B.SC. (HONOURS) MICROBIOLOGY

COURSE OUTCOMES

Sr.No	Subject Code	Subject Name	Subject category	CourseOutcomes
B.Sc. (Honors) Microbiology1st Year				
1	MICRO1C01	Introduction to Microbiology and Microbial Diversity	Core course	• To introduce the students to thebasics and historyofmicrobiology • Tolearnaboutvariousstructuraldetails ofdifferenttypesofmicrobes.
2	MICRO1C02	Bacteriology done	Core course	• Use pure culture and selective techniques to enrich for and isolate microorganisms, using proper aseptictechnique. • Use appropriate microbiological lab equipment and methods, in order to conduct and analyze experimental measurements relevant to microbiology
3	MICRO1C03	Biochemistry	Core Course	• Understand biochemistry at the atomic level, draw molecules and reaction mechanisms perfectly • Understand the relationship between the properties of macromolecules and cellular activities, cell metabolism and chemical composition.
4	MICRO1C04	Virology	SEC	• Tomakestudentsfamiliartothestructural and metabolic aspectsofvirusandits control • To study bacteriophages, their classification of viruses along with their different applications of viruses in research
5	BIOTECH1GE01	Mycology and Phycology	GE	• Toinformthestudentsaboutdifferentstructural, physiological aspectsoffungiandalgae • Students can learn about the role of fungi in biotechnology, food industry, agriculture and production of biological controls and biotech industries.

6.	BIOTECH1GE02	CellBiology	GE	• To make students understandhow cell organization, its functioning • To getadetailed knowledge of thevariousmechanisms of their functionsin livingbeings
B.Sc. (Honors) Microbiology 2nd Year				
1	MICRO2C05	MicrobialPhysiology andMetabolism	Core	• To understand the energetics and biochemistry of metabolic pathways • Students will comprehend metabolic pathways unique to microorganisms.
2	MICRO2C06	Environmental Microbiology	Core	• To make students understand their different habitats and adaptations • To make students familiar withroleofmicrobesinenvironment and how they can help inbioremediation of theenvironment.
3	MICRO2C07	Recombinant DNATechnology	Core	• Thestudents will be to understandthe manipulation of genes inordertoproducemodified organismswithbetter properties. • The students will be able to demonstrate a knowledge and understanding of: Genetic engineering principle in the development of novel microbial strains with an application in different fields.
4	MICRO2C08	Industrial Microbiology	Core	• Gives knowledge of use ofmicroorganisms in theproductionofvarious commercial products. • To understand the basic set up, processes involved in commercial production.
5	MICRO2C09	Microbes in Sustainable Agriculture and Development	DSE	• Tomakestudentsawareaboutthe use of microorganisms insustainable agriculture • Know basics of sustainable agriculture in form of

				biofertilizers and organic farming will expose them to the broader perspective of agricultural biotechnology.
6	MICRO2C010	Mol.Diagnostics	Core	• Applications of enzyme immunoassays in diagnostic microbiology • Adequate knowledge about recent advances and technological developments in the field of diagnostics
7	BIOTECH2GE3	Molecular Biology	GE	• Tomakestudentsfamiliar aboutstructure,functionofmacromolecules viz. DNA,RNA,Proteins • Students will study the detailed structure of nucleic acids. 2. Students will learn in detail the molecular processes such as replication, transcription and translation.
8	BIOTECH2GE4	Immunology	GE	• To study the components of human immune system and human defense mechanisms. • Students will gain hands on experience of hematology and immune-techniques.
9	MICR2SE01	Microbial Quality Control In Food And Pharmaceutical Industries	SEC	• To make students aware aboutthe different types of media andother cultural and moleculartechniques used in the detectionand control of commoncontaminants infoodandotherindustries. • Students will also know the microbial quality control and quality schemes used in food industries
10	MICROSEC03	Biofertilizers and Biopesticides	SEC	• The aim of this course is to introduce the students biofertilizers in enhancing the fertility of soil • The students also learn about the large scale production of biofertilizers • and different biopesticides

B.Sc.(Honors) Microbiology 3rd Year				
11	MICRO3C011	Food and Dairy Microbiology	Core Course	• To study general principles of food microbiology, food preservation, fermented and microbial foods. . • To study microbiological examination of foods, microbiological quality Control and quality schemes.
12	MICRO3C12	Medical Microbiolo-gy	Core course	• Understand relationship between human host and pathogens and the ability of pathogens to cause disease. • Students will be able to correlate disease symptoms with causative agent, isolate and identify pathogens.
13	MICRO3C13	Bioprocess Technology	Core Course	• Understand and specify reactors used in industrial bioprocesses, develop mathematical models for bioreactors and analyze their behaviour. • Understand suitable process instrumentation for monitoring and control of bioreactors using the biocatalyst such as an enzyme microorganisms, plant and animal cell in the bioreactor
14	MICR03C14	Instrumentation and Biotechniques	Core Course	• Students will learn about the principle, working and applications of commonly used instruments in microbiology. • Students will be able to handle, calibrate and use the instruments.
15	MICRO3DSE01	Biochemical Engineering	DSE	• Comprehend the state of the arts in bioreactor technology and its broad range of applications. techniques to measure and control these parameters. • The students perform studies on cell, proteins and other biological substances to determine optimal conditions for growth and its inhibition.

16	MICRO3DSE03	Ecology and Environment Management	DSE	• To provide students the fundamental concepts and knowledge about principles of ecology • Understand use of different Biotechnological techniques in protection and preservation of environment
17	MICRO3DSE04	Parasitology	DSE	• Understanding basic morphology, classification , physiology of parasites. • To impartswiththestudy of disease causingmicroorganismssuchas protozoans, helminths andarthropods, their pathogenesis and laboratory diagnosis of disease caused by parasites
18	MICRO3DSE06	Advances in Microbiology	DSE	• Understanding the structure and functions of genomes of different microbial groups and to provide a comprehensive detail on microbial genomes • Identifying and distinguishing genetic regulatory mechanisms at different levels for understanding of high throughput techniques including genomics, proteomics and metabolomics for microbiological research.