



PGP COLLEGE OF ARTS AND SCIENCE

NH-7, Namakkal – Karur Main Road, Namakkal – 637 207

(Affiliated to Periyar University, Salem and Approved by AICTE,

New Delhi, Reaccredited by NAAC and Recognized by UGC with 2(f) & 12(B))



DEPARTMENT OF MICROBIOLOGY

PROGRAMME OUTCOMES OF UG COURSES (2021 ONWARDS)

Name of the Programme: B.Sc Microbiology	
PO1	Understand the contribution of various scientists and scope of different branches of microbiology
PO2	Recognize various kinds of prokaryotic and eukaryotic microbes and their importance
PO3	Explain and describe importance of organic compounds and their chemistry
PO4	Make clear the structure of DNA, RNA and Protein
PO5	Understand the physiological behavior of microorganisms
PO6	Comprehend the importance of instruments and techniques in microbiology
PO7	Value the nature of macromolecules
PO8	Know the Environmental and Medical insight of microorganisms
PO9	To be familiar with structure and functions of main building blocks of life



PROGRAMME SPECIFIC OUTCOMES OF UG COURSES (2021 ONWARDS)

Name of the Programme: B.Sc Microbiology	
PSO1	To understand and recognize characters of different types of viruses, bacteria causing infections
PSO2	To study the role of viruses as well as the mechanisms underlying the pathogenicity of them, their detection and prophylaxis
PSO3	Understanding the taxonomy of parasite and host-parasite interactions
PSO4	Assimilate various lab technologies for diagnosis of medically important protozoans and their treatment
PSO5	To understand the distribution of microbes in soil
PSO6	To get the knowledge about microbial interaction
PSO7	To get information about biogeochemical cycle



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COURSE OUTCOMES OF UG COURSES (2021 ONWARDS)

Name of the Programme: B.Sc MICROBIOLOGY	
Course Code & Course Title	Course Outcome
SEMESTER - I	
21UMB01 Basics of Microbiology	CO1 To learn history, development and fundamentals of microbiology
	CO2 To understand basic techniques to study microorganisms
	CO3 To get information about different branches of microbiology
	CO4 To acquire awareness about the life cycle of significant individuals
	CO5 To gain the knowledge of economic importance of microorganisms
	CO6 To learn about microscopy
21UBCA01 Biochemistry-I	CO1 To be familiar with structure and functions of main building blocks of life
	CO2 To learn about structure, types and functions of DNA and RNA



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	CO3	To know the role of catalysts in vital activities
	CO4	To get overview of microbial metabolism
	CO5	To grasp the mechanism of microbial growth and nutritional transport for growth
	CO6	To know about different biogeochemical cycles
	CO7	To learn about biochemical reactions inside the cell
SEMESTER - II		
21UMB02 Microbial Physiology	CO1	To differentiate microorganisms on the basis of microscopic features
	CO2	To retain information regarding the properties of biochemical compounds and their detection in biological system
	CO3	To study the production of enzymes and their role



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	CO4	To study about different cycles
21UBCA02 Biochemistry-II	CO1	To be familiar with structure and functions of main building blocks of life
	CO2	To learn about structure, types and functions of DNA and RNA
	CO3	To grasp the mechanism of microbial growth and nutritional transport for growth
	CO4	To know the role of catalysts in vital activities
	CO5	To study cell cycles
	CO6	To study different components of cells
	CO7	To deal with different biochemical reactions in the cells
21UES01 Environmental Studies	CO1	To study the environment studies .
	CO2	To deal with microorganisms deal with different environment.
	CO3	Microbial adaptations to different environment.
	CO4	To study biodegradation



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SEMESTER - III

21UMB03 Microbial Genetics and Molecular Biology	CO1	To be trained with the fundamentals of molecular biology
	CO2	To understand the central dogma of protein synthesis
	CO3	To study the alteration, repair and regulation of gene
	CO4	To gain knowledge of genetic database
	CO5	To get approach of genetic modifications and its detection □
	CO6	To study about genetic modifications
21UMBS01 Applied biotechniques	CO1	To be aware of different types of microscope and their applications
	CO2	To understand the instruments used for separation and analysis of bio-molecules
	CO3	To study about the new products production via biotechniques
	CO4	To study about the fermentation technology
	CO5	To study about the plant tissue cultures



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SEMESTER - IV

21UMBP04 Immunology and Immunotechnology

CO1	To study about defense system of the body
CO2	To study innate and adaptive immunity
CO3	To study the immunization
CO4	To study immune reactions
CO5	To study blood grouping
CO6	To study immunological techniques

21UMBS02 Mushroom Cultivation

	Introduction to mushroom cultivation
CO1	Climatic requirement
CO2	Appropriate mushroom cultivation sites
CO3	Designing and construction of mushroom farm
CO4	To study the role of composting in mushroom cultivation
CO5	To study the different types of mushroom strains



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SEMESTER - V

21UMB05 Medical Bacteriology	CO1	To study the pathogenic bacteria.
	CO2	To study of the action of bacteria in health and in disease, inside and outside the animal body
	CO3	To study the bacteria and their relation to medicine
	CO4	To study the prevention, diagnosis and treatment of infected diseases.
	CO5	To study the detection of cancer, diabetes related to bacteria



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21UMB06 Food Microbiology	CO1	To study food safety
	CO2	To study food production
	CO3	To study food preservation and storage
	CO4	To study the positive and negative role of microbes in food.
	CO5	To gain knowledge about fermented food products
	CO6	To understand the significance of food borne disease
21UMB07 Medical Virology	CO1	To understand and recognize characters of different types of viruses causing infections
	CO2	Assessment of severity method of diagnosis and there prophylaxis
	CO3	To recognize the two different classes, DNA and RNA viruses causing viral diseases in human beings
	CO4	To study the genomes of the viruses
	CO5	To conceptualized the role of viruses as well as the mechanisms underlying the pathogenicity of them, their detection.



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21UMBE01 Medical Parasitology	CO1	To understand the taxonomy of parasites
	CO2	To understand the host – parasite interaction
	CO3	To acquire depth knowledge on clinical diagnosis
	CO4	To study the pathogenicity
	CO5	To assimilate various lab technologies for diagnosis of medically important protozoans and their treatment
21UMBS03 Microbial Biotechnology	CO1	To understand the knowledge about the basic principles of gene cloning
	CO2	Acquire knowledge about molecular cloning tools
	CO3	To create an understanding about cloning vectors gene transfer techniques
	CO4	To procure the knowledge about methods in molecular cloning



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SEMESTER - VI

21UMB08 Soil and Agricultural Microbiology	CO1	To understand the distribution of microbes in soil
	CO2	TO study information about biogeochemical cycle
21UMB09 Environmental Microbiology	CO1	To understand about the microbial diversity in environmental
	CO2	To get information about the ecosystem
	CO3	TO understand the environmental pollution
	CO4	To understand basic knowledge about bioremediation
	CO5	To study the heavy metal tolerance in microbes
21UMB10 Industrial Microbiology	CO1	To study the selection and to design a fermentation process for a specific product
	CO2	To identify the industrial important microbes and its potential applications
	CO3	To device and improve the production rate of existing fermentation processes
	CO4	To become capable of designing process for higher production yield at economically cheaper rate
	CO5	To study the microbial production of alcoholic beverages
	CO6	To study the production of amino acid



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PROGRAMME OUTCOMES OF PG PROGRAMMES (2021 ONWARDS)

Name of the Programme: M.Sc MICROBIOLOGY	
PO1	Acquired the knowledge with facts and figures related to various subjects in pure sciences such as Microbiology
PO2	Understood the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the field of Microbiology
PO3	The skills of observations and drawing logical inferences from the scientific experiments. Analyzed the given scientific data critically and systematically and the ability to draw the objective conclusions in Microbiology
PO4	The students should be well acquainted with Microbiological concepts
PO5	To learn about about microscopy, bacteriology, mycology, virology and their advanced techniques



PROGRAMME SPECIFIC OUTCOMES OF PG COURSES (2021 ONWARDS)

Name of the Programme: M.Sc MICROBIOLOGY	
PSO1	To enable the students to understand the basic knowledge in Microbiology
PSO2	To gain strong foundation on general microbiological practices
PSO3	To learn the basics of various characteristics features of division used in the classification of bacteria, fungi, protozoa and algae
PSO4	To know the basics of microbial taxonomy and metabolism of microbes
PSO5	To understand the various drugs and vaccines in emerging diseases.



COURSE OUTCOMES OF PG COURSES (2021 ONWARDS)

Name of the Programme: M.Sc MICROBIOLOGY		
Course Code & Course Title	Course Outcome	
SEMESTER - I		
21PMI01 General Microbiology	CO1	To gain a strong foundation on general microbiological practices
	CO2	To learn the basics of various characteristics features of divisions used in the classification of bacteria, fungi, protozoa and algae
	CO3	To know the basics of microbial taxonomy and metabolism of microbes
	CO4	To study the isolation of microorganisms
	CO5	To study about the microscopy
	CO6	To study about the chemical and physical method of controlling microorganism
21PM102 Immunology and Immunotechnology	CO1	To gain a strong foundation on general immunological practices
	CO2	To understand the Immunological assay and test
	CO3	To understand the various drugs and vaccines in emerging diseases
	CO4	To study about the cellular and humoral immunity
	CO5	To study the differentiation of immune cells



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SEMESTER - II		
21PMI04 Medical Bacteriology and Mycology	CO1	To perform various staining techniques of bacteria
	CO2	To study the isolation from various samples
	CO3	To understand the various methods to isolate and identify the microorganisms
	CO4	To study the biochemical reactions for identification of pathogenic bacteria
	CO5	To study different microbiologic samples
21PM106 Genetic Engineering and Advances in Biotechnology	CO1	To recall the basics and importance of enzymes in molecular research
	CO2	To apply cloning for developing novel recombinant products
	CO3	To develop transformants for production of various pharmacologically important products
	CO4	To apply gene transfer technology for controlling plant diseases
	CO5	To demonstrate sequencing method for bacterial identification



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SEMESTER - III		
21PM107 Medical Virology and Parasitology	CO1	To study the epidemiological diagnostic techniques
	CO2	To study the preventive measures and techniques
	CO3	To gain knowledge as collection from infected clinical samples
21PMI08 Food, Dairy and Environmental Microbiology	CO1	To gain knowledge as collection from infected food samples
	CO2	Isolation and identification of diseases producing bacteria producing bacteria from food samples
	CO3	To study the microorganisms present in the air sample and sewage samples
	CO4	To study various treatment processes in sewage for microbial load
	CO5	To study the interaction between microorganisms and environment
21PMI09 Soil, Agricultural Microbiology Biodegradation	CO1	To study the microorganisms present in soil
	CO2	Isolation and identification of diseases producing bacteria from soil samples
	CO3	To study about biofertilizers
	CO4	To identify the soil pathogens
	CO5	To study the degradation process in soil



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SEMESTER - IV		
21PMI10 Research Methodology Biostatistics and Bioinformatics	CO1	To study the collection of data and computations in biology
	CO2	Presentation of research
	CO3	Bioinformatics related with research
	CO4	TO collect the data and measurement of central tendency
	CO5	To study various biostatistics tools
	CO6	To study in detail Student T test, null hypothesis