

DEPARTMENT OBJECTIVES

1. To offer courses within National education policy (NEP) 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 (M.Sc. and Ph.D.) 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 OUTCOMES

SEM-I: 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.

SEM-II: Gather basic knowledge regarding AI, Specialise use of Microscope, Culture techniques

What can I do with a Major in Microbiology

The Microbiology major deals with minute organisms such as microorganisms, parasites, algae protozoa & many infectious organism infections. Microbiology study involves study of microbial growth, survival, metabolism, genetics and physiology. Furthermore analyzing the relationship between environment and organism, biotechnology, and diseases also the part of the curriculum. Our focus centre on a particular field in microbial science that can be utilized in clinics and different clinical labs, food and wine industry and research laboratories.

What You Gain From Studying Microbiology:

The Microbiology major prepares students to pursue act on different food and beverage industries, medical field and different research laboratories. Students also gain the heavy knowledge and can trained themselves on molecular biology, biochemistry, recombinant DNA technology, immunology, genetics and many more fields of modern biology section.

Careers in Microbiology:

Microbiology can be used in medical, academic, veterinary, environmental, public health, food, and pharmaceutical industries to examine the way microbes or microorganisms affect health care, products, animals, the environment, and the food supply. Many entry level microbiology jobs accept a Bachelor's degree. You can advance from entry level to higher--level positions with additional education.

Microbiology is the study of organisms invisible to the naked eye, such as bacteria, fungi, & viruses.

- There are many different types of microbiology careers. Medical, veterinary, environmental, food, and pharmaceutical microbiology deal with the way microbes or microorganisms affect the health care industry, animals, the environment, and the food supply.
- Most microbiology jobs require a Bachelor's degree. Administrative, and university teaching & research positions generally require a graduate degree.
- It is critical to gain relevant work experience through internships, research, jobs, and volunteer work.

The following list provides a brief sample of responsibilities, employers, jobs, and industries for individuals with a degree in this major. This is by no means an exhaustive listing, but is simply designed to give initial insight into a particular career field that would employ the skills and knowledge gained through this major.

Areas	
Environmental/Veterinary	<p>Study how organisms such as bacteria function and react to themselves and other processes in the environment, such as pollution, plants, animals, and seasonal & evolutionary changes.</p> <p>Examination of microbes role in the cycling of inorganic nutrients and weathering of minerals.</p> <p>Purify and treat water for safe consumption and use.</p>
Industrial	<p>Examine food supply later distributed to grocery stores and other vendors.</p> <p>Ensure food and beverage supply is free of pathogenic organisms potentially harmful to health of those who consume it.</p> <p>Guarantee food is safe to distribute to public.</p> <p>Dairy/Agriculture management & quality control.</p> <p>Identify, catalogue, or culture microbes for industrial production (Cosmetics, toiletries, oil, sales, breweries, etc.).</p>

<p style="text-align: center;">Legal</p>	<p style="text-align: center;">Knowledge about microbial species and products in drafting patents and technological transfer agreements.</p>
<p style="text-align: center;">Medical/Pharmaceutical</p>	<p style="text-align: center;">Identify disease-causing bacteria that may have affected a patient or potentially could affect the human body (<i>Medical</i>).</p> <p style="text-align: center;">Assist in preventing the spread of disease by containing & treating it (<i>Epidemiology</i>).</p> <p style="text-align: center;">Test organisms for vaccine development or distribution of medicine (<i>Immunology, Mol. Pathogenesis, Virology</i>).</p>
<p style="text-align: center;">Research</p>	<p style="text-align: center;">Study and test bacteria and other organisms in controlled environments to understand their breakdown and reaction to various tests (<i>Epidemiology, Immunology, Mol. Pathogenesis, Virology</i>).</p> <p style="text-align: center;">Identifying bacterial, viral, fungal and parasitic infections to prevent epidemics.</p> <p style="text-align: center;">Study the structure, function, ecology, biotechnology and genetics of micro-organisms and research the functioning of human, animal and plant tissues and cells.</p>
<p style="text-align: center;">Safety</p>	<p style="text-align: center;">Combination of field and lab research working with biological agents to protect against bioterrorism.</p> <p style="text-align: center;">Vaccine and anti-viral development for serious or</p>

	fatal illnesses.
Teaching	Lecture about the systems and advances of microbiology. Conduct microbiology research and train students.