

COURSE OUTCOMES (COs)- MSC MICROBIOLOGY 2019 ADMISSION ONWARDS

SI No.	Semester	Course Name	Nature of the Course (Core, Complementary, Elective, Open etc.)	Course Code	Course Outcomes
1	SEMESTER 1	GENERAL BIOCHEMISTRY AND MICROBIAL METABOLISM	Core	MBG1C01	<ul style="list-style-type: none"> • C1: To get a general knowledge on biomolecules – carbohydrates, lipids, proteins, aminoacids, nucleic acids. • C2: To understand the biosynthesis and the degradation pathways involved. • C3:To Specify the biological significance of biomolecules in metabolism
2	SEMESTER 1	BIOPHYSICS AND INSTRUMENTATION	Core	MBG1C02	<ul style="list-style-type: none"> • C1: To understand the laws of thermodynamics , concepts of entropy, enthalpy and free energy changes and their application to biological systems and various biochemical studies and reactions.

SEMESTER R1	ENVIRONMENTAL AND SANITATION MICROBIOLOGY	Core	MBG1C03	<p>Upon successful completion of the course, students are expected to be able</p> <ul style="list-style-type: none"> • C1: To Appreciate the diversity of microorganisms and microbial communities inhabiting a multitude of habitats and occupying a wide range of ecological habitats. • C2: To learn the occurrence, abundance and distribution of microorganisms in the environment and their role in the environment and also learn different methods for their detection and characterization
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Semester1	AGRICULTURAL MICROBIOLOGY AND PLANT PATHOLOGY	core	MBG1C04	<ul style="list-style-type: none"> • C1: To understand various plant microbes interactions especially rhizosphere, phyllosphere and mycorrhizae and their applications especially the biofertilizers and their production techniques
SEMESTER 1 R1	PRACTICAL 1 &2	Practical	MBG1L01 &MBG1L02	<ul style="list-style-type: none"> • C1: To perform DNA,RNA,protein and other estimations • C2: To isolate microorganisms from soil,water and other sources

6	Semester 2	PRINCIPLES OF GENETICS	Core	MBG2C05	<ul style="list-style-type: none"> • C1: To get a practical knowledge about the concept of recombination, linkage mapping and elucidate the gene transfer mechanisms in prokaryotes and eukaryotes. • C2: Understand the properties, structure and function of genes in living organisms at the molecular level • C3: Have a conceptual knowledge about DNA as a genetic material, enzymology, and replication strategies
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7	Semester 2	FOOD AND DIARY MICROBIOLOGY	Core	MBG2C06	<ul style="list-style-type: none"> • C1: To understand the significance and activities of microorganisms in food and role of intrinsic and extrinsic factors on growth and survival of microorganisms in foods • C2: To know the spoilage mechanisms in foods and thus identify methods to control deterioration and spoilage • C3: To recognize and describe the characteristics of important pathogens and spoilage microorganisms in foods.
8	Semester 2	INDUSTRIAL MICROBIOLOGY	core	MBG2C07	<p>Upon successful completion of this course the student will be able :</p> <ul style="list-style-type: none"> • C1: To get equipped with a theoretical and practical understanding of industrial microbiology • C2: To appreciate how microbiology is applied in manufacture of industrial products • C3: To know how to source for microorganisms of industrial importance from the environment
9	Semester 2	IMMUNOLOGY	Core	MBG2C08	<ul style="list-style-type: none"> • C1: To demonstrate an understanding of key concepts in immunology. • C2: Understand the overall organization of the immune system

10	Semester 2	PRACTICAL3	Practical	MBG2L03	<ul style="list-style-type: none"> • C1: To handle and independently work on lab protocols involving genetics, industrial, food microbiology and immunology
11	Semester 3	MEDICAL MICROBIOLOGY	Core	MBG3C09	<p>Upon successful completion of this course the student will be able :</p> <ul style="list-style-type: none"> • C1: To learn opportunities in the basic principles of medical microbiology and infectious disease. • C2: To learn mechanisms of infectious disease transmission, principles of aseptic practice, and the role of the human body's normal microflora.
12	Semester 3	MOLECULAR MICROBIOLOGY	Core	MBG3C10	<ul style="list-style-type: none"> • C1: To know the terms and terminologies related to molecular biology • C2: To understand the molecular mechanisms involved in transcription and translation

1 3	Semester 3	DIAGNOSTIC MICROBIOLOGY	Elective	MBG3E01	<ul style="list-style-type: none"> • C1: To provide opportunities to develop informatics and diagnostic skills, including the use and interpretation of laboratory tests in the diagnosis of infectious diseases.
1 4	Semester 3	PRACTICAL4 &5	Practical	MBG3L04 &MBG3L05	<ul style="list-style-type: none"> • C2: To handle and independently work on lab protocols involving molecular techniques
1 5	Semester 4	BIostatistics AND BIOinformatics	Core	MBG4C11	<ul style="list-style-type: none"> • C1: To demonstrate an understanding of key concepts in bioinformatics and biostatistics. • C2: To understand the overall organization of the survey diagrams, plots etc.

16	Semester 4	MICROBIAL BIOTECHNOLOGY	elective	MBG4E04	<ul style="list-style-type: none"> • C1: To know the basics and concepts of various biotechnological related terms. • C2: To explain the physiological processes that occur during plant growth and development Describe the methodology involved in plant tissue culture and plant transgenics.
17	Semester 4	BIOSAFETY, BIOETHICS AND IPR	Elective	MBG4E06	<ul style="list-style-type: none"> • C1: To address bioethical and biosafety issues related to various subject.
18	Semester 4	PRACTICAL6	Practical	MBG4L06	<ul style="list-style-type: none"> • C2: To handle and independently work on lab protocols involving bioinformatics and biostatistical works including analysis, surveys,etc.

19	Semester 4	DISSERTATION	Dissertation	MBG4P	<ul style="list-style-type: none"> • C1: To give a practical exposure to the process of microbiology. Students are also encouraged to take up a research oriented work to formulate a research problem and produce results based on its implementation/simulation/experimental analysis.
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