
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Customs and Culture through Folk Literature	B.A Prog Tamil Discipline	62081108
	Mid-Term Test	<u>Oral Traditions</u>		
	Theory	<u>MIL Communications (Tamil)</u> Practical Translations	B.A Prog Tamil AECC	72082807
	Mid-Term Test	<u>Tamil Communications</u>		
November	Theory	<u>History of Indian Language (Tamil)</u> Types of Dialects	B.A Prog Tamil Language	62081104
	Theory	<u>Oral Traditions : Folk Tales, Songs and Myth</u> Analysis of Tamil Literary text through Folk tale		
	Theory	<u>MIL Communications (Tamil)</u> Practical Public Speeches in Tamil	B.A Prog Tamil AECC	72082807



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

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

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

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



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

Name of the Faculty : Dr. S. Seenivasan

Department : Tamil

CBCS Semester : V

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





**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

Name of the Faculty : Dr. S. Seenivasan

Department : Tamil

CBCS Semester : V

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	<u>Language in advertisement</u> Meaning, Definitions of advertisement	B.A Hons Tamil G.E	
August	Theory	<u>Language in advertisement</u> Meaning, Definitions of advertisement	B.A Hons Tamil G.E	
September	Theory	<u>Language in advertisement</u> Aims and kinds of advertisement	B.A Hons	
	Assignment	Merits and Demerits of advertisement	Tamil G.E	
October	Theory	<u>Language in advertisement</u> Techniques of advertisement	B.A Hons Tamil G.E	
	Mid Term Test			
November	Theory	<u>Language in advertisement</u> Usage of advertisement	B.A Hons Tamil G.E	



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

**Academic Planner: Odd Semester 2018 (July – November)**

**Name of the Faculty: Ms. Ramaa Sinha**

**Department: Zoology**

**Semester : III and V**

Month		Topics	Course	Paper
July	Theory	Unit 1 : <ul style="list-style-type: none"> <li>• Chemical messengers in general</li> <li>• Characteristics of hormones</li> <li>• Historical perspective of endocrinology-Epochal experiments</li> </ul>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
	<b>Practicals</b>	<ul style="list-style-type: none"> <li>• Plan of the syllabus, Maintenance of lab record, general introduction</li> <li>• Preparation of haemin and haemchromogen crystals from own sample of blood</li> </ul>	B.Sc (Programme) Life Sciences	Physiology and Biochemistry-CC III
		<ul style="list-style-type: none"> <li>• Anatomical location of endocrine organs in human</li> <li>• An overview of hormones secreted by various glands</li> </ul>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
AUGUST	<b>Theory:</b>	Unit 1 –contd. <ul style="list-style-type: none"> <li>• Detailed classification of hormones based on chemical nature and functional effects</li> </ul> Unit 6- <ul style="list-style-type: none"> <li>• Male reproductive system</li> <li>• Hormonal regulation of testicular function</li> <li>• Chemistry and biosynthesis of testosterone</li> </ul>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>

		<b>Unit 6 Cont..</b> <ul style="list-style-type: none"> <li>• Chemistry of female sex hormones (including biosynthesis)</li> <li>• Placental hormones and their role</li> <li>• Role of hormones in Parturition</li> </ul>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Basic –histology –Introductory studies</li> <li>• Anatomy, histology and endocrinology of gonads- Ovary and testis</li> <li>• Anatomy, histology and endocrinology of adrenal cortex and medulla</li> <li>• Anatomy, histology and endocrinology of thyroid and parathyroid glands</li> <li>• Anatomy, histology and endocrinology of pancreatic islets</li> </ul>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
		<ul style="list-style-type: none"> <li>• Repetition of haemin and haemchromogen crystals</li> <li>• Biochemistry of carbohydrates- demonstration of functional groups</li> <li>• Histology and functional correlations of :-Cartilage, Bone, Spinal cord, Duodenum, Liver, Pancreas and thyroid</li> </ul>	<b>B.Sc (Programme) Life Sciences</b>	<b>Physiology and Biochemistry-CC III</b>
<b>SEPTEMBER</b>	<b>Theory:</b>	<b>Unit 6 Contd...</b> <ul style="list-style-type: none"> <li>• Hormonal regulation of lactation</li> <li>• Gastro intestinal tract hormones</li> <li>• Endocrine role of kidney</li> </ul>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>

	<b>Practicals:</b>	<ul style="list-style-type: none"> <li>• Anatomy histology and endocrinology of the hypothalamus and hypophysis</li> <li>• Study of Estrous cycle in rat – identification of stages based on vaginal smears (Photomicrographs)</li> <li>• Understanding surgery-Video demonstration of orchidectomy and Ovariectomy in laboratory rats</li> <li>• Understanding “ Compensatory hypertrophy” based on any one model of unilateral surgery</li> </ul>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
		<ul style="list-style-type: none"> <li>• Demonstration of salivary amylase Activity under</li> <li>• Histology and functional correlation of adrenal cortex and medulla</li> </ul>	B.Sc (Programme) Life Sciences	Physiology and Biochemistry-CC III

NOTE : As my superannuation falls in the end of September , the coverage of topics have been concluded thereof







**SEMESTER WISE TEACHING PLAN (2018-2019)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Anita Verma**

**Department: Zoology**

**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction to Physiology. Scope of Studying the subject.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
		Syllabus overview. Scope of studying the course.	B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)
	<b>Practicals</b>	Syllabus overview, general instructions and maintenance of lab record.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
		Syllabus overview, general instructions and maintenance of lab record.	B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)
		Stored grain pest	GE III	Food, Nutrition and Health
AUGUST	<b>Theory:</b>	<p><b>Unit 3: Nervous System:</b> Structure of neuron, resting membrane potential, Origin of action potential and its propagation across the myelinated and unmyelinated nerve fibers; Types of synapse, Synaptic transmission, Neuromuscular junction; Reflex action and its types - reflex arc; Physiology of hearing and vision.</p> <p><b>Unit IV: Dipteran as Disease Vectors:</b> Dipterans as important insect vectors – Mosquitoes, Sand fly, Houseflies; Study of mosquito-borne diseases – Malaria, Dengue, Chikungunya, Viral encephalitis, Filariasis; Control of mosquitoes.</p>	<p>B.Sc. (Hons) Zoology, Semester-III</p> <p>B.Sc. Semester-I GE I: Zoology</p>	<p>Animal Physiology: Controlling and Coordinating Systems (CC VI)</p> <p>Insect Vector and Diseases (GE I)</p>

	<b>Practicals:</b>	Demonstration of the unconditioned reflex action (Deep tendon reflex such as knee jerk reflex). Preparation of temporary mounts: Squamous epithelium, Striated muscle fibres and nerve cells.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
		Study of different orders of insects. Study of mouth parts of insects by permanent slides and dead insects. Evaluation of students on their performance in practical and Record.	B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)
		Titration of Ascorbic acid; Food Adulteration; Stored grain pest.	GE III	Food, Nutrition and Health

SEPTEMBER	<b>Theory:</b>	<b>Unit 4: Muscle:</b> Histology of different types of muscle.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
		<b>Unit IV: Dipteran as Disease Vectors:</b> Study of sand fly-borne diseases – Visceral Leishmaniasis, Cutaneous Leishmaniasis, Phlebotomus fever; Control of Sand fly. Study of house fly as important mechanical vector, Myiasis, Control of house fly.	B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)
	<b>Practicals:</b>	Recording of simple muscle twitch with electrical stimulation. Study of permanent slides of Mammalian skin, Cartilage, Bone, Spinal cord, Nerve cell, Pituitary, Pancreas, Testis, Ovary, Adrenal, Thyroid and Parathyroid.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
		Study of different insect vectors through slides and specimen.	B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)
		Titration: Calcium and Ascorbic acid, stored grain pest.	GE III	Food, Nutrition and Health



OCTOBER	<b>Theory:</b>	<b>Unit 4: Muscle:</b> Ultra structure of skeletal muscle; Molecular and chemical basis of muscle contraction; Characteristics of muscle twitch.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
		<b>Unit IV: Dipteran as Disease Vectors:</b> Management strategies to control vectors.	B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)
	<b>Practicals:</b>	Microtomy: Preparation of permanent slide of any five mammalian (Goat/white rat) tissues. Evaluation of studentson their performance in practical and Record.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
		Diseases spread by vectors. Evaluation of students on their performance in practical and Record.	B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)
		Titration of Lactose +Revision.	GE III	Food, Nutrition and Health
	<b>Test:</b>	Mid-term test.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
Mid-term test.		B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)	

NOVEMBER	<b>Theory:</b>	<b>Unit 4: Muscle:</b> Motor unit, summation and tetanus.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
		Revision (Adaptations of insects to become successful vectors revision).	B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)
	<b>Practicals: (Test)</b>	Mock test and Revision.	B.Sc. (Hons) Zoology, Semester-III	Animal Physiology: Controlling and Coordinating Systems (CC VI)
		Mock test.	B.Sc. Semester-I GE I: Zoology	Insect Vector and Diseases (GE I)
Mock test.		GE III	Food, Nutrition and Health	



**SEMESTER WISE  
TEACHING PLAN  
SRI VENKATESWARA COLLEGE  
July-Nov, 2018-2019 (Odd Semester)**

**Name of the Faculty: Dr. Vartika Mathur**

**Department: Zoology**

**Semester: I/III/V: Theory & Practicals: B.Sc. (H) Zoology Semester I (Ecology) & V (Animal**

**Behaviour); Practicals: B.Sc. (H) Zoology Semester I (Ecology)**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	Introduction, Origin and history of Ethology; Brief profiles of Karl Von Frish, Ivan Pavlov, Konrad Lorenz, Niko Tinbergen, Proximate and ultimate causes of behaviour	B.Sc (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology
		Introduction, concept of ecosystem	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
	<b>Practicals:</b>	Different types of nests and nesting habits in birds and social insects	B.Sc (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology
		Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
		Introduction to Zoology Practicals; Study of whole mount of Euglena, Amoeba and Paramecium,	B.Sc (H) Zoology Semester I	CC I: : Non chordata: Protists to pseudocoelomates
AUGUST	<b>Theory:</b>	Methods and recording of a behavior, Stereotyped Behaviours (Orientation, Reflexes); Individual Behavioural patterns; Instinct vs. Learnt Behaviour; Associative learning, classical and operant conditioning, Habituation, Imprinting	B.Sc (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology
		Community characteristics: species richness, dominance, diversity, abundance	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
	<b>Practicals:</b>	1. To study the behavioural responses of woodlice in dry and humid conditions 2. To study the nesting habits in birds and social insects	B.Sc (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology

	<b>Tutorials:</b>	1. Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided 2. Determination of population density in a natural/hypothetical community by quadrat method and calculation of Shannon-Weiner diversity index for the same community 3. Determination of Dissolved Oxygen content (Winkler's method)	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
		Examination of pond water collected from different places for diversity in Protista; Study of Sycon (T.S. and L.S.), Hyalonema, Euplectella, Spongilla, Study of Obelia, Physalia, Millepora, Aurelia, Tubipora, Corallium, Alcyonium, Gorgonia, Metridium, Pennatulula, Fungia, Meandrina, Madrepora	B.Sc (H) Zoology Semester I	CC I: : Non chordata: Protists to pseudocoelomates
SEPTEMBER	<b>Theory:</b>	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 (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology
		Vertical stratification, Ecotone and edge effect	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
	<b>Practicals:</b>	1. To study geotaxis behavior in earthworm 2. Study and actogram construction of locomotor activity of suitable animal models	B.Sc (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology
	<b>Tutorials:</b>	1. Determination of population density in a natural/hypothetical community by quadrat method and calculation of Shannon-Weiner diversity index for the same community 2. Study of aquatic ecosystem: phytoplanktons & zooplanktons	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
		One specimen/slide of any ctenophore; Study of adult Fasciola hepatica, Taenia solium and their life cycles (Slides/microphotographs)	B.Sc (H) Zoology Semester I	CC I: : Non chordata: Protists to pseudocoelomates
	<b>Assignment</b>	Ecotone & Edge effect	B.Sc (H) Zoology Semester I	CC II: Principles of Ecology
		Animal behavior concepts	B.Sc (H) Zoology Sem V	Animal behavior & chronobiology (DSE 1)
OCTOBER	<b>Theory</b>	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 (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology

		Ecological succession with examples	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
	<b>Practicals:</b>	<ol style="list-style-type: none"> <li>To study the phototaxis behavior in insects</li> <li>Study of circadian function in humans (daily eating, sleep, and temperature pattern)</li> </ol>	B.Sc (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology
		<ol style="list-style-type: none"> <li>Study of an aquatic ecosystem.; Measurement of area, temperature, turbidity/penetration of light,</li> <li>Visit to National Park/Biodiversity Park/Wild life sanctuary</li> </ol>	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
		Study of adult <i>Ascaris lumbricoides</i> and its life stages (Slides/micro- photographs); To submit a Project Report on any related topic on life cycles/coral/ coral reefs.	B.Sc (H) Zoology Semester I	CC I: : Non chordata: Protists to pseudocoelomates
	<b><u>Mid Term Test</u></b>	Unit 3: Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Ecotone and edge effect	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
NOVEMBER	<b>Theory:</b>	Historical developments in chronobiology; Biological oscillation: the concept of Average, amplitude, phase and period. Adaptive significance of biological clocks. Revision	B.Sc (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology
		Theories pertaining to climax community, Revision	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
	<b>Practicals:</b>	<ol style="list-style-type: none"> <li>Study of circadian functions in humans (daily eating, sleep and temperature patterns).</li> <li>Revision of practicals</li> <li>Mock practical examination</li> </ol>	B.Sc (H) Zoology Sem V	DSE 1: Animal behavior & chronobiology
	<b>Tutorials:</b>	<ol style="list-style-type: none"> <li>Determination of pH, Chemical Oxygen Demand and free CO<sub>2</sub></li> <li>Revision of practicals</li> <li>Mock practical examination</li> </ol>	B.Sc (H) Zoology Sem I	CC II: Principles of Ecology
		Practice and repetition of practicals; mock practical examination	BSc (H) Zoology Semester I	CC I: : Non chordata: Protists to pseudocoelomates



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**Academic Planner: Odd Semester 2018 (July – November)**

**Name of the Faculty: Dr. Om Prakash**

**Department: Zoology**

**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	Theory	<b>Immunology</b> <b>Unit 1: Overview of Immune System</b> 10 Historical perspective of Immunology, Early theories of Immunology, Cells and organs of the Immune system.	B.Sc. (Hons.) Zoology Sem V TZH	DSE 9
		<b>Ecology</b> Exponential and logistic growth, equation and patterns,	B.Sc. (Hons.) Zoology Sem I FZH	CC II
	Practicals	Immunology Demonstration of lymphoid organs.	B.Sc. (Hons.) Zoology Sem V TZH	DSE 9
		<b>Ecology</b> Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided	B.Sc. (Hons.) Zoology Sem I FZH	CC II
		<b>FUNDAMENTALS OF BIOCHEMISTRY</b> Qualitative tests of functional groups in carbohydrates Qualitative tests of functional groups in proteins Qualitative tests of functional groups in lipids.	B.Sc. (Hons.) Zoology Sem III SZH	CC VII
AUGUST	Theory	<b>Unit 2: Innate and Adaptive Immunity</b> 10 Anatomical barriers, Inflammation, Cell and molecules involved in innate immunity, Adaptive immunity (Cell mediated and humoral), Passive: Artificial and natural Immunity, Active: Artificial and natural Immunity, Immune dysfunctions (brief account of autoimmunity with reference to Rheumatoid Arthritis and tolerance, AIDS). And masking	B.Sc. (Hons.) Zoology Sem V TZH	DSE-2
		<b>Ecology</b> <b>Ecology</b> r and K strategies Population regulation	B.Sc. (Hons.) Zoology Sem I FZH	CC II
	Practicals	<b>Immunology</b> 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	DSE-2

SEPTEMBER	Theory	<b>Ecology</b> Determination of population density in a natural/hypothetical community by quadrat method and calculation of Shannon-Weiner diversity index for the same community	B.Sc. (Hons.) Zoology Sem I FZH	CC II
		<b>FUNDAMENTALS OF BIOCHEMISTRY</b> Paper chromatography of amino acids. Action of salivary amylase under optimum conditions Repeated Action of salivary amylase under optimum conditions	B.Sc. (Hons.) Zoology Sem III SZH	CC VII
		<b>Immunology</b> <b>Unit 3: Antigens 8</b> Antigenicity and immunogenicity, Immunogens, Adjuvants and haptens, Factors influencing immunogenicity, B and T-Cell epitopes	B.Sc. (Hons.) Zoology Sem V TZH	DSE 9
	Practicals	<b>Ecology</b> density-dependent and independent factors Population interactions, Gause's Principle with laboratory and field examples	B.Sc. (Hons.) Zoology Sem I FZH	CC II
		<b>Ecology</b> Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature, turbidity/penetration of light, determination of pH	B.Sc. (Hons.) Zoology Sem I FZH	CC II
		<b>FUNDAMENTALS OF BIOCHEMISTRY</b> Effect of pH on the action of salivary amylase. Effect of temperature on the action of salivary amylase Repetition of above experiments	B.Sc. (Hons.) Zoology Sem III SZH	CC VII
OCTOBER	Theory	<b>Immunology</b> <b>Unit 4: Immunoglobulins 10</b> Structure and functions of different classes of immunoglobulins, Antigen-antibody interactions, Immunoassays (ELISA and RIA), Polyclonal sera, Hybridoma technology: Monoclonal antibodies in therapeutics and diagnosis <b>Unit 5: Major Histocompatibility Complex 6</b> Structure and functions of MHC molecules. Endogenous and exogenous pathways of antigen processing and presentation	B.Sc. (Hons.) Zoology Sem V TZH	DSE 9
		<b>Ecology</b> Lotka-Volterra equation for competition and Predation, functional and numerical responses	B.Sc. (Hons.) Zoology Sem I FZH	CC II

	<b>Practicals</b>	Immunology Ouchterlony's double immuno-diffusion method. ABO blood group determination. Cell counting and viability test from splenocytes of farm bred animals/cell lines.  Repetition of these practicals	B.Sc. (Hons.) Zoology Sem V TZH	DSE 9
		<b>Ecology</b> Dissolved Oxygen content (Winkler's method), Chemical Oxygen Demand and free CO <sub>2</sub>	B.Sc. (Hons.) Zoology Sem I FZH	CC II
		<b>FUNDAMENTALS OF BIOCHEMISTRY</b> Effect of inhibitors on the action of salivary amylase Repetition of effect of temperature on the action of salivary amylase	B.Sc. (Hons.) Zoology Sem III SZH	CC VII
<b>Mid Term Test</b>		<b>Test of Immunology</b> From all units taught	B.Sc. (Hons.) Zoology Sem V TZH	DSE 9
		<b>Test of Ecology</b> From all units taught	B.Sc. (Hons.) Zoology Sem I FZH	CC II
<b>NOVEMBER</b>	<b>Theory</b>	<b>Immunology</b> <b>Unit 9: Vaccines 5</b> Various types of vaccines.	B.Sc. (Hons.) Zoology Sem V TZH	DSE 9
		<b>Ecology</b> Class discussion and revision of all the topics studied.	B.Sc. (Hons.) Zoology Sem I FZH	CC II
	<b>Practicals:</b>	<b>Immunology</b> Demonstration of a. ELISA b. Immunoelectrophoresis Repetition of these practicals Repetition of all practicals, and finalization of continuous assessment. Conduct of Mock examination.	B.Sc. (Hons.) Zoology Sem V TZH	DSE 9
		<b>Ecology</b> Report on a visit to National Park/Biodiversity Park/Wild life sanctuary Repetition of all experiments Conduct of Mock examination.	B.Sc. (Hons.) Zoology Sem I FZH	CC II
		<b>FUNDAMENTALS OF BIOCHEMISTRY</b> Demonstration of proteins separation by SDS-PAGE Repetition of all experiments Conduct of Mock examination	B.Sc. (Hons.) Zoology Sem III SZH	CC VII



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**Academic Planner: Odd Semester 2019 (July – November)**

**Name of the Faculty: Dr. Ajaib Singh**

**Department: Zoology**

**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	Theory	Unit 2: Porifera. General characteristics, classification, canal system in sycon.	B.Sc Life Sciences Sem I	LS Core I Animal Diversity
		Unit 3: Cnidaria. General characteristics, classification, polymorphism in hydrozoa.		
		Unit 7: Carbohydrates metabolism: glycolysis, Krebs cycle, Penrose phosphate pathway	B. Sc Life Sciences Sem III	CC III Physiology and Biochemistry
	Practicals	Mendel's laws of inheritance	B.Sc. Zoology (H) V	CCXII Genetics
		Syllabus overview, general instructions and maintenance of lab record I. Study of the following specimens: <i>Amoeba, Euglena, Paramecium,</i>  <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc Life Sciences Sem I (two batches)	Animal Diversity
		Plasmid DNA isolation – extraction of DNA	B.Sc Life Sciences Sem V	DSE I: Animal biotechnology
AUGUST	Theory	Animal Diversity Unit 4: Platyhelminthes General characteristics, classification, life cycle of <i>Taenia solium</i> . Parasitic adaptations.  Unit 5: Nematelminthes, General characteristics, classification, life cycle of <i>Ascaris lumbricoides</i> . Parasitic adaptations. Unit 6: Annelida, General characteristics, classification, metamerism.	B.Sc Life Sciences Sem I	LS Core I Animal Diversity



		Physiology and Biochemistry Unit 7: Gluconeogenesis, glycogen metabolism, electron transport chain.	B.Sc Life Sciences Sem III	CC III Physiology and Biochemistry
		Exception to Mendel's law, Co-dominance, Incomplete dominance	B.Sc. Zoology (H) V	CCXII Genetics
	<b>Practicals:</b>	Animal Diversity Study of the following specimens: Evaluation of students on their performance in practical and Record <i>Sycon, Hyalonema, Euplectella, Obelia, Physalia, Aurelia, Tubipora, Metridium, Taenia solium, Male and female Ascaris lumbricoides, Aphrodite, Nereis, Heteronereis, Chaetopterus, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra, Julus, Periplaneta, Chiton, Dentalium, Pila, Unio, Sepia, Octopus, Pentaceros, Ophiothrix, Echinus, Cucumaria, Antedon</i>	B.Sc Life Sciences Sem I (two batches)	Animal Diversity
		Plasmid DNA isolation – Agarose gel Electrophoresis	B.Sc Life Sciences Sem V	DSE I: Animal biotechnology
<b>SEPTEMBER</b>	<b>Theory</b>	Animal Diversity Unit 7: Arthropoda, General characteristics, classification, vision, metamorphosis in insects.  Unit 8: Mollusca, General characteristics, classification, torsion and detorsion in gastropoda, pearl formation.	B.Sc Life Sciences Sem I	LS Core I Animal Diversity
		Physiology and Biochemistry Unit 8: Lipid metabolism, biosynthesis and oxidation of palmitic acid.	B.Sc Life Sciences Sem III	CC III Physiology and Biochemistry
		Multiple alleles, lethal alleles, sex lethals	B.Sc. Zoology (H) V	CCXII Genetics

	<b>Practicals</b>	<p>Animal Diversity  <i>Study of:</i> Study of the following specimens: <i>Balanoglossus, Herdmania, Branchiostoma, Petromyzon, Sphyrna, Pristis, Torpedo, Labeo, Exocoetus, Anguilla Ichthyophis/Ureotylus Salamandra, Bufo, Hyla,</i></p> <p><i>Study of:</i> <i>Chelone, Chamaeleon, Draco, Vipera, Naja, Crocodylus,</i> Any three common birds from different orders, Bat, <i>Fu nambulus, Loris.</i></p> <p>Any three common birds from different orders, Bat, <i>Fu nambulus, Loris.</i></p> <p>Study of the following permanent slides: T.S. and L.S. of <i>Sycon,</i></p>	B.Sc Life Sciences Sem I mI (two batches)	Animal Diversity
		Transformation efficiency, PCR	B.Sc Life Sciences Sem V	DSE I: Animal biotechnology
<b>OCTOBER</b>	<b>Theory</b>	<p>Animal Diversity Unit            10: Echinodermata, General characteristics, classification, water vascular system in asterozoa.</p>	B.Sc Life Sciences Sem I mI	LS Core I Animal Diversity
		<p>Physiology and Biochemistry            Unit 9: Protein metabolism, transamination, deamination and Urea cycle.</p>	B.Sc Life Sciences Sem III mIII	CC III Physiology and Biochemistry
		Epistasis, Pleiotropy	B.Sc. Zoology (H) V	CCXII Genetics
	<b>Practicals:</b>	<p>Animal Diversity            Key for identification of poisonous and non-poisonous snakes            A visit to Biodiversity parks and Zoological Museum of Digestive, Reproductive and Nervous system of Cockroach.            Study of Urinary and Nervous system of Rat.</p>	B.Sc Life Sciences Sem I mI (two batches)	Animal Diversity
		DNA sequencing, DNA Fingerprinting, Restriction digestion	B.Sc Life Sciences Sem V	DSE I: Animal biotechnology

	<b>Mid Term Test</b>	Test of B.Sc Life sciences Sem I (Animal Diversity)		
		Test of B.Sc Life sciences Sem III (Physiology and Biochemistry)		
<b>NOVEMBER</b>	<b>Theory:</b>	Animal Diversity Revision, class tests.	B.Sc Life Sciences Sem I	LS Core I Animal Diversity
		Physiology and Biochemistry Unit 10: Enzymes, introduction, mechanism of action, enzyme kinetics, inhibition and regulation.	B.Sc Life Sciences Sem III	CC III Physiology and Biochemistry
		Sex influenced traits, Sex limited traits	B.Sc. Zoology (H) V	CC XII Genetics
	<b>Practicals:</b>	Animal Diversity Submission of File and Biodiversity parks report, containing photographs with appropriate writeup Mocktest	B.Sc Life Sciences Sem I (two batches)	Animal Diversity
		Western Blotting, Southern, Northern blotting Revision exercises and test	B.Sc Life Sciences Sem V	DSE I: Animal biotechnology



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**July-November 2018, (Session 2018-19)**

**Name of the Faculty:** Dr. Rajendra Phartyal

**Department:** Zoology

**Semester: I, III: Theory:** B.Sc. H . Biological Science Sem I(Light and Life), B.Sc. H . Biological Science sem III (Functional Ecology), B.Sc. H . Zoology Sem I(Principles of ecology)

**Practicals :** B.Sc. H . Biological Science Sem I(Light and Life), B.Sc. H . Biological Science Sem III (Functional Ecology), BSc Life Science Semester III (SEC: Medical Diagnostics)

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	General Introduction: Nature of light.	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
		General Introduction, Population : Unitary and Modular populations, metapopulation	B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)
		General Introduction, Population : Unitary and Modular populations, metapopulation	B.Sc. H . Zoology Sem I	CC-II (Principles of ecology)
	<b>Practicals :</b>	General Introduction , light penetration in water using Secchi disc	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
		<ul style="list-style-type: none"> <li>• Plotting of survivorship curves from hypothetical life table data.</li> <li>• To determine a minimal quadrat area for sampling in the given simulation sheet</li> </ul>	B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)
		Estimation of Hemoglobin content using Sahli's Hemoglobinometer	BSc Life Science Semester III	(SEC: Medical Diagnostics)
AUGUST	<b>Theory:</b>	Light as an ecological factor affecting distribution of plants and animals (Phyto and Zoo geography), in terrestrial and aquatic ecosystems: Morphological, Anatomical, Physiological and Behavioral adaptations to extreme light conditions by organisms. spectrum of light which is useful/ harmful (ionizing radiation) for various biological processes in life of plants and animals.	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)

		Density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion; carrying capacity, population dynamics (exponential and logistic growth equation and patterns), r and K selection, density-dependent and independent population regulation; Competition, Niche concept	B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)
		Unique and group attributes of population: Density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion	B.Sc. H . Zoology Sem I	CC-II (Principles of ecology)
	<b>Practicals :</b>	<ul style="list-style-type: none"> <li>Animal migration in aquatic ecosystems during day and night (pictures only)</li> <li>To study the effect of light and darkness on the chromatophores of fish</li> <li>To study Diurnal variations in human body temperature\</li> <li>To test / survey for colour blindness using Ishihara charts</li> </ul>	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
		<ul style="list-style-type: none"> <li>To determine density /frequency /abundance of the vegetation by quadrat method in the field or on given simulation sheet <ul style="list-style-type: none"> <li>Principle and function of Sechi disc, Atmometer, Anemometer, Hygrometer, Hair hygrometer, Luxmeter, Rain guage, Soil thermometer, Min-Max thermometer</li> </ul> </li> <li>Study through specimens/photographs/slides of Parasitic angiosperms, Saprophytic angiosperms, VAM fungi, Root nodules, Corolloid roots, Mycorrhizal roots, Velamen roots, Lichen as pollution indicators.</li> <li>To estimate dissolved oxygen content of given water sample using Winkler's method.</li> </ul>	B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)
		<ul style="list-style-type: none"> <li>Detecting defects of Colour vision by Ishihara Charts <ul style="list-style-type: none"> <li>ABO Blood typin</li> </ul> </li> <li>Determination of Bleeding time or Clotting time <ul style="list-style-type: none"> <li>Differential Leucocyte count</li> </ul> </li> </ul>	BSc Life Science Semester III	(SEC: Medical Diagnostics)
SEPTEMBER	<b>Theory:</b>	<b>Bioluminescence</b> :Definition, discovery, diversity of organisms (plants and animals), photoreceptors distribution, mechanism. Circadian rhythms, jetlag, rhythm of heart beat,	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
		Competition, Niche concept, Gause's Principle with laboratory and field examples, LotkaVolterra equation for competition and Predation, functional and numerical responses. Phenotypic and genotypic plasticity, canalization. Species interactions in brief classified based on their reciprocal effects.	B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)
		History of ecology, Autecology and synecology, Levels of organization, Laws of limiting factors,	B.Sc. H . Zoology Sem I	CC-II (Principles of ecology)

	<b>Practicals :</b>	<ul style="list-style-type: none"> <li>Photographs of bioluminescent organisms (plants and animals),</li> <li><i>Berlese</i> funnel experiment to demonstrate the effect of light on soil fauna</li> <li>To study the effect of light/darkness on development of insect (<i>Spodoptera</i>)</li> <li>To study the phototactic behavior of different larval instars of <i>Spodoptera</i></li> </ul>	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
		<ul style="list-style-type: none"> <li>To determine soil texture, soil density, bulk density, particle density and pore space.</li> <li>To determine water holding capacity and percolation rate of soil.</li> <li>To determine pH, Cl, SO<sub>4</sub>, NO<sub>3</sub>, base deficiency, organic matter, cation exchange capacity in the soil.</li> </ul>	B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)
		<ul style="list-style-type: none"> <li>Estimation of Blood Glucose/ Cholesterol by kit</li> <li>Analysis of Urine for abnormal constituents</li> <li>Body temperature and Blood Pressure under normal and stressed conditions</li> </ul>	BSc Life Science Semester III	(SEC: Medical Diagnostics)
	<b><u>Assignment</u></b>		B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
			B.Sc. H . Biological Science sem III	BS-C7 Functional Ecology)
			B.Sc. H . Zoology Sem I	CC-II (Principles of ecology)
OCTOBER	<b>Theory</b>	Light as an inducer for biosynthesis of enzymes, hormones and other biomolecules melanocytes and skin colour, chromatophores and colour changes in animals.	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
		Social, reproductive & territorial behavior, kin selection. Evolution of optimal life history, tradeoffs, semelparity and iteroparity	B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)
		Study of physical factors	B.Sc. H . Zoology Sem I	CC-II (Principles of ecology)
	<b>Practicals :</b>	<ul style="list-style-type: none"> <li>To study the estrous cycle of rat</li> <li>Revision</li> </ul>	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
		<ul style="list-style-type: none"> <li>Revision of minimal quadrat and determination of density /frequency /abundance of the vegetation by quadrat method</li> <li>Revision of Dissolved Oxygen</li> <li>Revision of Soil Parameters</li> </ul>	B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)

		<ul style="list-style-type: none"> <li>• Interpretation of ECG</li> <li>• Medical imaging: X-Ray of Bone Fracture, MRI and CT scan <ul style="list-style-type: none"> <li>• Revision</li> </ul> </li> </ul>	BSc Life Science Semester III	(SEC: Medical Diagnostics)
	<b><u>Mid Term Test</u></b>		B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
			B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)
			B.Sc. H . Zoology Sem I	CC-II (Principles of ecology)
NOVEMBER	<b>Theory:</b>	Photoreception in animals, evolution of eye and visual processing in vertebrate retina.	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
		reproductive structure and mating system	B.Sc. H . Biological Science sem III (	BS-C7 (Functional Ecology)
		Food chain: Detritus and grazing food chains, Linear and Y-shaped food chains, Food web,	B.Sc. H . Zoology Sem I	CC-II (Principles of ecology)
	<b>Practicals :</b>	<ul style="list-style-type: none"> <li>• Revision</li> <li>• Mock Practical test</li> </ul>	B.Sc. H . Biological Science Sem I	BS-C2 (Light and Life)
		<ul style="list-style-type: none"> <li>• Revision</li> <li>• Mock Practical test</li> </ul>	B.Sc. H . Biological Science sem III	BS-C7 (Functional Ecology)
		<ul style="list-style-type: none"> <li>• Revision</li> <li>• Mock Practical Test</li> <li>• Submission of practical files</li> </ul>	BSc Life Science Semester III	(SEC: Medical Diagnostics)



**SEMESTER WISE TEACHING PLAN (2018-2019)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Mansi Verma**  
**Semester : I /III/V**

**Department: Zoology**

Month		Topics	Course	Paper Code/Name
July	<b>Practicals</b>	Syllabus overview, general instructions and maintenance of lab record I. Study of the following specimens: <i>Balanoglossus, Herdmania, Branchiostoma, Petromyzon,</i>  <i>With continuous evaluation</i> Evaluation of students on their	B.Sc. Life Sciences Sem I	Core Course-I ANIMAL DIVERSITY
		Stored grain pest	GE III	Food, Nutrition and Health
		Quantitative estimation of salmon sperm/calf thymus DNA using colorimeter (Diphenylamine reagent)	B.Sc. (Hons.) Zoology Sem V	Molecular Biology
	<b>Theory</b>	Salient features of DNA and RNA	B.Sc. (Hons.) Zoology Sem V	Molecular Biology
		Nomenclature and classification of Enzymes	B.Sc. (Hons.) Zoology Sem III	Fundamentals of Biochemistry
		Concept and scope of biotechnology	B.Sc. Life Sciences Sem V	Animal Biotechnology
AUGUST	<b>Practicals :</b>	Study of the following specimens: <i>Sphyrna, Pristis, Torpedo, • Labeo, Exocoetus, Anguilla, Ichthyophis/Ureotyphlus, Salamandra, Bulb, Hyla Hyla, Chelone, Hemidactylus, Chamaeleon, Draco, Vipera, Nafa, Crocodylus, Gavialis,</i> Key for Identification of poisonous and non-poisonous snakes Evaluation of students on their performance in practical and Record	B.Sc Life Sciences Sem I	CORE COURSE I ANIMAL DIVERSITY
		Study of Polytene chromosomes from Chironomous / Drosophila larvae Preparation of liquid culture medium (LB) and raise culture of E. coli Preparation of solid culture medium (LB) and growth of E. coli by spreading and streaking	B.Sc. (Hons.) Zoology Sem V	Molecular Biology



		Titration of Ascorbic acid; Food Adulteration; Stored grain pest	GE III	Food, Nutrition and Health
	<b>Theory</b>	Watson and Crick model of DNA; DNA Replication in prokaryotes and eukaryotes, mechanism of DNA replication, Semi-conservative, bidirectional and semi-discontinuous replication, RNA priming,	B.Sc. (Hons.) Zoology Sem V	Molecular Biology
		Cofactors; Specificity of enzyme action; Isozymes; Mechanism of enzyme action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Derivation of Michaelis-Menten equation,	B.Sc. (Hons.) Zoology Sem III	Fundamentals of Biochemistry
		Cloning vectors: Plasmids, Cosmids, Phagemids, Lambda Bacteriophage, M13, BAC, YAC, MAC and Expression vectors (characteristics) Restriction enzymes: Nomenclature, <i>detailed study of Type II</i>	B.Sc. Life Sciences Sem V	Animal Biotechnology
SEPTEMBER	<b>Practicals</b>	<p><i>Study of</i> : Study of the following specimens: Any six common birds from different orders, <i>Sorex</i>, Bat, <i>Funatnbulus</i>, <i>Loris</i></p> <p>I. Study of the following specimens: : <i>Amoeba</i>, <i>Euglena</i>, <i>Plasmoditln</i>, <i>Paramecium</i>, <i>Sycon</i>, <i>Hyalonema</i>, and <i>Euplectella</i>, <i>Obelia</i>, <i>Physulia</i>, <i>Aurelia</i>, <i>Tubipora</i>, <i>Mertidium</i></p> <p>Study of the following permanent slides: T.S. and L.S. of <i>Sycon</i>,</p> <p><i>With continuous evaluation:</i> Evaluation of students on their performance in practical and Record</p> <p>Assignment: Individual phylum based topics given as Assignment</p>	Core Course-I ANIMAL DIVERSITY Practical	
		Demonstration of antibiotic sensitivity/resistance of E. coli to antibiotic pressure and interpretation of results Quantitative estimation of RNA using Orcinol reaction Estimation of the growth kinetics of E. coli by turbidity method	TZH Molecular Biology	
		Titration: Calcium and Ascorbic acid, stored grain pest	GE III	Food, Nutrition and Health

	<b>Theory</b>	Replication of circular and linear ds-DNA, replication of telomeres, Unit 3:Transcription 10 RNA polymerase and transcription Unit, mechanism of transcription in prokaryotes and eukaryotes, <b>Class Test</b>	B.Sc. (Hons.) Zoology Sem V	Molecular Biology
		Concept of Km and Vmax, Lineweaver-Burk plot; Multi-substrate reactions; Enzyme inhibition; Allosteric enzymes and their kinetics;	B.Sc. (Hons.) Zoology Sem III	Fundamentals of Biochemistry
		Transformation techniques; Calcium chloride method and electroporation. Construction of genomic and cDNA libraries and screening by colony and plaque hybridization Southern, Northern and Western blotting;	B.Sc. Life Sciences Sem V	Animal Biotechnology
OCTOBER	<b>Practical's:</b>	<i>Study of Taenia solium, Male and female Ascaris lumbricoides, Aphrodite, Nereis, Pheretima, Hirudinaria, Palaemon,. Cancer, Limulus, Palamnaeus, Scolopendru, Pariplaneta, Lulus, Apis</i>	B.Sc Life Sciences CORE COURSE I ANIMAL DIVERSITY	ANIMAL DIVERSITY
		Study and interpretation of electron micrographs/ photograph showing (a) DNA replication (b) Transcription (c) synthesis of rRNA and mRNA, transcription factors	B.Sc. (Hons.) Zoology Sem V	Molecular Biology
		Unit 5: Post Transcriptional Titration of Lactose +Revision	B.Sc. (Hons.) Zoology Sem V	Molecular Biology
		Regulation of enzyme action;	GE III	Food, Nutrition
		DNA sequencing: Sanger method Polymerase Chain Reaction, DNA	B.Sc. (Hons.) Zoology Sem V	Fundamentals of
			B.Sc. Life Sciences Sem V	Animal Biotechnology
	NOVEMBER	<b>Practical's:</b>	Submission of File and animal album" containing photographs, cut outs, with	B.Sc Life Sciences CORE COURSE I
Mock Test			B.Sc. (Hons.) Zoology	Molecular
		Mock Test	GE III	Food, Nutrition
<b>Theory</b>		splicing mechanism, alternative splicing, exon shuffling and RNA	B.Sc. (Hons.) Zoology Sem V	Molecular Biology
		revision	B.Sc. (Hons.) Zoology	Fundamentals of
		DNA micro array	B.Sc. Life Sciences	Animal





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

**Academic Planner: Odd Semester 2018 (July – November)**

**Name of the Faculty: Dr.P.Jayaraj**

**Department: Zoology**

**Semester : I and V**

Month		Topics	Course	Paper
JULY	Theory	Unit 1- General Growth Pattern in Animals, Types of	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>Growth and reproduction (core course XI/code BS-C11/DSE-1)</b>
		<b>Unit 2: Hypothalamus-pituitary system</b> <ul style="list-style-type: none"> <li>• Structure of hypothalamus, names and functions of important nuclei, neuroendocrine regulation of endocrine glands and</li> </ul>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
		<b>Unit 7: Complement System</b> Components and pathways of complement activation.	<b>B.Sc. (Hons.) Zoology Part III</b>	<b>Immunology (DSE)</b>
	Practicals	Study Of Whole Mounts Of Frog	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>Growth and reproduction (core course XI/code BS)</b>
		Syllabus overview, general instructions and maintenance of lab record	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>

		<p>Syllabus overview, general instructions and maintenance of lab record</p> <p>I. Study of the following specimens: <i>Balanoglossus</i>, <i>Herdmania</i>, <i>Branchiostoma</i>, <i>Petromyzon</i>,  <i>With continuous evaluation</i></p> <p>Evaluation of students on their performance in practical and Record</p>	Core Course-I ANIMAL DIVERSITY Practical	ANIMAL DIVERSITY
AUGUST	<b>Theory:</b>	<p>Unit 2/3: Pre fertilization events- gametogenesis-spermatogenesis and oogenesis</p> <ul style="list-style-type: none"> <li>• Neural tube formation</li> <li>• Placenta: Function and types</li> <li>• Extra Embryonic membranes in chick and mammal</li> </ul>	<b>B.Sc. (Hons.) Zoology Part III</b>	<b>Growth and reproduction (core course XI/code BS)</b>
		<p><b>Unit 2 Cont..</b></p> <ul style="list-style-type: none"> <li>• Pituitary gland, structure of pituitary, its hormones, their secretion, transportation, storage, functions and hypothalamic regulation; disorders of pituitary gland</li> <li>• Pineal gland, secretions and their function in biological rhythms and reproduction</li> </ul>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
		<p>Unit 7 cont...</p> <p>Components and pathways of complement activation.</p> <p><b>Unit 8: Hypersensitivity</b>  Gell and Coombs' classification</p>	<b>B.Sc. (Hons.) Zoology Part III</b>	Immunology (DSE)

	<b>Practicals:</b>	Unit 2/3: <ul style="list-style-type: none"> <li>• Study of Developmental Stages of Frog – Neural tube formation</li> <li>• Study of permanent sections- Neural plate, Neural fold, Neural tube</li> <li>• Tadpole-external gill and internal gill stage</li> <li>• Videos showing selective embryonic events embryonic events : Frog</li> </ul>	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>Growth and reproduction (core course XI/code BS</b>
		<ul style="list-style-type: none"> <li>• Study of permanent slides of all the endocrine glands</li> </ul>	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>Growth and reproduction (core course XI/code BS</b>
		<p>Study of the following specimens:  <i>Sphyrna, Pristis, Torpedo, • Labeo, Exocoetus, Anguilla, Ichthyophis/Ureotyphlus, Salamandra, Bulb, Hyla Hyla, Chelone, Hemidactylus, Chamaeleon, Draco, Vipera, Nafa, Crocodylus, Gavialis, Key for Identification of poisonous and non-poisonous snakes</i>  Evaluation of students on their performance in practical and Record</p> <p><i>With continuous evaluation of students on their performance in practical and Record</i></p>	<b>B.Sc Life Sciences CORE COURSE I ANIMAL DIVERSITY</b>	<b>ANIMAL DIVERSITY</b>
SEPTEMBER	<b>Theory:</b>	Unit 3 cont.. Embryonic induction, Gastrulation in Chick	<b>B.Sc. (Hons.) Biological Science Part III</b>	
		Unit 3 Thyroid- parathyroid system Thyroid gland, structure, synthesis and function of thyroid hormone and its secretion; thyrocalcitonin, disorders of thyroid and parathyroid gland: secretions , role in calcitonin metabolism, disorders of parathyroid	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>

	<b>Pr:</b>	<p><b>Unit 8 cont.</b></p> <p>Brief description of various types of hypersensitivities</p> <p><b>Assignment :</b> Separate topics will be assigned to students</p>	<b>B.Sc. (Hons.) Zoology Part III</b>	Immunology (DSE)
	<b>Practicals:</b>	<p><i>Study of :</i> Study of the following specimens: Any six common birds from different orders, <i>Sorex</i>, Bat, <i>Funatnbulus</i>, <i>Loris</i></p> <p>I. Study of the following specimens: : <i>Amoeba</i>, <i>Euglena</i>, <i>Plasmoditiln</i>, <i>Paramecium</i>, <i>Sycon</i>, <i>Hyalonema</i>, and <i>Euplectella</i>, <i>Obelia</i>, <i>Physulia</i>, <i>Aurelia</i>, <i>Tubipora</i>, <i>Mertidium</i></p> <p>Study of the following permanent slides: T.S. and L.S. of <i>Sycon</i>,</p> <p><i>With continuous evaluation:</i> Evaluation of students on their performance in practical and Record</p>	<b>B.Sc Life Sciences CORE COURSE I ANIMAL DIVERSITY</b>	<b>ANIMAL DIVERSITY</b>
		<p>Study of developmental stages Chick embryo (whole mounts)</p> <p>Study of Chick development from eggs (Window viewing)</p>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>Growth and reproduction (core course XI/code BS</b>
		<p>Estrus cycle of rat- vaginal smear Castration/Ovariectomy</p>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
OCTOBER	<b>Theory:</b>	<p>Post fertilization events ; Gastrulation in humans</p> <p>Fate of Germ layers</p> <p>Embryonic induction</p>	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>Growth and reproduction (core course XI/code BS</b>
		<p>Unit 5 Pancreas and its hormones-structure,hormones secreted and insulin section; glucagon secretion and mechanism of action in blood glucose, diabetes mellitus</p>	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
		<p><b>Unit 9: Vaccines 5</b> Various types of vaccines.</p>	<b>B.Sc. (Hons.) Zoology Part III</b>	Immunology (DSE)

	<b>Practicals</b>	Study of section of chick embryo through selective developmental stages	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>Growth and reproduction (core course XI/code BS</b>
		Compensatory ovarian hypertrophy or adrenal hypertrophy	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
		<p><i>Study of Taenia solium, Male and female Ascaris lumbricoides, Aphrodite, Nereis, Pheretima, Hirudinaria, Palaemon., Cancer, Limulus, Palamnaeus, Scolopendru, Periplaneta, Julus, Apis,</i></p> <p><i>Study of : Chiton, Dentalium, Pila, Unio, Loligo, Sepia, Octopus, Pentaceros, Ophiura, Echinus, Cucumaria and Antedon,</i></p> <p><i>With continuous evaluation:</i> Evaluation of students on their performance in practical and Record</p>	B.Sc Life Sciences CORE COURSE I ANIMAL DIVERSITY	ANIMAL DIVERSITY
OCTOBER	<b><u>Mid term test</u></b>	Test on topics covered during the month of July-october end	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>Growth and reproduction (core course XI/code BS</b>
		<b><u>Test /internal assessment :</u></b> Test on topics covered during the month of July-october end	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
		<b><u>Test /internal assessment :</u></b> Test on topics covered during the month of July-october end	<b>B.Sc. (Hons.) Zoology Part III</b>	Immunology (DSE
NOVEMBER	<b>Theory:</b>	Organogenesis: Formation of CNS	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>Growth and reproduction (core course XI/code BS</b>
		Unit 7 Lactation Revision/test	<b>B.Sc. Biological Science (CBCS) DSE 6</b>	<b>DSE-6 Endocrinology</b>
		Unit 9 cont.. Revision/test	<b>B.Sc. (Hons.) Zoology Part III</b>	Immunology (DSE



	<b>Practicals:</b>	Submission of File <ul style="list-style-type: none"> <li>• Preparations for Practical Examination</li> <li>• Mock Tests</li> </ul>	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>Growth and reproduction (core course XI/code BS-C11/DSE-1)</b>
		Submission of File <ul style="list-style-type: none"> <li>• Preparations for Practical Examination</li> <li>• Mock Tests</li> </ul>	<b>B.Sc. (Hons.) Biological Science Part III</b>	<b>DSE-6 Endocrinology</b>
		Submission of File and animal album" containing photographs, cut outs, with appropriate write Mock test	B.Sc Life Sciences CORE COURSE I ANIMAL DIVERSITY	ANIMAL DIVERSITY







**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Riyaz Ahmed Bakshi**

**Department: Zoology**

**Semester: III and V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	• Introduction to medical diagnostics	B.Sc. (H) Zoology Sem. III	SEC: Medical Diagnostics
		• Nerve & Muscle	B.Sc. (P) Life Sciences Sem. III	CC-III: Physiology & Biochemistry
		Basic concept of food and nutrition	B..Sc (H) Sem. III	GE-III: Food Nutrition & Health
	<b>Practicals</b>	• ABO Blood Typing	B.Sc. (H) Zoology Sem III	SEC: Medical Diagnostics
		• Temporary mount of squamous epithelial tissue	B.Sc. (H) Zoolgy Sem III	CC-IV, Animal Physiology
		• ABO Blood group determination	B.Sc. (H) Zoology Sem V	DSE-2: Immunology
AUGUST	<b>Theory</b>	• Blood • DLC, PCV,ESR •	B.Sc. (H) Zoology Sem III	SEC: Medical Diagnostics
		• Respiration • Digestion	B.Sc. (P) Life Sciences Sem. III	CC-III, Physiology and Biochemistry
		• Components of food & Balance Diet	B.Sc. (H) Sem III	GE-III, Food, Nutrition &Health
	<b>Practicals:</b>	• Estimation of Haemoglobin • Interpretation of ECG • Blood Pressure and body temp.	B.Sc. (H) Zoolgy Sem III	SEC: Medical Diagnostics
		• Temporary mount of nerve cells & striated muscle fibbers • Reflex action • Reflex arc	B.Sc. (H) Zoolgy Sem III	CC-IV, Animal Physiology
		• Display of lymphoid organs • Ouchterlony double diffusion • Preparation of Single cell suspension of spleen & bone	B.Sc. (H) Zoolgy Sem v	DSE-2: Immunology

		marrow		
SEPTEMBER	<b>Theory</b>	<ul style="list-style-type: none"> <li>• Urine Analysis: Normal and Abnormal</li> <li>• Diabetes-I &amp; II</li> <li>• Hypertension</li> <li>• Testing of blood glucose</li> </ul>	B.Sc. (H) Zoology Sem III	SEC: Medical Diagnostics
		<ul style="list-style-type: none"> <li>• Excretion</li> </ul>	B.Sc. (P) Life Sciences Sem. III	CC-III, Physiology and Biochemistry
		<ul style="list-style-type: none"> <li>• Cause of food spoilage</li> <li>• Food Adulteration</li> </ul>	B.Sc. (H) Sem III	GE-III, Food, Nutrition & Health
	<b>Practicals</b>	<ul style="list-style-type: none"> <li>• DLC</li> <li>• Estimation of blood glucose/cholesterol</li> <li>• Determination of bleeding/Clotting time</li> </ul>	B.Sc. (H) Zoology Sem III	SEC: Medical Diagnostics
		<ul style="list-style-type: none"> <li>• Recording of simple muscle twitch</li> </ul>	B.Sc. (H) Zoology Sem III	CC-IV, Animal Physiology
		<ul style="list-style-type: none"> <li>• Viability &amp; cell counting of peritoneal macrophages</li> </ul>	B.Sc. (H) Zoology Sem V	DSE-2: Immunology
	<b><u>Assignment</u></b>	<ul style="list-style-type: none"> <li>• Infectious diseases</li> <li>• Non infectious diseases</li> <li>• Tumors and types</li> </ul>	B.Sc. (H) Zoology Sem III	SEC: Medical Diagnostics
		<ul style="list-style-type: none"> <li>• Distribution of topic unit wise</li> </ul>	B.Sc (P) Life Sciences Sem III	CC-III, Physiology and Biochemistry
		<ul style="list-style-type: none"> <li>• Distribution of topic unit wise</li> </ul>	B.Sc. (H) Sem III	GE-III, Food, Nutrition & Health
	OCTOBER	<b>Theory</b>	<ul style="list-style-type: none"> <li>• Infectious diseases</li> <li>• Tumors and types</li> <li>• Medical imaging- X-Ray, MRI, CT Scan</li> </ul>	B.Sc. (H) Zoology Sem III
<ul style="list-style-type: none"> <li>• Cardiovascular system</li> </ul>			B.Sc. (P) Life Sciences Sem. III	CC-III, Physiology and Biochemistry
<ul style="list-style-type: none"> <li>• Dietary pattern for various group</li> <li>• Adult</li> <li>• Mother, infants, school children</li> </ul>			B.Sc. (H) Sem III	GE-III, Food, Nutrition & Health
<b>Practicals:</b>		<ul style="list-style-type: none"> <li>• Analysis of Urine for Abnormal constituents.</li> <li>• Color vision test by Ishihara charts</li> <li>• Medical imaging- X-Ray, MRI, CT Scan</li> </ul>	B.Sc. (H) Zoology Sem III	SEC: Medical Diagnostics

		<ul style="list-style-type: none"> <li>• Study of permanent slides</li> <li>• Microtomy</li> <li>• Project report on contraceptives</li> </ul>	B.Sc. (H) Zoology Sem III	CC-IV, Animal Physiology
		<ul style="list-style-type: none"> <li>• Immuno electrophoresis</li> <li>• ELISA</li> </ul>	B.Sc. (H) Zoology Sem V	DSE-2: Immunology
	<b>Mid Term Test</b>	• Test of covered topics	B.Sc. (H) Zoology Sem III	SEC: Medical Diagnostics
		• Test of covered topics	B.Sc. (P) Life Sciences Sem. III	CC-III, Physiology and Biochemistry
		• Test of covered topics	B.Sc. (H) Sem III	GE-III, Food, Nutrition &Health
NOVEMBER	<b>Theory:</b>	• Revision	B.Sc. (H) Zoology Sem III	SEC: Medical Diagnostics
		• Revision	B.Sc. (P) Life Sciences Sem. III	CC-III, Physiology and Biochemistry
		• Revision	B.Sc. (H) Sem III	GE-III, Food, Nutrition &Health
	<b>Practicals:</b>	• Revisions and Practical mock examinations	B.Sc. (H) Zoology Sem III	SEC: Medical Diagnostics
		• Revisions and Practical mock examinations	B.Sc. (H) Zoology Sem III	CC-VI, Animal Physiology
		• Revisions and Practical mock examinations	B.Sc. (H) Zoology Sem V	DSE-2: Immunology



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**July – November, 2018-19 (Odd Semester)**

**Name of the Faculty: Dr. Vagisha Rawal**  
**Department: Zoology**  
**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Animal behavior and chronobiology <ul style="list-style-type: none"> <li>• Biological Rhythm</li> <li>• Types and characteristics biological rhythm: short and long term cycles,</li> </ul>	B.Sc. (Hons.) Zoology Sem V TZH	Animal behavior and chronobiology  DSE-1
		Non-chordata-I <ul style="list-style-type: none"> <li>• Unit-III : Porifera</li> <li>• General characteristics and classification upto classes</li> </ul>	B.Sc. (Hons.) Zoology Sem I  FZH	Non-chordata-I  CC-I
		Insect vector & diseases : <ul style="list-style-type: none"> <li>• General Features of Insects,</li> <li>• Types of Antennae and mouthparts</li> </ul>	B.Sc. (Hons.) Zoology Sem I  FZH	Insect vector & diseases GE-8
	<b>Practicals</b>	Animal behavior and chronobiology <ul style="list-style-type: none"> <li>• Different types of nests and nesting habits in birds and social insects</li> </ul>	B.Sc. (Hons.) Zoology Sem V TZH	Animal behavior and chronobiology  DSE-1
		Non-chordata I: To study the following specimens through permanent slides <ul style="list-style-type: none"> <li>• Phylum:Protozoa Amoeba, Euglena, Paramecium, binary fission, conjugation</li> </ul>	B.Sc. (Hons.) Zoology Sem I  FZH	Non-chordata-I  CC-I
		Insect vector & diseases : <ul style="list-style-type: none"> <li>• General introduction, Insect classification and Identification</li> </ul>	B.Sc. (Hons.) Zoology Sem I	Insect vector & diseases GE-8
AUGUST	<b>Theory</b>	Animal behavior and chronobiology <ul style="list-style-type: none"> <li>• Unit-5 biological rhythm</li> <li>• Circadian Rhythm, Tidal Rhythm &amp; Lunar Rhythms, Concept of synchronization And masking</li> </ul>	B.Sc. (Hons.) Zoology Sem V TZH	Animal behavior and chronobiology  DSE-1
		Non-chordata-I <ul style="list-style-type: none"> <li>• Type study of Sycon</li> <li>• Canal system in sycon</li> </ul>	B.Sc. (Hons.) Zoology Sem I  FZH	Non-chordata-I  CC-I

		<p>Insect vector &amp; diseases :</p> <p>Unit-1: introduction to insects</p> <ul style="list-style-type: none"> <li>• Structure of insect eye</li> <li>• Types of mouthparts and feeding mechanisms</li> <li>• Insect classification up to orders</li> </ul> <p>Unit-2 :</p> <ul style="list-style-type: none"> <li>• Concept of vectors: brief introduction Of carrier and vector, reservoirs, host-vector relationship, vectorial capacity, adaptations as vectors, host specificity.</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Insect vector &amp; diseases GE-8</p>
	<b>Practicals:</b>	<p>Animal behavior and chronobiology</p> <ul style="list-style-type: none"> <li>• To study the behavioural responses of woodlice in dry and humid conditions</li> <li>• To study the nesting habits in birds and social insects</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem V TZH</p>	<p>Animal behavior and chronobiology  DSE-1</p>
		<p>Non-chordata I:</p> <ul style="list-style-type: none"> <li>• Study of Sycon (T.S. &amp; L.S.)</li> <li>• Porifera: Sycon, Hyalonema, Euplectella, Spongilla</li> <li>• Study of Obelia, Physalia, Aurelia, tubipora, Metridium, Corallium, Alcyonium. Gorgonian, Pennatula, Fungia, Meandrina, Madrepora.</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Non-chordata-I  CC-I</p>
		<p>Insect vector &amp; diseases : GE</p> <ul style="list-style-type: none"> <li>• Study of different insect vectors through permanent slides: Anopheles, Aedes, Culex, Pediculus, Flea, Tsetse fly, Cimex, Housefly, Thrips</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Insect vector &amp; diseases GE-8</p>
SEPTEMBER	<b>Theory</b>	<p>Animal behavior and chronobiology</p> <ul style="list-style-type: none"> <li>• Photic and non-photic zeitgebers</li> <li>• Circannual rhythms,</li> <li>• photoperiod and regulation of seasonal reproduction of vertebrates, role of melatonin</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem V TZH</p>	<p>Animal behavior and chronobiology  DSE-1</p>
		<p>Non-chordata I Unit 2: Phylum Porifera</p> <ul style="list-style-type: none"> <li>• Canal system in sponges</li> <li>• Introduction to Metazoa</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Non-chordata-I  CC-I</p>



		<p>Insect vector &amp; diseases : GE Unit-2 :</p> <ul style="list-style-type: none"> <li>• Concept of vectors: brief introduction Of carrier and vector, reservoirs, host-vector relationship, vectorial capacity, adaptations as vectors, host specificity.</li> <li>• Siphonaptera as disease vectors: fleas As important insect vector , host specificity, study of Flea borne diseases plague, typhus fever control of flea</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I  FZH</p>	<p>Insect vector &amp; diseases GE-8</p>
	<b>Practicals</b>	<p>Animal behaviour and chronobiology</p> <ul style="list-style-type: none"> <li>• To study geotaxis behavior in earthworm</li> <li>• Study and actogram construction of locomotor activity of suitable animal models</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem V</p>	<p>Animal behavior and chronobiology  DSE-1</p>
		<p>Non-chordata I</p> <ul style="list-style-type: none"> <li>• Platyhelmenthes: life cycle and pathogenesis Taenia solium, Ascaris,</li> <li>• Making of project report on coral and coral reefs</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p>	<p>Non-chordata-I  CC-I</p>
		<p>Insect Vector and Diseases</p> <ul style="list-style-type: none"> <li>• Making of Project report on Medically important insects</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p>	<p>Insect vector &amp; diseases GE-8</p>
	<b>Assignment</b>	<p>Animal behavior and chronobiology Topic: Animal behavior related concepts</p>	<p>B.Sc. (Hons.) Zoology Sem V TZH</p>	<p>Animal behavior and chronobiology  DSE-1</p>
		<p>Non-chordata I Polymorphism in coelenterates And Parasitic adaptations in helminthes</p>	<p>B.Sc. (Hons.) Zoology Sem I  FZH</p>	<p>Non-chordata-I  CC-I</p>
		<p>Insect Vector and Diseases</p> <ul style="list-style-type: none"> <li>• Mosquito borne diseases and its prevention and control</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I  FZH</p>	<p>Insect vector &amp; diseases GE-8</p>
OCTOBER	<b>Theory</b>	<p>Animal behavior and chronobiology</p> <ul style="list-style-type: none"> <li>• Relevance of biological clocks, Chronopharmacology, Chronomedicine, Chronotherapy.</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem V TZH</p>	<p>Animal behavior and chronobiology  DSE-1</p>

	<p>Non-chordata I</p> <p>Unit 3: Cnidaria</p> <ul style="list-style-type: none"> <li>• General features and classification up to classes</li> <li>• Metagenesis in <i>Obelia</i></li> <li>• Polymorphism in Cnidaria</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Non-chordata-I</p> <p>CC-I</p>
	<p>Insect Vector and Diseases</p> <ul style="list-style-type: none"> <li>• Siphunculata as disease vectors: human louse ( head louse, body &amp; pubic louse), study of louse borne diseases- Typhus fever, Relapsing fever, Trench fever, Vagabond's disease, Phthiriasis, control of human louse</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Insect vector &amp; diseases GE-8</p>
<b>Practicals:</b>	<p>Animal behaviour and chronobiology</p> <ul style="list-style-type: none"> <li>• To study the phototaxis behavior in insects</li> <li>• Study of circadian function in humans (daily eating, sleep, and temperature pattern)</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem V TZH</p>	<p>Animal behavior and chronobiology</p> <p>DSE-1</p>
	<p>Non-chordata I</p> <ul style="list-style-type: none"> <li>• Study of adult <i>Fasciola hepatica</i>, <i>Taenia solium</i>,</li> <li>• Study of adult <i>Ascaris lumbricoides</i> and its life stages (slides/ photographs)</li> <li>• Examination of pond water collection from different places for diversity in protista</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Non-chordata-I</p> <p>CC-I</p>
	<p>Insect Vector and Diseases</p> <ul style="list-style-type: none"> <li>• Study of different diseases transmitted by insect vectors</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Insect vector &amp; diseases GE-8</p>
<b>Mid Term Test</b>	<p>Animal behavior and chronobiology</p> <ul style="list-style-type: none"> <li>• Test will include all the topics covered</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem V TZH</p>	<p>Animal behavior and chronobiology</p> <p>DSE-1</p>
	<p>Non-chordata-I</p> <ul style="list-style-type: none"> <li>• Test will include all the topics covered</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Non-chordata-I</p> <p>CC-I</p>
	<p>Insect Vector and Diseases</p> <ul style="list-style-type: none"> <li>• Test will include all the covered</li> </ul>	<p>B.Sc. (Hons.) Zoology Sem I</p> <p>FZH</p>	<p>Insect vector &amp; diseases GE-8</p>

NOVEMBER	<b>Theory:</b>	Animal behavior and chronobiology <ul style="list-style-type: none"> <li>• Revision</li> </ul>	B.Sc. (Hons.) Zoology Sem V	Animal behavior and chronobiology  DSE-1
		Non-chordata I <ul style="list-style-type: none"> <li>• Coral and coral reefs</li> </ul>	B.Sc. (Hons.) Zoology Sem I	Non-chordata-I  CC-I
		Insect Vector and Diseases <ul style="list-style-type: none"> <li>• Study of louse borne diseases and its control</li> </ul>	B.Sc. (Hons.) Zoology Sem I	Insect vector & diseases GE-8
	<b>Practicals:</b>	Animal behavior and chronobiology <ul style="list-style-type: none"> <li>• Revision/ mock exam</li> </ul>	B.Sc. (Hons.) Zoology Sem V	Animal behavior and chronobiology  DSE-1
		Non-chordata I <ul style="list-style-type: none"> <li>• Revision/ mock exam</li> </ul>	B.Sc. (Hons.) Zoology Sem I	Non-chordata-I  CC-I
		Insect Vector and Diseases <ul style="list-style-type: none"> <li>• Revision/ mock exam</li> </ul>	B.Sc. (Hons.) Zoology Sem I	Insect vector & diseases GE-8



**SEMESTER WISE TEACHING PLAN (2018-2019)**  
**SRI VENKATESWARA COLLEGE**  
**July-November, 2018**

**Name of the Faculty: Dr. Richa Misra**

**Department: Zoology**

**Semester: I, III, V (ODD)**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b> (2+2+1 periods)	Introduction to Reproductive Physiology	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-VI: Physiology
		Introduction to Basic Chordate Characters	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		Introduction to Genetics	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
	<b>Practicals:</b>	Introduction to Mendelian Genetics, Exercise No. 5: Study of human karyotype Instructions for maintaining records	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
		Protochordates, Agnatha: Specimens and cross-sections Instructions for Maintaining records	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		General survey of Protozoa, Porifera, Cnidaria: specimens and slides Instructions for Maintaining records	B.Sc Life Sciences 1 <sup>st</sup> year Sem I	CC-I/ Animal Diversity
AUGUST	<b>Theory:</b>	Unit 5: Male and female reproductive system, puberty	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-VI: Physiology
		Unit 4: Agnatha, Unit 5: Pisces, Unit 6: Amphibia	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		Unit 6: Polygenic Inheritance	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
	<b>Practicals:</b>	Exercise No. 1: To study the Mendelian laws and gene interactions. Exercise No. 2: Chi-square analyses using seeds/beads/Drosophila. Exercise No. 4: Linkage maps based on data from <i>Drosophila</i> crosses.	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
		Fishes, Amphibia, Reptilia: Specimens and cross-sections	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		General survey of Platyhelminthes, Nematelminthes, Annelida, Arthropoda: specimens and slides	B.Sc Life Sciences 1 <sup>st</sup> year Sem I	CC-I/ Animal Diversity
SEPTEMBER	<b>Theory:</b>	Unit 5: methods of contraception, unit 6: Endocrine system	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-VI: Physiology
		Unit 7: Reptilia, Unit 8: Aves	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		Unit 2: Linkage, Crossing Over and Chromosomal Mapping (Linkage and crossing over, Cytological basis of crossing over, Molecular mechanisms of crossing over including models of recombination, Recombination frequency as a measure of linkage intensity)	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics

	<b>Practicals</b>	Exercise No. 3: Linkage maps based on data from conjugation, transformation and transduction.	B. Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
		Reptilia, Aves, Mammals: Specimens and cross-sections	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		General survey of Mollusca, Arthropoda, Echinodermata, Hemichordata: specimens and slides	B.Sc. Life Sciences 1 <sup>st</sup> year Sem I	CC-I/ Animal Diversity
	<b>Assignment</b>	Topics for presentation assigned to students related to disorders affecting the various tissues, bone, muscles, nervous, reproductive and endocrine system	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-VI: Physiology
		Topics related to course given to students for presentation	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
OCTOBER	<b>Theory</b>	Unit 6 contd: Endocrine system	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-VI: Physiology
		Revision of Topics	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		Unit 2 Contd: Two factor and three factor crosses, Interference and coincidence, Somatic cell hybridization	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
	<b>Practicals:</b>	Exercise No. 6: Pedigree analysis of some human inherited traits.	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
		Presentation on animal given by students- Evaluation and feedback	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		General survey of Pisces, amphibians, reptiles, aves and mammals. Poisonous snakes identification	B.Sc Life Sciences 1 <sup>st</sup> year Sem I	CC-I/ Animal Diversity
	<b>Mid Term Test</b>	Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-VI: Physiology
		Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		Test questions in DU exam pattern of covered topics	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
	NOVEMBER	<b>Theory:</b>	Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III
Discussion of Mid-term Test paper and previous year question papers, Revision of Topics			B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
Discussion of assignment and previous year question papers			B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
<b>Practicals:</b>		Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
		Revision exercises and test, viva for practical exams	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		Revision exercises and test, viva for practical exams	B.Sc Life Sciences 1 <sup>st</sup> year Sem I	CC-I/ Animal Diversity



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Namita Nayyar**

**Department: Zoology**

**Semester: Odd I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	General introduction of non -chordates. <b>Unit 5:</b> Platyhelminthes: General Characteristics and classification upto classes	B.Sc. (H) Zoology 1 <sup>st</sup> semester	CCI Non Chordates I: Protists to Pseudocoelomates
		General Introduction on Biotechnology <b>Unit 3:</b> Production of cloned and transgenic animals: Nuclear Transplantation, Retroviral Method, DNA microinjection.	B.Sc. (P) Life Sciences 5 <sup>th</sup> Semester	DSE-1 Animal Biotechnology
		<b>General introduction of non-chordate and chordate.</b> <b>Unit 10:</b> Protochordata: General features and phylogeny of protochordata.	B.Sc. (P) Life Sciences 1 <sup>st</sup> semester	CC1 Animal Diversity
	<b>Practicals:</b>	Introduction to Mendelian Genetics, Exercise No. 5: Study of human karyotype	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
		Protochordates, Agnatha: Specimens and cross-sections	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		Estimation of Hemoglobin content using Sahli's Hemoglobinometer	B.Sc. Life Sciences 2 <sup>nd</sup> Year, Sem III	SEC Medical Diagnostics
AUGUST	<b>Theory:</b>	Unit 5: Life cycle and pathogenicity of <i>Fasciola hepatica</i> and <i>Taenia solium</i> .	B.Sc. (H) Zoology 1 <sup>st</sup> semester	CCI Non Chordates I: Protists to Pseudocoelomates
		<b>Unit 3:</b> Applications of transgenic animals: Production of pharmaceuticals, production of donor organs, knockout mice.	B.Sc. (P) Life Sciences 5 <sup>th</sup> Semester	DSE-1 Animal Biotechnology
		<b>Unit 11: Agnatha:</b> General features of Agnatha and classification.	B.Sc. (P) Life Sciences 1 <sup>st</sup> semester	CC1 Animal Diversity
	<b>Practicals:</b>	Exercise No. 1: To study the Mendelian laws and gene interactions. Exercise No. 2: Chi-square analyses using seeds/beads/ <i>Drosophila</i> . Exercise No. 4: Linkage maps based on data from <i>Drosophila</i> crosses.	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics

		Fishes, Amphibia, Reptilia: Specimens and cross-sections.	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		Detecting defects of Colour vision by Ishihara Charts ABO Blood typin Determination of Bleeding time or Clotting time Differential Leucocyte count	B.Sc. Life Sciences 2 <sup>nd</sup> Year, Sem III	SEC Medical Diagnostics
SEPTEMBER	<b>Theory:</b>	<b>Unit 6:</b> Nematelminthes: General Characteristics and and Classification upto classes. Life cycle and pathogenicity of <i>Ascaris lumbricoides</i> .	B.Sc. (H) Zoology 1 <sup>st</sup> semester	CCI Non Chordates I: Protists to Pseudocoelomates
		<b>Unit 3:</b> Production of transgenic plants: Agrobacterium mediated transformation. Applications of transgenic plants: insect and herbicide resistant plants.	B.Sc. (P) Life Sciences 5 <sup>th</sup> Semester	DSE-1 Animal Biotechnology
		<b>Unit 12: Pisces:</b> General features and classification upto orders.	B.Sc. (P) Life Sciences 1 <sup>st</sup> semester	CC1 Animal Diversity
	<b>Practicals:</b>	Exercise No. 3: Linkage maps based on data from conjugation, transformation and transduction.	B. Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
		Reptilia, Aves, Mammals: Specimens and cross-sections	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		<ul style="list-style-type: none"> <li>• Estimation of Blood Glucose/ Cholesterol by kit</li> <li>• Analysis of Urine for abnormal constituents</li> <li>• Body temperature and Blood Pressure under normal and stressed conditions</li> </ul>	B.Sc. Life Sciences 2 <sup>nd</sup> Year, Sem III	SEC Medical Diagnostics
	<b><u>Assignment</u></b>	<ul style="list-style-type: none"> <li>• Assignment for Animal Biotechnology will be given from the syllabus, most probably on Production of vaccines.</li> <li>• A list of assignemt topics will given: ~ Polymorphism in coelenterates. ~ Parasitic adaptations in Helminthes. Students can choose among the topics.</li> </ul>		
OCTOBER	<b>Theory</b>	<b>Unit 6:</b> Nematelminthes. Life cycle and pathogenicity of <i>Wuchereria bancrofti</i> . Parasitic adaptations in Helminthes.	B.Sc. (H) Zoology 1 <sup>st</sup> semester	CCI Non Chordates I: Protists to Pseudocoelomates
		<b>Unit 4: Culture Techniques and Applications</b> Animal cell culture, Expressing cloned genes in mammalian cells, Molecular diagnosis of genetic diseases (Cystic fibrosis, Sickle cell anemia)	B.Sc. (P) Life Sciences 5 <sup>th</sup> Semester	DSE-1 Animal Biotechnology

		<b>Unit 13: Amphibia</b> General features and Classification up to orders.	B.Sc. (P) Life Sciences 1 <sup>st</sup> semester	CC1 Animal Diversity
	<b>Practicals:</b>	Exercise No. 6: Pedigree analysis of some human inherited traits.	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
		Presentation on animal given by students- Evaluation and feedback	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		<ul style="list-style-type: none"> <li>• Interpretation of ECG</li> <li>• Medical imaging: X-Ray of Bone, Fracture, MRI and CT scan</li> <li>• Revision</li> </ul>	B.Sc. Life Sciences 2 <sup>nd</sup> Year, Sem III	SEC Medical Diagnostics
	<b><u>Mid Term Test</u></b>	A mid term test will be kept in October which will cover the syllabus to test the students grasping power. The test can be an objective test and a subjective test.		
NOVEMBER	<b>Theory:</b>	<b>Unit 4:</b> Ctenophora: General Characteristics and evolutionary Significance. <b>Unit 1:</b> evolution of symmetry and segmentation of metazoa. Revision.	B.Sc. (H) Zoology 1 <sup>st</sup> semester	CCI Non Chordates I: Protists to Pseudocoelomates
		<b>Unit 5:</b> Recombinant DNA in medicines: Recombinant insulin and human growth hormone, Gene therapy. Revision.	B.Sc. (P) Life Sciences 5 <sup>th</sup> Semester	DSE-1 Animal Biotechnology
		<b>Unit 13: Amphibia</b> Parental care <b>Revision of important topics.</b>	B.Sc. (P) Life Sciences 1 <sup>st</sup> semester	CC1 Animal Diversity
	<b>Practicals:</b>	Revision exercises and test, viva for practical exams	B.Sc. (H) Zoology 3 <sup>rd</sup> year Sem V	CC-XII/Principles of Genetics
		Revision exercises and test, viva for practical exams	B. Sc. (H) Zoology 2 <sup>nd</sup> year Sem III	CC-V/ Diversity of Chordates
		<ul style="list-style-type: none"> <li>• Revision</li> <li>• Mock Practical</li> </ul>	B.Sc. Life Sciences 2 <sup>nd</sup> Year, Sem III	SEC Medical Diagnostics





**SEMESTER WISE  
TEACHING PLAN  
Sri Venkateswara College  
July-November, 2018**

**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. Life Sciences Semester III; Batch 1 (SEC1- Medical Diagnostics)

**Practical:**

B.Sc. (Hons.) Biological Sciences Semester III (Concepts in Cell Biology)

B.Sc. (H) Zoology Semester III (CC VII- Fundamentals of Biochemistry)

B.Sc. (H) Zoology Semester III (SEC- Medical Diagnostics)

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	<b>Unit 3- Proteins:</b> <b>Amino Acid:</b> Structure, classification and general properties of $\alpha$ -amino acids	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
		<b>Unit 3: Health</b> Introduction to Health-Definition and concept of health	B.Sc. (H) Semester III	<b>GEIII/ Food, Nutrition and Health</b>
		<b>Unit 1:</b> Introduction to medical diagnostics and its importance. <b>Unit 2: Diagnostics methods used for analysis of blood</b> Blood composition, Preparation of blood smear	B.Sc. Life Sciences Semester III; Batch 1	<b>SEC1/ Medical Diagnostics</b>
	<b>Practical:</b>	Separation of nucleic acid bases by paper chromatography	B.Sc. (H) Biological Sciences Semester III	<b>BS-C6/ Concepts in Cell Biology</b>

		Qualitative tests of functional groups in carbohydrates	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
		ABO blood typing	B.Sc. (H) Zoology Semester III	<b>Medical Diagnostics</b>
AUGUST	<b>Theory:</b>	Physiological importance of essential and non-essential $\alpha$ -amino acids. Proteins- Bond stabilizing protein structure: levels of organization in proteins, Denaturation	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
		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	B.Sc.(H) Semester III	<b>GEIII/ Food, Nutrition and Health</b>
	<b>Practicals:</b>	Differential Leucocyte Count (DLC) using Leishman's stain, platelet count using haemocytometer, Erythrocyte Sedimentation Rate (ESR), Packed cell Volume (PCV), <b>Unit 3:</b> Urine analysis: Physical characteristics; abnormal constituents.	B.Sc. Life Sciences Semester III; Batch 1	<b>SEC1/ Medical Diagnostics</b>
		Separation of nucleic acid bases by paper chromatography  Study of different stages of meiosis by temporary preparation/permanent slides of onion flower buds Identification and study of types of cancer, cancer cells by permanent slides/photographs	B.Sc. (H) Biological Sciences Semester III	<b>BS-C6/ Concepts in Cell Biology</b>
		Qualitative tests of functional groups in proteins. Paper Chromatography of Amino acids. Demonstration of protein separation by SDS-PAGE.	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
		Differential leucocyte count. Interpretation of ECG Estimation of Haemoglobin content using Sahli's Haemoglobinometer.  Body temperature and blood pressure under normal condition and condition of stress.	B.Sc. (H) Zoology Semester III	<b>Medical Diagnostics</b>
SEPTEMBER	<b>Theory:</b>	Introduction to simple and conjugate proteins. Immunoglobulins: Basic structure, Classes and function	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>

		Life style related diseases-hypertension, diabetes mellitus and Obesity- their causes and prevention through dietary and lifestyle modifications	B.Sc. Semester III	<b>GEIII/ Food, Nutrition and Health</b>
		<b>Unit 4:</b> causes, types, symptoms, complications, diagnosis and prevention of Diabetes (Type I and Type II), Hypertension (Primary & Secondary), Testing of blood glucose using glucometer/kit.	B.Sc. Life Sciences Semester III; Batch 1	<b>SEC1/ Medical Diagnostics</b>
	<b>Practicals:</b>	Study of different stages of mitosis by temporary preparation /permanent slides of onion root tips  Preparation of temporary slides of the following : cytochemical staining of DNA, RNA, polysaccharises, proteins, histones, mitochondria.	B.Sc. (H) Biological Sciences Semester III	<b>BS-C6/ Concepts in Cell Biology</b>
		Action of Salivary Amylase under Optimum Conditions. Effect of pH and temperature on the action of salivary amylase	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
		Determination of bleeding time / clotting time. Estimation of blood glucose/cholesterol	B.Sc. (H) Zoology Semester III	<b>Medical Diagnostics</b>
	<b>Assignment</b>	Levels of organization in proteins, Denaturation and Renaturation of DNA, Types of DNA and RNA, Complementarity of DNA (Four Topics are given according to roll numbers)	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
		Social Health problems-Smoking, alcoholism, drug dependence and Acquired Immuno Deficiency Syndrome (AIDS)- their causes, treatment and prevention	B.Sc. Semester III	<b>GEIII/ Food, Nutrition and Health</b>
		<b>Unit 5: Infectious Diseases</b> Causes, types, Symptoms, diagnosis and prevention of Tuberculosis and Hepatitis	B.Sc. Life Sciences Semester III;	<b>SEC1/ Medical Diagnostics</b>
OCTOBER	<b>Theory</b>	Antigenic Determinants, <b>Unit 4: Nucleic acids:</b> Structure: purines and Pyrimidines, Nucleosides, Nucleotides, Nucleic acids, Cot curves, base pairing	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>

		Social Health Problems- Smoking, alcoholism, Drug dependenc and acquired immune deficiency syndrome (AIDS)- their causes, treatment and prevention	B.Sc. Semester III	<b>GEIII/ Food, Nutrition and Health</b>
		<b>Unit 6: Tumours</b> Types (Benign/Malignant), Detection and Metastasis; Medical Imaging: X-Ray of Bone fracture, PET, MRI and Ct scan (using photographs)	B.Sc. Life Sciences Semester III; Batch 1	<b>SEC1/ Medical Diagnostics</b>
	<b>Practicals:</b>	Study of the flowing microscopic techniques by photographs: fluorescence microscopy, autoradiography, positive staining, negative staining, freeze fracture, freeze etching, shadow casting  Study of ultrastructure of cell	B.Sc. (H) Biological Sciences Semester III	<b>BS-C6/ Concepts in Cell Biology</b>
		Effect of pH and temperature on the action of salivary amylase	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
		Analysis of urine for abnormal constituents Detection of defects of color vision by Ishihara charts Medical Imaging: X rays of Bone fracture, MRI, CT scan	B.Sc. (H) Zoology Semester III	<b>Medical Diagnostics</b>
	<b>Mid Term Test</b>	Physiological importance of essential and non-essential $\alpha$ -amino acids. Proteins- Bond stabilizing protein structure: levels of organization in proteins, Denaturation	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
		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	<b>GEIII/ Food, Nutrition and Health</b>
NOVEMBER	<b>Theory:</b>	Denaturation and Renaturation of DNA, Types of DNA and RNA, Complementarity of DNA, Hypo-Hyperchromaticity of DNA	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
		Common ailments: Cold, cough and fevers, their causes and treatment	B.Sc.(H) Semester III	<b>GEIII/ Food, Nutrition and Health</b>

	<b>Unit 5: Infectious Diseases</b> Causes, Types, Symptoms, Diagnosis and Prevention of Tuberculosis and Hepatitis	B.Sc. Life Sciences Semester III; Batch 1	<b>SEC1/ Medical Diagnostics</b>
<b>Practicals:</b>	Evaluation of Practical File and Practice and repetition of practical; mock practical examination	B.Sc. (H) Biological Sciences Semester III	<b>BS-C6/ Concepts in Cell Biology</b>
	Evaluation of Practical File and Practice and repetition of practical; mock practical examination	B.Sc. (H) Zoology Semester III	<b>CC VII/ Fundamentals of Biochemistry</b>
	Evaluation of Practical File and Practice and repetition of practical; mock practical examination	B.Sc. (H) Zoology Semester III	<b>Medical Diagnostics</b>



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

July-November, 2018

Name of the Faculty: Dr. Sadqua Shameem

Department: Zoology

Semester: I / III / IV

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	<ul style="list-style-type: none"> <li>▪ <b>Unit 4:</b> Food hygiene:</li> <li>▪ Food and Water borne infections; Bacterial infection:</li> </ul>	B.Sc. (Hons.) Sem III	<b>GE III / Food, Nutrition and Health</b>
		<b>Unit 10 Cancer</b> Programmed Cell Death; Biology and elementary knowledge of development and causes of cancer; Tumor viruses.	B.Sc. (Hons.) Biological Science Sem III	<b>Core course 6</b> Cell Biology
		<b>Unit 17: Mammals</b> Classification up to orders; Origin of mammals	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity
	<b>Practicals:</b>	<b>Unit 2: Protochordata</b> General characteristics of Hemichordata, Urochordata	B.Sc. (Hons.) Zoology Sem III	<b>Core course-V</b> Diversity of Chordata
		1) ABO blood group typing.	B.Sc. Life Sciences Sem V	<b>SEC - Medical Diagnostic</b>
		- Study of Polytene chromosomes from Chironomous / Drosophila larvae	B.Sc. (Hons.) Zoology Sem V	<b>Core course-XI</b> Molecular Biology
		Syllabus overview, general instructions and maintenance of lab record I. Study of the following specimens: <i>Amoeba, Euglena, Paramecium,</i>	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity
AUGUST	<b>Theory:</b>	<ul style="list-style-type: none"> <li>▪ Cholera, typhoid fever, dysentery;</li> <li>▪ <b>Viral infection:</b> Hepatitis, Poliomyelitis;</li> </ul>	B.Sc. (Hons.) Sem III	<b>GE III / Food, Nutrition and Health</b>

		<b>Unit10-Oncogenes</b> and suppressor genes, Cancer treatment-Molecular approach, Stem cells and therapeutic cloning.	B.Sc. (Hons.) Biological Science Sem III	<b>Core course 6</b> Cell Biology
		<b>Unit 11: Agnatha</b> -General features of Agnatha and classification of cyclostomes up to classes	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity
		<b>Unit 2: Protochordata</b>  General characteristics of Cephalochordate, Study of larval forms of protochordates, Retrogressive metamorphosis  <b>Unit 3: Origin of Chordata</b> -Dipleurula concept and the Echinoderm theory of origin of chordates Advanced features of vertebrates over Protochordata	B.Sc. (Hons.) Zoology Sem III	<b>Core course-V</b> Diversity of Chordata
	<b>Practicals:</b>	1) Estimation of haemoglobin content using Sahli's haemoglobinometer. 2) Analysis of urine for abnormal constituents Total leucocytes count from blood.	B.Sc. Life Sciences Sem V	<b>SEC - Medical</b> Diagnostic
		- Preparation of liquid culture medium (LB) and raise culture of <i>E. coli</i> - Estimation of the growth kinetics of <i>E. coli</i> by turbidity method - Preparation of solid culture medium (LB) and growth of <i>E.coli</i> by spreading and streaking.	B.Sc. (Hons.) Zoology Sem V	<b>Core course-XI</b> Molecular Biology
		Study of the following specimens: Evaluation of students on their performance in practical and Record <i>Sycon, Hyalonema, Euplectella, Obelia, Physalia, Aurelia, Tubipora, Metridium, Taeniasolium, Male and female Ascaris lumbricoides, Aphrodite, Nereis, Heteronereis, Chaetopterus, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra, Julus, Periplaneta, Chiton, Dentalium, Pila, Unio, Sepia, Octopus, Pentaceros, Ophiothrix, Echinus</i>		<b>Core course-I</b> Animal Diversity

		<i>Cucumaria, Antedon</i>		
SEPTEMBER	<b>Theory:</b>	<ul style="list-style-type: none"> <li>▪ <b>Parasitic infection:</b> taeniasis and ascariasis their transmission, causative agent, sources of infection, symptoms and prevention;</li> </ul>	B.Sc. (Hons.) Sem III	<b>GE III /</b> Food, Nutrition and Health
		<b>Unit 7 -Cytoskeleton</b> Structure and organization of actin, myosin and intermediate filaments, microtubules, and their role	B.Sc. (Hons.) Biological Science Sem III	<b>Core course 6</b> Cell Biology
		<b>Unit 12: Pisces-</b> General features and Classification up to orders; Osmoregulation in Fishes	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity
		<b>Unit 9: Mammals</b> General characters and classification up to order; Affinities of Prototheria; Adaptive radiation with reference to locomotory appendages	B.Sc. (Hons.) Zoology Sem III	<b>Core course-V</b> Diversity of Chordata
	<b>Practicals:</b>	1) Measurement of blood pressure under normal and stress condition. 2) Estimation of blood glucose/ cholesterol by kit. Determination of bleeding time/clotting time 3) Detecting defects of colour vision by Ishihara Charts.	B.Sc. Life Sciences Sem V	<b>SEC - Medical Diagnostic</b>
	- Demonstration of antibiotic sensitivity/resistance of <i>E. coli</i> to antibiotic pressure and interpretation of results. - Quantitative estimation of salmon sperm/calf thymus DNA using colorometer (Diphenylamine reagent) or spectrophotometer (A260 measurement) - Quantitative estimation of RNA using Orcinol reaction.	B.Sc. (Hons.) Zoology Sem V	<b>Core course-XI</b> Molecular Biology	



		<p>-Study of : Study of the following specimens: <i>Balanoglossus, Herdmania, Branchiostoma, Petromyzon, Sphyrna, Pristis, Torpedo, Labeo, Exocoetus, Anguilla Ichthyophis/Ureotyphlus Salamandra, Bufo, Hyla,</i></p> <p>-Study of , <i>Chelone, Chamaeleon, Draco, Vipera, Naja, Crocodylus,</i> Any three common birds from different orders, Bat, <i>Funambulus, Loris.</i></p> <p>-Any three common birds from different orders, Bat, <i>Funambulus, Loris.</i></p> <p>-Study of the following permanent slides: T.S. and L.S. of <i>Sycon,</i></p>	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity
	<b>Assignment</b>	Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Sem III	<b>GE III /</b> Food, Nutrition and Health
		Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Biological Science Sem III	<b>Core course 6</b> Cell Biology
		Separate questions will be given to students from previous year question paper	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity
		Separate questions will be given to students from previous year question paper	B.Sc. (Hons.) Zoology Sem III	<b>Core course-V</b> Diversity of Chordata
OCTOBER	<b>Theory</b>	<ul style="list-style-type: none"> <li>▪ Brief account of food spoilage: Causes of food spoilage and their preventive measures.</li> <li>▪</li> </ul>	B.Sc. (Hons.) Sem III	<b>GE III /</b> Food, Nutrition and Health
		<p><b>Unit 7 -Cytoskeleton</b> Microtubules, and their role</p> <p><b>Unit 9 -Cell signaling</b> Signaling molecules and their receptors, functions; intracellular signal transduction pathways (with special reference to some</p>	SBS - Cell Biology Physiology and Biochemistry	<b>Core course 6</b> Cell Biology

	<p><b>Unit 13: Amphibia</b> General features and Classification up to orders; Parental care</p>	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity
	<p><b>Unit 10: Zoogeography</b> Zoogeographical realms, Theories pertaining to distribution of animals, Plate tectonic and Continental drift theory.</p>	B.Sc. (Hons.) Zoology Sem III	<b>Core course-V</b> Diversity of Chordata
<b>Practicals:</b>	<p>1) Interpretation of ECG. 2) Medical Imaging techniques: X-Ray of bone fracture, MRI, CT scan.</p>	B.Sc. Life Sciences Sem V	<b>SEC - Medical Diagnostic</b>
	<p>-Study and interpretation of electron micrograph photograph showing (a) DNA replication (b) Transcription (c) Split genes</p>	B.Sc. (Hons.) Zoology Sem V	<b>Core course-XI</b> Molecular Biology
	<p>Study of</p> <ul style="list-style-type: none"> <li>• Study of larval stages of <i>Taeniasolium</i></li> </ul> <p>Key for Identification of poisonous and non-poisonous snakes</p> <ul style="list-style-type: none"> <li>- A visit to Biodiversity parks and Zoological Museum</li> <li>- Study of Digestive, Reproductive and Nervous system of Cockroach.</li> <li>- Study of Urinogenital and Nervous system of Rat.</li> </ul>	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity
<b>Mid Term Test</b>	Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Sem III	<b>GE III / Food, Nutrition and Health</b>
	Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Biological Science Sem III	<b>Core course 6</b> Cell Biology
	Test questions in DU exam pattern of covered topics	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity

		Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Zoology Sem III	<b>Core course-V</b> Diversity of Chordata
NOVEMBER	<b>Theory:</b>	- Protozoan infection: amoebiasis, giardiasis - Revision	B.Sc. (Hons.) Sem III	<b>GE III / Food, Nutrition and Health</b>
		<b>Unit 9 -Cell signaling</b> Signaling networks and cross talk- - Revision	B.Sc. (Hons.) Biological Science Sem III	<b>Core course 6</b> Cell Biology
		<b>Unit 10: Protochordate</b> -General features and Phylogeny of Protochordata - Revision	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity
		<b>Unit 10: Zoogeography –</b> Distribution of vertebrates in different realms - Revision	B.Sc. (Hons.) Zoology Sem III	<b>Core course-V</b> Diversity of Chordata
	<b>Practicals:</b>	- Submission of Report and File, Viva for practical exams. -Mock test	B.Sc. Life Sciences Sem V	<b>SEC - Medical Diagnostic</b>
		-Submission of Report and File -Mock test	B.Sc. (Hons.) Zoology Sem V	<b>Core course-XI</b> Molecular Biology
		- Submission of File and Biodiversity parks report, containing photographs with appropriate write up - Mock test	B.Sc. Life Sciences Sem I	<b>Core course-I</b> Animal Diversity



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**July-November, 2018-2019**

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

**Department:** Zoology

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

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	<b>Unit 4:</b> Sex Determination : Human and Drosophila	BSc. Zoology Hons. V Sem	CC XII Principles of Genetics
		<b>Unit 1:</b> Carbohydrates: Structure and Biological importance – Monosaccharide, Disaccharide	BSc. Zoology Hons. III Sem	CC VII Fundamentals of Biochemistry
		<b>Unit 4:</b> Ecosystem: Types of Ecosystem	BSc. Zoology Hons. I Sem	CC II Principles of Ecology
	<b>Practicals:</b>	- Study of Life tables	BSc. Zoology Hons. I Sem	CC II Principles of Ecology
		- Plan of the syllabus and maintenance of record files. - Preparation of Haemin and Haemochromogen crystals from your own sample of blood	BSc. Life Science III Sem <b>(Batch I, II, III)</b>	CC III Physiology and Biochemistry
<b>Tutorials:</b>				
AUGUST	<b>Theory:</b>	<b>Unit 3:</b> Mutations: Gene Mutation (classification) - Chromosomal aberrations - Mutagens	BSc. Zoology Hons. V Sem	CC XII Principles of Genetics
		<b>Unit 1:</b> Carbohydrates: Structure and Biological importance – Polysaccharides and Glycoconjugates. <b>Unit 2:</b> Lipids : structure and significance	BSc. Zoology Hons. III Sem	CC VII Fundamentals of Biochemistry
		<b>Unit 4:</b> Ecosystem: Pond Ecosystem. Energy flow through the ecosystem.	BSc. Zoology Hons. I Sem	CC II Principles of Ecology
	<b>Practicals:</b>	- Survivorship curves and plotting of survivorship curves. - Determination of population density by quadrat method, - Dissolved Oxygen content	BSc. Zoology Hons. I Sem	CC II Principles of Ecology
		- Preparation of Haemin and Haemochromogen crystals from your own sample of blood - Biochemistry of Carbohydrates. - Study of Permanent slides: Cartilage, bone, Spinal Cord, Liver, Pancreas, thyroid	BSc. Life Science III Sem <b>(Batch I, II, III)</b>	CC III Physiology and Biochemistry

	<b>Tutorials:</b>			
SEPTEMBER	<b>Theory:</b>	<b>Unit 7:</b> Recombination in Bacteria and Viruses: Conjugation, Transformation, Transduction, - Complementation test in Bacteriophage	BSc. Zoology Hons. V Sem	CC XII Principles of Genetics
		<b>Unit 2:</b> Lipids: Saturated and Unsaturated fatty acids, Tri-acylglycerols.	BSc. Zoology Hons. III Sem	CC VII Fundamentals of Biochemistry
		<b>Unit 4:</b> Ecosystem: Ecological Pyramids and Ecological efficiencies.	BSc. Zoology Hons. I Sem	CC II Principles of Ecology
	<b>Practicals:</b>	- Determination of population density by Shannon-Weiner diversity index. - Study of an aquatic ecosystem: Phytoplankton and Zooplankton.	BSc. Zoology Hons. I Sem	CC II Principles of Ecology
		- Demonstration of salivary amylase activity under optimal conditions. - Study of permanent slides: Liver, kidney, Lung.	BSc. Life Science III Sem	CC III Physiology and Biochemistry
	<b>Tutorials:</b>			
	<b>Assignment</b>	<b>Topic:</b> Wildlife Conservation and Management	BSc. Zoology Hons. I Sem	CC II Principles of Ecology
<b>Topic:</b> Transposons in Human		BSc. Zoology Hons. V Sem	CC XII Principles of Genetics	
OCTOBER	<b>Theory</b>	<b>Unit 8:</b> Transposable Genetic Elements : Transposons in bacteria, Ac-Ds elements in maize	BSc. Zoology Hons. V Sem	CC XII Principles of Genetics
		<b>Unit 2:</b> Lipids: Phospholipids and Glycolipids	BSc. Zoology Hons. III Sem	CC VII Fundamentals of Biochemistry
		<b>Unit 4:</b> Biogeochemical cycles Human modified ecosystem	BSc. Zoology Hons. I Sem	CC II Principles of Ecology
	<b>Practicals:</b>	- Study of an aquatic ecosystem: Measurement of area, temperature, turbidity/penetration of light - Visit to National Park	BSc. Zoology Hons. I Sem	CC II Principles of Ecology
		- Estimation of Total Protein in given solutions by Lowry's Method - Study of permanent slides: Pituitary, adrenal Gland, Duodenum,	BSc. Life Science III Sem	CC III Physiology and Biochemistry

	<b>Tutorials:</b>		
NOVEMBER	<b>Mid Term Test</b>	<b>Unit 1:</b> Carbohydrates <b>Unit 3:</b> Proteins	BSc. Zoology Hons. <b>III Sem</b> CC VII Fundamentals of Biochemistry
		<b>Unit 4:</b> Ecosystem	BSc. Zoology Hons. <b>I Sem</b> CC II Principles of Ecology
		<b>Unit 1:</b> Mendelian Genetics and its extension <b>Unit 3:</b> Mutations <b>Unit 4:</b> Sex Determination	BSc. Zoology Hons. <b>V Sem</b> CC XII Principles of Genetics
	<b>Theory:</b>	<b>Unit 8:</b> Transposable Genetic Elements: P elements in Drosophila, Transposons in Human	BSc. Zoology Hons. <b>V Sem</b> CC XII Principles of Genetics
		<b>Unit 2:</b> Lipids: Steroids	BSc. Zoology Hons. <b>III Sem</b> CC VII Fundamentals of Biochemistry
		<b>Unit 5:</b> Wildlife Conservation and Management	BSc. Zoology Hons. <b>I Sem</b> CC II Principles of Ecology
	<b>Practicals:</b>	- Study of an aquatic ecosystem: Determination of pH. - Chemical oxygen demand and free CO <sub>2</sub> - Mock Practical Exam	BSc. Zoology Hons. <b>I Sem</b> CC II Principles of Ecology
		- Repetition of Salivary amylase - Haemin and Haemochromogen crystals - Mock Practical Exam	BSc. Life Science <b>III Sem</b> CC III Physiology and Biochemistry
	<b>Tutorials:</b>		



**SEMESTER WISE TEACHING PLAN (2018-19)**

**ODD SEMESTER**

**SRI VENKATESWARA COLLEGE**

**Department: Sociology**

**Name of the Faculty: Geeta J. Sodhi**

**Semester: I (July-December, 2018)**

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

	<b>Assignment</b>	What does it mean to ‘think sociologically’?	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
OCTOBER	<b>Theory</b>	1. Individual and Group 2. Associations and Institutions	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Nature and Classification of Social groups	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
	<b><u>Mid-Semester Examination</u> (10Marks)</b>	Topics: Sociological Perspective, Sociology and Common Sense, Sociology and History, Sociology and Psychology, Sociology and Social Anthropology	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
NOVEMBER	<b>Theory</b>	1. Culture and Society 2. Social Change	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	The Theories of Social Change	B.A.(H) Sociology Core Course 1	Introduction to Sociology-I





**SEMESTER WISE TEACHING PLAN (2018-19)**

**ODD SEMESTER**

**SRI VENKATESWARA COLLEGE**

**Department: Sociology**

**Name of the Faculty: Geeta J. Sodhi**

**Semester: V (July-December, 2018)**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	1. Classical Approaches to Work 2. Work Study and the Industrial Worker	B.A. (H) Sociology DSE 04	Sociology of Work
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Marx, Durkheim and Weber on 'Work'	B.A. (H) Sociology DSE 04	Sociology of Work
AUGUST	<b>Theory</b>	1. Industrialism 2. Post-industrial Society	B.A. (H) Sociology DSE 04	Sociology of Work
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Comparison of industrial with post-industrial society	B.A. (H) Sociology DSE 04	Sociology of Work
SEPTEMBER	<b>Theory</b>	1. 3. Information Society 2. Dimensions of Work: Alienation, Gender	B.A. (H) Sociology DSE 04	Sociology of Work
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Theories of Alienation	B.A. (H) Sociology DSE 04	Sociology of Work
	<b><u>Assignment (10 Marks)</u></b>	Critically examine the theory of post-industrial society.	B.A. (H) Sociology DSE 04	Sociology of Work

OCTOBER	<b>Theory</b>	1.Unpaid Work and Forced labour 2. Work in the Informalsector	B.A. (H) Sociology DSE 04	Sociology of Work
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Features of work in the informal sector	B.A. (H) Sociology DSE 04	Sociology of Work
	<b>Mid-term Exam</b>	Topics: Interlinking Work and Industry, Industrialism, Post-industrialism, Information Society, Alienation		

NOVEMBER	<b>Theory</b>	Risk, Hazard and Disaster	B.A. (H) Sociology DSE 04	Sociology of Work
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Analysis of work in hazardous situations	B.A. (H) Sociology DSE 04	Sociology of Work



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**ODD SEMESTER**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Subas C Mohapatra**

**Department: Sociology**

**Semester: III (July-December, 2018)**

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

SEPTEMBER	<b>Theory</b>	Rites of Passage Hinduism Budhism	Discipline Specific Elective- 02	Religion and Society
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Rites of Passage Hinduism Budhism	Discipline Specific Elective- 02	Religion and Society
	<b><u>Assignment (10 Marks)</u></b>	Sociology of Religion: Nature and scope Sacred and profane Religion and Rationalization	Discipline Specific Elective- 02	Religion and Society
OCTOBER	<b>Theory</b>	Islam Jainism Sikhism Christianity	Discipline Specific Elective- 02	Religion and Society
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Islam Jainism Sikhism Christianity	Discipline Specific Elective- 02	Religion and Society
	<b><u>Mid- Semester Exami nation (10Marks)</u></b>	Islam, Jainism Sikhism, Christianity		Religion and Society

NOVEMBER	<b>Theory</b>	Communalism and secularism	Discipline Specific Elective- 02	Religion and Society
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Communalism and secularism	Discipline Specific Elective- 02	Religion and Society



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**ODD SEMESTER**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Subas C Mohapatra**

**Department: Sociology**

**Semester: I (July-December,2018)**

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

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



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**ODD SEMESTER**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr.ABHIJIT KUNDU**

**Department: Sociology**

**Semester: III (July-December, 2018)**

Month		Topic(s)	Course	Paper Code/Name
JULY	<b>Theory</b>	Scope And Development of Political Sociology	HONOURS-III Sem	Core Course-05 POLITICAL SOCIOLOGY
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Context of Political Sociology	Same	Same
AUGUST	<b>Theory</b>	Development of Political Anthropology  Concepts of Power and Authority	Same	Same
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Critical Review of Power and Legitimacy	Same	Same
SEPTEMBER	<b>Theory</b>	-State , Governance and Citizenship  -Elites and Ruling Classes	Same	Same



	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	-State as an Idea -Historical development of Citizenship - Ruling Class and Elite	Same	Same
	<b><u>Assignment</u></b>	Discuss the scope and development of Political anthro and sociology	Same	Same
OCTOBER	<b>Theory</b>	State, Democracy and Totalitarianism	Same	Same
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	-Types of Democracy - Totalitarianism -State and Civil Society	Same	Same
	<b><u>Mid-Semester Examination</u></b>	TOPIC : State , Democracy and Civil Society	Same	Same
NOVEMBER	<b>Theory</b>	Everyday State and Local Structures of Power	Same	Same
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Local Level Politics	Same	Same



**SEMESTER WISE TEACHING PLAN (2018-19)**

**ODD SEMESTER**

**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. ABHIJIT KUNDU**

**Department: Sociology**

**Semester: V (July-December, 2018 )**

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

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

NOVEMBER	<b>Theory</b>	Types of Suicide	Same	Same
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Individual and Society	Same	Same



**SEMESTER WISE TEACHING PLAN (2018-19)**

**ODD SEMESTER**

**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Nabanipa Bhattacharjee**

**Department: Sociology**

**Semester: I (July-December,2018)**

Month		Topic(s)	Course	Paper Code/Name
JULY	<b>Theory</b>	Introducing Sociology of India; India as an object of knowledge; colonial discourse	Core Course-02	Sociology of India I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Colonial discourse	Core Course-02	Sociology of India I
AUGUST	<b>Theory</b>	Nationalist discourse; introduction to subaltern studies	Core Course-02	Sociology of India I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Colonial discourse; nationalist discourse	Core Course-02	Sociology of India I
SEPTEMBER	<b>Theory</b>	Subaltern critique; concept of caste system; critique of caste; agrarian classes	Core Course-02	Sociology of India I

	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	subaltern reading of dominant historiographies; features and critique of caste; agrarian structure	Core Course-02	Sociology of India I
	<b><u>Assignment (10Marks)</u></b>	How was India projected by the orientalist and missionary approaches?	Core Course-02	Sociology of India I
OCTOBER	<b>Theory</b>	Village studies in India; profile and situation of Indian tribes; kinship system in India	Core Course-02	Sociology of India I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Understanding the Indian village; contemporary issues and problems of Indian tribes; North and South Indian kinship	Core Course-02	Sociology of India I
	<b><u>Mid-Semester Examination (10Marks)</u></b>	Topics: subaltern critique, agrarian classes, caste, kinship	Core Course-02	Sociology of India I
NOVEMBER	<b>Theory</b>	Industry and labor; religion and society in India	Core Course-02	Sociology of India I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Mapping the industrial working class; religious practices of Hindus, Sikhs and Muslims	Core Course-02	Sociology of India I



**SEMESTER WISE TEACHING PLAN (2018-19)**

**ODD SEMESTER**

**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Nabanipa Bhattacharjee**

**Department: Sociology**

**Semester: III (July-December, 2018)**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Interface of the social and the religious; understanding the religious sociologically	Core Course 06	Sociology of Religion
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Durkhemian understanding of social and religious; beliefs and practices	Core Course 06	Sociology of Religion
AUGUST	<b>Theory</b>	Sacred and profane in formulating the religious; asceticism and capitalist accumulation; theodicy and eschatology; introduction to church-state relations	Core Course 06	Sociology of Religion
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Australian totemism; religious ethic and capitalist spirit; suffering and redemption	Core Course 06	Sociology of Religion

SEPTEMBER	<b>Theory</b>	Judaism and human emancipation; individual, collective and the religious; understanding sacred, myth and ritual	Core Course 06	Sociology of Religion
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	State, church, emancipation; Malinowski on solitude and religious experience; myth	Core Course 06	Sociology of Religion
	<b><u>Assignment (10 Marks)</u></b>	How does Durkheim construct the sociological understanding of the religious?	Core Course 06	Sociology of Religion
OCTOBER	<b>Theory</b>	Srinivas and Durkheim on rituals; time and space; religion and rationality; concept of prayer	Core Course 06	Sociology of Religion
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Ritual complex of Coorgs; time-space and the Nuer; Tambiah on religion and science	Core Course 06	Sociology of Religion
	<b><u>Mid-Semester Examination (10Marks)</u></b>	Topics: Sacred and profane; religion and solitude; rituals, religious and economic life;	Core Course 06	Sociology of Religion



NOVEMBER	<b>Theory</b>	Maussian reading of prayer; craft of religious; body and the religious	Core Course 06	Sociology of Religion
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Practice of prayer; Ginzburg on craft; hands and dual symbolic classification	Core Course 06	Sociology of Religion



SEMESTER WISE TEACHING PLAN (2018-19)

ODD SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. URMI BHATTACHARYYA

Department: SOCIOLOGY

Semester: V

Course Details - B. A. (H): Discipline Specific Elective (*Urban Sociology*)

Month		Topic(s)	Course	Paper Code/Name
JULY	<b>Theory</b>	-Introducing Urban Sociology -The City in History	B. A. (H) DSE	Urban Sociology
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	-Discussion and writing on concepts of community, city and neighborhood	B. A. (H) DSE	Urban Sociology

AUGUST	<b>Theory</b>	-Concepts: Urban, Urbanism and the city Cities and Capitalism -Urban theory and urban experience	B. A. (H) DSE	Urban Sociology
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	-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	<b>Theory</b>	-Perspectives in Urban Sociology: City as Ecological, Political Economy, Network, City as Culture	B. A. (H) DSE	Urban Sociology
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	-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
	<b><u>Assignment</u></b>	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	<b>Theory</b>	-Movements and Settlements: Migration and Community  -Politics of Urban Space: Culture and Leisure	B. A. (H) DSE	Urban Sociology
	<b>Practical</b>	NA	NA	NA

	<b>Tutorial</b>	-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
	<b><u>Mid-Semester Examination</u></b>	Theme: Write a note on the principle features underlying urbanism as a way of life	B. A. (H) DSE	Urban Sociology
NOVEMBER	<b>Theory</b>	-Caste, Class, Gender and the Politics of Urban Space	B. A. (H) DSE	Urban Sociology
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	-Looking at how metropolitan areas are affected by differences of class, caste and gender	B. A. (H) DSE	Urban Sociology



**SEMESTER WISE TEACHING PLAN (2018-19)**

**ODD SEMESTER**

**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: DR. URMI BHATTACHARYYA**

**Department: SOCIOLOGY**

**Semester: I**

**Course Details - B. A. (Hons.) – Generic Elective (*Indian Society: Images and Realities*)**

Month		Topic(s)	Course	Paper Code/Name
JULY	<b>Theory</b>	-Course Introduction: Indian Society, ideas of civilization, perspectives, modernity, social institutions	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Guiding students to interpret the theoretical views and historical experiences	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
AUGUST	<b>Theory</b>	-Indian Civilization, -Approaches, anthropological and historical -Colonialism, Modernity and modern civilization	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Critically looking at concepts of Brahmanical Ideology and Regional Identities -Approaches to the Study of Indian Civilization -Cultural and Historical geography -The Shaping of the Civilization: Views of the Past -Cultural and Structural History: Nineteenth and twentieth centuries  Guiding students on how to write the term assignment	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities

SEPTEMBER	<b>Theory</b>	<ul style="list-style-type: none"> <li>-Tracing the idea of the village from pre-colonial times to the present.</li> <li>-Town and Centres in the integration of Indian Civilization</li> <li>-Regions and their relation to the study of history and society</li> </ul>	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
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	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	-Critically reading essays on the Village in Focus -Networks and Centres in the Integration of Indian Civilization -Regions Subjective and Objective: their Relation to the Study of Modern Indian History and Society	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
	<b>Assignment</b>	Write an essay on the continuity and transformations as witnessed in any particular social institution in Indian society/history by reviewing a text (as discussed with the course teacher)	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
OCTOBER	<b>Theory</b>	Social Institutions: -Caste -Religion	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Discussion and writing on: Caste in India: -Caste and Cultivation, Debates, -Personhood, Rank -Popular Hinduism	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
	<b>Mid-Semester Examination</b>	Write a note on the Idea of the Indian Village	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
NOVEMBER	<b>Theory</b>	Social Institutions: Ethnicity -Family and Gender	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	-Basic Conflict between Religious Traditions -The Construction of Gender -Sylvia Vatuk's study of South Indian Muslims	B. A. (Hons.) Generic Elective	Indian Society: Images and Realities



**SEMESTER WISE TEACHING PLAN (2018-19)**

**ODD SEMESTER**

**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: DR. URMI BHATTACHARYYA**

**Department: SOCIOLOGY**

**Semester: III**

**Course Details - B. A. (Hons) - Skill Enhancement Course 01 (Reading, Writing and Reasoning in Sociology)**

<b>Month</b>		<b>Topics</b>	<b>Course</b>	<b>Paper Code/Name</b>
JULY	<b>Theory</b>	-Introduction: Academic Reading and Writing  -Weekly take-away assignment (01): Read two pages from a text and summarize in three paragraphs.	B. A. (Hons.) SEC 01	Reading, Writing and Reasoning for Sociology
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	NA	NA	NA
AUGUST	<b>Theory</b>	-On Sociological Reason -On Reading: reading at university, reading as student, developing skills, relationship with texts, thinking -On Writing: ways of writing, different perspectives, reading as part of writing, academic writing, organizing and putting together different kind of writing  -Weekly take-away assignments (02): Re-reading texts and summarizing.	B. A. (Hons.) SEC 01	Reading, Writing and Reasoning for Sociology
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	NA	NA	NA



SEPTEMBER	<b>Theory</b>	-On Critical Reasoning: Analyzing and Evaluating Reasoning, recognizing implications, exercising skills -On Academic Writing: Elements of writing, different stages and accuracy  -Weekly take-away assignments (03): Critical reviews of academic texts.	B. A. (Hons.) SEC 01	Reading, Writing and Reasoning for Sociology
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	NA	NA	NA
	<b><u>Assignment</u></b>	Personally supervised, peer-reviewed extended essay	B. A. (Hons.) SEC 01	Reading, Writing and Reasoning for Sociology
OCTOBER	<b>Theory</b>	-On academic writing (contd.): Dealing with secondary literature, professional writing, and editing. -On language, composition and style: Rules of usage, composition, and approach to style  -Weekly take-away assignments (03): Self-Reflective writings	B. A. (Hons.) SEC 01	Reading, Writing and Reasoning for Sociology
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	NA	NA	NA
	<b><u>Mid-Semester Examination</u></b>	Cumulative assessment of the Class File: With all the weekly take-away and in-class assignments.	B. A. (Hons.) SEC 01	Reading, Writing and Reasoning for Sociology
NOVEMBER	<b>Theory</b>	-Spirit of Reading and Writing  -Weekly take-away assignment (01): Peer-reviewing of the supervised extended essay assignment	B. A. (Hons.) SEC 01	Reading, Writing and Reasoning for Sociology
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	NA	NA	NA



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**ODD SEMESTER**  
**SRI VENKATESWARA COLLEGE**

Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: III (July-December, 2018) BA(Hons)

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

SEPTEMBER	<b>Theory</b>	Production of Masculinity and Femininity- Halberstam Judith, Alter Joseph, Patricia Uberoi; Class, Caste- WalbySylvia	Core Course-07	Sociology of Gender
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	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Masculinity and Femininity	Core Course-07	Sociology of Gender
	<b><u>Field Work</u></b>	Gender Relations	Core Course-07	Sociology of Gender
OCTOBER	<b>Theory</b>	Caste, Class- Leela Dube, Sharmila Rege; Family, Work- Whitehead, Rajni Palriwal; Power and Subordination- Candace	Core Course-07	Sociology of Gender
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Caste and Class; Family	Core Course-07	Sociology of Gender
	<b><u>Mid-Semester Examination</u></b>	Topics: caste, family	Core Course-07	Sociology of Gender
NOVEMBER	<b>Theory</b>	Resistance and Movements- Kandiyoti Deniz, Hill-Collins Patricia, Radha Kumar	Core Course-07	Sociology of Gender
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Feminist Movements	Core Course-07	Sociology of Gender



**SEMESTER WISE TEACHING PLAN (2018-19)**

**ODD SEMESTER**

**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Antasa Vairagya**

**Department: Sociology**

**Semester: III (July-December, 2018) BA (Hons)**

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

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

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



**SEMESTER WISE TEACHING PLAN (2018-19)**

**ODD SEMESTER**

**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Antasa Vairagya**

**Department: Sociology**

**Semester: III (July-December, 2018) BA (Hons)**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction	Generic Elective 01	Indian Society: Images and Realities
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	NA	NA	NA
AUGUST	<b>Theory</b>	Gender Construction in Hindu Society,; South Asian Household	Generic Elective 01	Indian Society: Images and Realities
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Gender seen as a social construction	Generic Elective 01	Indian Society: Images and Realities



SEPTEMBER	<b>Theory</b>	Social Change among South Indian Muslims; State and Politics in India	Generic Elective 01	Indian Society: Images and Realities
	<b>Practical</b>	NA	NA	NA
NOVEMBER	<b>Theory</b>	Recasting Women	Generic Elective 01	Indian Society: Images and Realities
	<b>Tutorial</b>	Household and Politics	Generic Elective 01	Indian Society: Images and Realities
	<b>Practical</b>		NA	NA
	<b><u>Assignment</u></b>	On Gender and Household	Generic Elective 01	Indian Society: Images and Realities
	<b>Tutorial</b>	Colonial History	Generic Elective 01	Indian Society: Images and Realities
OCTOBER	<b>Theory</b>	Understanding Caste	Generic Elective 01	Indian Society: Images and Realities
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Forms of Solidarity	Generic Elective 01	Indian Society: Images and Realities



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**ODD SEMESTER**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Nupurnima Yadav**

**Department: Sociology**

**Semester: 5<sup>th</sup> B.A (Hons) (July-December, 2018)**

Month		Topic(s)	Course	Paper Code/Name
JULY	<b>Theory</b>	Introducing the concept of 1. Socialresearch 2. Introduction to methodologies & techniques	Core Course-12	Sociological Research Methods – I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Sociological Imagination	Core Course-12	Sociological Research Methods – I
AUGUST	<b>Theory</b>	Objectivity and Reflexivity	Core Course-12	Sociological Research Methods – I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Durkheimian and Weberian understanding of social research	Core Course-12	Sociological Research Methods – I
SEPTEMBER	<b>Theory</b>	Comparative Method and Feminist Method of doing sociological research	Core Course-12	Sociological Research Methods – I

	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Understanding the difference between approaches and methods.	Core Course-12	Sociological Research Methods – I
	<b><u>Assignment (10Marks)</u></b>	What is the relevance of Objectivity in contemporary social research.	Core Course-12	Sociological Research Methods – I
OCTOBER	<b>Theory</b>	Conceptual understanding and difference between Theory and Research	Core Course-12	Sociological Research Methods – I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Modes of enquiry	Core Course-12	Sociological Research Methods – I
	<b><u>Mid-Semester Examination (10Marks)</u></b>	Topics: Reflexivity, Objectivity, Comparative and Feminist methods	Core Course-12	Sociological Research Methods – I
NOVEMBER	<b>Theory</b>	Determining and analyzing quantitative and qualitative research methods and techniques.	Core Course-12	Sociological Research Methods – I
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>		Core Course-12	Sociological Research Methods – I



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**ODD SEMESTER**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Nupurnima Yadav**

**Department: Sociology**

**Semester: 5<sup>th</sup> B.A Program (July-December, 2018)**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	The political history of Independent India. State and democratic problem	Generic elective 01	Polity and Society in India
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Democracy and politics in South Asia	Generic elective 01	Polity and Society in India
AUGUST	<b>Theory</b>	Political Economy Para political system	Generic elective 01	Polity and Society in India
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	Social character of Indian State	Generic elective 01	Polity and Society in India

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

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



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**ODD SEMESTER**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Nupurnima Yadav**

**Department: Sociology**

**Semester: 5<sup>th</sup> B.A Prog. (July-December, 2018)**

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

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



NOVEMBER	<b>Theory</b>	Qualitative research and positioning women researchers in visual anthropology	SEC 03	Society through the visual
	<b>Practical</b>	NA	NA	NA
	<b>Tutorial</b>	NA	NA	NA



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**ODD SEMESTER**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty:** Pratichi Majumdar  
**Department:** Sociology  
**Semester:** B.A.Prog. First Semester (July-November 2018)

Month		Topics	Course	Paper Code/Name
AUGUST	<b>Theory:</b>	Nature and Scope of Sociology: What is sociology? Definition and subject matter; sociological imagination; History of sociology; classical (Positivism, Durkheim, Marx, Weber) and contemporary perspectives (functionalism, conflict perspective, symbolic interactionism)	<b>B.A. (Prog.) Sociology</b>	<b>Introduction to Sociology (Core Course 01)</b>
	<b>Practicals:</b>	-NA-		
	<b>Tutorials:</b>	Discussions on Classical sociological theories – Marx, Weber, Durkheim; approaches, debates, criticism, and their influence on sociology as a discipline.		
SEPTEMBER	<b>Theory:</b>	Relationship of Sociology with other Social Sciences: a) Anthropology b) Psychology c) History  Sociological Concepts – a) Status and Role	<b>B.A. (Prog.) Sociology</b>	<b>Introduction to Sociology (Core Course 01)</b>
	<b>Practicals:</b>	-NA-		
	<b>Tutorials:</b>	Discussion on disciplinary boundaries between sociology and other disciplines.		
	<b>Assignment</b>	The relationship between sociology and social anthropology has not been an easy one. Discuss.		
OCTOBER	<b>Theory:</b>	Sociological Concepts – b) Groups c) Culture d) Socialisation	<b>B.A. (Prog.) Sociology</b>	<b>Introduction to Sociology (Core Course 01)</b>
	<b>Practicals:</b>	-NA-		
	<b>Tutorials:</b>	Discussion and class presentation on various concepts in sociology, examples from everyday life		
	<b>Mid-Term Test</b>	<b>Topics-</b> 1. Nature, Scope and history of Sociology; 2. Classical Thinkers – Marx, Weber, Durkheim; 3. Contemporary Perspectives; 4. Relationship of Sociology and other disciplines; 5. Status and Roles; 6. Groups		
NOVEMBER	<b>Theory:</b>	Sociological Concepts – e) Structure and Function in Society		

		f) Social Control and Change	<b>B.A. (Prog.) Sociology</b>	<b>Introduction to Sociology (Core Course 01)</b>
	<b>Practicals:</b>	-NA-		
	<b>Tutorials:</b>	Discussion on structural- functionalism and its criticisms; conflict perspective.		



SEMESTER WISE TEACHING PLAN (2018-19)

ODD SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Pratichi Majumdar

Department: Sociology

Semester: Fifth Semester (July-November 2018)

Month		Topics	Course	Paper Code/Name
AUGUST	<b>Theory:</b>	Envisioning Environmental Sociology: Definitions; History, Nature and Scope of the subject; Contemporary theoretical Approaches; Realist and Constructionist approaches to Environmental Sociology; Realist-Constructionist Debate	<b>B.A. (Hons.) Sociology</b>	<b>Environmental Sociology (DSE03)</b>
	<b>Practicals:</b>	-NA-		
	<b>Tutorials:</b>	Discussion on Realism-Constructionism: Approaches, Criticisms and Contemporary Perspectives		
SEPTEMBER	<b>Theory:</b>	Approaches to Environmental Sociology: a) Treadmill of Production Theory b) Ecological Modernism Theory c) Risk Society Approach	<b>B.A. (Hons.) Sociology</b>	<b>Environmental Sociology (DSE03)</b>
	<b>Practicals:</b>	-NA-		
	<b>Tutorials:</b>	Critical analysis on the differences and debates between the Treadmill of Production Theory and Ecological Modernism Theory.		
	<b>Assignment</b>	Project and Class Presentation on a contemporary Environmental Movement in India.		
OCTOBER	<b>Theory:</b>	Approaches to Environmental Sociology: d) Eco-feminism and Feminist Environmentalism e) Political Ecology Approach	<b>B.A. (Hons.) Sociology</b>	<b>Environmental Sociology (DSE03)</b>
	<b>Practicals:</b>	-NA-		
	<b>Tutorials:</b>	Discussion on Environmental problems and social inequalities such as Gender, class, caste, race etc.		
	<b>Mid-Term Test</b>	<b>Topics-</b> 1. What is Environmental Sociology; 2. Realist-Constructionist Debate; 3. Treadmill of production Approach; 4. Ecological Modernism Approach; 5. Risk		

		Society Approach.		
NOVEMBER	<b>Theory:</b>	Environmental Movements in India: a) Forest Based Movements–Chipko b) Water-Based Movements –Narmada c) Land Based Movements – Anti-mining andSeed	<b>B.A. (Hons.) Sociology</b>	<b>Environmental Sociology (DSE03)</b>
	<b>Practicals:</b>	-NA-		
	<b>Tutorials:</b>	Discussion and Analysis on documentaries viewed in class on environmental movements and their place in contemporary society.		



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr M PADMA SURESH**

**Department: ECONOMICS**

**Semester : III / 2018-19**

MONTH		TOPICS	COURSE	PAPER CODE/NAME
JULY	<b>Theory</b>	Nature of research –Ch 1,2 Ranjit Kumar(RK)	BA(Hons) Economics	12273302-SEC Research Methodology
AUGUST	<b>Theory</b>	Formulating the research topic, review of literature, Approaches to research and research strategy-Ch 4,3, 5,6,7,8,13 of RK Discussion on ideas for research project topics.		
SEPTEMBER	<b>Theory</b>	Research Ethics, Using data-primary and secondary data, Sample selection: Ch 14, 9,10,11,12 of RK and Cochran-Ch1, Ch5, Ch 8 (1.1-1.6,5.1,8.1) Conduct of practice internal test on Ch 1-8 of RK. Submission of research proposal		
OCTOBER	<b>Theory</b>	Analyzing data, Writing Project Report-Ch 15,16.17 of RK		
NOVEMBER	<b>Theory</b>	Conduct of second practice internal test covering Ch 9- 17. Submission, presentation and evaluation of research projects.		



Name of the Faculty: Dr. M PADMA SURESH

Department: ECONOMICS

Semester : V /2018-19

MONTH		TOPICS	COURSE	PAPER CODE/NAME
JULY	<b>Theory</b>	Matrix approach to k-variable regression model	BA(Hons) Economics	12277502-DSE Applied Econometrics
	<b>Tutorials</b>	Exercises from Basic Econometrics on matrix approach, 5 <sup>th</sup> International ed.		
AUGUST	<b>Theory</b>	Matrix approach, Stages in empirical econometric research, Regression Diagnostics- Multicollinearity, Heteroscedasticity, Autocorrelation. Functional forms and Dummy variables. Use of GRETL in econometrics by using Econometrics By Example(EBE)		
	<b>Tutorials</b>	Review and revision of essentials of econometrics using EBE, question papers-problem solving		
SEPTEMBER	<b>Theory</b>	Model specification- Ramsey RESET Test, LM Test, DW test. Measurement errors, AIC, SIC, Outliers, Leverage etc. Non-normal errors. GRETL exercises from EBE for specification and diagnostics		
	<b>Tutorials</b>	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 of Project topic		

		and submission of proposals		
OCTOBER	<b>Theory</b>	Advanced topics in regression analysis- Dynamic econometric models, Panel data and Instrumental Variable estimation, GRETL exercises using EBE		
	<b>Tutorials</b>	Exercises from Basic econometrics, Gujarati and Wooldridge. Question papers-problem solving		
NOVEMBER	<b>Theory</b>	Simultaneous equation models		
	<b>Tutorials</b>	Conduct of practice internal test covering Advanced topics in regression analysis. Submission and evaluation of projects.		





**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: KRISHNAKUMAR S (2018-19)**

**Department: ECONOMICS**

**Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	What is macroeconomics? Macroeconomic Issues in an economy	BA Programme Sem III	Principles of Macroeconomics-I
	<b>Practicals</b>			
	<b>Tutorials</b>			
AUGUST	<b>Theory:</b>	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 multiplier	BA Programme Sem III	Principles of Macroeconomics-I
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Numericals on the basis of the simple Keynesian model	BA Programme Sem III	Principles of Macroeconomics-I
SEPTEMBER	<b>Theory:</b>	Fiscal policy; impact of changes in government expenditure and taxes; net exports and equilibrium national income.	BA Programme Sem III	Principles of Macroeconomics-I
	<b>Practicals:</b>			

	<b>Tutorials:</b>	Discussion of Keynes and Great Depression, recession in the current world economy . Numericals on the three sector model	BA Programme Sem III	Principles of Macroeconomics-I
	<b><u>Assignment :</u></b>	Detailed assignment on Fiscal Policy and Keynesian model. Balanced budget multiplier.(TEST)	BA Programme Sem III	Principles of Macroeconomics-I
OCTOBER	<b>Theory:</b>	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
	<b>Practicals:</b>			
	<b>Tutorials:</b>	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
	<b><u>Test</u></b>	Test on the basis of the course in two sets		
NOVEMBER	<b>Theory:</b>	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
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Revision and discussion of the previous year papers	BA Programme Sem III	Principles of Macroeconomics-I



Name of the Faculty: KRISHNAKUMAR S

Department: ECONOMICS

Semester : I/III/V

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Ricardian model of comparative advantage. H-O-S factor endowments model, specific factors	BA(Hons) Economics Sem V	International Economics
	<b>Practicals</b>			
	<b>Tutorials</b>	Problems on Ricardian model and modeling with specific factor model		
AUGUST	<b>Theory:</b>	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.	BA(Hons) Economics Sem V	International Economics
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Problem set on welfare calculation of tariffs and subsidies.		
SEPTEMBER	<b>Theory:</b>	Brander Spencer strategic trade policy. Optimum tariff. Trade creation and trade diversion. WTO, RTAs, FTAs.	BA(Hons) Economics Sem V	International Economics

		Introduction to Open Economy Macroeconomics. Uncovered and covered interest parity theories. Nominal and real exchange rates. DD and AA curves		
	<b>Tutorials:</b>	Trade creation, trade diversion. Problems of instruments of trade policy		
	<b>Assignment :</b>	Students to assess the external sector performance of economies on the basis of BOPS, DOTS, IFS and WEO Database of IMF		
OCTOBER	<b>Theory:</b>	Permanent and temporary fiscal expansion. Permanent and temporary monetary expansion under the DD-AA framework. Exchange rate overshooting. Marshall Lerner conditions. J Curve. Mundell-Fleming model.	BA(Hons) Economics Sem V	International Economics
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Small macro models on the basis of DD AA framework.		
	<b>Test</b>	Test on the basis of four chapters : two from each section		
NOVEMBER	<b>Theory:</b>	Financial Globalization. Regulation of banking. Revision	BA(Hons) Economics Sem V	International Economics
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Revision of the trade theory numerical from back of text.		



Name of the Faculty: N.KALITHASAMMAL

Department: Economics

SEMESTER III

Month		Topics	Course	Paper Name/ Code
JULY	<b>Theory</b>	.Population and Demographic trends are going to teach along with issues of school enrolment in India.	<b>B.A (hons) II yr.</b>	INDIAN ECONOMY PART I
	<b>Tutorials</b>	The basic educational trend problems of migrated people in India is going to discuss		
AUGUST	<b>Theory:</b>	International comparison is going to take along with all progress.		
	<b>Tutorials:</b>	Inequwality and employment issues are going to take in an inclusive manner to different group of students,.		
SEPTEMBER	<b>Theory:</b>	Trends and policies of the economy and unemployment is going to explain, which is one of the major challenges of economic growth.		
	<b>Tutorials:</b>	, Inequwality and concentration of income is going to explain with some inclusive work.outs.		
	<b><u>Assignment</u></b>	<b>Two tests are</b> going to conduct according to the given schedule.		

OCTOBER, NOVEMBER	<b>Theory:</b>	Institution policy frame work is going to take.		
	<b>Tutorials:</b>	Major features and challenges are going to explain eith some basic work out.		



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: N.KALITHASAMMAL**

Month		Topics	Course	Paper Name/
JULY	<b>Theory</b>	.Population and HDI have taken along with issues of school enrolment in India.	<b>B.A (ECO) III yr.</b>	<b>INDIAN ECONOMY PART I</b>
	<b>Tutorials</b>	The basic educational trend and development and the problems of migrated people in India discussed elaborately.		
AUGUST	<b>Theory:</b>	International comparison is going to take along with all progress and flip sides of both countries		
	<b>Tutorials:</b>	Two different groups of students going to represent two different countries to strength their view points.		
SEPTEMBER	<b>Theory:</b>	Trends and policies of the economy and unemployment is going to explain, which is one of the major challenges of economic growth.		
	<b>Tutorials:</b>	, Inequwality and concentration of income is going to explain with some inclusive work.outs.		
	<b><u>Assignment</u></b>	<b>Two tests are</b> going to conduct according to the given schedule.		
OCTOBER,	<b>Theory:</b>	Institution policy frame work is going to take, structural changes are going to explain.		

NOVEMBER	<b>Tutorials:</b>	Major features and savings and investment related questions going to work out.		
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**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty:** Meenakshi Sharma

**Department:** ECONOMICS

**Semester :** III, B.A. (H) Economics

Month		Topics	Course	Paper Code/Name
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JULY	<b>Theory</b>	Budget constraint-Taxes, subsidies and Rationing and Preferences: Assumptions about preferences, MRS, ICS	B.A (H), Economics, Semester III	Intermediate microeconomics I
	<b>Tutorials</b>	Numericals from Varian Workbook and past years' questions	B.A (H), Economics, Semester III	Intermediate microeconomics I
AUGUST	<b>Theory:</b>	Utility; demand; Slutsky equation Hicksian demand : Cardinal, Ordinal, Quasilinear preferences.	B.A (H), Economics, Semester III	Intermediate microeconomics I
	<b>Tutorials:</b>	Numericals from Varian Workbook and past years' questions, Appendix of Varian	B.A (H), Economics, Semester III	Intermediate microeconomics I
SEPTEMBER	<b>Theory:</b>	Revealed preference. Buying and selling; choice under risk and intertemporal choice;	B.A (H), Economics, Semester III	Intermediate microeconomics I
	<b>Tutorials:</b>	Numericals from Varian Workbook and past years' questions, questions from B. Douglas Bernheim and M. Whinston (2009): Chapter 11.	B.A (H), Economics, Semester III	Intermediate microeconomics I
	<b><u>Test 1 :</u></b>	Utility, preferences, budget constraint, choice, demand, Slutsky equation	B.A (H), Economics, Semester III	Intermediate microeconomics I
OCTOBER	<b>Theory:</b>	Technology, isoquants, production with one and more variable inputs,	B.A (H), Economics, Semester III	Intermediate microeconomics I
	<b><u>Test 2:</u></b>	Buying and selling; choice under risk and intertemporal choice;	B.A (H), Economics, Semester III	Intermediate microeconomics I
	<b>Tutorials:</b>	Back questions from C. Snyder and W. Nicholson (2010): Fundamentals of Microeconomics	B.A (H), Economics, Semester III	Intermediate microeconomics I

NOVEMBER	<b>Theory:</b>	Cost : short run and long run costs, cost curves in the short and long run; review of perfect competition.	B.A (H), Economics, Semester III	Intermediate microeconomics I
	<b>Tutorials:</b>	Back questions from C. Snyder and W. Nicholson (2010): Fundamentals of Microeconomics	B.A (H), Economics, Semester III	Intermediate microeconomics I

**Semester: I, B.A. Programme**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Scarcity and choice: concepts of scarcity, choice and opportunity cost; production possibility frontier; economic systems.	B.A (Prog), Semester I	Principles of Microeconomics I
	<b>Tutorials</b>	Problem of scarcity and choice : Numericals from Case n Fair n past years' questions	B.A (Prog), Semester I	Principles of Microeconomics I
AUGUST	<b>Theory:</b>	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.	B.A (Prog), Semester I	Principles of Microeconomics I
	<b>Tutorials:</b>	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	B.A (Prog), Semester I	Principles of Microeconomics I
SEPTEMBER	<b>Theory:</b>	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.	B.A (Prog), Semester I	Principles of Microeconomics I

	<b>Tutorials:</b>	Numericals from Case & Fair; and Appendix of Chapter 6	B.A (Prog), Semester I	Principles of Microeconomics I
	<b><u>Test 1 :</u></b>	Demand and supply and consumer theory	B.A (Prog), Semester I	
OCTOBER	<b>Theory:</b>	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.	B.A (Prog), Semester I	Principles of Microeconomics I
	<b>Tutorials:</b>	Numericals from Case & Fair; past years' question papers, and Appendix of Chapter 7.	B.A (Prog), Semester I	Principles of Microeconomics I
	<b><u>Test 2:</u></b>	Production and costs.	B.A (Prog), Semester I	
NOVEMBER	<b>Theory:</b>	Perfect competition and welfare: 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.A (Prog), Semester I	Principles of Microeconomics I
	<b>Tutorials:</b>	Perfect competition and welfare	B.A (Prog), Semester I	Principles of Microeconomics I



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Ankit Joshi**

**Department: Economics**

**Semester: III (2018- 19)**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	TOPIC 1: AGGREGATE DEMAND & AGGREGATE SUPPLY CURVE Dornbush: Chapter 5	B.A. (Hons.) Economics	227302 Intermediate Macroeconomics-I
	<b>Tutorials</b>	Revision of Basic Concepts		

AUGUST	<b>Theory:</b>	<p>TOPIC 1: AGGREGATE DEMAND &amp; AGGREGATE SUPPLY CURVE</p> <p>Dornbush: Chapter 7</p> <p>O. Blanchard: Pg 292- 294, Pg 300- 306, Ch- 6 &amp; 7</p>	B.A. (Hons.) Economics	227302 Intermediate Macroeconomics-I
	<b>Tutorials:</b>	<p>Discussion on the current Macroeconomic Issues and try to link the macroeconomic models with reality</p> <p>Practice of Back Questions of Unit -1</p>		
SEPTEMBER	<b>Theory:</b>	<p>TOPIC 2: INFLATION, UNEMPLOYMENT &amp; EXPECTATIONS</p> <p>O. Blachard: Ch- 8 &amp; 9</p> <p>CLF, Attfied &amp; NW Duck: Pg 1 – 28</p> <p>Steven Sheffin: Ch- 2; Pg 25- 40</p>	B.A. (Hons.) Economics	227302 Intermediate Macroeconomics-I
	<b>Tutorials:</b>	Practice of additional problems		
	<b><u>Assignment :</u></b>	TEST 1: Unit- 1		
OCTOBER	<b>Theory:</b>	<p>TOPIC 3: OPEN ECONOMY MODELS</p> <p>Dornbush &amp; Fischer: Ch 6 &amp; 20</p>	B.A. (Hons.) Economics	227302 Intermediate Macroeconomics-I
	<b>Tutorials:</b>	<p>Discussion of some additional Open Economy Models</p> <p>Discussion of Back Questions</p>		

	<b>Test</b>	TEST 2: Unit – 2 & Unit -3 (Dornbush, Ch- 6)		
NOVEMBER	<b>Theory:</b>	TOPIC 3: OPEN ECONOMY MODELS Salvatore: Ch 15 & 20.6	B.A. (Hons.) Economics	227302 Intermediate Macroeconomics- I
	<b>Tutorials:</b>	Discussion of Past Years and additional questions		



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Ankit Joshi**

**Department: Economics**

**Semester: I (2018- 19)**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	SYDSAETER & HAMMOND Ch- 1: Introduction	B.A. (Hons.) Economics	227103 Mathematical Methods for Economics - I
	<b>Tutorials</b>	Providing the basic motivation of the course and discussion on the use of mathematics in economics		
AUGUST	<b>Theory:</b>	SYDSAETER & HAMMOND  Ch- 2: Functions  Ch- 3: Polynomials, Powers & Exponentials	B.A. (Hons.) Economics	227103 Mathematical Methods for Economics - I

	<b>Tutorials:</b>	Teaching students how to plot different curves and to analyse the same  Discussion on Book Exercises for Ch- 1 to 4		
SEPTEMBER	<b>Theory:</b>	SYDSAETER & HAMMOND  Ch- 5: More on Differentiation  Ch- 6: Limits, Continuity & Series  Ch- 7: Implications of Continuity	B.A. (Hons.) Economics	227103 Mathematical Methods for Economics - I



	<b>Tutorials:</b>	Assignment and additional questions		
	<b><u>Assignment :</u></b>	TEST 1: Ch- 1 to 4		
OCTOBER	<b>Theory:</b>	SYDSAETER & HAMMOND  Ch- 8: Exponential & Logarithmic Functions  Ch- 9: Optimization	B.A. (Hons.) Economics	227103 Mathematical Methods for Economics - I
	<b>Tutorials:</b>	Discussion on Past Years, Book Exercises and assignment		
	<b><u>Test</u></b>	TEST 2: Ch – 5 to 8		
NOVEMBER	<b>Theory:</b>	SYDSAETER & HAMMOND  Ch- 10: Integration (10.1 – 10.3)  Ch- 20: Difference Equations (20.1)	B.A. (Hons.) Economics	227103 Mathematical Methods for Economics - I
	<b>Tutorials:</b>	Solving Book Exercises and additional questions		



**SEMESTER WISE TEACHING  
PLAN (2018-19)  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Jitesh Rana**

**Department: Economics**

**Semester III, BA.(H) Economics**

Month		Topics	Course	Paper Code/Name
AUGUST	<b>Theory</b>	Devore Ch1 and 2.	B.A. Hons Economics	12271303: Statistical Methods for Economics
	<b>Tutorials</b>	Student doubts and Past year questions from the topics covered.		
SEPTEMBER	<b>Theory:</b>	Devore Ch3, 4.	B.A. Hons Economics	12271303: Statistical Methods for Economics
	<b>Tutorials:</b>	Student doubts and Past year questions from the topics covered.		
	<b><u>Test 1:</u></b>	All topics of first 3 units.		
OCTOBER	<b>Theory:</b>	Devore Ch5 (excluding pp 218-221).	B.A. Hons Economics	12271303: Statistical Methods for Economics
	<b>Tutorials:</b>	Student doubts and Past year questions from the topics covered.		

	<b><u>Test 2:</u></b>	All topics of unit 4 and 5.		
November	<b>Theory:</b>	Devore Ch 6 and 7.	B.A. Hons Economics	12271303: Statistical Methods for Economics
	<b>Tutorials:</b>	Student doubts and Past year questions from the topics covered. Preparation for final exams.		

**Semester I Generic Elective**

Month		Topics	Course	Paper Code/Name
AUGUST	<b>Theory</b>	Mankiw: Ch1,2 and 4	Generic Elective	227101: Introductory Microeconomics
	<b>Tutorials</b>	Student doubts and Past year questions from the topics covered.		
SEPTEMBER	<b>Theory:</b>	Mankiw: Ch5, 6, 7 and 8.	Generic Elective	227101: Introductory Microeconomics
	<b>Tutorials:</b>	Student doubts and Past year questions from the topics covered.		
	<b><u>Test 1:</u></b>	All topics of first 2 units.		
OCTOBER	<b>Theory:</b>	Mankiw: Ch 13, 14, and 21.	Generic Elective	227101: Introductory Microeconomics
	<b>Tutorials:</b>	Student doubts and Past year questions from the topics covered.		
	<b><u>Test 2:</u></b>	All topics in unit 3 and 4.		

NOVEMBER	<b>Theory:</b>	Mankiw: Ch15 and 18.	Generic Elective	227101: Introductory Microeconomics
	<b>Tutorials:</b>	Student doubts and Past year questions from the topics covered. Preparation for final exams.		



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Amit Kumar Jha**

**Department: ECONOMICS**

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

Month		Topics	Course	Paper Code/Name
AUGUST	<b>Theory:</b>	Fiscal Function: an Overview(Hendricks & Myles, Chapter 5) 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 & Myles, Chapter 8)	<b>B.A. (H) Economics</b>	Public Economics
	<b>Tutorials:</b>	Past Year question, Students doubts		
SEPTEMBER	<b>Theory:</b>	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 18, Hendricks & Myles, Chapter 15)	<b>B.A. (H) Economics</b>	Public Economics
	<b>Tutorials:</b>	Past Year question, Students doubts		
	<b>Test 1 :</b>	First two units from reading		

OCTOBER	<b>Theory:</b>	Taxation: its economic effects, dead weight loss and distortion, efficiency and equity considerations, tax incidence, optimal taxation (Hendricks & Myles, Chapter 16,17)	<b>B.A. (H) Economics</b>	Public Economics
	<b>Tutorials:</b>	Past Year question, Students doubts		
NOVEMBER	<b>Theory:</b>	Indian Public Finance: tax system, buget, deficit, public debt, fiscal federalism in India	<b>B.A. (H) Economics</b>	Public Economics
	<b>Tutorials/ Presentation</b>	Past Year question, Students doubts		

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

Month		Topics	Course	Paper Code/Name
AUGUST	<b>Theory:</b>	Scarcity and choice: concepts of scarcity, choice and opportunity cost; production possibility frontier; economic systems. Mankiw ch 1, 2 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. Mankiw ch 4,5,6,7,8,	BA(HONS)	Introductory Microeconomics (GE)
	<b>Tutorials</b>	Last year papers, student doubts, Numericals		
SEPTEMBER	<b>Theory:</b>	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. Mankiw ch 21	BA(HONS)	Introductory Microeconomics (GE)
	<b>Tutorials</b>	Last year papers, student doubts, Numericals		
	<b>Test 1</b>	Above topic		



OCTOBER	<b>Theory:</b>	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. Mankiw ch 13, 14	BA(HONS)	Introductory Microeconomics (GE)
	<b>Tutorials</b>	Last year papers, student doubts, Numericals		
NOVEMBER	<b>Theory:</b>	Markets Mankiw ch 15	BA(HONS)	Introductory Microeconomics (GE)
	<b>Tutorials</b>	Last year papers, student doubts, Numericals		
	<b>Test2</b>	Above topics		



**SEMESTER WISE TEACHING PLAN (2018-2019)**  
**SRI VENKATESWARA COLLEGE**

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

**Department: Sanskrit**

**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	SECTION 'A': INTRODUCTION TO SANSKRIT POETICS	B.A. 2 <sup>ND</sup> YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
		SECTION 'A': SANGHYA PRAKARAN	B.A. 3 <sup>RD</sup> YEAR (H)	C-12 SANSKRIT GRAMMAR
	<b>Tutorials</b>	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
AUGUST	<b>Theory:</b>	SECTION 'A': HITOPADESA UNIT I	B.A. 1 <sup>ST</sup> YEAR (P)	MIL-A1 SANSKRIT LITERATURE
		SECTION 'B': FORMS OF KAVYA LITERATURE	B.A. 2 <sup>ND</sup> YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
		SECTION 'A': UNIT I: ACH SANDHI	B.A. 3 <sup>RD</sup> YEAR (H)	C-12 SANSKRIT GRAMMAR

	<b>Tutorials:</b>	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
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	<b><u>Assignment :</u></b>	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS.		
SEPTEMBER	<b>Theory:</b>	SECTION 'A': HITOPADESA UNIT I	B.A. 1 <sup>ST</sup> YEAR (P)	MIL-A1 SANSKRIT LITERATURE
		SECTION 'C': SABDA SAKTI (POWER OF WORD) AND RASA-SUTRA	B.A. 2 <sup>ND</sup> YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
		SECTION 'A': UNIT II: HAL AND VISARG SANDHI	B.A. 3 <sup>RD</sup> YEAR (H)	C-12 SANSKRIT GRAMMAR
	<b>Tutorials:</b>	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	<b><u>Test</u></b>	TESTS WILL BE TAKEN TIMELY.		
OCTOBER	<b>Theory:</b>	SECTION 'A': HITOPADESA UNIT II	B.A. 1 <sup>ST</sup> YEAR (P)	MIL-A1 SANSKRIT LITERATURE
		SECTION 'D': ALANKARA (FIGURES OF SPEECH) AND CHANDASA (METRE)	B.A. 2 <sup>ND</sup> YEAR (H)	C-6 POETICS AND LITERARY CRITICISM
		SECTION 'B': UNIT I: I:AVAYIBHAV AND TATPURUS SAMAS UNIT II: BAHUVRIHI AND DVADAV SAMAS	B.A. 3 <sup>RD</sup> YEAR (H)	C-12 SANSKRIT GRAMMAR

	<b>Tutorials:</b>	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
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NOVEMBER	<b>Theory:</b>	SECTION 'A': HITOPADESA UNIT II	B.A. 1 <sup>ST</sup> YEAR (P)	MIL-A1 SANSKRIT LITERATURE
		SECTION 'C': KRIDANT PRATYA	B.A. 3 <sup>RD</sup> YEAR (H)	C-12 SANSKRIT GRAMMAR



	<b>Tutorials:</b>	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
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**SEMESTER WISE TEACHING  
PLAN (2018-2019)  
SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Dr. Sunita Atal**

**Department: Sanskrit**

**Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	<b>Theory</b>	SECTION-A UNIT-1 SCIENCE OF INQUIRY	B.A.(H)3 <sup>rd</sup> year	INDIAN SYSTEM OF LOGIC AND DEBATE
		SECTION-A BRIEF INTRODUCTION AND ELEMENTS OF CHHANDAHSASTRA	B.A (H)2 <sup>nd</sup> year AECC	SANSKRIT METER AND MUSIC
FEBRUARY	<b>Theory:</b>	SECTION-A UNIT-2 METHOD OF DEBATE TYPES OF DEBATE	B.A.(H)3 <sup>rd</sup> year	INDIAN SYSTEM OF LOGIC AND DEBATE
		SECTION-C ANALYSIS OF SELECTED VEDIC METERS AND THEIR MUSICAL RENDERING	B.A (H)2 <sup>nd</sup> year AECC	SANSKRIT METER AND MUSIC
	<b>Tutorials:</b>	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

	<b><u>Assignment :</u></b>	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS		
MARCH	<b>Theory:</b>	SECTION-C UNIT-1 THEORY OF DEBATE	B.A.(H)3 <sup>rd</sup> year	INDIAN SYSTEM OF LOGIC AND DEBATE
		SECTION-D ANALYSIS OF SELECTED CLASSICAL METERS AND THEIR MUSICAL	B.A (H)2 <sup>nd</sup> year AEEC	SANSKRIT METER AND MUSIC
	<b>Tutorials:</b>	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	<b><u>Test</u></b>	TESTS WILL BE TAKEN TIMELY		
APRIL	<b>Theory:</b>	SECTION-C UNIT-2 THEORY OF DEBATE	B.A.(H)3 <sup>rd</sup> year	INDIAN SYSTEM OF LOGIC AND DEBATE
		SECTION-A BRIF INTRODUCTION TO CHHANDAHSASTRA	B.A (H)2 <sup>nd</sup> year AEEC	SANSKRIT METER AND MUSIC
	<b>Tutorials:</b>	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		







**SEMESTER WISE TEACHING PLAN (2018-2019)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty: Rajbir Kaur**

**Department: History**

**Semester: III**

Month		Topics	Course	Paper Code/ Name
JULY	<b>Theory:</b>	I. Studying Early Medieval India (a) Dynamic and divergent topographies (b) Sources: texts, inscriptions, coins	B.A. (Hons.) IIInd Year	Core - History of India-III (c.750-1200)
		I. Foundation, expansion and consolidation of the Sultanates of Delhi c.13 <sup>th</sup> to 15 <sup>th</sup> Century: Expansion; iqta system; administrative reforms; nobility	B.A. (Prog.) IIInd Year	Core - History of India, c. 1200-1700
		I. Defining heritage Art and architecture in India: an overview	B.A. (Prog.) IIInd Year	SEC – History and Tourism
	<b>Tutorials:</b>	Introducing the course and its themes.		
		Discussion		
AUGUST	<b>Theory:</b>	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.A. (Hons.) IIInd Year	Core - History of India-III (c.750-1200)

		<p>III. Foundation, expansion and consolidation of the Mughal state, c. 16<sup>th</sup> to 17<sup>th</sup> century: expansion and consolidation; Rajputs; Mansabdari and Jagirdari; imperial ideology: assessing Aurangzeb</p> <p>VII. Economy and integrated patterns of exchange: rural and urban linkages; commercial practices (usury and banking); maritime trade and non-agrarian production</p>	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
	<b>Tutorials:</b>	<p>II. Understanding built heritage Stupa architecture – Sanchi</p>	B.A. (Prog.) IInd Year	SEC – History and Tourism
		Discussion with the tutorial groups on the topics already taken up in the lectures		
		Interaction and Queries		
SEPTEMBER		<b>Theory:</b>	<p>III. Social and economic processes (a) Agricultural expansion; forest-dwellers, peasants and landlords (b) Expansion of <i>varna-jati</i> order and brahmanization (c) Forms of exchange; inter-regional and maritime trade (d) Processes of Urbanization</p>	B.A. (Hons.) IInd Year
	<b>Tutorials:</b>	<p>II. Regional political formations: Gujarat and Vijayanagara IV. 17<sup>th</sup> century transitions: Marathas; Sikhs</p>	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
		<p>Indo-Persian architecture, forts, palaces, mosques: Delhi</p>	B.A. (Prog.) IInd Year	SEC – History and Tourism
		Discussion with regard to specific readings given for study		
	<b><u>Assignment:</u></b>	Critically analyse the debates on Early Medieval Period with regard to the recent writings for the period.	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)

		<p>1. Describe the relation between the sultan and the nobility in Sultanate period.</p> <p>2. Critically analyze the evolution of Iqta system during the Delhi Sultanate.</p> <p>3. Describe the role played by Sufism in the history of Delhi Sultanate.</p> <p>4. Outline the evolution of Qutub Complex during the sultanate period.</p>	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
		Group Projects assigned to students	B.A. (Prog.) IInd Year	SEC – History and Tourism
OCTOBER	<b>Theory:</b>	<p>IV. Religious, literary and visual cultures</p> <p>(a) Bhakti: Alvars and Nayanars</p> <p>(b) Puranic Hinduism; Tantra; Buddhism and Jainism</p> <p>(c) Sanskrit and regional languages: interactions</p> <p>(d) Art and architecture: temples - regional styles</p>	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
		IV. Varieties of tourism Tourism management Tour packages	B.A. (Prog.) IInd Year	SEC – History and Tourism
		Discussion group for Hindi medium students		
		<b>Mid Term Test:</b> Internal Class Test held on 26 <sup>th</sup> October 2018	B.A. (Hons.) IInd Year	Core - History of India-III (c.750-1200)
		Internal Class Test held on 25 <sup>th</sup> October 2018	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
		<b>Theory:</b>	<p>II. Political Structures and Processes</p> <p>(b) Symbols of political power: Brahmins and temples; sacred spaces and conflicts; courtly c cultures</p> <p>(c) Issue of ‘Foreign and Indian’ : Arabs and Ghaznavids in the north-west, Cholas in Southeast Asia</p>	B.A. (Hons.) IInd Year
NOVEMBER				

<b>Tutorials:</b>	VI. Society, culture and religion : Bhakti – Kabir and Mira Bai; Sufism – Nizamuddin Auliya; Sufism in popular literature from the Deccan: <i>Chakki-Nama</i> and <i>Charkha-Nama</i>	B.A. (Prog.) IInd Year	Core - History of India, c. 1200-1700
	Project presentations	B.A. (Prog.) IInd Year	SEC – History and Tourism
	Revision of the courses		
	Discussion on previous year's question papers		



	<b>Practicals:</b>	N/A		
	<b>Tutorials:</b>	Discussions on changing perspectives from colonial to recent times, <i>Itihasa-Purana</i> tradition, questions-answers sessions	B.A. Honours I	Core Course I, Paper-History of India-I
		N/A	B.A. Honours II	SEC/Paper-Understanding Heritage
SEPTEMBER	<b>Theory:</b>	<p>UNIT III</p> <ol style="list-style-type: none"> <li>Food Production (Neolithic): Distribution of sites, regional variations and special reference to Mehrgarh</li> <li>Chalcolithic Cultures: regional distribution, features and variations</li> </ol> <p>UNIT III</p> <ol style="list-style-type: none"> <li>Challenges to Heritage: Antiquity Smuggling, conflicts and ‘development’</li> </ol>	B.A. Honours I	Core Course I, Paper-History of India-I
			B.A. Honours II	SEC/Paper-Understanding Heritage
	<b>Practicals:</b>	N/A		
	<b>Tutorials:</b>	Discussions on diffusion and internal dynamics of food production, regional variations of chalcolithic cultures, questions-answers sessions	B.A. Honours I	Core Course I, Paper-History of India-I
		N/A	B.A. Honours II	SEC/Paper-Understanding Heritage
	<b><u>Assignment</u></b>	<ol style="list-style-type: none"> <li>Critically evaluate the merit and demerits of archaeological and literary sources for the reconstruction of Indian history.</li> </ol>	B.A. Honours I	Core Course I, Paper-History of India-I
		<ol style="list-style-type: none"> <li>Field studies taken by different groups of students to visit heritage sites, fill questionnaires, take still and video pictures and data collation for topics decided</li> </ol>	B.A. Honours II	SEC/Paper-Understanding Heritage

OCTOBER	<b>Theory</b>	<p>UNIT IV Harappan Civilization: origins and decline, society, polity, agriculture, trade,, technology, religion, art</p> <p>UNIT IV 1. Heritage and Travel: Viewing Heritage Sites</p>	<p>B.A. Honours I</p> <p>B.A. Honours II</p>	<p>Core Course I, Paper- History of India-I</p> <p>SEC/Paper- Understanding Heritage</p>
	<b>Practicals:</b>	N/A		
	<b>Tutorials:</b>	<p>Discussion of evidences and problems in construction of various aspects of Harappan civilization. Questions-answers sessions</p> <p>N/A</p>	<p>B.A. Honours I</p> <p>B.A. Honours II</p>	<p>Core Course I, Paper- History of India-I</p> <p>SEC/Paper- Understanding Heritage</p>
	<b><u>Mid Term Test</u></b>	<p>Any Two Questions to be attempted</p> <ol style="list-style-type: none"> <li>1. With reference to literary and archaeological sources, critically analyze their relative merits and demerits for the reconstruction of early Indian history.</li> <li>2. Define Paleolithic. Write an essay covering the major aspects of this culture in India.</li> <li>3. In what ways do Mesolithic cultures mark an intermediate phase in Indian prehistory?</li> <li>4. Write short notes on any two of the following: <ol style="list-style-type: none"> <li>a) Advances in the field of archaeology</li> <li>b)Rock art</li> <li>c)Significance of Mehrgarh</li> <li>d)Ecological variations in Chalcolithic cultures</li> </ol> </li> </ol> <p><u>Group Projects Deliberations</u></p> <ol style="list-style-type: none"> <li>1. Food Culture of Old Delhi 2)Vocal Traditions in India 3)Vandalism and Graffiti 4)Sufism in Delhi</li> </ol>	<p>B.A. Honours I</p> <p>B.A. Honours II</p>	<p>Core Course I, Paper- History of India-I</p> <p>SEC/Paper- Understanding Heritage</p>

NOVEMBER	<b>Theory:</b>	<p>UNIT V</p> <ol style="list-style-type: none"> <li>1. Aryan Debate</li> <li>2. Vedic: Rig Vedic and later Vedic; geography, economy, polity, society, religion</li> <li>3. Megaliths: typology, distribution and features</li> </ol> <p>UNIT IV</p> <ol style="list-style-type: none"> <li>2. Heritage, Landscape and Travel; recent trends</li> </ol>	B.A. Honours I	Core Course I, Paper-History of India-I
	<b>Practicals:</b>	N/A		
	<b>Tutorials:</b>	<p>Discussion of two cultures: Harappan and Vedic. Problems of paucity of archaeological sources, megalithic economy. Questions-answers session</p> <p>Group Projects Submission and presentation of Individual Reports</p>	<p>B.A. Honours I</p> <p>B.A. Honours II</p>	<p>Core Course I, Paper-History of India-I</p> <p>SEC/Paper-Understanding Heritage</p>









**SEMESTER WISE TEACHING PLAN**

**SRI VENKATESWARA COLLEGE**

**July-November, 2018-2019**

**Name of the Faculty: Dr. NINGMUANCHING**

**Department: HISTORY**

**Semester: BA (H) I SEM and BA (P) V Sem**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	Introducing the Course	B.A. (Honours) HISTORY	12311104 Social Formations and Cultural Patterns of the Ancient World (NC) Admission from 2016
		1. Evolution of humankind and Paleolithic cultures (a) Environmental context of human evolution		
	<b>Tutorials</b>	I. Historicizing gender in history: Patriarchy; masculinity and femininity	B.A (Programme) GE	Gender in the Modern World
AUGUST	<b>Theory:</b>	(b) Biological Evolution of Hominins	B.A. (Honours) HISTORY	12311104 Social Formations and Cultural Patterns of the Ancient World (NC) Admission from 2016
		(c) Social and Cultural Adaptations: mobility and migration; development of lithic and other technologies; changes in the hunting gathering economy; social organisation; art and graves		
	<b>Tutorials</b>	II. Understanding the Mesolithic (a) Mesolithic as a stage in prehistory	B.A. (Honours) HISTORY	12311104 Social Formations and Cultural Patterns of the Ancient World (NC)
		I. Gender in the French Revolution: iconography; women writers and feminism	B.A (Programme)	Gender in the Modern World
		II. Women's Suffragette movements: Europe	GE	
	Discussions on topic I, written assignment	B.A. (Honours) HISTORY	12311104 Social Formations and Cultural Patterns of the Ancient World (NC) Admission from 2016	

	<b>Tutorials</b>	Discussions on assignment and test	B.A (Programme) GE	Gender in the Modern World
SEPTEMBER	<b>Theory:</b>	III. The Neolithic  (a) Debating the origins of food production, climate change, population pressure; ecological choices, cognitive reorientations  (b) features of the Neolithic based on sites...; nature and size of settlements; toolkits, artifacts and pottery; family and household		
		(c) features of social complexity in late Neolithic communities; ceremonial sites and structures  IV. The Bronze Age-(a) Concepts		
		. III. (Contd) Women's Suffragette movements: the USA  I. Gender Relations in West Asia: Struggles for Women's rights; women's movements; Islamic Feminists	B.A (Programme) GE	Gender in the Modern World
		Questions on topics covered, Active reading	B.A. (Honours) HISTORY	12311104  Social Formations and Cultural Patterns of the Ancient World (NC) Admission from 2016
		Questions on topics covered, Active reading	B.A (Programme) GE	Gender in the Modern World
	<b>Assignments</b>	Evolution of Hominins during the Pleistocene epoch	B.A. (Honours) HISTORY	12311104  Social Formations and Cultural Patterns of the Ancient World (NC) Admission from 2016
	Gender in the French Revolution	B.A (Programme)	Gender in the Modern World	
OCTOBER	<b>Theory</b>	IV(b) Ecological context of early civilizations  (c) Aspects of social complexity: class, gender and economic specialization  (d) Forms of kingship, religion and state  V. Nomadic Pastoralism-(a) conceptualizing nomadic pastoralism	B.A. (Honours) HISTORY	12311104  Social Formations and Cultural Patterns of the Ancient World (NC) Admission from 2016

		V. Socialist Revolution in Russia and China: Women's rights; the household; Socialist Feminism	B.A (Programme) GE	Gender in the Modern World
	<b>Tutorials:</b>	Presentation of assignments		
	<b>Mid Term Test</b>	Questions from Topic II,III,IV	B.A. (Honours) HISTORY	12311104 Social Formations and Cultural Patterns of the Ancient World (NC) Admission from 2016
		Question from topic I or III or IV	B.A (Programme) GE	Gender in the Modern World
NOVEMBER	<b>Theory:</b>	V(b) The emergence of specialized pastoral economy in West Asia and its relationship to sedentary farming, third and second millennium BCE  (c) Socia-political interactions between nomadic pastoralists and Urban state societies in west Asia, third and second millenium BCE	B.A. (Honours) HISTORY	12311104 Social Formations and Cultural Patterns of the Ancient World (NC) Admission from 2016
		IV. The Advent of Iron –its origins and implications	B.A. (Honours) HISTORY	12311104 Social Formations and Cultural Patterns of the Ancient World (NC) Admission from 2016
		VI. Women and the anti-apartheid movement in Africa	B.A (Programme) GE	Gender in the Modern World
	<b>Tutorials:</b>	Discussions and revisions		



**SEMESTER WISE TEACHING PLAN (2018-19)**  
**SRI VENKATESWARA COLLEGE**

**Name of the Faculty:** NUTI NAMITA

**Department:** HISTORY

**Semester:** I/III/V

**Odd Semester**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	1.. The environmental setting; prehistoric and protohistoric sites; Purana Qila: Ashkan and Mehrauli Iron Pilar, Anangpur	GENERAL ELECTIVE-1 SEMESTER-1	DELHI THROUGH THE AGES PAPER-1
JULY	<b>Theory</b>	1.Imperialism and China (19 <sup>th</sup> c.) 2. Chinese Feudalism, 3. Gentry, the Confucian Value System, Sino centrism, Canton system	B.A (Hons) Third Year, Semester V	History of Modern East Asia-1(1840-49) PAPER-1X
	<b>Tutorials</b>	QUESTION ANSWER SESSION Doubts clearance		
AUGUST	<b>Theory:</b>	1.Settlements between 11 <sup>th</sup> and 16 <sup>th</sup> C.E 2. Lal Kot, Delli-Kuhna, 3. The Tomb, The Garden and the River: Humayun's Tomb, Nizammuddin	GENERAL ELECTIVE-1 SEMESTER-1	DELHI THROUGH THE AGES PAPER-1
AUGUST	<b>THEORY:</b>	1. OPIUM WARS 2. UNEQUAL TREATIES 3. TAIPING MOVEMENT	B.A (Hons) Third Year, Semester V	History of Modern East Asia-1(1840-49) PAPER-1X
	<b>Tutorials:</b>	Assignment:  1.On the IMPORTANCE OF THE iron pillar IN Mehrauli?		

	<b><u>Assignment</u></b> :	2.Causes of the Opium War and what were the consequences?		
SEPTEMBER	<b>Theory:</b>	. Shahjahanabad:  The Company and the Mughal Court; Delhi College; Ghalib	GENERAL ELECTIVE-1 SEMESTER-1	DELHI THROUGH THE AGES PAPER-1
SEPTEMBER	<b>Theory</b>	Boxer movement Reform movements: Self-Strengthening movement; 1898 Reform movement The Revolution of 1911: Sun Yat-sen. Warlordism	B.A (Hons) Third Year, Semester V	History of Modern East Asia-1(1840-49) PAPER-1X
	<b>Tutorials:</b>	question ANSWER SESSIONS:  PRESENTATIONS		
	<b><u>Test</u></b>	TEST WAS CONDUCTED FOR BOTH THE PAPERS.		
OCTOBER	<b>Theory:</b>	1857 in Delhi  From the 1877 Durbar to the New Imperial Capital	GENERAL ELECTIVE-1 SEMESTER-1	DELHI THROUGH THE AGES PAPER-1
OCTOBER	<b>Theory</b>	May Fourth Movement of 1919 1921 -1927: Formation of the CCP; reorganization of the KMT/ GMD (Nationalist Party); the First United Front	B.A (Hons) Third Year, Semester V	History of Modern East Asia-1(1840-49) PAPER-1X
	<b>Tutorials:</b>	DISCUSSIONS ABOUT THE RESULTS IN THE TEST		

NOVEMBER	<b>Theory:</b>	Partition, Violence and Relocation: 1947 onwards	GENERAL ELECTIVE-1 SEMESTER-1	DELHI THROUGH THE AGES PAPER-1
NOVEMBER	<b>Theory</b>	The Communist Movement (1938-1949) (i)The Jiangxi Period and the rise of Mao Tse Tung	B.A (Hons) Third Year, Semester V	History of Modern East Asia-1(1840-49) PAPER-1X
	<b>Tutorials:</b>	Revision		





**SEMESTER WISE TEACHING PLAN (2018-2019)**  
**SRI VENKATESWARA COLLEGE**

Name of the Faculty: Rajni Chandiwala

Department:History

Semester : I/III/V

Month		Topics	Course	Paper Code/Name
July	<b>Theory</b> 1.	<ul style="list-style-type: none"> <li>Transition From Feudalism to Capitalism –Problems and Theory</li> </ul>	Core Course-VI	Rise of Modern West-I
	2.	<ul style="list-style-type: none"> <li>Interpreting Ancient India Survey of Sources.</li> </ul>	CC-1	History of India from Earliest Times to upto C.-300 CE
	3.	<ul style="list-style-type: none"> <li>Defining Heritage, Art and Architecture in India</li> </ul>	SEC-I	History and Tourism
	<b>Practicals</b>	NA	NA	
	<b>Tutorials</b>	Discussion on the theme Discussion on the theme		
August	<b>Theory:</b> 1.	<ul style="list-style-type: none"> <li>Early Colonial Expansion-Motives Beginning of the Era of Expansion,</li> <li>Mining and Plantation, African Slaves.</li> <li>Renaissance-in Italy its Social Roots, Humanism and Its Spread in Europe, Art</li> </ul>		
	2.	<ul style="list-style-type: none"> <li>Survey of Paleolithic , Mesolithic and Neolithic Cultures-Rock Art.</li> <li>Harappan Civilization-Origin and Extent , urban Features, Town Planning, Economy , Society, Religion, Decline.</li> <li>Chalcolithic Cultures. Vedic Culture-Polity, Economy,</li> <li>Society and Religion ,</li> <li>Beginning of the Iron Age</li> </ul>		
	3.	<ul style="list-style-type: none"> <li>Indo Persian Architecture</li> </ul>		

<b>Practicals</b>	NA		
<b>Tutorials:</b>	Discussion on the theme Screening selected documentary and visual Art		

	<b><u>Assignment :</u></b>	Feudalism Debate Harappan Theme			
September	<b>Theory:</b>	1	<ul style="list-style-type: none"> <li>• Origin Course and the Results of European Reformation in 16<sup>th</sup> Century.</li> <li>• Economic Developments of the 16<sup>th</sup> Century</li> </ul>		
		2	<ul style="list-style-type: none"> <li>• Emergence of Mahajanpadas, Rajyas , Gana Sanghas, Magadhan Expansion , Buddhism Jainism Doctrines</li> </ul>		
		3	<ul style="list-style-type: none"> <li>• Forts, Palaces, Mosques, Delhi.</li> </ul>		
	<b>Practicals:</b>		NA		
	<b>Tutorials:</b>		Discussion on the themes taught in the class		
	<b><u>Test</u></b>		Taken on the themes taught in the class till Sept.		
October	<b>Theory:</b>	1	<ul style="list-style-type: none"> <li>• Shift of the Economic Balance From the Mediterranean to the Atlantic, Commercial Revolution.</li> </ul>		
		2	<ul style="list-style-type: none"> <li>• Mauryan Empire-State and Administration , Economy , Ashoka's Dhamma, Art and Architecture. Post Maurayan Age, satvahans, and Kushanas, Polity, Economy ,Society Art,.</li> </ul>		
		3.	<ul style="list-style-type: none"> <li>• Colonial Architecture Delhi</li> </ul>		
	<b>Practicals:</b>		NA		

	<b>Tutorials:</b>	Questions and Answer Sessions with presentations		
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November	<b>Theory:</b>	1	<ul style="list-style-type: none"> <li>Emergence of the European State Systems with the two case Studies Spain and England .</li> </ul>		
		2	<ul style="list-style-type: none"> <li>Sangam Age, Polity Economy and society</li> </ul>		
		3	<ul style="list-style-type: none"> <li>Revision.</li> </ul>		
	<b>Practicals:</b>	NA			
	<b>Tutorials:</b>	Revisions			



**SEMESTER WISE  
TEACHING PLAN  
SRI VENKATESWARA  
COLLEGE**

**July-November, 2018-19**

**Name of the Faculty: Vandana Joshi**

**Department: History**

**Semester: V**

Month		Topics	Course	Paper Code/Name	
JULY	<b>Theory:</b>	1. The French Revolution [a] Crisis of the Ancien Regime [b] Intellectual currents 2.	BA HONS Core Course XI History	Modern European History	
	<b>Practicals:</b>	I. Key concepts and historical background [a] The idea of the early Modern; perspectives on culture in history 1. [b] An overview of the classical and medieval legacy	BA Programme DSE	Cultural Transformation in Early Modern Europe	
		<b>Tutorials:</b>	The French Revolution	BA HONS	Modern European History
			The idea of Early Modern Europe	BAP /DSE	Cultural Transformation in Early Modern Europe
AUGUST	<b>Theory:</b>	[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	
		II. The Renaissance [a] Society and politics in Italian city states [b] Humanism in art and literature	BAP/DSE	Cultural Transformation in Early Modern Europe	

		[c] Developments in science and philosophy		
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Presentations and assignments		
		Presentations and assignments		
SEPTEMBER	<b>Theory:</b>	II. Restoration and revolution: c 1815-1848 [a] Forces of conservatism and restoration of old hierarchies [b] Social, political and intellectual currents [c] Revolutionary and radical movements 1830-1848 III. Capitalist industrialization and social and economic transformation (Late 18 <sup>th</sup> century to AD 1914) [a] Process of capitalist development in industry and agriculture: case studies of Britain, France, the German States and Russia.	BA HONS	Modern European History
		[d] Renaissance beyond Italy III. Upheaval in religion [a] The Papacy and its critics [b] The spread of Protestant sects in Northern Europe	BAP/DSE	Cultural Transformation in Early Modern Europe
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Presentations and assignments		

		Presentations and assignments		
	<b><u>Assignment</u></b>			
OCTOBER	<b>Theory</b>	[b] Evolution and differentiation of social classes: bourgeoisie, proletariat, landowning classes and peasantry. [c] Changing trends in demography and urban patterns [d] Family, gender and process of industrialization IV Liberal democracy, working class movements and Socialism in the 19 <sup>th</sup> and 20 <sup>th</sup> Centuries: 39 [a] The struggle for parliamentary democracy and civil liberties in Britain: popular movements – chartists and suffragettes	BA HONS	Modern European History
		[c] Counter Reformation and religious strife [d] The economic and cultural impact of the Reformations	BAP/DSE	Cultural Transformation in Early Modern Europe
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Presentations and class test		
		Presentations and assignments		
	<b><u>Mid Term Test</u></b>			



NOVEMBER	<b>Theory:</b>	[b] The making of democratic and constitutional rights [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
		IV. The Conquest of the New World: material, social and cultural aspects	BAP	Cultural Transformation in Early Modern Europe
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Presentations and assignments		
		Presentations and assignments		





**DEPARTMENT OF ENGLISH**  
**SRI VENKATESWARA COLLEGE**  
**(UNIVERSITY OF DELHI)**

**SEMESTER TEACHING PLAN**

**2018-2019**  
**(ODD SEMESTER)**



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

**Name of the Faculty: DEBARATI SEN**

**Department: ENGLISH**

**Semester: I/III/V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory</b>	Introduction to Sanskrit <i>Kavya</i> and <i>Natyashastra</i> . Analysis of Sudraka's <i>Mricchatakatika</i> Acts- 1-3 with criticism.	B.A.(H) English I yr.	Indian Classical Literature (Paper 1)
		Introduction to Modernism Introduction to W.B. Yeats	B.A.(H) English IIIyr	British literature: The Early 20 <sup>th</sup> Century (Paper 12)
		Introduction to Dharamvir Bharti's <i>Andha Yug</i>	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
		Speaking Skills: Introduction, Monologue and Dialogue	B.Sc (H) Chemistry	AECC
		Essentials of Communication-Introduction, Theory, types, Modes. Mahesh Dattani Final Solutions : Introduction  English language	B.Sc. (H) Zoology B.A.(H) English Sem I B.A.(P) Sem V B.Com (P) Sem I	AECC  DSE 1A
AUGUST	<b>Theory</b>	Analysis of Acts- 4-6 with criticism.	B.A.(H) English I yr.	Indian Classical Literature (Paper 1)
		Part I of <i>Sons and Lovers</i> . <i>Leda and the Swan</i> , <i>No Second Troy</i> , <i>The Second Coming</i> .	B.A.(H) English IIIyr	British literature: The Early 20 <sup>th</sup> Century (Paper 12)
		Act 1	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
		Group Discussion	B.Sc (H) Chemistry	AECC

		Verbal and Non-Verbal , Spoken and Written Communication  Analysis of Act I with Criticism Introduction	B.Sc (H) Zoology B.A.(H) English Sem I B.A.(P) Sem V B.Com (P) Sem I	AECC  DSE 1A
SEPTEMBER	<b>Theory</b>	Analysis of Acts- 7-9 with criticism.	B.A.(H) English I yr	Indian Classical Literature (Paper 1)
		Sailing to Byzantium. Critical reading of the Yeats's poems.	B.A.(H) English IIIyr	British literature: The Early 20 <sup>th</sup> Century (Paper 12)
		Act II	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
		Effective communication/ Mis-communication	B.Sc (H) Chemistry	AECC
		Personal, Business and Social Communication  Analysis of Act II with Criticism Theory of Language	B.Sc (H) Zoology B.A.(H) English Sem I B.A.(P) Sem V B.Com (P) Sem I	AECC  DSE 1A
		<b><u>Assignment</u></b> Poems of W.B.Yeats & T.S.Eliot	B.A.(H) English IIIyr	British literature: The Early 20 <sup>th</sup> Century (Paper 12)
			B.Sc (H) Chemistry	AECC
OCTOBER	<b>Theory</b>	Analysis of Act- 10 with criticism.	B.A.(H) English I yr	Indian Classical Literature (Paper 1)
		Introduction to T.S.Eliot. The Love Song of Alfred J. Prufrock, Sweeney Among the Nightingales	B.A.(H) English IIIyr	British literature: The Early 20 <sup>th</sup> Century (Paper 12)

		Act III	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
		Interview	B.Sc (H) Chemistry	AECC
		Barriers and Strategies in Communication Analysis of Act III with Criticism Practical Aspects	B.Sc (H) Zoology B.A.(H) English Sem I B.A.(P) Sem V B.Com (P) Sem I	AECC
	<b>Mid Term Test</b>	Poems of W.B.Yeats & T.S.Eliot	B.A.(H) English IIIyr	British literature: The Early 20 <sup>th</sup> Century (Paper 12)
			B.Sc (H) Chemistry	AECC
NOVEMBER	<b>Theory:</b>	Analysis of the text with a critical perspective	B.A.(H) English I yr	Indian Classical Literature (Paper 1)
		Hollow Men . Analysing the poems critically.	B.A.(H) English IIIyr	British literature: The Early 20 <sup>th</sup> Century (Paper 12)
		Critical analysis of the play.	B.A.(H) English IIIyr	Modern Indian Writing in English Translation (DSE 1)
		Public Speech	B.Sc (H) Chemistry	AECC
		Intra-personal, Inter-personal and group Communication Reading the play with diverse critical perspectives Writing Practice	B.Sc (H) Zoology B.A.(H) English Sem I B.A.(P) Sem V B.Com (P) Sem I	AECC



**SEMESTER WISE  
TEACHING PLAN  
SRI VENKATESWARA  
COLLEGE**

**July-November, 2018**

**Name of the Faculty: Nitya Datta**

**Department: English**

**Semester: Odd**

Month		Topics	Course	Paper Code/Name	
JULY	<b>Theory:</b>	1. Introduction to 17 <sup>th</sup> and 18 <sup>th</sup> C English history, politics and history	British Poetry & Drama 17 <sup>th</sup> and 18 <sup>th</sup> C		
		2. Introduction to Popular literature	Popular Literature		
		3. Introduction to 20thC American drama	American Literature		
		4. Introduction to Modern Indian Drama	DSE 1 A Modern Drama		
		5. Introduction to Communication Theory	AECC		
		6. Introduction to Communication Theory	AECC		
		7. Introduction to Communication Theory	AECC		
		8. Interview	MIL		
		<b>Practicals:</b>			
	<b>Tutorials:</b>	Popular Culture and Critical Theory	Popuar Lit		



AUGUST	<b>Theory:</b>	1. Canto I and I	British Poetry & Drama 17 <sup>th</sup> and 18 <sup>th</sup> C	
		2. Introduction to 19 <sup>th</sup> C Victorian England	Popular Literature American Literature	
	3. Plastic theatre and the European Avant-garde movement	DSE 1 A Modern Drama		
	4. Modern Indian drama and Karnad	AECC		
		5. Communication theory	AECC	
		6. Communication theory	AECC	
		7. Communication theory	MIL	
		8. Dialogue Writing- Presentations. Discussion on the basic differences and similarities between dialogue writing and Interview.		
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Nonsense poetry	Popular Lit	
SEPTEMBER	<b>Theory:</b>	1. Canto III and IV	British Poetry & Drama 17 <sup>th</sup> and 18 <sup>th</sup> C	
		2. Textual analysis of Carroll		
		3. Textual analysis of Glass Menagerie	Popular Literature	
		4. Textual analysis	American Literature	
		5. Practise of Writing and Reading Skills	DSE 1 A Modern Drama	
		6. Practise of Writing and Reading Skills		
		7. Practise of Writing and Reading Skills	AECC	
		8. Types of Interviews. Discussion on	AECC	

		how to structure an Interview.	AECC MIL	
	<b>Practicals:</b>			
	<b>Tutorials:</b>	Frankfurt School and Critical theory	Pop Lit	
	<b><u>Assignment</u></b>	Language games and play in Carroll	Pop Lit	
		Interview/Dialogue writing	AECC	
<b>OCTOBER</b>	<b>Theory</b>	<ol style="list-style-type: none"> <li>1. Canto V</li> <li>2. Reception of Carroll from 19<sup>th</sup> C to the contemporary</li> <li>3. The legacy of Williams to Modern American drama and beyond</li> <li>4. Discussion of major themes in Karnad's work</li> <li>5. Discussions on Writing Skills: Different types of writing. Descriptive, narrative, expository and argumentative.</li> <li>6. Discussions on Writing Skills: Different types of writing. Descriptive, narrative, expository and argumentative</li> <li>7. Discussions on Writing Skills: Different types of writing. Descriptive, narrative, expository and argumentative</li> <li>8. Revision and discussion of question paper</li> </ol>	British Poetry & Drama 17 <sup>th</sup> and 18 <sup>th</sup> C Popular Literature American Literature DSE 1 A Modern Drama AECC AECC AECC MIL	

	<b>Practicals:</b>		
	<b>Tutorials:</b>	Analysis and writing on different modes of Popular Culture	Pop Lit
	<b><u>Mid Term Test</u></b>	Carroll's text as a subversion of the genre and various forms it employs.  Communication theory and formal letter	Pop Lit  AECC
NOVEMBER	<b>Theory:</b>	<ol style="list-style-type: none"> <li>1. Discussion of previous years question papers</li> <li>2. Discussion of previous years question papers</li> <li>3. Discussion of previous years question papers</li> <li>4. Discussion of previous years question papers</li> <li>5. Discussion of previous years question papers</li> <li>6. Discussion of previous years question papers</li> <li>7. Discussion of previous years question papers</li> <li>8. Discussion of previous years question papers</li> </ol>	British Poetry & Drama 17 <sup>th</sup> and 18 <sup>th</sup> C  Popular Literature  American Literature  DSE 1 A Modern Drama  AECC  AECC  AECC  MIL

<b>Practicals:</b>			
<b>Tutorials:</b>	Discussion of previous year papers	Pop Lit	



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**July-November, 2018**

**Name of the Faculty:** Ritika Singh

**Department:** English

**Semester:** Odd

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	Introduction to African-American Literature Colonialism, Postcolonialism and the novel Women's Writing: Introduction, Key Issues	B.A (H) English III B.A English V B.A English V	American Literature British Lit. 20th Century Women's Writing
		Individual and Society: Role of Literature Theory of English Communication	B.A (P) B.A (H) - History, English, B.A (P), B.Sc- Bio. Sciences	DSC English AECC English
	<b>Practicals:</b>	-		
	<b>Tutorials:</b>	Race, Slavery, Memory, Identity and Politics	B.A (H) English III 5 Tut Groups	American Literature
AUGUST	<b>Theory:</b>	Toni Morrison and the African-American Novel Conrad's Colonialism and Narrative Style Mary Wollstonecraft: Historical Voice	B.A (H) English III B.A (H) English V B.A (H) English V	American Literature British Lit. 20th Century Women's Writing
		'Race' Section of Individual and Society Theory of Communication Contd.	B.A (P) Sem I B.A (H) - History, English, B.A (P), B.Sc- Bio. Sciences	DSC English AECC English
	<b>Practicals:</b>	-		
	<b>Tutorials:</b>	Folklore and the American Novel	B.A (H) English III 5 Tut Groups	American Literature

SEPTEMBER	<b>Theory:</b>	Beloved: Text and Critical Reading Heart of Darkness: Text and Critical Reading Mary Wollstonecraft: Critical Reading	B.A English III B.A English V B.A English V	American Literature British Lit. 20th Century Women's Writing
		Violence and War: Introduction Reading Skills	B.A (P) Sem I B.A (H) - English, History, B.A (P), B.Sc - Bio. Sciences	DSC English AECC English
	<b>Practicals:</b>	-		
	<b>Tutorials:</b>	Black Women's Writing	B.A (H) English III 5 Tut Groups	American Literature
	<b><u>Assignment</u></b>	Question on Communication Theory	B.A (H) - History	AECC English
		Question on Toni Morrison's 'Beloved'	B.A (H) - English III	American Literature
OCTOBER	<b>Theory</b>	Critical Material on 'Beloved' Views, Counterinterviews on Conrad's Novel and colonialism Pandita Ramabai: Introduction and Text	B.A (H) - English III B.A (H) English V B.A (H) English V	American Literature British Lit. 20th Century Women's Writing
		Poems from the 'Violence' section of Individual and Society Reading Skills	B.A (P) Sem I B.A (H) - English, History, B.A (P), B.Sc - Bio. Sciences	DSC English AECC English
	<b>Practicals:</b>	-		
	<b>Tutorials:</b>	The American Dream	B.A (H) English III 5 Tut Groups	American Literature
	<b><u>Mid Term Test</u></b>	Question on 'Beloved' Question on writing skills	B.A (H) English III B.A (H) History I	American Literature AECC English

NOVEMBER	<b>Theory:</b>			
		Previous year questions, revision, doubts for all courses.		
	<b>Practicals:</b>			
	<b>Tutorials:</b>			



**SEMESTER WISE TEACHING PLAN**  
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**July-November, 2018**

**Name of the Faculty: Dr. RENU JAIN**  
**Department: Physics**  
**Semester: III**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	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
	<b>Practicals:</b>	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	<b>Theory:</b>	De Morgans theorem, Boolean laws, Simplification of logic circuits using Boolean algebra fundamental products idea of minterm and maxterms, conversion of truth tables into equivalent logic circuits by sum of product method.	B.Sc. (Hons) Physics Sem III	PHYSICS-C VII: DIGITAL SYSTEMS AND APPLICATIONS



		<p>Karnaugh map, Multiplexer Demultiplexer, Decoder, Encoder, Binary Addition. Binary Subtraction using 2's Complement</p> <p>Half and Full Adders. Half &amp; Full Subtractors, 4-bit binary Adder/Subtractor.</p> <p>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.</p>		
	<b>Practicals:</b>	<p>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 &amp; 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.</p>	B.Sc. (Hons) Physics Sem III	PHYSICS PRACTICAL-C VII LAB
SEPTEMBER	<b>Theory:</b>	<p>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.</p> <p>IC 555: block diagram and applications: Astable multivibrator and Monostable multivibrator.</p> <p>Serial in serial out , serial in parallel out , parallel in serial out and parallel in parallel out shift register, ring counter, asynchronous counter, decade counter, synchronous counter.</p> <p>Block diagram of CRO, electron gun, deflection system, time base deflection, sensitivity, application of CRO: study of waveform, measurement of Voltage, current, frequency and phase difference.</p>	B.Sc. (Hons) Physics Sem III	PHYSICS-C VII: DIGITAL SYSTEMS AND APPLICATIONS

	<b>Practicals:</b>	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
	<b>Assignment</b>	Topics covered till September 2018		
OCTOBER	<b>Theory</b>	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
	<b>Practicals:</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. Other programs (e.g. Parity Check, using interrupts, etc.).	B.Sc. (Hons) Physics Sem III	PHYSICS PRACTICAL-C VII LAB
	<b>Mid Term Test</b>	Topic covered till 15 October 2018	B.Sc. (Hons) Physics Sem III	PHYSICS-C VII: DIGITAL SYSTEMS AND APPLICATIONS
NOVEMBER	<b>Theory:</b>	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

	<b>Practicals:</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. Other programs (e.g. Parity Check, using interrupts, etc.).		
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**SEMESTER WISE TEACHING PLAN  
VENKATESWARA COLLEGE**

**SRI**

**July-November, 2018**

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

**Department: Physics**

**Semester: III**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	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, State Functions.	B.Sc. (Hons) Physics Sem III	PHYSICS-C VI: THERMAL PHYSICS
	<b>Practicals:</b>	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 semiconductor sample.	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB
		1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde`s Experiment and to verify $\lambda^2 - T$ Law. 3. To study Lissajous Figures 4. Familiarization with Schuster`s focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton`s Rings. 11. To determine the wavelength of Laser light	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS

		<p>using Diffraction of Single Slit.</p> <p>12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating</p> <p>13. To determine the Resolving Power of a Plane Diffraction Grating.</p> <p>14. To determine the wavelength of laser light using diffraction grating.</p>		
AUGUST	<b>Theory:</b>	<p>First Law of Thermodynamics and its differential form, Internal Energy, First Law &amp; 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.</p> <p>Conversion of Work into Heat and Heat into Work. Heat Engines. Carnot's Cycle, Carnot engine &amp; efficiency. Refrigerator &amp; 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.</p> <p>Entropy: Concept of Entropy, Clausius Theorem. Clausius Inequality, Second Law of Thermodynamics in terms of Entropy. Entropy of a perfect gas. Principle of Increase of Entropy. Entropy Changes in Reversible and Irreversible processes with examples.</p>	B.Sc. (Hons) Physics Sem III	PHYSICS-C VI: THERMAL PHYSICS
	<b>Practicals:</b>	<p>1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method)</p> <p>2. To measure the Magnetic susceptibility of Solids.</p> <p>3. To determine the Coupling Coefficient of a Piezoelectric crystal.</p> <p>4. To measure the Dielectric Constant of a dielectric Materials with frequency.</p> <p>5. To study the PE Hysteresis loop of a Ferroelectric Crystal.</p> <p>6. To draw the BH curve of Fe using Solenoid &amp; determine energy loss from Hysteresis.</p> <p>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.</p> <p>8. To determine the Hall coefficient of a semiconductor sample.</p>		PHYSICS PRACTICAL-C XII LAB
		<p>1. To investigate the motion of coupled oscillators</p> <p>2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify <math>\lambda^2 - T</math> Law.</p> <p>3. To study Lissajous Figures</p> <p>4. Familiarization with Schuster's focussing; determination of angle of prism.</p> <p>5. To determine the Refractive Index of the</p>	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS

		<p>Material of a Prism using Sodium Light.</p> <p>6. To determine Dispersive Power of the Material of a Prism using Mercury Light</p> <p>7. To determine the value of Cauchy Constants.</p> <p>8. To determine the Resolving Power of a Prism.</p> <p>9. To determine wavelength of sodium light using Fresnel Biprism.</p> <p>10. To determine wavelength of sodium light using Newton's Rings.</p> <p>11. To determine the wavelength of Laser light using Diffraction of Single Slit.</p> <p>12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating</p> <p>13. To determine the Resolving Power of a Plane Diffraction Grating.</p> <p>14. To determine the wavelength of laser light using diffraction grating.</p>		
SEPTEMBER	<b>Theory:</b>	<p>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.</p> <p>Magnetic Work, Cooling due to adiabatic demagnetization, First and second order Phase Transitions with examples, Clausius Clapeyron Equation and Ehrenfest equations. Maxwell's Thermodynamic Relations: Derivation of Maxwell's thermodynamic Relations and their applications.</p>	B.Sc. (Hons) Physics Sem III	PHYSICS-C VI: THERMAL PHYSICS
	<b>Practicals:</b>	<p>1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method)</p> <p>2. To measure the Magnetic susceptibility of Solids.</p> <p>3. To determine the Coupling Coefficient of a Piezoelectric crystal.</p> <p>4. To measure the Dielectric Constant of a dielectric Materials with frequency.</p> <p>5. To study the PE Hysteresis loop of a Ferroelectric Crystal.</p> <p>6. To draw the BH curve of Fe using Solenoid &amp; determine energy loss from Hysteresis.</p> <p>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.</p> <p>8. To determine the Hall coefficient of a semiconductor sample.</p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB
		<p>1. To investigate the motion of coupled oscillators</p> <p>2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify <math>\lambda^2 - T</math> Law.</p> <p>3. To study Lissajous Figures</p>	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS

		<p>4. Familiarization with Schuster`s focussing; determination of angle of prism.</p> <p>5. To determine the Refractive Index of the Material of a Prism using Sodium Light.</p> <p>6. To determine Dispersive Power of the Material of a Prism using Mercury Light</p> <p>7. To determine the value of Cauchy Constants.</p> <p>8. To determine the Resolving Power of a Prism.</p> <p>9. To determine wavelength of sodium light using Fresnel Biprism.</p> <p>10. To determine wavelength of sodium light using Newton`s Rings.</p> <p>11. To determine the wavelength of Laser light using Diffraction of Single Slit.</p> <p>12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating</p> <p>13. To determine the Resolving Power of a Plane Diffraction Grating.</p> <p>14. To determine the wavelength of laser light using diffraction grating.</p>		
	<b>Assignment</b>	Topics covered till September 2018	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
OCTOBER	<b>Theory</b>	<p>Maxwell`s Relations: (1) Clausius Clapeyron equation, (2) Value of <math>C_p - C_v</math>, (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.</p> <p>Molecular Collisions: Mean Free Path. Collision Probability. Estimation of Mean Free Path. Transport Phenomenon in Ideal Gases: (1) Viscosity, (2) Thermal Conductivity and (3) Diffusion. Brownian Motion and its Significance.</p>	B.Sc. (Hons) Physics Sem III	PHYSICS-C VI: THERMAL PHYSICS
	<b>Practicals:</b>	<p>1. Measurement of susceptibility of paramagnetic solution (Quinck`s Tube Method)</p> <p>2. To measure the Magnetic susceptibility of Solids.</p> <p>3. To determine the Coupling Coefficient of a Piezoelectric crystal.</p> <p>4. To measure the Dielectric Constant of a dielectric Materials with frequency.</p> <p>5. To study the PE Hysteresis loop of a Ferroelectric Crystal.</p> <p>6. To draw the BH curve of Fe using Solenoid &amp; determine energy loss from Hysteresis.</p> <p>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.</p> <p>8. To determine the Hall coefficient of a semiconductor sample.</p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB

		<ol style="list-style-type: none"> <li>1. To investigate the motion of coupled oscillators</li> <li>2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify <math>\lambda^2 - T</math> Law.</li> <li>3. To study Lissajous Figures</li> <li>4. Familiarization with Schuster's focussing; determination of angle of prism.</li> <li>5. To determine the Refractive Index of the Material of a Prism using Sodium Light.</li> <li>6. To determine Dispersive Power of the Material of a Prism using Mercury Light</li> <li>7. To determine the value of Cauchy Constants.</li> <li>8. To determine the Resolving Power of a Prism.</li> <li>9. To determine wavelength of sodium light using Fresnel Biprism.</li> <li>10. To determine wavelength of sodium light using Newton's Rings.</li> <li>11. To determine the wavelength of Laser light using Diffraction of Single Slit.</li> <li>12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating</li> <li>13. To determine the Resolving Power of a Plane Diffraction Grating.</li> <li>14. To determine the wavelength of laser light using diffraction grating.</li> </ol>	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS
	<b>Mid Term Test</b>	Topic covered till 15 October 2018	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
NOVEMBER	<b>Theory:</b>	Real Gases: Behavior of Real Gases: Deviations from the Ideal Gas Equation. Andrew's Experiments on CO <sub>2</sub> 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 Cooling.	B.Sc. (Hons) Physics Sem III	PHYSICS-C VI: THERMAL PHYSICS
	<b>Practicals:</b>	<ol style="list-style-type: none"> <li>1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method)</li> <li>2. To measure the Magnetic susceptibility of Solids.</li> <li>3. To determine the Coupling Coefficient of a Piezoelectric crystal.</li> <li>4. To measure the Dielectric Constant of a dielectric Materials with frequency.</li> <li>5. To study the PE Hysteresis loop of a Ferroelectric Crystal.</li> <li>6. To draw the BH curve of Fe using Solenoid &amp; determine energy loss from Hysteresis.</li> <li>7. To measure the resistivity of a semiconductor</li> </ol>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB



	(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 semiconductor sample.		
	<ol style="list-style-type: none"> <li>1. To investigate the motion of coupled oscillators</li> <li>2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify <math>\lambda^2 - T</math> Law.</li> <li>3. To study Lissajous Figures</li> <li>4. Familiarization with Schuster's focussing; determination of angle of prism.</li> <li>5. To determine the Refractive Index of the Material of a Prism using Sodium Light.</li> <li>6. To determine Dispersive Power of the Material of a Prism using Mercury Light</li> <li>7. To determine the value of Cauchy Constants.</li> <li>8. To determine the Resolving Power of a Prism.</li> <li>9. To determine wavelength of sodium light using Fresnel Biprism.</li> <li>10. To determine wavelength of sodium light using Newton's Rings.</li> <li>11. To determine the wavelength of Laser light using Diffraction of Single Slit.</li> <li>12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating</li> <li>13. To determine the Resolving Power of a Plane Diffraction Grating.</li> <li>14. To determine the wavelength of laser light using diffraction grating.</li> </ol>	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS



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

**July-November, 2018**

**Name of the Faculty:** Dr. Piyush K. Parashar

**Department:** Physics

**Semester:** Odd Semester

Month		Topics	Course	Paper Code/Name
August	<b>Theory:</b>	Kronig Penny model. Band Gap. Conductor, Semiconductor (P and N type) and insulator. Conductivity of Semiconductor, mobility, Hall Effect.	B.Sc. (Hons) Physics Sem V	C XI-Solid State Physics
		Simple harmonic motion (SHM). Linearity and Superposition Principle. (1) Oscillations having equal frequencies and (2) Oscillations having different frequencies (Beats).	B.Sc. (Hons) Physics Sem V	GE III - Wave and Optics
	<b>Practicals:</b>	<p><i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i></p> <p>1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom.  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V(r) = -e^2/r</math></p> <p>2. Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = -e^2/r e^{-r/a}</math></p> <p>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = \frac{1}{2} kr^2 + 1/3 br^3</math>.</p> <p>4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 \mu/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r} )</math>,  <math>r' = r - r_0/r</math></p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB (6/week)

		<p>1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.</p> <p>2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.</p> <p>3. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.</p> <p>4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton's disc method.</p> <p>5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).</p> <p>6. To study the variation of Thermo-Emf of a Thermocouple with Difference of Temperature of its Two Junctions.</p>	B.Sc. (H) Physics Sem III	PHYSICS LAB-C VI LAB (4/week)
		<ul style="list-style-type: none"> <li>• Multiplication of two 3 x 3 matrices.</li> <li>• Eigenvalues and eigenvectors</li> <li>• Orthogonal polynomials as eigenfunctions of Hermitian differential operators.</li> <li>• Determination of the principal axes of moment of inertia through diagonalization</li> <li>• Study of geodesics in Euclidean and other spaces (surface of a sphere, etc)</li> <li>• Estimation of ground state energy and wave function of a quantum system.</li> <li>• Graphics</li> </ul>	B.Sc. (Hons) Physics Sem V	DSC I- Advanced Mathematical Physics Lab (2/week)
September	<b>Theory:</b>	<p>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)</p> <p>Dia-, Para-, Ferri- and Ferromagnetic Materials. Classical Langevin Theory of dia- and Paramagnetic Domains.</p>	B.Sc. (Hons) Physics Sem V	C XI-Solid State Physics

	<p>Quantum Mechanical Treatment of Paramagnetism. Curie's law, Weiss's Theory of Ferromagnetism and Ferromagnetic Domains. Discussion of B-H Curve. Hysteresis and Energy Loss.</p> <p>Solids: Amorphous and Crystalline Materials. Lattice Translation Vectors. Lattice with a Basis– Central and Non-Central Elements. Unit Cell. Miller Indices. Reciprocal Lattice. Types of Lattices. Brillouin Zones. Diffraction of X-rays by Crystals. Bragg's Law. Atomic and Geometrical Factor.</p>		
	<p>Graphical and Analytical Methods. Lissajous Figures (1:1 and 1:2) and their uses.</p> <p>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.</p>	B.Sc. (Hons) Physics Sem V	GE III - Wave and Optics
<b>Practicals:</b>	<p><i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics-</i></p> <p>1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom.  <math display="block">d^2u/dr^2 = A(r) u(r), A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V(r) = -e^2/r</math></p> <p>2. Solve the s-wave radial Schrodinger equation for an atom:  <math display="block">d^2u/dr^2 = A(r) u(r), A(r) = 2 m/\hbar^2 [ V(r) - E ],</math> where <math>V(r) = -e^2/r e^{-r/a}</math></p> <p>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math display="block">d^2u/dr^2 = A(r) u(r), A(r) = 2 m/\hbar^2 [ V(r) - E ],</math> where <math>V(r) = \frac{1}{2} kr^2 + 1/3 br^3</math>.</p> <p>4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math display="block">d^2u/dr^2 = A(r) u(r), A(r) = 2 \mu/\hbar^2 [ V(r) - E ],</math> where <math>V(r) = D ( e^{-2\alpha r} - e^{-2\alpha r'} )</math>,  <math>r' = r - r_0/r</math></p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB (6/week)
	<p>1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.</p>	B.Sc. (H) Physics Sem III	PHYSICS LAB-C VI LAB (4/week)

<p>2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.</p> <p>3. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.</p> <p>4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton's disc method.</p> <p>5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).</p> <p>6. To study the variation of Thermo-Emf of a Thermocouple with Difference of Temperature of its Two Junctions.</p>		
<ul style="list-style-type: none"> <li>• Multiplication of two 3 x 3 matrices.</li> <li>• Eigenvalues and eigenvectors</li> <li>• Orthogonal polynomials as eigenfunctions of Hermitian differential operators.</li> <li>• Determination of the principal axes of moment of inertia through diagonalization</li> <li>• Study of geodesics in Euclidean and other spaces (surface of a sphere, etc)</li> <li>• Estimation of ground state energy and wave function of a quantum system.</li> <li>• Graphics</li> </ul>	<p>B.Sc. (Hons) Physics Sem V</p>	<p>DSC I- Advanced Mathematical Physics Lab (2/week)</p>
<p><b><u>Mid Term</u></b> <b><u>Test-1</u></b></p>	<p>Topic covered till 15 September 2018</p>	

October	<b>Theory:</b>	<p>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. <math>T^3</math> law.</p> <p>Polarization. Local Electric Field at an Atom. Depolarization Field. Electric Susceptibility. Polarizability. Clausius Mosotti Equation. Classical Theory of Electric Polarizability. Normal and Anomalous Dispersion. Cauchy and Sellmeier relations. Langevin-Debye equation. Complex Dielectric Constant. Optical Phenomena. Application: Plasma Oscillations, Plasma Frequency, Plasmons, TO modes.</p>	B.Sc. (Hons) Physics Sem V	C XI-Solid State Physics
		<p>Sound waves, production and properties. Intensity and loudness of sound. Decibels. Intensity levels. musical notes. musical scale. Acoustics of buildings (General idea). Electromagnetic nature of light. Definition and Properties of wave front. Huygens Principle.</p>	B.Sc. (Hons) Physics Sem V	GE III Waves and Optics
	<b>Practicals:</b>	<p><i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i></p> <p>1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom.  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V(r) = -e^2/r</math></p> <p>2. Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = -e^2/r e^{-r/a}</math></p> <p>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = \frac{1}{2} kr^2 + \frac{1}{3} br^3</math>.</p> <p>4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 \mu/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r} )</math>,  <math>r' = r - r_0/r</math></p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL- C XII LAB (6/week)

	**	<p>1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.</p> <p>2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.</p> <p>3. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.</p> <p>4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton's disc method.</p> <p>5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).</p> <p>6. To study the variation of Thermo-Emf of a Thermocouple with Difference of Temperature of its Two Junctions.</p>	B.Sc. (H) Physics Sem III	PHYSICS LAB-C VI LAB (4/week)
		<ul style="list-style-type: none"> <li>• Multiplication of two 3 x 3 matrices.</li> <li>• Eigenvalues and eigenvectors</li> <li>• Orthogonal polynomials as eigenfunctions of Hermitian differential operators.</li> <li>• Determination of the principal axes of moment of inertia through diagonalization</li> <li>• Study of geodesics in Euclidean and other spaces (surface of a sphere, etc)</li> <li>• Estimation of ground state energy and wave function of a quantum system.</li> <li>• Graphics</li> </ul>	B.Sc. (H) Physics Sem I	DSC I- Advanced Mathematical Physics-I Lab (2/week)
	<b><u>Assignment</u></b>	Topics covered till 30 September 2018		
	<b><u>&amp; Mid Term Test -2</u></b>	Topics covered till 15 October 2018		
November	<b>Theory</b>	Structural phase transition, Classification of crystals, Piezoelectric effect, Pyroelectric effect, Ferroelectric effect, Electrostrictive effect, Curie-Weiss Law, Ferroelectric domains, PE hysteresis loop.	B.Sc. (Hons) Physics Sem V	C XI – Solid State Physics
		Transverse nature of light waves. Plane polarized light – production and analysis. Circular and elliptical polarization.	B.Sc. (Hons) Physics Sem V	GE III – Waves and Optics
	<b>Practicals:</b>	<p><i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i></p> <p>1. Solve the s-wave Schrodinger equation for the ground state and the first excited</p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XI LAB (6/ week)

	<p>state of the hydrogen atom.  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V ( r) = - e^2/r</math>  2.Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V ( r) = - e^2/r e^{-r/a}</math>  3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V ( r) = \frac{1}{2} kr^2 + 1/3 br^3</math>.  4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 \mu/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r'} )</math>,  <math>r' = r - r_0/r</math></p>		
	<ol style="list-style-type: none"> <li>To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.</li> <li>To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.</li> <li>To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.</li> <li>To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton's disc method.</li> <li>To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).</li> <li>To study the variation of Thermo-Emf of a Thermocouple with Difference of Temperature of its Two Junctions.</li> </ol>	B.Sc. (H) Physics Sem III	PHYSICS LAB-C VI LAB (4/week)
	<ul style="list-style-type: none"> <li>Multiplication of two 3 x 3 matrices.</li> <li>Eigenvalues and eigenvectors</li> <li>Orthogonal polynomials as eigenfunctions of Hermitian differential operators.</li> <li>Determination of the principal axes of moment of inertia through diagonalization</li> <li>Study of geodesics in Euclidean and other spaces (surface of a sphere, etc)</li> <li>Estimation of ground state energy and wave function of a quantum system.</li> <li>Graphics</li> </ul>	B.Sc. (H) Physics Sem I	DSC I- Advanced Mathematical Physics-I Lab (2/week)





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

**July-November, 2018**

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

**Department:** Physics

**Semester:** Odd Semester

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	Constituents of nucleus and their intrinsic properties, quantitative facts about mass, radii, charge density (matter density), angular momentum, magnetic moment, electric moments.	B.Sc. (Hons) Physics Sem V	DSE-Nuclear and Particle Physics
	<b>Theory:</b>	Electromagnetic nature of light. Definition and Properties of wave front. Huygens Principle	B. Sc.(Hons)- Sem-III- GE	Waves and Optics - GE
	<b>Practicals:</b>	<p><i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i></p> <p>1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom.  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V(r) = -e^2/r</math></p> <p>2. Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = -e^2/r e^{-r/a}</math></p> <p>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = \frac{1}{2} kr^2 + \frac{1}{3} br^3</math>.</p> <p>4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 \mu/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r} )</math>,  <math>r' = r - r_0/r</math></p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XI LAB

		<p>1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.</p> <p>2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.</p> <p>3. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.</p> <p>4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton's disc method.</p> <p>5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).</p> <p>6. To study the variation of Thermo-Emf of a Thermocouple with Difference of Temperature of its Two Junctions.</p>	B.Sc. (H) Physics Sem III	PHYSICS LAB-C VI LAB
	<b>Tutorials:</b>	<p>1. Discussion on nuclear excited states.</p> <p>2. What is the distance of closest approach of a 2 MeV proton to a gold nucleus?</p> <p>3. Calculate the mass number of a nucleus whose radius is <math>1.66 \times 10^{-15}</math> m.</p>		
AUGUST	<b>Theory:</b>	<p>Binding energy, average binding energy and its variation with mass number, main features of binding energy versus mass number curve, N/A plot, parity.</p> <p>(a) Alpha decay: basics of <math>\alpha</math>-decay processes, theory of <math>\alpha</math>- emission, Gamow factor, Geiger Nuttall law, <math>\alpha</math>-decay spectroscopy. (b) beta-decay: energy kinematics for beta-decay. Positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays emission &amp; kinematics, internal conversion.</p> <p>Types of Reactions, Conservation Laws, kinematics of reactions, Q-value, reaction rate, reaction cross section, Concept of compound and direct Reaction, resonance reaction, Coulomb scattering (Rutherford scattering).</p>	B.Sc. (Hons) Physics Sem V	DSE-Nuclear and Particle Physics
	<b>Theory:</b>	<p>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. Fringes of equal inclination (Haidinger Fringes); Fringes of equal thickness (Fizeau Fringes). Newton's Rings: measurement of wavelength and refractive index.</p>	B. Sc. (Hons)- Sem-III- GE	Waves and Optics - GE

<p><b>Practicals:</b></p>	<p>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</p> <ol style="list-style-type: none"> <li>1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom.  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V(r) = -e^2/r</math></li> <li>2. Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = -e^2/r e^{-r/a}</math></li> <li>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = \frac{1}{2} kr^2 + 1/3 br^3</math>.</li> <li>4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 \mu/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r'} )</math>,  <math>r' = r - r_0/r</math></li> </ol>	<p>B.Sc. (Hons) Physics Sem V</p>	<p>PHYSICS PRACTICAL-C XI LAB</p>
	<ol style="list-style-type: none"> <li>1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.</li> <li>2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.</li> <li>3. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.</li> <li>4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton's disc method.</li> <li>5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).</li> <li>6. To study the variation of Thermo-Emf of a Thermocouple with Difference of Temperature of its Two Junctions.</li> </ol>	<p>B.Sc. (H) Physics Sem III</p>	<p>PHYSICS LAB- C VI LAB</p>
<p><b>Tutorials:</b></p>	<ol style="list-style-type: none"> <li>1. Why visible or ultraviolet light can not be used to demonstrate Compton effect?</li> <li>2. Discussion on alpha spectra.</li> <li>3. Which of the following nuclei are stable, and which are radioactive? (a) <math>_{10}Ne^{18}</math> (b) <math>_{16}S^{32}</math> (c) <math>_{90}Th^{236}</math> (d) <math>_{56}Ba^{123}</math></li> </ol>		

SEPTEMBER	<b>Theory:</b>	<p>Energy loss due to ionization (Bethe-Block formula), energy loss of electrons, Cerenkov radiation. Gamma ray interaction through matter, photoelectric effect, Compton scattering, pair production, neutron interaction with matter.</p> <p>Gas detectors: estimation of electric field, mobility of particle, for ionization chamber and GM Counter. Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT). Semiconductor Detectors (Si and Ge) for charge particle and photon detection (concept of charge carrier and mobility), neutron detector.</p>	B.Sc. (Hons) Physics Sem V	DSE-Nuclear and Particle Physics
		<p>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</p>	B. Sc.(Hons)- Sem-III- GE	Waves and Optics - GE
	<b>Practicals:</b>	<p><i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i></p> <p>1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom.  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V(r) = -e^2/r</math></p> <p>2. Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = -e^2/r e^{-r/a}</math></p> <p>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = \frac{1}{2} kr^2 + \frac{1}{3} br^3</math></p> <p>4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 \mu/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r} )</math>,  <math>r' = r - r_0/r</math></p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XI LAB
	<p>1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.</p> <p>2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.</p> <p>3. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.</p> <p>4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee</p>	B.Sc. (H) Physics Sem III	PHYSICS LAB-C VI LAB	

		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.		
	<b>Tutorials:</b>	1. An electron and a photon have the same wavelength. Which one has the highest energy? 2. Compare the stopping powers of 4MeV protons and 8 MV deuterons in a given medium. 3. Calculate the frequency of a proton cyclotron, if the magnetic field is $B = 0.15$ tesla(T). 4. what is the maximum kinetic energy that carbon nuclei can attain in a 70 MeV Tandem accelerator /		
	<b>Assignment</b>	Topics covered till September 2018		
OCTOBER	<b>Theory:</b>	Gas detectors: estimation of electric field, mobility of particle, for ionization chamber and GM Counter. Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT). Semiconductor Detectors (Si and Ge) for charge particle and photon detection (concept of charge carrier and mobility), neutron detector.	B.Sc. (Hons) Physics Sem V	DSE-Nuclear and Particle Physics
	<b>Theory:</b>	Transverse nature of light waves. Plane polarized light – production and analysis. Circular and elliptical polarization. Graphical and Analytical Methods. Lissajous Figures (1:1 and 1:2) and their uses. 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	Waves and Optics - GE
	<b>Practicals:</b>	<i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i> 1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom. $d^2u/dr^2 = A(r) u$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ where $V ( r) = - e^2/r$	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XI LAB

	<p>2. Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = -e^2/r e^{-r/a}</math></p> <p>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = \frac{1}{2} kr^2 + 1/3 br^3</math>.</p> <p>4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 \mu/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r} )</math>,  <math>r' = r - r_0/r</math></p>		
<b>Tutorials:</b>	<p>1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.</p> <p>2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.</p> <p>3. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.</p> <p>4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton's disc method.</p> <p>5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).</p> <p>6. To study the variation of Thermo-Emf of a Thermocouple with Difference of Temperature of its Two Junctions.</p>	B.Sc. (H) Physics Sem III	PHYSICS LAB-C VI LAB
	<p>1. Find the strangeness and hypercharge of a neutral elementary particle whose isotopic spin projection is <math>\frac{1}{2}</math> and baryon number is +. What particle is this?</p> <p>2. Consider the following decay modes. Determine whether or not each decay mode is possible on the basis of electron-lepton number. (i) <math>\mu^- = e^- + \bar{\nu}_e + \nu_\mu</math>  (ii) <math>\pi^+ = \pi^+ + \nu_\mu + \nu_\mu</math></p> <p>3. What particles corresponds to quark composition <math>u \bar{s}</math>, <math>ddu</math>, <math>sss</math>, <math>uus</math>, <math>d \bar{s}</math> and <math>uds</math>?</p>		
<b>Mid Term Test</b>	Topic covered till 15 October 2018	B.Sc. (Hons) Physics Sem V	DSE-Nuclear & Particle Physics

NOVEMBER	<b>Theory:</b>	Discussion and problems based on nuclear physics	B.Sc. (Hons) Physics Sem V	DSE-Nuclear & Particle Physics
		Sound waves, production and properties. Intensity and loudness of sound.	B. Sc. (Hons)- Sem-III- GE	Waves and Optics – GE
	<b>Practicals:</b>	<p>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</p> <p>1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom.  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V(r) = -e^2/r</math></p> <p>2. Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = -e^2/r e^{-r/a}</math></p> <p>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = \frac{1}{2} kr^2 + \frac{1}{3} br^3</math>.</p> <p>4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math>d^2u/dr^2 = A(r) u(r)</math>, <math>A(r) = 2 \mu/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r} )</math>, <math>r' = r - r_0/r</math></p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XI LAB
	<b>Tutorials:</b>	<p>1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method.</p> <p>2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus.</p> <p>3. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method.</p> <p>4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton's disc method.</p> <p>5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).</p> <p>6. To study the variation of Thermo-Emf of a Thermocouple with Difference of Temperature of its Two Junctions.</p>	B.Sc. (H) Physics Sem III	PHYSICS LAB-C VI LAB
	<p>1. Predict the spin and parity of nuclei: <math>{}_{49}\text{In}^{119}</math> and <math>{}_{20}\text{Ca}^{47}</math></p> <p>2. According to shell model, what are the spins and parities of the following nuclei in their ground states: <math>{}_{2}\text{He}^4</math> (ii) <math>{}_{7}\text{N}^{14}</math></p>			



**SEMESTER WISE TEACHING PLAN  
SRI VENKATESWARA COLLEGE**

**July-November, 2018**

**Name of the Faculty: Dr. K. Chandramani Singh**

**Department: Physics**

**Semester: V**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	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
	<b>Practicals:</b>	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 semiconductor sample.	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB
		1. To investigate the motion of coupled oscillators 2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify $\lambda^2 - T$ Law. 3. To study Lissajous Figures 4. Familiarization with Schuster's focussing; determination of angle of prism. 5. To determine the Refractive Index of the Material of a Prism using Sodium Light. 6. To determine Dispersive Power of the Material of a Prism using Mercury Light 7. To determine the value of Cauchy Constants. 8. To determine the Resolving Power of a Prism. 9. To determine wavelength of sodium light using Fresnel Biprism. 10. To determine wavelength of sodium light using Newton's Rings. 11. To determine the wavelength of Laser light using Diffraction of Single Slit. 12. To determine wavelength of (1) Sodium	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS



		and (2) Spectral lines of the Mercury light using plane diffraction Grating 13. To determine the Resolving Power of a Plane Diffraction Grating. 14. To determine the wavelength of laser light using diffraction grating.		
AUGUST	<b>Theory:</b>	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 wave-packet for a free particle in one dimension	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
	<b>Practicals:</b>	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 semiconductor sample.		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.	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS

		<p>9. To determine wavelength of sodium light using Fresnel Biprism.</p> <p>10. To determine wavelength of sodium light using Newton's Rings.</p> <p>11. To determine the wavelength of Laser light using Diffraction of Single Slit.</p> <p>12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating</p> <p>13. To determine the Resolving Power of a Plane Diffraction Grating.</p> <p>14. To determine the wavelength of laser light using diffraction grating.</p>		
SEPTEMBER	<b>Theory:</b>	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 operator & quantum numbers.	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
	<b>Practicals:</b>	<p>1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method)</p> <p>2. To measure the Magnetic susceptibility of Solids.</p> <p>3. To determine the Coupling Coefficient of a Piezoelectric crystal.</p> <p>4. To measure the Dielectric Constant of a dielectric Materials with frequency.</p> <p>5. To study the PE Hysteresis loop of a Ferroelectric Crystal.</p> <p>6. To draw the BH curve of Fe using Solenoid &amp; determine energy loss from Hysteresis.</p> <p>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.</p> <p>8. To determine the Hall coefficient of a semiconductor sample.</p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB
		<p>1. To investigate the motion of coupled oscillators</p> <p>2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify <math>\lambda^2 - T</math> Law.</p> <p>3. To study Lissajous Figures</p> <p>4. Familiarization with Schuster's focussing; determination of angle of prism.</p> <p>5. To determine the Refractive Index of the</p>	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS

		<p>Material of a Prism using Sodium Light.</p> <p>6. To determine Dispersive Power of the Material of a Prism using Mercury Light</p> <p>7. To determine the value of Cauchy Constants.</p> <p>8. To determine the Resolving Power of a Prism.</p> <p>9. To determine wavelength of sodium light using Fresnel Biprism.</p> <p>10. To determine wavelength of sodium light using Newton's Rings.</p> <p>11. To determine the wavelength of Laser light using Diffraction of Single Slit.</p> <p>12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating</p> <p>13. To determine the Resolving Power of a Plane Diffraction Grating.</p> <p>14. To determine the wavelength of laser light using diffraction grating.</p>		
	<b>Assignment</b>	Topics covered till September 2018	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
OCTOBER	<b>Theory</b>	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 Moment and Magnetic Energy.	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
	<b>Practicals:</b>	<p>1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method)</p> <p>2. To measure the Magnetic susceptibility of Solids.</p> <p>3. To determine the Coupling Coefficient of a Piezoelectric crystal.</p> <p>4. To measure the Dielectric Constant of a dielectric Materials with frequency.</p> <p>5. To study the PE Hysteresis loop of a Ferroelectric Crystal.</p> <p>6. To draw the BH curve of Fe using Solenoid &amp; determine energy loss from Hysteresis.</p> <p>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.</p> <p>8. To determine the Hall coefficient of a semiconductor sample.</p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB
		<p>1. To investigate the motion of coupled oscillators</p> <p>2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify <math>\lambda^2 - T</math> Law.</p>	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS

		<p>3. To study Lissajous Figures</p> <p>4. Familiarization with Schuster's focussing; determination of angle of prism.</p> <p>5. To determine the Refractive Index of the Material of a Prism using Sodium Light.</p> <p>6. To determine Dispersive Power of the Material of a Prism using Mercury Light</p> <p>7. To determine the value of Cauchy Constants.</p> <p>8. To determine the Resolving Power of a Prism.</p> <p>9. To determine wavelength of sodium light using Fresnel Biprism.</p> <p>10. To determine wavelength of sodium light using Newton's Rings.</p> <p>11. To determine the wavelength of Laser light using Diffraction of Single Slit.</p> <p>12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating</p> <p>13. To determine the Resolving Power of a Plane Diffraction Grating.</p> <p>14. To determine the wavelength of laser light using diffraction grating.</p>		
	<b><u>Mid Term Test</u></b>	Topic covered till 15 October 2018	B.Sc. (Hons) Physics Sem V	PHYSICS-C XI: QUANTUM MECHANICS AND APPLICATIONS
NOVEMBER	<b>Theory:</b>	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
	<b>Practicals:</b>	<p>1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method)</p> <p>2. To measure the Magnetic susceptibility of Solids.</p> <p>3. To determine the Coupling Coefficient of a Piezoelectric crystal.</p> <p>4. To measure the Dielectric Constant of a dielectric Materials with frequency.</p> <p>5. To study the PE Hysteresis loop of a Ferroelectric Crystal.</p> <p>6. To draw the BH curve of Fe using Solenoid &amp; determine energy loss from Hysteresis.</p> <p>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.</p> <p>8. To determine the Hall coefficient of a semiconductor sample.</p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XII LAB
		<p>1. To investigate the motion of coupled oscillators</p> <p>2. To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify <math>\lambda^2 - T</math> Law.</p> <p>3. To study Lissajous Figures</p>	B.A/B.Sc. Sem III	GE LAB: WAVES AND OPTICS

	<ol style="list-style-type: none"><li>4. Familiarization with Schuster`s focussing; determination of angle of prism.</li><li>5. To determine the Refractive Index of the Material of a Prism using Sodium Light.</li><li>6. To determine Dispersive Power of the Material of a Prism using Mercury Light</li><li>7. To determine the value of Cauchy Constants.</li><li>8. To determine the Resolving Power of a Prism.</li><li>9. To determine wavelength of sodium light using Fresnel Biprism.</li><li>10. To determine wavelength of sodium light using Newton`s Rings.</li><li>11. To determine the wavelength of Laser light using Diffraction of Single Slit.</li><li>12. To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating</li><li>13. To determine the Resolving Power of a Plane Diffraction Grating.</li><li>14. To determine the wavelength of laser light using diffraction grating.</li></ol>		
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**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA COLLEGE**  
**July-November, 2018**

**Name of the Faculty:** Dr.Garima Saxena  
**Department:** Physics  
**Semester:** I, III and V

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	Properties of vectors. Scalar product and vector product	B.Sc. (Hons) Physics Sem I	<b>PHYSICS-C I:</b> MATHEMATICAL PHYSICS I
		Linear Vector Spaces Abstract Systems. Binary Operations and Relations. Introduction to Groups and Fields. Vector Spaces and Subspaces	B.Sc. (Hons) Physics Sem V	<b>PHYSICS-DSE:</b> ADVANCED MATHEMATICAL PHYSICS I
	<b>Practicals</b> :	ICT REMAINED CLOSED TILL 28 <sup>TH</sup> JULY	B.Sc. (Hons) Physics Sem I	<b>PHYSICS LAB - C I LAB</b> MATHEMATICAL PHYSICS I
		ICT REMAINED CLOSED TILL 28 <sup>TH</sup> JULY	B.Sc. (Hons) Physics Sem III	<b>PHYSICS LAB - C V LAB</b> MATHEMATICAL PHYSICS-II
		ICT REMAINED CLOSED TILL 28 <sup>TH</sup> JULY	B.Sc. (Hons) Physics Sem V	<b>PHYSICS LAB - DSE</b> ADVANCED MATHEMATICAL PHYSICS-I
AUGUST	<b>Theory:</b>	Scalar triple product and their interpretation in terms of area and volume respectively. Scalar and Vector fields Vector Differentiation: Directional derivatives and normal derivative. Gradient of a scalar field and its geometrical interpretation. Divergence and curl of a vector field	B.Sc. (Hons) Physics Sem I	<b>PHYSICS-C I:</b> MATHEMATICAL PHYSICS I
		Linear Independence and Dependence of Vectors. Basis and Dimensions of a Vector Space. Change of basis. Homomorphism and Isomorphism of Vector Spaces Linear Transformations. Algebra of Linear Transformations.	B.Sc. (Hons) Physics Sem V	<b>PHYSICS-DSE:</b> ADVANCED MATHEMATICAL PHYSICS I

	<p>Nonsingular Transformations. Representation of Linear Transformations by Matrices Matrices Addition and Multiplication of Matrices. Null Matrices. Diagonal, Scalar and Unit Matrices. Upper-Triangular and Lower-Triangular Matrices. Transpose of a Matrix. Symmetric and Skew-Symmetric Matrices. Conjugate of a Matrix. Hermitian and SkewHermitian Matrices. Singular and Non-Singular matrices. Orthogonal and Unitary Matrices. Trace of a Matrix. Inner Product.</p>		
<b>Practicals :</b>	<p>(04 HOURS/WEEK) Introduction and Overview, Basics of scientific computing, Review of C &amp; C++ Programming fundamentals.</p> <ul style="list-style-type: none"> <li>• Sum and average of a list of numbers</li> <li>• largest of a given list of numbers and its location in the list</li> </ul>	B.Sc. (Hons) PhysicsSem I	<b>PHYSICS-C I: MATHEMATICAL PHYSICS I</b>
	<p>(04 HOURS/WEEK) 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, Hierararchy 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, nested loops, logical arrays and vectorization. User defined functions, Introduction to Scilab functions, Variable passing in Scilab, optional arguements, 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</p> <ul style="list-style-type: none"> <li>• Radioactive decay</li> <li>• Current in RC, LC circuits with DC source</li> </ul>	B.Sc. (Hons) Physics Sem III	<b>PHYSICS LAB - C V LAB MATHEMATICAL PHYSICS-II</b>

		<p>(04 HOURS/WEEK)</p> <ul style="list-style-type: none"> <li>• Multiplication of two 3 x 3 matrices.</li> <li>• Eigenvalues and eigenvectors</li> <li>• Orthogonal polynomials as eigenfunctions of Hermitian differential operators.</li> <li>• Determination of the principal axes of moment of inertia through diagonalization</li> <li>• Study of geodesics in Euclidean and other spaces (surface of a sphere, etc)</li> <li>• Estimation of ground state energy and wave function of a quantum system.</li> <li>• Graphics</li> </ul>	B.Sc. (Hons) Physics Sem V	<b>PHYSICS LAB - DSE</b> ADVANCED MATHEMATICAL PHYSICS-I
SEPTEMBER	<b>Theory:</b>	Del and Laplacian operators. Vector identities. Vector Integration: Ordinary Integrals of Vectors. Multiple integrals, Jacobian.	B.Sc. (Hons) Physics Sem I	<b>PHYSICS LAB - DSE</b> ADVANCED MATHEMATICAL PHYSICS-I
		Eigen-values and Eigenvectors. Cayley-Hamilton Theorem. Diagonalization of Matrices Solutions of Coupled Linear Ordinary Differential Equations. Functions of a Matrix.  General Tensors Transformation of Coordinates. Minkowski Space. Contravariant & Covariant Vectors. Contravariant, Covariant and Mixed Tensors. Kronecker Delta and Permutation Tensors. Symmetric and Anti-symmetric Tensors.	B.Sc. (Hons) Physics Sem V	<b>PHYSICS-DSE:</b> ADVANCED MATHEMATICAL PHYSICS I
	<b>Practicals :</b>	<p>(03 HOURS/WEEK)</p> <ul style="list-style-type: none"> <li>• sorting of numbers in ascending and descending order</li> <li>• Random number generation</li> <li>• Solution of linear equation,</li> <li>• Solution of quadratic equation,</li> </ul>	B.Sc. (Hons) Physics Sem I	<b>PHYSICS-C I:</b> MATHEMATICAL PHYSICS I
		<p>(04 HOURS/WEEK)</p> <ul style="list-style-type: none"> <li>• Harmonic oscillator (no friction)</li> <li>• Damped Harmonic oscillator</li> <li>• Overdamped</li> <li>• Critical damped</li> <li>• Oscillatory</li> <li>• solve <math>-4(1+) + 2(1+) =</math> with the boundary conditions at <math>=1, = 1/2, = -3/2 - 0.5</math></li> </ul>	B.Sc. (Hons) Physics Sem III	<b>PHYSICS LAB - C V LAB</b> MATHEMATICAL PHYSICS-II



		<p>(04 HOURS/WEEK)</p> <ul style="list-style-type: none"> <li>• Multiplication of two 3 x 3 matrices.</li> <li>• Eigenvalues and eigenvectors</li> <li>• Orthogonal polynomials as eigenfunctions of Hermitian differential operators.</li> <li>• Determination of the principal axes of moment of inertia through diagonalization</li> <li>• Study of geodesics in Euclidean and other spaces (surface of a sphere, etc)</li> <li>• Estimation of ground state energy and wave function of a quantum system.</li> <li>• Graphics</li> </ul>	B.Sc. (Hons) Physics Sem V	<b>PHYSICS LAB - DSE</b> ADVANCED MATHEMATICAL PHYSICS-I
	<u>Assignment</u>	Topics covered till September 2018	B.Sc. (Hons) Physics Sem I and V	<b>PHYSICS-C I: MATHEMATICAL PHYSICS I, PHYSICS-DSE: ADVANCED MATHEMATICAL PHYSICS</b>
OCTOBER	<b>Theory</b>	Notion of infinitesimal line, surface and volume elements. Line, surface and volume integrals of Vector fields. Flux of a vector field. Gauss' divergence theorem	B.Sc. (Hons) Physics Sem I	<b>PHYSICS-C I: MATHEMATICAL PHYSICS I</b>
		Metric Tensor. Algebra of Tensors. Sum, Difference & Product of Two Tensors. Contraction. Quotient Law of Tensors. Cartesian Tensors Transformation of Coordinates. Einstein's Summation Convention. Relation between Direction Cosines. Tensors. 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 Antisymmetric Tensor of Order Two and Vectors. Isotropic Tensors. Tensorial Character of Physical Quantities. Moment of Inertia Tensor. Stress and Strain Tensors : Symmetric Nature. Elasticity Tensor. Generalized Hooke's Law.	B.Sc. (Hons) Physics Sem V	<b>PHYSICS-DSE: ADVANCED MATHEMATICAL PHYSICS I</b>

	<b>Practicals</b> :	(03 HOURS/WEEK) <ul style="list-style-type: none"> <li>• Errors and error Analysis</li> <li>• Radioactive decay</li> <li>• Current in RC, LC circuits with DC source</li> </ul>	B.Sc. (Hons) Physics Sem I	<b>PHYSICS-C I:</b> MATHEMATICAL PHYSICS I
		(04 HOURS/WEEK) Generating and plotting Legendre Polynomials Generating and plotting Bessel function Solution of coupled spring mass systems (3 masses)	B.Sc. (Hons) Physics Sem III	<b>PHYSICS LAB - C V LAB</b> MATHEMATICAL PHYSICS-II
		(04 HOURS/WEEK) <ul style="list-style-type: none"> <li>• Multiplication of two 3 x 3 matrices.</li> <li>• Eigenvalues and eigenvectors</li> <li>• Orthogonal polynomials as eigenfunctions of Hermitian differential operators.</li> <li>• Determination of the principal axes of moment of inertia through diagonalization</li> <li>• Study of geodesics in Euclidean and other spaces (surface of a sphere, etc)</li> <li>• Estimation of ground state energy and wave function of a quantum system.</li> <li>• Graphics</li> </ul>	B.Sc. (Hons) Physics Sem V	<b>PHYSICS LAB - DSE</b> ADVANCED MATHEMATICAL PHYSICS-I
	<b><u>Mid Term Test</u></b>	Topic covered till 15 October 2018	B.Sc. (Hons) <b>Physics Sem I &amp; V</b>	<b>PHYSICS-C I:</b> MATHEMATICAL PHYSICS I <b>PHYSICS –DSE</b> ADVANCED MATHEMATICAL PHYSICS
NOVEMBER	<b>Theory:</b>	Green's and Stokes Theorems and their verification	B.Sc. (Hons) Physics Sem I	<b>PHYSICS-C VI:</b> THERMAL PHYSICS
		Vector Algebra and Calculus using Cartesian Tensors : Scalar and Vector Products, Scalar and Vector Triple Products. Differentiation. Gradient, Divergence and Curl of Tensor Fields. Vector Identities. Tensorial Formulation of Analytical Solid Geometry : Equation of a Line. Angle Between Lines. Projection of a Line on another Line. Condition for Two Lines to be Coplanar. Foot of the Perpendicular from a Point on	B.Sc. (Hons) Physics Sem V	<b>PHYSICS-DSE:</b> ADVANCED MATHEMATICAL PHYSICS I

		a Line. Rotation Tensor (No Derivation).		
	<b>Practicals</b> :	<p>(03 HOURS/WEEK)</p> <ul style="list-style-type: none"> <li>Given Position with equidistant time data calculate velocity and acceleration and vice versa</li> <li>Evaluation of trigonometric functions e.g. <math>\sin\theta</math>, <math>\cos\theta</math>, <math>\tan\theta</math> etc</li> </ul>	B.Sc. (Hons) Physics Sem I	<b>PHYSICS-C I:</b> MATHEMATICAL PHYSICS I
		<p>(04 HOURS/WEEK)</p> <p>Given Bessel's function at N points find its value at an intermediate point. Generating sine wave, square wave, sawtooth wave</p> <p><input type="checkbox"/> Solution of harmonic oscillator</p>	B.Sc. (Hons) Physics Sem III	<b>PHYSICS LAB - C V LAB</b> MATHEMATICAL PHYSICS-II
		<p>(04 HOURS/WEEK)</p> <ul style="list-style-type: none"> <li>Multiplication of two 3 x 3 matrices.</li> <li>Eigenvalues and eigenvectors</li> <li>Orthogonal polynomials as eigenfunctions of Hermitian differential operators.</li> <li>Determination of the principal axes of moment of inertia through diagonalization</li> <li>Study of geodesics in Euclidean and other spaces (surface of a sphere, etc)</li> <li>Estimation of ground state energy and wave function of a quantum system.</li> <li>Graphics</li> </ul>	B.Sc. (Hons) Physics Sem V	<b>PHYSICS LAB - DSE</b> ADVANCED MATHEMATICAL PHYSICS-I



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

**July-November, 2018**

**Name of the Faculty: Dr. B. V. G. Rao**

**Department: Physics**

**Semester: Odd Semester (Ist)**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	Michelson-Morley Experiment and its outcome. Postulates of Special Theory of Relativity. Lorentz Transformations. Simultaneity and order of events. Lorentz contraction. Time dilation. Relativistic transformation of velocity, frequency and wave number.	B.Sc. (Hons) Physics Sem I	PHYSICS-C II: MECHANICS
	<b>Practicals:</b>	<ol style="list-style-type: none"> <li>1. To study the random error in observations.</li> <li>2. To determine the height of a building using a Sextant.</li> <li>3. To study the Motion of Spring and calculate (a) Spring constant, (b) g and (c) Modulus of rigidity.</li> <li>4. To determine the Moment of Inertia of a Flywheel.</li> <li>5. To determine g and velocity for a freely falling body using Digital Timing Technique</li> <li>6. To determine the Young's Modulus of a Wire by Optical Lever Method.</li> <li>7. To determine the Modulus of Rigidity of a Wire by Maxwell's needle.</li> <li>8. To determine the elastic Constants of a wire by Searle's method.</li> <li>9. To determine the value of g using Bar Pendulum.</li> <li>10. To determine the value of g using Kater's Pendulum.</li> </ol>	B.Sc. (Hons) Physics Sem I	PHYSICS LAB-C II LAB

AUGUST	<b>Theory:</b>	<p>Relativistic addition of velocities. Variation of mass with velocity. Massless Particles. Mass-energy Equivalence. Relativistic Doppler effect. Relativistic Kinematics. Transformation of Energy &amp; Momentum.</p> <p>Law of gravitation. Gravitational potential energy. Inertial &amp; gravitational mass. Potential and field due to spherical shell and solid sphere.</p> <p>Motion of a particle under a central force field. Two-body problem and its reduction to one-body problem and its solution. The energy equation and energy diagram. Kepler's Laws. Satellite in circular orbit &amp; applications.</p>	B.Sc. (Hons) Physics Sem I	PHYSICS-C II: MECHANICS
	<b>Practicals:</b>	<ol style="list-style-type: none"> <li>1. To study the random error in observations.</li> <li>2. To determine the height of a building using a Sextant.</li> <li>3. To study the Motion of Spring and calculate (a) Spring constant, (b) g and (c) Modulus of rigidity.</li> <li>4. To determine the Moment of Inertia of a Flywheel.</li> <li>5. To determine g and velocity for a freely falling body using Digital Timing Technique</li> <li>6. To determine the Young's Modulus of a Wire by Optical Lever Method.</li> <li>7. To determine the Modulus of Rigidity of a Wire by Maxwell's needle.</li> <li>8. To determine the elastic Constants of a wire by Searle's method.</li> <li>9. To determine the value of g using Bar Pendulum.</li> <li>10. To determine the value of g using Kater's Pendulum.</li> </ol>	B.Sc. (Hons) Physics Sem I	PHYSICS LAB-C II LAB
SEPTEMBER	<b>Theory:</b>	<p>Review of SHM (Simple Harmonic Oscillations. Differential equation of SHM and its solution. Kinetic energy, potential energy, total energy and their time<sup>2</sup> average values). Damped oscillation. Forced oscillations: Transient and steady states; Resonance, sharpness of resonance; power dissipation and Quality Factor.</p> <p>Angular momentum of a particle and system of particles. Torque. Principle of conservation of angular momentum. Rotation about a fixed axis. Moment of Inertia. Calculation of</p>	B.Sc. (Hons) Physics Sem I	PHYSICS-C II: MECHANICS

		<p>moment of inertia for rectangular, cylindrical and spherical bodies. Kinetic energy of rotation. Motion involving both translation and rotation.</p> <p>Non-inertial frames and fictitious forces. Uniformly rotating frame. Laws of Physics in rotating coordinate systems. Centrifugal force. Coriolis force and its applications</p>		
	<b>Assignment</b>	Topics covered till September 2018	B.Sc. (Hons) Physics Sem I	PHYSICS-C II: MECHANICS
OCTOBER	<b>Theory</b>	<p>Work and Kinetic Energy Theorem. Conservative and non-conservative forces. Potential Energy. Energy diagram. Stable and unstable equilibrium. Elastic potential energy. Force as gradient of potential energy. Work &amp; Potential energy. Work done by non-conservative forces. Law of conservation of Energy.</p> <p>Elastic and inelastic collisions between particles. Centre of Mass and Laboratory frames.</p> <p>Review of relation between Elastic constants. Twisting torque on a Cylinder or Wire (only qualitative discussion).</p>	B.Sc. (Hons) Physics Sem I	PHYSICS-C II: MECHANICS
	<b>Mid Term Test</b>	Topic covered till 15 October 2018	B.Sc. (Hons) Physics Sem I	PHYSICS-C II: MECHANICS
NOVEMBER	<b>Theory:</b>	<p>Reference frames. Inertial frames, Review of Newton's Laws of Motion. Galilean transformations. Galilean invariance. Momentum of variable mass system: motion of rocket. Motion of a projectile in uniform gravitational field. Dynamics of a system of particles. Centre of Mass. Principle of conservation of momentum. Impulse.</p>	B.Sc. (Hons) Physics Sem I	PHYSICS-C II: MECHANICS



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

**July-November, 2018**

**Name of the Faculty:** Miss Geetika Jain

**Department:** Physics

**Semester:** Odd Semester

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	Constituents of nucleus and their intrinsic properties, quantitative facts about mass, radii, charge density (matter density), angular momentum, magnetic moment, electric moments. (Taken by Dr Manoj Giri)	B.Sc. (Hons) Physics Sem V	DSE-Nuclear and Particle Physics
	<b>Theory:</b>	SEC Theory (Taken by Dr B V G Rao)	B.Sc. (H) Physics Sem III	Renewable & Harvesting Energy
	<b>Practicals:</b>	<i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i> 1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom. $d^2u/dr^2 = A(r) u(r)$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ where $V(r) = -e^2/r$ 2. Solve the s-wave radial Schrodinger equation for an atom: $d^2u/dr^2 = A(r) u(r)$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ , where $V(r) = -e^2/r e^{-r/a}$ 3. Solve the s-wave radial Schrodinger equation for a particle of mass m $d^2u/dr^2 = A(r) u(r)$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ , where $V(r) = \frac{1}{2} kr^2 + \frac{1}{3} br^3$ . 4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule: $d^2u/dr^2 = A(r) u(r)$ , $A(r) = 2 \mu/\hbar^2 [ V(r) - E ]$ , where $V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r''} )$ , $r' = r - r_0$ (Taken by Dr Manoj Giri and Piyush Kumar)	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XI LAB
	<b>Practicals:</b>	SEC: Project assigned/Presentations (Taken by Dr. B.V. G Rao)	B.Sc. (H) Physics Sem III	Renewable & Harvesting Energy

	<b>Tutorials:</b>	1. Discussion on nuclear excited states. 2. What is the distance of closest approach of a 2 MeV proton to a gold nucleus? 3. Calculate the mass number of a nucleus whose radius is $1.66 \times 10^{-15}$ m. ( By Dr Manoj Giri)		
AUGUST	<b>Theory:</b>	Binding energy, average binding energy and its variation with mass number, main features of binding energy versus mass number curve, N/A plot, parity.  (a) Alpha decay: basics of $\alpha$ -decay processes, theory of $\alpha$ - emission, Gamow factor, Geiger Nuttall law, $\alpha$ -decay spectroscopy. (b) beta-decay: energy kinematics for beta-decay. Positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays emission & kinematics, internal conversion.  Types of Reactions, Conservation Laws, kinematics of reactions, Q-value, reaction rate, reaction cross section, Concept of compound and direct Reaction, resonance reaction, Coulomb scattering (Rutherford scattering). (Taken by Dr Manoj Giri)	B.Sc. (Hons) Physics Sem V	DSE-Nuclear and Particle Physics
	<b>Theory:</b>	SEC Theory (Taken by Dr B V G Rao)	B.Sc. (H) Physics Sem III	Renewable & Harvesting Energy
	<b>Practicals:</b>	<i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i> 1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom. $d^2u/dr^2 = A(r) u (r)$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ where $V ( r) = - e^2/r$  2. Solve the s-wave radial Schrodinger equation for an atom: $d^2u/dr^2 = A(r) u (r)$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ , where $V ( r) = - e^2/r e^{-r/a}$  3. Solve the s-wave radial Schrodinger equation for a particle of mass m $d^2u/dr^2 = A(r) u (r)$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ , where $V ( r) = \frac{1}{2} kr^2 + \frac{1}{3} br^3$  4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule: $d^2u/dr^2 = A(r) u (r)$ , $A(r) = 2 \mu/\hbar^2 [ V(r) - E ]$ , where $V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r} )$ , $r' = r - r_0/r$	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XI LAB



	<b>Practicals:</b>	SEC: Project assigned/Presentations (Taken by Dr. B.V. G Rao)	B.Sc. (H) Physics Sem III	Renewable & Harvesting Energy
	<b>Tutorials:</b>	1. Why visible or ultraviolet light can not be used to demonstrate Compton effect? 2. Discussion on alpha spectra. 3. Which of the following nuclei are stable, and which are radioactive? (a) $_{10}\text{Ne}^{18}$ (b) $_{16}\text{S}^{32}$ (c) $_{90}\text{Th}^{236}$ (d) $_{56}\text{Ba}^{123}$		
SEPTEMBER	<b>Theory:</b>	Accelerator facility available in India: Van-de Graaff generator (Tandem accelerator), Linear accelerator, Cyclotron, Synchrotrons. Particle interactions; basic features, types of particles and its families	B.Sc. (Hons) Physics Sem V	DSE-Nuclear and Particle Physics
		SEC Theory	B. Sc. (Hons) - Sem-III	Renewable & Harvesting Energy
	<b>Practicals:</b>	<i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i> 1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom. $d^2u/dr^2 = A(r) u(r)$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ where $V(r) = -e^2/r$ 2. Solve the s-wave radial Schrodinger equation for an atom: $d^2u/dr^2 = A(r) u(r)$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ , where $V(r) = -e^2/r e^{-r/a}$ 3. Solve the s-wave radial Schrodinger equation for a particle of mass m $d^2u/dr^2 = A(r) u(r)$ , $A(r) = 2 m/\hbar^2 [ V(r) - E ]$ , where $V(r) = \frac{1}{2} kr^2 + \frac{1}{3} br^3$ . 4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule: $d^2u/dr^2 = A(r) u(r)$ , $A(r) = 2 \mu/\hbar^2 [ V(r) - E ]$ , where $V(r) = D ( e^{-2\alpha r} - e^{-2\alpha r'} )$ , $r' = r - r_0/r$	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XI LAB
		SEC: Project assigned/Presentations (With Dr. Manoj Giri)	B.Sc. (H) Physics Sem III	PHYSICS LAB- C VI LAB
	<b>Tutorials:</b>	1. An electron and a photon have the same wavelength. Which one has the highest energy? 2. Compare the stopping powers of 4MeV		

		<p>protons and 8 MV deuterons in a given medium.</p> <p>3. Calculate the frequency of a proton cyclotron, if the magnetic field is <math>B = 0.15</math> tesla(T).</p> <p>4. what is the maximum kinetic energy that carbon nuclei can attain in a 70 MeV Tandem accelerator /</p>		
	<b><u>Assignment</u></b>	Topics covered till September 2018		
OCTOBER	<b>Theory:</b>	<p>Symmetries and Conservation Laws: energy and momentum, angular momentum, parity, baryon number, Lepton number, Isospin, Strangeness and charm. Concept of quark model, color quantum number and gluons.</p> <p>Liquid drop model approach, semi empirical mass formula and significance of its various terms</p> <p>Condition of nuclear stability, two nucleon separation energies, Fermi gas model (degenerate fermion gas, nuclear symmetry potential in Fermi gas)</p>	B.Sc. (Hons) Physics Sem V	DSE-Nuclear and Particle Physics
	<b>Theory:</b>	SEC Theory	B. Sc .(Hons)- Sem-III	Renewable & Harvesting Energy
	<b>Practicals:</b>	<p><i>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</i></p> <p>1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom.  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V ( r) = - e^2/r</math></p> <p>2.Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V ( r) = - e^2/r e^{-r/a}</math></p> <p>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V ( r) = \frac{1}{2} kr^2 + 1/3 br^3</math>.</p>	B.Sc. (Hons) Physics Sem V	PHYSICS PRACTICAL-C XI LAB

		4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule: $d^2u/dr^2 = A(r) u(r), A(r) = 2 \mu/\hbar^2 [ V(r) - E ]$ , where $V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r} )$ , $r' = r - r_0/r$		
	<b>Tutorials:</b>	SEC: Project assigned/ Presentations (With Dr. Manoj Giri)  1. Find the strangeness and hypercharge of a neutral elementary particle whose isotopic spin projection is $1/2$ and baryon number is $+$ . What particle is this? 2. Consider the following decay modes. Determine whether or not each decay mode is possible on the basis of electron-lepton number. (i) $\mu^- = e^- + \bar{\nu}_e + \nu_\mu$ (ii) $\pi^+ = \pi^+ + \nu_\mu + \nu_\mu$ 3. What particles corresponds to quark composition $u \bar{s}$ , $ddu$ , $sss$ , $uus$ , $d \bar{s}$ and $uds$ ?	B.Sc. (H) Physics Sem III	Renewable & Harvesting Energy
	<b>Mid Term Test</b>	Topic covered till 15 October 2018	B.Sc. (Hons) Physics Sem V	DSE-Nuclear & Particle Physics
NOVEMBER	<b>Theory:</b>	Evidence for nuclear shell structure, nuclear magic numbers, basic assumption of shell model, concept of mean field, residual interaction, concept of nuclear force.	B.Sc. (Hons) Physics Sem V	DSE-Nuclear & Particle Physics
	<b>Theory:</b>	SEC Theory	B. Sc. (Hons)- Sem-III	Renewable & Harvesting Energy

<p><b>Practicals:</b></p>	<p>Use C/C++/Scilab for solving the following problems based on Quantum Mechanics</p> <p>1. Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom.  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math> where <math>V ( r) = - e^2/r</math></p> <p>2.Solve the s-wave radial Schrodinger equation for an atom:  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V ( r) = - e^2/r e^{-r/a}</math></p> <p>3. Solve the s-wave radial Schrodinger equation for a particle of mass m  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 m/\hbar^2 [ V(r) - E ]</math>, where <math>V ( r) = \frac{1}{2} kr^2 + 1/3 br^3</math>.</p> <p>4. Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule:  <math>d^2u/dr^2 = A(r) u (r)</math>, <math>A(r) = 2 \mu/\hbar^2 [ V(r) - E ]</math>, where <math>V(r) = D ( e^{-2\alpha r'} - e^{-2\alpha r'})</math>,  <math>r' = r - r_0/r</math></p>	<p>B.Sc. (Hons) Physics Sem V</p>	<p>PHYSICS PRACTICAL-C XI LAB</p>
<p><b>Tutorials:</b></p>	<p>SEC: Project assigned/Presentations (With Dr. Manoj Giri)</p> <p>1. Predict the spin and parity of nuclei:  <math>_{49}\text{In}^{119}</math> and <math>_{20}\text{Ca}^{47}</math></p> <p>2.Accrding to shell model, what are the spins and parities of the following nuclei in their ground states: <math>_{2}\text{He}^4</math> (ii) <math>_{7}\text{N}^{14}</math></p>	<p>B.Sc. (H) Physics Sem III</p>	<p>Renewable &amp; Harvesting Energy</p>



**SEMESTER WISE TEACHING PLAN**  
**SRI VENKATESWARA**

**COLLEGE**

**July-November, 2018**

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

**Department: Physics**

**Semester: Odd**

Month		Topics	Course	Paper Code/Name
JULY	<b>Theory:</b>	1. First Order Differential Equations, their solution using integrating factor	B.Sc. (H) Physics Sem I	Mathematical Physics I C-I
		1. Periodic functions. Orthogonality of sine and cosine functions, Dirichlet Conditions	B.Sc. (H) Physics Sem III	Mathematical Physics II C-V
	<b>Practicals:</b>	1. To study the random error in observations. 2. To determine the height of a building using a Sextant. 3. To study the Motion of Spring and calculate (a) Spring constant, (b) g and (c) Modulus of rigidity. 4. To determine the Moment of Inertia of a Flywheel. 5 To determine g and velocity for a freely falling body using Digital Timing Technique 6. To determine the Young's Modulus of a Wire by Optical Lever Method. 7. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 8. To determine the elastic Constants of a wire by Searle's method. 9. To determine the value of g using Bar Pendulum. 10. To determine the value of g using Kater's Pendulum.	B.Sc. (H) Physics Sem I	Mechanics C-II
		<b>Practicals:</b>	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. 7. To calibrate a thermocouple to measure temperature in a specified Range using (1) Null Method, (2) Direct measurement using	B.Sc. (H) Physics Sem III

		Op-Amp difference amplifier and to determine Neutral Temperature.		
	<b>Assignment</b>	Based on theory taught.		
AUGUST	<b>Theory:</b>	1, Methods of solution of First Order exact differential Equations 2. Methods of solution of First Order inexact differential Equations 3. Introduction of Second Order Differential Equations.	B.Sc. (H) Physics Sem I	Mathematical Physics I C-I
		1. Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients. 2. Even and odd functions and their Fourier expansions. Applications. Summing of Infinite Series. 3. Term-by-Term differentiation and integration of Fourier Series. Parseval Identity. 4. Singular Points of Second Order Linear Differential Equations and their importance.	B.Sc. (H) Physics Sem III	Mathematical Physics II C-V
	<b>Practicals:</b>	1. To study the random error in observations. 2. To determine the height of a building using a Sextant. 3. To study the Motion of Spring and calculate (a) Spring constant, (b) g and (c) Modulus of rigidity. 4. To determine the Moment of Inertia of a Flywheel. 5 To determine g and velocity for a freely falling body using Digital Timing Technique 6. To determine the Young's Modulus of a Wire by Optical Lever Method. 7. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 8. To determine the elastic Constants of a wire by Searle's method. 9. To determine the value of g using Bar Pendulum. 10. To determine the value of g using Kater's Pendulum.	B.Sc. (H) Physics Sem I	Mechanics C-II
	<b>Practicals:</b>	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. 7. To calibrate a thermocouple to measure temperature in a specified Range using	B.Sc. (H) Physics Sem III	Thermal Physics C-V

	<b>Assignments:</b>	(1) Null Method, (2) Direct measurement using Op-Amp difference amplifier and to determine Neutral Temperature.		
		Based on theory taught		
SEPTEMBER	<b>Theory:</b>	1. Methods of solution of Homogeneous Second Order Differential Equations with constant coefficients. 2. Idea of Linearly dependent and independent functions and their properties and Wronskian	B.Sc. (H) Physics Sem I	Mathematical Physics I C-I
		1. Frobenius method and its applications to differential equations. 2. Solution of Legendre Differential Equation. Properties of Legendre Polynomials: Rodrigues Formula, Generating Function, Orthogonality. Simple recurrence relations. Expansion of function in a series of Legendre Polynomials. 3. Solution of Bessel Differential Equation. Bessel Functions of the First Kind: Generating Function, simple recurrence relations. Zeros of Bessel Functions ( $J_0(x)$ and $J_1(x)$ ) and Orthogonality. Solutions of Hermite and Laguerre Differential Equations	B.Sc. (H) Physics Sem III	Mathematical Physics II C-V
	<b>Practicals:</b>	1. To study the random error in observations. 2. To determine the height of a building using a Sextant. 3. To study the Motion of Spring and calculate (a) Spring constant, (b) $g$ and (c) Modulus of rigidity. 4. To determine the Moment of Inertia of a Flywheel. 5 To determine $g$ and velocity for a freely falling body using Digital Timing Technique 6. To determine the Young's Modulus of a Wire by Optical Lever Method. 7. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 8. To determine the elastic Constants of a wire by Searle's method. 9. To determine the value of $g$ using Bar Pendulum. 10. To determine the value of $g$ using Kater's Pendulum.	B.Sc. (H) Physics Sem I	Mechanics C-II
	<b>Practicals:</b>	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	B.Sc. (H) Physics Sem III	Thermal Physics C-V

		Thermocouple with Difference of Temperature of its Two Junctions. 7. To calibrate a thermocouple to measure temperature in a specified Range using (1) Null Method, (2) Direct measurement using Op-Amp difference amplifier and to determine Neutral Temperature.		
	<b>Assignments:</b>	Based on theory taught		
OCTOBER	<b>Theory</b>	1. General solution of Second Order Differential Equations with constant coefficients using Wronskian. 2. Operator Method of solution of Homogeneous Second Order Differential Equations. 3. Method of undetermined coefficients for the solution of Second Order Differential Equations		
		1. Beta and Gamma Functions and Relation between them. Expression of Integrals in terms of Gamma Functions. 2. Solutions to partial differential equations, using separation of variables: Laplace's Equation in problems of rectangular geometry	B.Sc. (H) Physics Sem III	Mathematical Physics II C-V
	<b>Practicals:</b>	1. To study the random error in observations. 2. To determine the height of a building using a Sextant. 3. To study the Motion of Spring and calculate (a) Spring constant, (b) g and (c) Modulus of rigidity. 4. To determine the Moment of Inertia of a Flywheel. 5 To determine g and velocity for a freely falling body using Digital Timing Technique 6. To determine the Young's Modulus of a Wire by Optical Lever Method. 7. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 8. To determine the elastic Constants of a wire by Searle's method. 9. To determine the value of g using Bar Pendulum. 10. To determine the value of g using Kater's Pendulum.	B.Sc. (H) Physics Sem I	Mechanics C-II
	<b>Practicals:</b>	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	B.Sc. (H) Physics Sem III	Thermal Physics C-V



		Temperature of its Two Junctions. 7. To calibrate a thermocouple to measure temperature in a specified Range using (1) Null Method, (2) Direct measurement using Op-Amp difference amplifier and to determine Neutral Temperature.		
	<b><u>Mid Term Test</u></b>	Syllabus covered before commencement of Test	B.Sc. (H) Physics Sem I	Mathematical Physics I C-I
		Syllabus covered before commencement of Test		
NOVEMBER	<b>Theory:</b>	1. Method of variation of parameters for the solution of Second Order Differential Equations 2. Dirac Delta Function.	B.Sc. (H) Physics Sem I	Mathematical Physics I C-I
		1. Solution of wave equation for vibrational modes of a stretched string, rectangular and circular membranes.	B.Sc. (H) Physics Sem III	Mathematical Physics II C-V
	<b>Practicals:</b>	1. To study the random error in observations. 2. To determine the height of a building using a Sextant. 3. To study the Motion of Spring and calculate (a) Spring constant, (b) g and (c) Modulus of rigidity. 4. To determine the Moment of Inertia of a Flywheel. 5 To determine g and velocity for a freely falling body using Digital Timing Technique 6. To determine the Young's Modulus of a Wire by Optical Lever Method. 7. To determine the Modulus of Rigidity of a Wire by Maxwell's needle. 8. To determine the elastic Constants of a wire by Searle's method. 9. To determine the value of g using Bar Pendulum. 10. To determine the value of g using Kater's Pendulum.	B.Sc. (H) Physics Sem I	Mechanics C-II
	<b>Practicals:</b>	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. 7. To calibrate a thermocouple to measure temperature in a specified Range using (1) Null Method, (2) Direct measurement using Op-Amp difference amplifier and to	B.Sc. (H) Physics Sem III	Thermal Physics C-V

		determine Neutral Temperature.		

**Teaching Plan for Electricity & Magnetism (Theory and Practical) Paper GE-1  
(Physics) 2018-19**

**Dr. Anant Pandey, Physics Department, Sri Venkateswara College, University of  
Delhi, Dhaula Kuan, New Delhi-110021**

Week	Month	No. of periods/week	Syllabus to be covered (Theory)	*Experiments to be performed by different groups of students (Practicals)
1	July	4	Vector Analysis: Review of vector algebra (Scalar and Vector product), gradient, divergence, curl and their significance	Ballistic galvanometer, De Sauty's bridge, RC series, LCR series and parallel, Carey Foster's bridge, Thevenin's and Norton's theorems, Superposition and Maximum Power Transfer theorems.
2	July	4	Vector Analysis: Vector Integration, Line, surface and volume integrals of Vector fields	-do-
3	August	4	Vector Analysis: Gauss-divergence theorem and Stokes' theorem of vectors	-do-
4	August	4	Electrostatics: Electrostatic Field, electric flux, Gauss's theorem of electrostatics.	-do-
5	August	4	Applications of Gauss theorem- Electric field due to point charge, infinite line of charge, uniformly charged spherical shell and solid sphere, plane charged sheet, charged conductor.	-do-
6	August	4	Electric potential as line integral of electric field, potential due to a point charge, electric dipole, uniformly charged spherical shell and solid sphere.	-do-
7	September	4	Calculation of electric field from potential. Capacitance of an isolated spherical conductor. Parallel plate, spherical and cylindrical condenser. Energy per unit volume in electrostatic field.	-do-

8	September	4	Dielectric medium, Polarisation, Displacement vector. Gauss's theorem in dielectrics. Parallel plate capacitor completely filled with dielectric.	-do-
9	September	4	Magnetostatics: Biot-Savart's law and its applications- straight conductor, circular coil, solenoid carrying current. Divergence and curl of magnetic field. Magnetic vector potential.	-do-
10	September	4	Ampere's circuital law. Magnetic properties of materials: Magnetic intensity, magnetic induction, permeability, magnetic susceptibility. Brief introduction of dia-, para- and ferromagnetic materials.	-do-
11	October	4	Electromagnetic Induction: Faraday's laws of electromagnetic induction, Lenz's law	-do-
12	October	4	Self and mutual inductance, L of single coil, M of two coils. Energy stored in magnetic field.	-do-
13	October	4	Maxwell's equations and Electromagnetic wave propagation: Equation of continuity of current, Displacement current waves, polarization.	-do-
14	November	4	Maxwell's equations	-do-
15	November	4	Poynting vector, energy density in electromagnetic field, electromagnetic wave propagation through vacuum and isotropic dielectric medium, transverse nature of EM	-do-

Total number of theory lectures in the semester = 60

\*Each group of students needs to perform a minimum of 5 experiments in the semester.