## COURSE OUTCOMES

## B.Sc. I Year Microbiology

- Get an idea about the historical events in microbiology
- Understand the diversity in microbiology
- Know the scope of Microbiology
- Understand the taxonomic classification of microorganisms
- Know parts of microscope, type and its principal
- Get the theoretical concepts of related stain
- Understand different methods of staining techniques
- Understand nutritional requirements of bacterial.
- Develop basic skill in aseptic techniques
- Understand various accessories for microbiology practicals
- Perform various staining techniques
- Cultivate bacteria with different cultivation technique
- Understand concepts of growth and reproduction of bacteria
- Know anatomy of prokaryotic cell
- Know structural detail of eukaryotic cell
- Understood various parts of cell and its importance
- Acquainted with various sterilization techniques
- Use various method to control microbes.
- Gather theoretical background of microbial cultivation
- Understand various specialized techniques such as pasteurization
- Perform various biochemical test
- Stain the bacteria with differential staining techniques
- Understand the effect of various environmental factors
- Get familiar with various instrumentation

## COURSE OUTCOMES

## B.Sc. II Year Microbiology

- Get an idea regarding microbes and their relation with environment
- Understand the enumeration technique for microbes
- Check portability of water, microflora of air.
- Aware of screening of bacteria
- Develop skill to stain parts of bacterial cell
- Milk microbiology- technique used in milk industry,
- Food microbiology – technique used in food industries,
- Microbial food poisoning
- Soil microbiology and xenobiotics
- Microbial waste treatment methods
- Tests in waste water treatment
- Test for milk quality
- Understand basics of immunology
- Various concepts of medical microbiology
- Immune response and immune mechanism.
- Concept related to cells and organs related to immune system.
- Concepts related to Immunodeficiency
- Immuno-diffusion techniques
- Antibiotics senstitivity and resistance test

# COURSE OUTCOMES

## B.Sc. III Year Microbiology

- Concept of central dogma of molecular biology, Process of DNA replication transcription, translation
- Viral genetics, Various method used for genetic recombination
- Concept of gene regulation
- Principals and applications of various molecular techniques
- Concept, methods and application of r-DNA technology, Gene library and gene mapping, Quality control and assurance,
- Evaluation of sterilization techniques
- Isolate and identify microorganism form laboratory sample, Antibiotics senstitivity and resistance test
- Handling of blood and body fluids
- UV-survival curve
- Strain improvement
- Scale up and large scale production
- Concept of bioenergetics
- Anabolism and catabolism with examples
- Anatomy of human system
- Various chemotherapeutic agent and their mode of action
- Vitamin as cofactor, its role metabolism,
- Regulation of enzyme
- Techniques used in industrial production of alcohol
- Techniques used in industries –Citric acid fermentation
- Enzyme production and determination of its activity
- Validation techniques of instruments and immobilization process
- Bioreactors, Industrial sterilization