

COURSE OUTCOMES (COs)- BSc MICROBIOLOGY 2019 ADMISSION ONWARDS

SI No.	Semester	Course Name	Nature of the Course (Core, Complementary, Elective, Open etc.)	Course Code	Course Outcomes
11	Semester 1	GENERAL MICROBIOLOGY	CORE	MBG1 B01	<ul style="list-style-type: none"> • C1: To develop knowledge and understanding that besides common bacteria there are several other microbes • C2: To differentiate a large number of common bacteria by their salient characteristics; classify bacteria into groups.
	Semester 1	BIOSTATISTICS 1	COMPLIMENTARY	MBG1 C02	<ul style="list-style-type: none"> • C1: To identify convenient sample by sampling theory • C2: To define the principal concepts of probability.

	Semester 1	BIOCHEMISTRY 1	COMPLIMENTARY	BCH1 C01	<ul style="list-style-type: none"> • C1:To make knowledge on biophysical chemistry and bioinstrumentation.
	Semester 2	MICROBIAL PHYSIOLOGY AND TAXONOMY	CORE	MBG2 B02	<ul style="list-style-type: none"> • C1: To differentiate concepts of aerobic and anaerobic respiration and how these are manifested in the form of different metabolic pathways in microorganisms.
	Semester 2	BIOSTATISTICS 2	COMPLIMENTARY	MBG2 C04	<ul style="list-style-type: none"> • C1: To define some concepts about hypothesis testing • C2: To arrange the result of hypothesis testing and make statistical decision.
Semester 2	BIOCHEMISTRY 2	complimentary	BCH2C02	<ul style="list-style-type: none"> • C1: To understand the structure of carbohydrates, proteins, amino acids, lipids , etc 	

Semester 3	ENVIRONMENTAL AND SANITATION MICROBIOLOGY	CORE	MBG3C03	<ul style="list-style-type: none"> • C1: To make able to identify the important role microorganisms play in maintaining healthy environment by degradation of solid/liquid wastes; how these activities of microorganisms are used in sewage treatment plants, production of activated sludge and functioning of septic tanks . • C2: To understand the significance of BOD/COD and various tests involving use of enumerating fecal <i>E.coli</i> for assessing quality of water.
Semester 3	BIOCHEMISTRY 3	complimentary	BCH3C03	<ul style="list-style-type: none"> • C1: To explain various metabolic pathways in the cell.
Semester 3	GENERAL COURSE 1- BIODIVERSITY -SCOPE AND RELEVANCE	GENERAL	A11	<ul style="list-style-type: none"> • C1: To demonstrate ability to critically and systematically integrate knowledge and perspectives and to analyse, assess and deal with complex biological problems, issues and situations within the field of biodiversity and systematics.

					<ul style="list-style-type: none"> • C2: To demonstrate an ability to reflect on their personal impact on biodiversity in a global perspective.
	Semester 3	GENERAL COURSE 2-RESEARCH METHODOLOGY	GENERAL	A12	<ul style="list-style-type: none"> • C1: To demonstrate knowledge of research processes • C2: To perform literature reviews using print and online databases.
	Semester 4	SOIL AND AGRICULTURAL MICROBIOLOGY	CORE	MBG4B04	<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 4	MICROBIOLOGY PRACTICAL 1	PRACTICAL	MBG4B05(P)	<ul style="list-style-type: none"> • C1: To know the principle this underlies sterilization of culture media, glassware and plastic ware to be used for

					<p>microbiological work.</p> <ul style="list-style-type: none"> • C2: Perform basic laboratory experiments to study microorganisms; methods to preserve bacteria in the laboratory; calculate generation time of growing bacteria.
	Semester 4	BIOCHEMISTRY 4	complimentary	BCH4C04	<ul style="list-style-type: none"> • C1: To make knowledge on hormones, vitamins, nucleic acids, etc
	Semester 5	INDUSTRIAL MICROBIOLOGY	CORE	MBG5B06	<p>Upon successful completion of this course the student will be able to</p> <ul style="list-style-type: none"> • C1: Get equipped with a theoretical and practical understanding of industrial microbiology • C2: Appreciate how microbiology is applied in manufacture of industrial products • C3: Know how to source for microorganisms of industrial

					importance from the environment.
	Semester 5	FOOD AND DIARY MICROBIOLOGY	CORE	MBG5B07	<ul style="list-style-type: none"> • C1: To know the spoilage mechanisms in foods and thus identify methods to control deterioration and spoilage • C2: To recognize and describe the characteristics of important pathogens and spoilage microorganisms in foods
	Semester 5	IMMUNOLOGY	CORE	MBG5B08	<ul style="list-style-type: none"> • C1: Understand the overall organization of the immune system • C2: To conceptualize how the collection of individual clones of lymphocytes (termed the “immune repertoire”) arises from rearrangement within two genetic loci: the Ig gene in B cells and the antigen

					receptor in T cells.
	Semester 5	MEDICAL MICROBIOLOGY-1	CORE	MBG5B09	<ul style="list-style-type: none"> • C1: To know the mechanisms of infectious disease transmission, principles of aseptic practice, and the role of the human body's normal microflora. • C2: To provide the conceptual basis for understanding pathogenic microorganisms and the mechanisms by which they cause disease in the human body.
	Semester 5	FOOD AND DIARY MICROBIOLOGY	CORE	MBG5B07	<ul style="list-style-type: none"> • C1: To know the spoilage mechanisms in foods and thus identify methods to control deterioration and spoilage • C2: To recognize and describe the characteristics of important pathogens and spoilage microorganisms in foods

	Semester 5	IMMUNOLOGY	CORE	MBG5B08	<ul style="list-style-type: none"> • C1: Understand the overall organization of the immune system • C2: To conceptualize how the collection of individual clones of lymphocytes (termed the “immune repertoire”) arises from rearrangement within two genetic loci: the Ig gene in B cells and the antigen receptor in T cells.
	Semester 5	MEDICAL MICROBIOLOGY-1	CORE	MBG5B09	<ul style="list-style-type: none"> • C1: To know the mechanisms of infectious disease transmission, principles of aseptic practice, and the role of the human body’s normal microflora. • C2: To provide the conceptual basis for understanding pathogenic microorganisms and the mechanisms by which they cause disease in the human body.

Semester 5	ENVIRONMENTAL MICROBIOLOGY	OPEN COURSE	MB5D01	<ul style="list-style-type: none"> • C1: to identify the important role microorganisms play in maintaining healthy environment by degradation of solid/liquid wastes; how these activities of microorganisms are used in sewage treatment plants, production of activated sludge and functioning of septic tanks • C2: To understand the significance of BOD/COD and various tests involving use of enumerating fecal E.coli for assessing quality of water.
Semester 6	GENETICS AND GENETIC ENGINEERING	CORE	MBG6B10	<ul style="list-style-type: none"> • C1:To understand the properties, structure and function of genes in living organisms at the molecular level • C2: To make a conceptual knowledge about DNA as a genetic material, enzymology, and replication strategies

					<ul style="list-style-type: none"> • C3: To explain the significance of central dogma of gene action
	Semester 6	MEDICAL MICROBIOLOGY2	CORE	MBG6B11	<ul style="list-style-type: none"> • C1: To identify commonly available fungi and algae and their characteristic.
	Semester 6	MICROBIOLOGY PRACTICAL 2,3,&4	PRACTICAL	MBG6B12(P), MBG6B13(P)& MBG6B14 (P)	<ul style="list-style-type: none"> • C1: To handle and independently work on lab protocols involving industrial and food microbiology • C2: To recognize and describe the molecular techniques used in the laboratory.
	1. Semester 6	MOLICULAR MICROBIOLOGY	ELECTIVE	MBG6B15(E2)	<ul style="list-style-type: none"> • C1: To Understand genome organization of model organisms namely E.coli and Saccharomyces, and the molecular mechanisms that underlie mutations.

					<ul style="list-style-type: none"> • C2: To develop a fairly good knowledge about the three well known mechanisms by which genetic material is transferred among the microorganisms namely transformation, transduction and conjugation.
	SEME STER 6	PROJECT	PROJE CT	MBG6B16(PR)	<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.