

J.J. College of Arts & Science (Autonomous), Pudukottai

Department of Microbiology

Course Outcomes

M.Sc. Microbiology – PSMB

Course Name - Advanced Microbiology		Course Code - P1R1MBCC1
Upon Completion of the course students would be able to		
CO 1	Get information about Nomenclature rules and modern classification system	
CO 2	Get knowledge on algae and protozoan classification, reproduction and characterization	
CO 3	Get clear idea on culture collection and preservation	
CO 4	Acquire knowledge on nutritional strategies of fungi	
CO 5	Get basic knowledge on algae and protozoans	
Course Name - General Biochemistry		Course Code - P1R1MBCC2
Upon Completion of the course students would be able to		
CO 1	Get information clearly about the biomolecules.	
CO 2	Clear knowledge on Carbohydrates and Lipids	
CO 3	Get knowledge about on amino acids and proteins.	
CO 4	Acquire knowledge on Enzymes	
CO 5	Gain knowledge on energy production	
Course Name – Microbial Physiology		Course Code – P2R1MBCC3
Upon Completion of the course students would be able to		
CO 1	Acquire knowledge on cell structure and function	
CO 2	Become educated on pigments	
CO 3	Know about spore physiology	
CO 4	Work on fermentation industry	
CO 5	Get information about energy production	

Course Name - Biological Techniques		Course Code – P1R1MBEC1
Upon Completion of the course students would be able to		
CO 1	Acquire knowledge on different types of microscopes	
CO 2	Become familiar in chromatographic techniques	
CO 3	Come to know about electrophoresis techniques	
CO 4	Gain understanding of analytical techniques	
CO 5	Procure knowledge on Molecular techniques	
Course Name - Microbial Genetics		Course Code – P2R1MBCC5
Upon Completion of the course students would be able to		
CO 1	Become well-known in Genetics concepts in central dogma of Molecular Biology	
CO 2	Become knowledgeable in Viral Genetics	
CO 3	Get knowledge on gene regulation is imparted	
CO 4	Learn transcription and translation process	
CO 5	Acquire knowledge on gene expression	
Course Name – Molecular Biology & Genetic Engineering		Course Code – P2R1MBCC6
Upon Completion of the course students would be able to		
CO 1	Seek knowledge on mutation and its types	
CO 2	Gain insight in cloning vectors	
CO 3	Become aware of enzymes	
CO 4	Get better understand of cloning techniques	
CO 5	Get an idea on genomics	

Course Name - Immunology		Course Code – P2R1MBCC7
Upon Completion of the course students would be able to		
CO 1	Get knowledge on immunity and its types	
CO 2	Seek information on vaccines and its types	
CO 3	Learn on MHC molecules	
CO 4	Acquire skills on B and T cells	
CO 5	Develop expertise on immunotechniques	
Course Name – Medical Microbiology		Course Code – P2R1MBCC8
Upon Completion of the course students would be able to		
CO 1	Get basic ideas about medical microbiology.	
CO 2	Get knowledge in specimen collection and processing	
CO 3	Become technically expert which will helpful to work in clinical laboratory	
CO 4	Be familiar in the emerging diseases.	
CO 5	Acquire knowledge on control measures of diseases	
Course Name – Microbial Nanotechnology		Course Code – P2R1MBEC2
Upon Completion of the course students would be able to		
CO 1	Get knowledge on latest environmentally research to human welfare	
CO 2	Become familiar on Physical and Chemical properties of Nanoparticles	
CO 3	Gain better knowledge about targeting drug delivery	
CO 4	Acquire knowledge on types and applications of nanoparticles	
CO 5	Be familiar with the characterization of nanoparticles	

Course Name - Virology		Course Code – P3R1MBCC10
Upon Completion of the course students would be able to		
CO 1	Know the basic ideas about viruses.	
CO 2	Know diagnosis procedures in virology.	
CO 3	Familiar in the viral diseases.	
CO 4	Get basic knowledge on life cycle of viruses	
CO 5	Get clear idea on Plant and animal viruses	
Course Name - Environment and Agricultural Microbiology		Course Code – P3R1MBCC11
Upon Completion of the course students would be able to		
CO 1	Become familiar with Indian crop diseases	
CO 2	Become knowledgeable in aquatic ecosystem	
CO 3	Know the Solid and liquid waste management techniques are imparted	
CO 4	Know about interactions among soil microorganisms	
CO 5	Understand the basic concepts of Air Microbiology	
Course Name – Microbial Biotechnology		Course Code – P3R1MBCC12
Upon Completion of the course students would be able to		
CO 1	Get knowledge on microbial production of enzymes	
CO 2	Get idea on transgenic plants and animals	
CO 3	Familiar on microbial productions of pharmaceuticals products.	
CO 4	Become familiar with biosensors	
CO 5	Acquire knowledge on bioremediation	

Course Name - Fermentation Technology		Course Code - P3R1MBCC13
Upon Completion of the course students would be able to		
CO 1	Basic idea on strain improvement for fermentation industries	
CO 2	Get idea on different types of fermenters and their function and applications	
CO 3	Get knowledge on IPR	
CO 4	Acquire knowledge on downstream processing	
CO 5	Become proficient to produce industrial products	
Course Name - Biostatistics & Bioinformatics		Course Code - P3RMBEC3
Upon Completion of the course students would be able to		
CO 1	Gain knowledge on microbes used as biofertilizers	
CO 2	Learn about the mass production of microbial inoculant	
CO 3	Acquire Knowledge on isolation of <i>Azospirillum</i> and <i>Azotobacter</i>	
CO 4	Aware of Phosphate solubilizing microbes	
CO 5	Get educated on taxonomy of mycorrhizae	
Course Name – Food and Dairy Microbiology		Course Code - P4R1MBEC4
Upon Completion of the course students would be able to		
CO 1	Gain knowledge on types of microorganisms in food spoilage	
CO 2	Understand about methods of fermentation process	
CO 3	Know about fermented products	
CO 4	Become aware of food borne diseases	
CO 5	Get educated on food preservation methods.	
Course Name- Marine Microbiology		Course Code - P4R1MBEC5
Upon Completion of the course students would be able to		
CO 1	Get knowledge on Marine environment	

CO 2	Acquire skills on types of extremophiles
CO 3	Gather knowledge on animal microbes interaction
CO 4	Become aware of Marine microbial diseases
CO 5	Understanding of protection and application of Marine microbial products
Course Name- Molecular Taxonomy & Phylogeny	
Course Code - P4R1MBEC6	
Upon Completion of the course students would be able to	
CO 1	Learnt about basic concepts of taxonomy
CO 2	Become aware of DNA fingerprinting methods
CO 3	Obtain knowledge on types of rRNA
CO 4	Get knowledge on Genbank submission
CO 5	Acquainted with constructing phylogenetic tree
Course Name- Bioethics, Biosafety & IPR	
Course Code - P4R1MBEC7	
Upon Completion of the course students would be able to	
CO 1	Get knowledge on Bioethics
CO 2	Become educated in risk and benefits of biosafety
CO 3	Familiar in Quality control
CO 4	Learned about IPR
CO 5	Seek information on GLP & GMP
Course Name – Medical Lab Technology	
Course Code – P4R1MBEC8	
Upon Completion of the course students would be able to	
CO 1	Acquire Knowledge on Blood system and their functions.
CO 2	Gain Knowledge on Cardiovascular system and diagnostic pathology.
CO 3	Work on clinical labs.
CO 4	Learn about handling animals and laboratory safety

CO 5	Get knowledge on clinical tests	
Practical I – Advanced Microbiology, General Biochemistry & Microbial Physiology		Course Code – P1R1MBCC4P
Upon Completion of the course students would be able to		
CO 1	Acquire knowledge on media preparation	
CO 2	Isolate and characterize bacteria, fungi, algae	
CO 3	Learn on Staining Techniques	
CO 4	Estimate biomolecules	
CO 5	Seek information on biochemical characterization of bacteria	
Practical II – Covering CC5, CC6, CC7, CC8		Course Code – P2R1MBCC9P
Upon Completion of the course students would be able to		
CO 1	Get basic ideas about isolation and characterization of DNA	
CO 2	Learned about transformation techniques	
CO 3	Become technically expert which will helpful to work in clinical laboratory	
CO 4	Get knowledge in collection of specimens and processing	
CO 5	Familiar in handling experimental animals	
Practical II – Covering CC5, CC6, CC7, CC8		Course Code – P3R1MBCC14P
Upon Completion of the course students would be able to		
CO 1	Get knowledge on isolation and characterization of phages.	
CO 2	Become educated in isolation and enumeration of soil microorganisms	
CO 3	Familiar in aware of plant diseases	
CO 4	Assess the air and water quality	
CO 5	Produce and characterize enzymes	