

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), COIMBATORE - 29.

ACADEMIC PLANNING

Department : Biochemistry

Name of the Teacher : Dr. N. Santhosh Kumar

Year 20²¹ - 20²²

Title of the Paper : Immunology & Immune techniques

Subject Code :

Semester : ODD / EVEN ✓

Test No. & Period	Topics Allotted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 21.2.22 To : 13.04.2022	<u>UNIT-I</u> Innate, Acquired, Child Immunity - Th1, Th2, Th17, Treg, Lymph, MALT - Full <u>UNIT-II</u> (Fut) Antibody mediated Immunity, TNF, C3F, cytotoxic activity of Tc, NK, K cells. <u>UNIT-III</u> (Fut) Antigen presentation, MHC restriction.	30	30	NIL		
II From : 25.4.22 To : 07.06.22	<u>UNIT-IV</u> (Fut) Antibodies, structure, classification, phagocytosis and inflammation. <u>UNIT-V</u> (Fut) Hypersensitivity, RA, AIDS, T-cells, disease, clinical syndrome <u>UNIT-VI</u> (Fut) Antigen-Antibody interaction, Techniques involved in Immunology.	30	30	NIL		

ACADEMIC PLANNING

Department : Biochemistry

Name of the Teacher : Dr. M. Santhoshkumar

Title of the Paper : C.P. Human physiology

Subject Code : 19UBC505

Year 20²¹ - 20²²

Semester : ✓ ODD / ✓ EVEN

Test No. & Period	Topics Allotted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature
I	<u>UNIT-I</u> Skeletal muscle, structure, muscle contraction, source of energy. Body Fluids & blood, blood, ICF, ECF, buffers, Lymphatic system <u>UNIT-II</u> Digestive system - GI tract, digestion & absorption, Respiratory system, CO ₂ -O ₂ transport <u>UNIT-III</u> Excretory system - Kidney, urine - properties, formation, RAAS	30 hours	30 hours	NIL	Staff 
From : 9.8.2021 To : 7.10.2021					
II	<u>UNIT-III</u> : Nervous system - Neuron, Action potential, mechanism of neuromuscular transmission, dopamine <u>UNIT-IV</u> Endocrine system - mechanisms, hormones, Pathophysiology - thyroid hormones. <u>UNIT-V</u> Male Reproductive system, Female reproductive system, spermatogenesis, testosterone, Ovarian cycle, Menopause, estrogens, progesterone	30 hours	30 hours	NIL	Staff 
From : 8.10.2021 To : 31.01.2022					

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ACADEMIC PLANNING

Department : Biochemistry

Name of the Teacher : Dr. K. Nirubama

Year 20~~0~~²¹ - 20~~0~~²²

Title of the Paper : C.P. 8 Molecular Biology

Subject Code : 19UBC508

Semester : ODD / EVEN

Test No. & Period	Topics Allotted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 9.8.2021 To : 7.10.2021	<u>UNIT-I</u> organization of eucaryotic chromosome Nucleosomes, chromatin assembly. DNA carrier Genetic information, Transformation, transduction, conjugation, Griffith's, Avery's & Hershey chase Experiments. <u>UNIT-II</u> DNA replication, DNA repair mechanism Inhibitors, Mutation & its types. <u>UNIT-III</u> Transcription - Central Dogma, RNA Polymerase	30hrs	30hrs	Nil		
II From : 8.10.2021 To : 31.01.2022	Initiation, elongation & Termination of transcription Post transcriptional modification, RNA directed RNA polymerase <u>UNIT IV</u> Translation Genetic code - features Protein synthesis in Prokaryotes - Inhibitors <u>UNIT V</u> Gene regulation - Terminology - Types Lactose operon in E. coli - Positive, Negative regulation, lac operon, co-repressor, tryptophan	30hrs	30hrs	Nil		

ACADEMIC PLANNING

Department : Biochemistry

Name of the Teacher : Dr. R. Nirubama

Year 200²¹ - 200²²

Title of the Paper : Diagnostic Biochemistry

Subject Code : 19UBCSX1

Semester : ODD / EVEN

Test No. & Period	Topics Allotted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 9.8.2021 To : 4.10.2021	<u>UNIT I</u> Introduction - components of Blood - cellular & fluid components & functions - collection of blood specimens - Anticoagulants (heparin - EDTA & sodium citrate) <u>UNIT - III</u> Serology - Introduction & clinical significance of ELISA	8hrs	8hrs	NIL		
II From : 8.10.2021 To : 31.12.2022	<u>UNIT - III</u> Fluorescent Antibodies, VDRL test, widal test, RA test, Pregnancy test, CRP test. <u>UNIT V</u> Sex hormones - FSH, testosterone, Progesterone & estrogen + Biosafety Measures & disposal of laboratory waste	7hrs	7hrs	NIL		

ACADEMIC PLANNING

Department : BiochemistryName of the Teacher : Dr. K. NirubamaYear 20²¹ - 20²²Title of the Paper : Enzymes and Enzyme TechnologySubject Code : 200BC303

Semester : ODD/EVEN

Test No. & Period	Topics Allotted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 9.8.2021 To: 7.10.2021	<u>UNIT-I</u> Enzymes - Numbering & nomenclature. Enzyme unit (IU) - active sites - Theories - lock & key or induced fit model - Enzyme specificity - Turnover number. - Factors (PH, Temp, enzyme) <u>UNIT-III</u> Coenzymes - TPP - NAD/NADP FMN, FAD, coenzyme, lipoic acid, biotin	18 hrs	18 hrs	NIL		
II From : 8.10.2021 To: 31.01.2022	<u>UNIT-IV</u> Immobilized enzymes - sources and techniques - choice of immobilization - Industrial, ^{analytical} medicinal applications <u>UNIT-V</u> enzyme diagnostic importance Isoenzymes - LDH - ELISA - Biosensors - ribozymes, abzymes, synzymes	17 hrs	17 hrs	NIL		

ACADEMIC PLANNING

Department : Biochemistry

Name of the Teacher : Dr. K. Nirmala

Year 200²¹ - 200²²

Title of the Paper : B.S.4 Technician in Genomics & Proteomics

Subject Code : 19UB653

Semester : ODD / EVEN ☒

Test No. & Period	Topics Allotted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature	
					Staff	HO
I From : 21.2.2022 To : 13.04.2022	<u>UNIT-I</u> omics by its importance - DNA Eukaryotes, RFLP & RAPD, BAC libraries & cDNA libraries - mapping of genome, cytogenetic maps - restriction mapping - FISH - STS - gene editing - CRISPR/Cas9. <u>UNIT-II</u> High throughput sequencing by shotgun sequencing, PCR - RT-PCR, cDNA library - positional cloning - gene therapy	15 hrs	15 hrs	NIL		
II From : 25.04.2022 To : 7.06.2022	<u>UNIT-III</u> comparative genomics - orthology & Paralogy - model organisms - C. elegans & Drosophila - synthetic genomes & applications. <u>UNIT-IV</u> Transcriptomics - DNA microarray - Northern blot - microarray data analysis - Pharmacogenomics - genetic tests. <u>UNIT-V</u> Proteomics - MALDI-TOF - MS - PFGE - 2D gel electrophoresis - ^{Protein} microarray	15 hrs	15 hrs	NIL		

ACADEMIC PLANNING

Department : BiochemistryName of the Teacher : Dr. K. VisubarnaYear 200²¹ - 200²²Title of the Paper : C.P.4. Intermediary MetabolismSubject Code : 20UBC404

Semester : ODD / EVEN

Test No. & Period	Topics Alloted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 21.2.22 To : 13.4.22	<u>UNIT - I</u> , carbohydrate metabolism Glycolysis, regulation - citric cycle - Glucose alanine cycle - utilization fructose 1,6 diphosphate, metabolic fate pyruvate, Pentose phosphate pathway <u>UNIT - II</u> , lipid metabolism - carnitine cycle - β -oxidation, α -oxidation by ω -oxidation	15 hrs	15 hrs	NIL		
II From : 25.4.22 To : 7.6.22	<u>UNIT - III</u> , Biosynthesis saturated fatty Biosynthesis by degradation, Lecithin, ^{acids} cephalin - inositol - serine - sphingolipids Biosynthesis of glycolipids - cholesterol <u>UNIT - IV</u> Nucleic acid metabolism Purines de novo synthesis - metabolism of pyrimidines - conversion RNA to DNA, allopathic uracil.	15 hrs	15 hrs	NIL		

Department : Biochemistry Name of the Teacher : Dr. K. Nimbama
 Title of the Paper : Allied Biochemistry Subject Code : 200BC4A4

Year 200² - 200² 22

Semester : ODD / EVEN ✓

Test No. & Period	Topics Alloted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 21.2.22 To : 13.4.22	<u>UNIT V</u> metabolic pathways lipid and Protein metabolism. Lipid metabolism - Beta oxidation - biosynthesis of saturated fatty acids - Palmitic acid.	8hrs	8hrs	NIL		
II From : 25.4.22 To : 07.06.22	<u>UNIT - VI</u> Protein metabolism - General Pathway of amino acid metabolism deamination, transamination and decarboxylation - Urea cycle. interrelationship of carbohydrate, fat and Protein metabolism.	7hrs	7hrs	NIL		

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ACADEMIC PLANNING

Department : Biochemistry

Name of the Teacher : Dr. V. Selvi

Year 200²¹ - 200²²

Title of the Paper : C.B. Bacteriology & Microbiology 2
Biotechnology

Subject Code : 19UB1506

Semester : ✓ ODD / EVEN

Test No. & Period	Topics Allotted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 9.8.2021 To : 7.10.2021	Unit I - Introduction to Microbiology, culture techniques, staining techniques, Prokaryotes - morphology & bacteria component parts, cell wall structure, growth curve, media composition, Prokaryotes Eukaryotes - Morphology, characteristics and importance of algae & fungi.	15 hrs	15 hrs	Nil	<u>h</u>	<u>h</u>
II From : 8.10.2021 To : 31.01.2022	<u>Viruses</u> : cultivation, structure & viruses, plaque assay. Bacteriophages - T₄ phage, stages in life cycle, Lambda phage, life cycle, switch between lysogeny and lytic cycle. Oncogenic viruses - oncogenic DNA viruses - SV40; oncogenic RNA viruses - HIV.	15 hrs	15 hrs	Nil	<u>h</u>	<u>h</u>

Department : BiochemistryName of the Teacher : Dr. V. Selvi2021-2022
Year 200 - 200Title of the Paper : CP1. Chemistry of Bio-moleculesSubject Code : 21UAC101Semester : ODD / EVEN

Test No. & Period	Topics Alloted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 9.8.2021. To : 7.10.2021	<u>Unit I</u> - Carbohydrates - complete unit. <u>Unit-II</u> - Lipids . Classification of lipids . Types of fatty acids . Classification and significance of phospholipids - phosphatidyl choline , P-serine & P-inositol and sphingomyelin	30 hrs	30 hrs	nil	h	h
II From : 8.10.2021 To : 31.01.2022.	<u>Unit II</u> : Classification and significance of glycolipids. Cerebrosides and gangliosides. Classification and functions of lipoproteins. Structure and biological functions of cholesterol. <u>Unit III</u> Amino acids - full unit	30 hrs	30 hrs	nil	h	h

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ACADEMIC PLANNING

Department : Biochemistry Name of the Teacher : Dr. V. Selvi

Year 200²¹ - 200²²

Title of the Paper : CP-II Genetic Technology Subject Code : 19VBCB11

Semester : ~~ODD~~ / ☒ EVEN

Test No. & Period	Topics Allotted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 21.02.2022 To : 13.04.2022	Unit I - Gene cloning - complete. Unit II - complete. Unit III - DNA sequencing, restriction fingerprinting.	30 hrs	30 hrs	Nil	b	b
II From : 25.04.2022 To : 07.06.2022	Unit IV - In vitro mutagenesis, protein engineering, basic PCR techniques and applications. Unit V - complete Unit VI - complete.	30 hrs	30 hrs	Nil	b	b

Department : BiochemistryName of the Teacher : Dr. V. SelviYear 200²¹ - 200²²Title of the Paper : C.P.H. Intermediary MetabolismSubject Code : 200AC404Semester : ODD / EVEN

Test No. & Period	Topics Alloted	No. of hours required for completion	Dates & hrs of handling	Topics not covered, if any	Signature of	
					Staff	HOD
I From : 21.02.2022 To : 13.04.2022	Unit IV : Amino acid Metabolism : Amino acid pool, overview of amino acid metabolism, deamination, decarboxylation, metabolism of ammonia, urea cycle, metabolism of individual amino acids - glycine, phenyl alanine & tyrosine. Unit I TCA cycle, reactions of the cycle, biosynthesis, anabolic pathway, anaplerotic reactions & TCA cycle.	15 hrs	15 hrs	Nil		
II From : 25.04.2022 To : 07.06.2022	Unit I pathway of glycogenesis and glycogenolysis, gluconeogenesis, definition, significance, pathway, substrate of gluconeogenesis, regulation of gluconeogenesis. Unit II - Electron Transport chain and oxidative phosphorylation - complete unit.	15 hrs	15 hrs	Nil.		