DEPARTMENT OF MICROBIOLOGY

Vision

Up gradation of the Knowledge in theory and research activities in order to keep pace with the global scientific progress and to meet the requirements of the society and for the development of the Country.

Mission

The mission of the department of microbiology is to educate and train students in the discipline of microbiology and to expand their scientific knowledge through research.

DEPARTMENT OBJECTIVES

1. To offer courses within National education policy (NEP-2020) to enhance the intellectual foundation and preparation of students for life in a complex, dynamic technological world

2. To prepare students careers in clinical and Pharma industries and for careers in basic, environmental and biomedical research

3. To prepare students (B.Sc. Hons.) with in-depth knowledge and research skills for professional careers in Microbiology

4. To enhance opportunities for research and scholarship for faculty members as well as undergraduate and graduate students

5. To preserve, add to, evaluate, and transmit knowledge in the field of Microbiology

6. To serve the society by promoting science

7. To promote the sustainable goals of the country

PROGRAM EDUCATIONAL OBJECTIVES

The Program Educational Objectives (PEOs) for the B.Sc. Microbiology program describe accomplishments that graduates are expected to attain within four years after graduation:

PEO-1: To exhibit ability to pursue careers in the industry, agriculture, and applied research where microbial systems are increasingly employed.

PEO-2: To address the increasing need for skilled scientific manpower, contributing to application, advancement and impartment of knowledge in interdisciplinary areas related to Microbiology and life sciences.

PEO-3: To exhibit excellent professional skills, communication skills and ethical attributes as an effective team member. in a competitive global environment

PEO-4: To demonstrate right mixes of innovative ability, equipped with entrepreneurship abilities contributing to self and national development.

PEO-5: The graduates will be cognizant and responsive to the societal needs and will possess the initiative and critical acumen required to continuously improve their knowledge through life long learning.

PROGRAM OUTCOMES

This program will help post graduates to:

PO1: Have Knowledge and technical skills associated with microbiology laboratory for delivering quality clinical investigations.

PO2: Perform safe use of basic laboratory glassware and equipment including the cell counter, microscope, centrifuge, incubator, Hot air oven, autoclave, colorimeter, and Laminar air flow.

PO3: Perform advanced molecular microbial methods including Polymerase Chain reaction, Site directed mutagenesis, SDS-PAGE, Agarose gel electrophoresis, Western blotting, Southern blotting, Transformation ,Transduction, Conjugation and AMES test etc,

PO4: Conduct routine clinical laboratory procedures within acceptable quality control parameters in bacteriology, virology, mycology, parasitology and immunology.

PO5: Learn Problem solving techniques in identification and correction of pre analytical, post analytical & analytical variables.

PO6: Demonstrate technical skills, social behavior and professional awareness for functioning effectively as a microbiology technician.

PO7: Maintain & operate laboratory equipment utilizing appropriate quality control and safety procedures.

PO8: Identify the impact of laboratory tests in a global and environmental context.

PO9: Perform as a leader/team member in diverse professional and industrial research areas.

PO10: Use the fundamentals of research process to complete and present research studies that enrich the all areas of advanced research.

PO11: Gain practical knowledge through internship at various food industries.

PO12: Ability to inculcate an attitude of enquiry towards developing innovative ability and enhancing entrepreneurship skills.

PROGRAM SPECIFIC OUTCOMES

PSO-1: Equips capacity to venture into a career in bio based industries as scientists or technologists in the division of production, research and developmental settings.

PSO-2: Demonstrate the concepts and research approach for their higher career in the field of microbiology and develop their scientific interest.

PSO-3: Administer skill sets to understand the rationales behind various regulatory/legal bodies governing the R&D in the industry.

PSO-4: Exhibit in-depth practical oriented knowledge to students in various thrust areas of microbiology, so as to meet the global demands of industry and academia.

PSO-5: Ability to designs aids in developing solutions for complex problems with appropriate consideration to the public health and safety, and the cultural, societal, and environmental considerations.