



2021 - 2022

DEPARTMENT OF BIOCHEMISTRY
B.SC., BIOCHEMISTRY
POs and COs Mapping

Sem	Course Code	Title of the Course	COs	POS							
				PO1	PO2	PO3	PO4	PO5	PO6	PO7	
SEM I	20110AEC11	Tamil I	CO1 Learn the changes occurred in literature since classical period.	3							
			CO2 Make use of vocabulary systematically	3							
			CO3 Understand how to lead one's life realizing the modernity and its environment/atmosphere.	3							
	20111AEC11	Advanced English-I	CO1 Develop vocabulary	3							
			CO2 Read and comprehend literature	3							
			CO3 Read and comprehend literature	3							
	20111AEC12	English-I	CO1 Appreciate poetry and prose	3							
			CO2 Familiarize students with fiction.	3							
			CO3 Read and comprehend literature	3							
	20115AEC13	Biomolecules	CO1 Recognize water as a universal solvent and elixir of life by knowing its importance						3		
			CO2 Identify the properties and classification of carbohydrates						3		
			CO3 Recall the role of various lipids in biomembrane including signal transduction						3		
			CO4 Categories the amino acids and know their properties						3		

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	English-II	CO2 Able to write in a variety of formats	3					
2011AEC22	English-II	CO3 Read biographies and develop personality	3					
		CO1 Appreciate different forms of literature.	3					
		CO2 Acquire language skills through literature	3					
20115AEC23	Biochemical Techniques	CO3 Broadens the horizon of knowledge	3					
		CO1 The units of this paper are crucial for implementation of research ideas at molecular level.	3		3		3	
		CO2 This skill based course will teach the students the various instrumentations that are used in the analytical laboratories.	3		3		3	
		CO3 This course covers both fundamental and applications of the instruments that are routinely used for the characterization of biomolecules	3		3		3	
		CO4 It trains the students in adopting various techniques in biological research.	3		3		3	
		CO5 To learn various techniques and acquire the skills to use appropriate methods	3		3		3	
		CO6 To acquire the good laboratory practices	3		3		3	
20115AEC24L	Biochemical Techniques Lab-I	CO7 This significantly enhances the employability of the candidates in Biotechnological, Pharmaceutical Industries and Analytical Laboratories and research institutes.	3		3		3	
		CO1 Gain knowledge on lab safety				3		3
		CO2 Trained on preparation of reagents and solution				3		3
		CO3 Students will understand the concept of spectrophotometer				3		3
		CO4 They will be able to assess the suitability of chromatographic techniques for solving specific bio-analytical problems and critically apply the knowledge for biomolecules separation				3		3

20111RLC27	Research Led seminar	CO1 Exposure to various research domains	3		3	3
		CO2 Acquaintance with languages of research	3		3	3
		CO3 Development of research aptitude	3		3	3
20120SEC02A	Packages Lab-II	CO1 Identify the names and functions of the PowerPoint interface.	3			
		CO2 Create, edit, save, and print presentations.	3			
		CO3 Format presentations.	3			
		CO4 Add a graphic to a presentation.	3			
		CO5 Create and manipulate simple slide shows with outlines and notes.	3			
		CO6 Create slide presentations that include text, graphics, animation, and transitions	3			
20160SEC02B	Soft Skill -II	Build self development		3		
20111SEC02L	Communicative English Lab-II	CO1 Learn grammar.		3		
		CO2 Use a variety of reading strategies		3		
		CO3 Enhance the skill of making grammatically correct sentences.		3		
SEM III	Tamil III	CO1 Achieve one's goal by following the ancestral path		3		
		CO2 Learn to lead life of perfection by realizing the uncertainty in the life		3		
		CO3 Attain happiness through honesty		3		
		CO1 Understand phonetics.		3		
		CO2 Develop writing skill		3		
		CO3 Able to develop creative writing		3		
20111AEC31	Advanced English-III	CO1 Enable to appreciate different types of prose		3		
		CO2 Develop the conversational skills through one-act plays		3		
		CO3 Enhance the skill of making grammatically correct sentences.		3		
20111AEC32	English-III					

20115AEC33	Cell Biology and Genetics	CO1 Differentiate the prokaryotic and eukaryotic cell	3	3					
		CO2 Understand the principle behind studying the cell morphology using various microscope	3	3					
		CO3 Identify the structure and functions of each organelle in cell	3	3					
		CO4 Recognise the mechanism behind the protein sorting and transport to their destinations like lysosome, mitochondria and chloroplast	3	3					
		CO5 Maintenance of cytoskeleton structure and function of micro, macro and intermediary filaments	3	3					
		CO6 Identify the proteins involved in cell interaction	3	3					
		CO7 Enumerate the phases of cell cycle, events in cell division and mechanism of cell death.	3	3					
20115AEC34L	Cell Biology and Genetics Lab	CO1 By the end of the course, students can be able to demonstrate the importance of the chromatography and their wide applications	3	2	3	3	3	3	
		CO2 Understand and apply the principles and techniques of separation of pigments, amino acid and protein which prepares students for further education and/or employment in teaching, basic research, or the health professions.	3	2	3	3	3	3	
		CO3 would be able to separate the plant pigments, identify and distinguish different amino acid, protein, lipids	3	2	3	3	3	3	
		CO4 would be able to identify and outline the structure of an cell membrane at different magnification	3	2	3	3	3	3	
		CO5 It trains the students in adopting various techniques in biological research.	3	2	3	3	3	3	
20120AEC35	Programming in C	CO1 Understanding a functional hierarchical code organization.	3						

			CO2 Ability to define and manage data structures based on problem subject domain.	3					
			CO3 Understanding a concept of object thinking within the framework of functional model.	3					
			CO4 Understanding a concept of functional hierarchical code organization.	3					
			CO5 Understand operators, expressions and preprocessors.	3					
			CO6 To learn the concept of programming	3					
20120AEC36L		Programming in C Lab	CO1 : To know the proper lines of C++, Encapsulation, Inheritance and Polymorphism.	3					
			CO2 : To explain the various data types, operations and functions of C++.	3					
			CO3 : To know the concept of constructors and destructors.	3					
			CO4 : To explain the concept of inheritances, types of inheritance and polymorphism, virtual function Functions.	3					
			CO5 : To explain the types of streams, format and format of input and output operations.	3					
			CO6:To Known the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.	3					
20117RMC37		Research Methodology	CO1 Understanding research questions and tools				3	3	3
			CO2 Experience in scientific writings				3	3	3
			CO3 Practice in various aspects of scientific publications				3	3	3
			CO4 Incultation of research ethics				3	3	3
20120SEC01AL		Package lab-III	CO1 Indicate the names and functions of the Excel interface components.	3					
			CO2 Enter and edit data.	3					
			CO3 Format data and cells.	3					

	<p>CO3 Acquire good knowledge on Nervous & Muscular systems</p> <p>CO4 A Fair knowledge on Human Reproductive Biology provides information with the system, hormones involved, disorders associated with them in, and treatments in both genders respectively.</p> <p>CO5 Understand "Anatomy & Physiology of various Systems such as Nervous system, Muscular system, Reproductive system, Liver.</p> <p>CO6 It gives and exposure about human anatomy and physiology.</p>	3	3	3	3	3
20115AEC44L	<p>Biochemical Techniques Lab-II</p> <p>CO1 This skill based course will teach the students the various instrumentations that are used in the analytical laboratories.</p> <p>CO2 This course covers both fundamental and applications of the instruments that are routinely used for the characterization of biomolecules</p> <p>CO3 Perform skillful specimen collection, identification and processing</p> <p>CO4 Utilize communication skills necessary-for working in the health care setting</p> <p>CO5 Exhibit professionalism, initiative, positive interpersonal skills, teamwork, respect and integrity.</p> <p>CO6 By the end of the course, students can be able to demonstrate the importance of the blood, buffer and their wide applications</p>	3	3	3	3	3
20120AEC45	<p>Fundamentals of Computing</p> <p>CO1 Bridge the fundamental concepts of computers with the present level of knowledge of the students.</p> <p>CO2 Familiarise operating systems, programming languages, peripheral devices, networking, multimedia and internet</p> <p>CO3 Understand binary, hexadecimal and octal number systems and their arithmetic.</p>	3	3	3	3	3

201ENV1STU	Environmental Studies	CO3 Develop soft skills	3											
		CO4 Enhance presentation skills	3											
SEM V	20115AEC51 Enzymes	CO1 to acquire awareness about immediate/wider surroundings through lived experiences on various themes related to daily life for example Family, Plants, Animals, Food, Water, Travel, and Shelter etc.	3								2		3	
		CO2 To learn natural curiosity and creativity for the immediate surroundings.	3									2		3
		CO3 To develop various processes/skills e.g. observation, discussion, explanation, experimentation, logical reasoning, through interaction with immediate surroundings.	3									2		3
		CO4 To develop sensitivity for the natural, physical and human resources in the immediate environment.	3									2		3
		CO5 point out/ raise issues related to equality, justice and respect for human dignity and rights.	3									2		3
		CO6 To Learn about environmental pollution.	3									2		3
		CO7 Familiarize with the social issues and the environment	3									2		3
		CO1. Understand the basic concepts on enzymes												
		CO2 Relate the initial velocity and substrate concentration of enzymes and be able to understand the kinetics of inhibition reactions	3						3			3		3
		CO3. Able to understand the regulation pattern of various enzymes	3						3			3		3
CO4. Relate the regulation pattern of enzymes for its application in health and diseases	3						3			3		3		
CO5. Understand the application of enzymes in Industrial and therapeutic.	3						3			3		3		
CO 6 Exposure to the nature of non-protein enzymes such as ribozymes.	3						3			3		3		

20115AEC52	Bioenergetics and Metabolism	CO1 To shed knowledge on generation and transformation of energy in metabolic pathways.	3		3		3	3	3
		CO2 To know the various metabolic pathways associated with carbohydrate, lipid, protein and nucleic acid metabolism, their regulation and associated disorders.	3		3		3	3	3
		CO3 To understand the inter relationship of carbohydrate, lipid, protein and nucleic acid metabolism and understand the importance of TCA cycle.	3		3		3	3	3
		CO4 To aware about the Biological oxidation	3		3		3	3	3
		CO5 Understanding the importance of high energy compounds, electron transport chain, synthesis of ATP under aerobic and anaerobic conditions.	3		3		3	3	3
		CO6 Understand the anabolic and catabolic processes associated with amino acids and nucleic acids and their regulation.	3		3		3	3	3
20115AEC53	Immunology	CO1 The students may understand the immune system, its components and various techniques used in bio manipulation.	3		3		3	3	3
		CO2 Describe surface membrane barriers and their protective functions.	3		3		3	3	3
		CO3 Explain the importance of phagocytosis and natural killer cells in innate body defense.	3		3		3	3	3
		CO4 Describe the roles of different types of T cells, B cells and APCs.	3		3		3	3	3
		CO5 Compare and contrast the origin, maturation process, and general function of B and T lymphocytes.	3		3		3	3	3
		CO6 Along with this the students will become aware about concept, synthesis and action mechanism of vaccines.	3		3		3	3	3
20115AEC54L	Food and enzyme	CO1 To illustrate various aspects of food engineering.	3			3	3	3	3

			CO2. navigate images	3					
			CO3. resize and crop images	3					
			CO4. make and work with selections	3					
			CO5. create new layers and perform other basic layer functions	3					
			CO6. transform images	3					
		20160SEC05B	Develop leadership skills and body language		3				
		20111SEC05L	CO1 Develop corporate skills.		3				
			CO2 Handle their day to day affairs well with their knowledge of language skills.		3				
			CO3 Get a job		3				
			CO1 At the end of the course, the student will be able to describe the diagnostic laboratory, according to the main stages pre-analytical, analytical and post-analytical.			3	3	3	3
			CO2 Describe the various disorders			3	3	3	3
			CO3 Understand and explain the acid-base and water-electrolyte balance in the body.			3	3	3	3
			CO4 Understand the difference between plasma, serum, normal and abnormal constituents in various body fluids. Blood clotting mechanism and anticoagulants.			3	3	3	3
			CO5 Explain the nature and function of various enzymes, normal levels and elevated levels in various diseases.			3	3	3	3
			CO6 Comprehend that blood is a universal fluid for carrying different minerals, nutrients, proteins etc to and from various tissues.			3	3	3	3
			CO7 Learn that many diseases result from imbalance in certain enzymes and helps in diagnosis of liver, cardiac, gastrointestinal, kidney diseases.			3	3	3	3
SEM VI	20115AEC61	Clinical Biochemistry							

		Managements	CO2 Understand the management process and integrated approach in management.	3				3	3	3
			CO3 Manage service organizations by accepting the inbuilt challenges.	3				3	3	3
			CO4 Manage hospitals by understanding the complexity, levels and role of hospital administrator.	3				3	3	3
			CO5 Understand the current issues that have an implication in administration practice hospital administration	3				3	3	3
	20117PRW67	Project Work	CO1 To outcome are the changes or result that the organization expects to be achieved the successful completion of the project	3			3		3	3
			CO2 The outcomes could be qualitative and qualitative or both	3			3		3	3
			CO3 The outcomes are the changes or results that the organization expects to be achieved the successful completion of the project	3			3		3	3
	20120SEC06AL	Package Lab – VI	CO1. Learn to create animated graphics add sound and interactivity.	3						
			CO2. Can develop Website	3						
			CO3. CD based presentations	3						
	20160SEC06B	Soft skill – VI	Develop life skills and other skills				3			
	20111SEC06L	Communicative English Lab-VI	CO1 Apply study skills				3			
			CO2 Widen creative thinking				3			
			CO3 Be a good team worker				3			
			CO4 Make them proficient in English				3			

M.SC., BIOCHEMISTRY

POs and COs Mapping

Sem	Course Code	Title of the Course	COs	POs							
				PO 1	PO 2	PO 3	PO 4	PO 5	PO 6		
SEME STER I	20215SEC11	Biomolecules	CO1- Recognize water as a universal solvent and elixir of life by knowing its importance	3	3						
			CO2- Identify the properties and classification of carbohydrates	3	3				3		
			CO3 -Recall the role of various lipids in biomembrane including signal transduction	3	3				3		
			CO4 -Categories the amino acids and know their properties	3	3				3		
			CO5 -Differentiate the structure, properties and functions of DNA and RNA	3	3				3		
			CO6 -List the functions and deficiency disease of fat and water soluble vitamins	3	3				3		
			CO 1 This skill based course will teach the students the various instrumentations that are used in the analytical laboratories.	3	3			3			
			CO2 Understanding the principles of Electrophoresis, Spectrophotometry and ELISA and their applications in biological investigations/experiments	3	3			3			
	20215SEC12	Biochemical and Instrumental analysis	CO3 This course covers both fundamental and applications of the instruments that are routinely used for the characterization of biomolecules	3	3			3			
			CO 4 Develop competence in handling various chromatographic techniques and apply them in isolating and characterizing different biological molecules.	3	3			3			
			CO 5 Purify proteins by affinity chromatography	3	3			3			
			CO 6 Understanding the principles of Electrophoresis, Spectrophotometry and ELISA and their applications in biological investigations/experiments	3	3			3			
			CO 7 To learn various techniques and acquire the skills to use appropriate methods	3	3			3			
			CO 8 To acquire the good laboratory practices	3	3			3			
				3	3			3			
				3	3			3		3	

20215SEC13	Enzymology	<p>CO1 Upon successful completion of this course, the student will learn, the major classes of enzyme and their functions in the cell.</p> <p>CO2 The course also provides information pertaining to role of co-enzyme cofactor in enzyme catalyzed reaction, properties of enzymes and regulation of biochemical pathways.</p> <p>CO3 To acquire fundamental knowledge on enzymes and their importance in biological reactions.</p> <p>CO4 Exposure to the concept of activation energy and its importance in biological reactions.</p> <p>CO5 Understanding the role of enzymes in clinical diagnosis and industries.</p> <p>CO 6 Exposure to the nature of non-protein enzymes such as ribozymes.</p> <p>CO 7 Differentiate between equilibrium and steady state kinetics and analyzed simple kinetic data and estimate important parameter (K_m, V_{max}, K_{cat} etc)</p>	3	3	3	3	3
20215SEC14L	Biochemical Techniques Lab - I	<p>CO1 By the end of the course, students can be able to demonstrate the importance of the protein chemistry and their wide applications.</p> <p>CO2 This skill based course will teach the students the various instrumentations that are used in the analytical laboratories.</p> <p>CO3 This course covers both fundamental and applications of the instruments that are routinely used for the characterization of biomolecules</p> <p>CO4 Perform skillful specimen collection, identification and processing</p> <p>CO5 Utilize communication skills necessary for working in the health care setting</p> <p>CO6 Exhibit professionalism, initiative, positive interpersonal skills, teamwork, respect and integrity.</p>	3	3	3	3	3
20215DSC15A	Biostatistics	<p>CO1 To use basic analytical techniques to generate results</p> <p>CO2 interpret results of commonly used statistical analyses in</p>	3	3	3	3	3

II									
			CO2 Describe the structure and function of biological membranes including the roles of gradients in energy transduction.	3	3			3	3
			CO3 Explain the basic pathways and mechanisms in biological energy transduction from oxidation of metabolites to synthesis of ATP.	3	3			3	3
			CO4 Explain various levels of gene regulation and protein function including signal transduction and cell cycle control.	3	3			3	3
			CO5 To become aware with the variations in the levels of triglycerides and lipoproteins and their relationship with various diseases.	3	3			3	3
			CO6 Relate properties of cancerous cells to mutational changes in gene function.	3	3			3	3
	20215SEC22	Metabolism and Regulation	CO1 Gain knowledge on glucose anabolic and catabolic pathways that ultimately control the glucose homeostatis.	3	3			3	3
			CO2 Describe surface membrane barriers and their protective functions.	3	3			3	3
			CO3 Able to explain the role of lipids, their metabolism and their stringent control by hormones and other factors.	3	3			3	3
			CO4 To acquire knowledge related to the role of TCA cycle in central carbon metabolism, importance of anaplerotic reactions and redox balance.	3	3			3	3
			CO5 Understanding the importance of high energy compounds, electron transport chain, synthesis of ATP under aerobic and anaerobic conditions.	3	3			3	3
			CO6 Understand the anabolic and catabolic processes associated with amino acids and nucleic acids and their regulation.	3	3			3	3
			CO7 Able to understand the energy homeostatis during starvation and energy excess.	3	3			3	3
	20215SEC23	Neuro Biochemistry	CO1 To understand various neurological system	3	3			3	3
			CO2 Recognize the need for, and engage in life-long learning in neurological system	3	3			3	3

		CO3 To understand various Exocytosis of neurotransmitter	3	3			3	3
		CO4 To able to understand DNA microarrays, Methodology, types and applications	3	3			3	3
		CO5 To acquire knowledge related to LEARNING AND MEMORY	3	3			3	3
		CO6 Gain knowledge of contemporary issues	3	3			3	3
		CO7 to understand BIOCHEMISTRY OF VISION AND MUSCLE CONTRACTION	3	3			3	3
2021SSEC24L	Enzymology Lab- II	CO1 Students will gain an enhanced overall understanding of enzymology, enzyme assays, and in particular the influence of various physicochemical characteristics upon enzyme activity.	3	3			3	3
		CO2 Acquiring training to estimate activity of enzymes.	3	3			3	3
		CO3 To determine pH optimum, Km and Vmax of enzymes and to analyse enzyme kinetics	3	3			3	3
		CO4 To determine optimum temperature for the activity of an enzyme.	3	3			3	3
		CO5 Students will gain direct laboratory experience in spectrophotometry.	3	3			3	3
		CO6 Students will gain an understanding of buffers and their importance in the context of pH control.	3	3			3	3
		CO7 Students will gain an appreciation of working as part of an integrated research team.	3	3			3	3
2021SDSC25A	Endocrinology	Apply the knowledge from this course while working in medical laboratory to diagnose different hormone disorders	3	3			3	3
		Understand the scientific research that have been used to understand endocrine and hormone function	3	3			3	3
		Explain recent laboratory methods in diagnosis hormone disorders	3	3			3	3
		Knowledge and Understanding the synthesis of different endocrine gland hormones	3	3			3	3

		Ability to analyze and solve problems related to hormone tests	3	3	3	3	3	3
20215DSC25B	Clinical nutrition and dietetics	Ø To know the pathophysiology significance of the system with special reference to humans	3	3	3	3	3	3
		CO1 To learn glycemic index, balanced diet, micronutrient deficiencies and the remedies, nutraceuticals and their importance, junk foods and their hazards	3	3	3	3	3	3
		CO2 Understanding merits and demerits of vegetarian and non-vegetarian foods	3	3	3	3	3	3
		CO3 To understand the need for specialized food for people with special needs - diabetes, pregnancy, inherited genetic disorders.	3	3	3	3	3	3
		CO4 To know the use of alternate crops – cereals and pulses and their importance.	3	3	3	3	3	3
		CO5 Patients receive medical or surgical help with their conditions, but some have conditions that can also benefit from special diets. Eating more of certain foods, and/or avoiding certain things can help to control a patient's symptoms.	3	3	3	3	3	3
20215DSC25C	Bioinformatics	CO6 In some cases, by carefully monitoring what a sick patient eats and drinks, the dietitian can reduce the chance that patient will have problems in the long-term, and can establish and/or help maintain the patient's quality of life.	3	3	3	3	3	3
		Ø The student will choose biological data, submission and retrieval from databases.	3	3	3	3	3	3
		Ø The students will be able to experiment pair wise and multiple sequence alignment and will analyze the secondary and tertiary structures of protein sequences.	3	3	3	3	3	3
		The students will acquire training in different areas of bioinformatics related to various biological databases such as protein databases, nucleic acid databases, metabolic pathway databases, etc.	3	3	3	3	3	3
		to understand the Role of computers in Biology	3	3	3	3	3	3

SEME STER III	20215RMC26	Research Methodology	To know the Software in Bioinformatics - C, C++, bioperl, Biopython and oracle Ø The student will understand the data structure (databases) used in bioinformatics and interpret the information (especially: find genes; determine their functions), understand and be aware of current research and problems relating to this area.	3	3	3	3	3	3
				CO1 Understanding research questions and tools	3	3	3	3	3
				CO2 Experience in scientific writings	3	3	3	3	3
				CO3 Practice in various aspects of scientific publications	3	3	3	3	3
				CO4 Inculcation of research ethics	3	3	3	3	3
				CO1 Hands on exposure to problem solving tools in contemporary research	3		3		3
				CO2 Evolution of research intuitiveness and orientation	3		3		3
				CO3 Familiarity with cutting edge research trends	3		3		3
				CO1 Understand the structure of nucleic acids and the DNA replication process	3		3		3
				CO2 Learn about the process of transcription	3		3		3
CO3 Understand the mechanism of translation	3		3		3				
CO4 Learn about gene regulation in prokaryotes	3		3		3				
CO5 Study the discovery of DNA as genetic material, transcription, DNA repair and translation.	3		3		3				
CO6 Analyse coding and non-coding regions of eukaryotic genome and their importance.	3		3		3				
CO7 Exposure with the importance of E. coli lac operon	3		3		3				
20215SEC32	Clinical Biochemistry	CO1 To learn about the normal constituents of urine, blood and their significance in maintaining good health.	3		3		3	3	
		CO2 Exposure to the mechanisms of causation of diseases of liver and kidney.	3		3		3	3	
		CO3 Develop understanding of the current concepts related to mechanism of Cancer.	3		3		3	3	

SEME STER IV	20215DSC34B	Pharmaceutical Biotechnology	CO6 To produce insulin using recombinant DNA technology.	3	3	3	3	3
			CO1 Understanding the importance of Immobilized enzymes in Pharmaceutical Industries.	3	3	3	3	3
			CO2 Genetic engineering applications in relation to production of pharmaceuticals	3	3	3	3	3
			CO3 This course gives information on drug designing, novel techniques in drug discovery and the role of biotechnology in pharmaceuticals.	3	3	3	3	3
			CO4 Importance of Monoclonal antibodies in Industries	3	3	3	3	3
			CO5 Appreciate the use of microorganisms in fermentation technology	3	3	3	3	3
	20215SRC35	Design/Socio technical research	CO6 Exposure with the importance of expression vectors and their importance in Biotechnology.	3	3	3	3	3
			CO1 Sensitization of social needs for innovation				3	
			CO2 Team work towards interdisciplinary synchronous research strategy				3	
			CO3 Development of critical thinking and synergistic research approach.				3	
20215SEC41	Molecular Basis of diseases	CO1 Attain a thorough knowledge on the molecular mechanisms for Tuberculosis, Typhoid, Cholera						
		CO2 Understand the pathological changes during infectious diseases.						
		CO3 Provide an insight into the history of pathology covering all the basic definitions and common terms.						
		CO4 Detail on the survival mechanism in diseases, an insight into microscopic and cellular pathology.						
		CO5 Elaborate the overview of Dengue Hemorrhagic Fever, and Chlamydiae, opportunistic fungal pathogens						
		CO6 review the causes and mechanisms of Emerging and re-emerging infectious diseases and pathogens						
20215SEC42	Environmental Biochemistry	CO1 students will be able to explain fundamentals of earth atmosphere and its interconnectivity between various components.	3	3	3	3	3	

M.Phil., BIOCHEMISTRY
POs and COs Mapping

SEM	Course Code	Title of the Course	COs	POS						
				PO1	PO2	PO3	PO4	PO5	PO6	
SEM I	20RMG11	Research methodology	Understanding research questions and tools	*		*	*	*	*	*
			Experience in scientific writings	*		*	*	*	*	*
			practice in various aspects of scientific publications	*		*	*	*	*	*
SEM I	203BCC12	Advanced Biochemistry	inculcation of research ethics	*		*	*	*	*	*
			<input type="checkbox"/> Develop and demonstrate an advanced level of understanding of gene and protein functionalities and their relevance to specific problems and research directions in field such as human health, environmental sciences.		*			*		
			<input type="checkbox"/> Explain some of the complexities of cellular control mechanisms in higher organism and inborn errors of metabolism.		*			*		
			<input type="checkbox"/> Develop and demonstrate an advanced level of understanding of the enzymes, proteins and other biochemical compounds.		*			*		
			<input type="checkbox"/> Demonstrate advanced level skills in theoretical, critical analysis of data, communication.		*			*		
			<input type="checkbox"/> Understand the Basic concepts and principles of Clinical Biochemistry, detail on the various biological specimens including the process of collection, preservation and storage.		*			*		
			<input type="checkbox"/> Gain Knowledge on the collection, and analysis of Amniotic fluid and on the Immunological tests related to diagnosis.		*			*		
			<input type="checkbox"/> Understand the pathophysiological processes responsible for common biochemical disorders such as jaundice, Hepatitis, Fatty liver etc.		*			*		
			<input type="checkbox"/> Differentiate three types of jaundice and their systematic analysis. Detailed study of Jaundice, Cirrhosis, Hepatitis, Fatty liver and gall stones. Serum enzyme activities in diseases.		*			*		
			<input type="checkbox"/> Elaborate on the Clinical features of atherosclerosis.		*			*		
SEM II	203RPW14	Research	develop ability to independently carry out a complete scientific	*	*	*	*	*	*	

	Project	work process skilled students who can do further research and contribute to fields of Biochemistry to trend the research students in the analytical tools required gain then knowledge on review, theses, conference and project reports Learn about how to write dissertation and proposal for the scientific community	*	*	*	*	*	*
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