

DEPARTMENT OF MICROBIOLOGY

COURSE OBJECTIVES

Microbiology is the study of all living organisms that are too small to be visible with the naked eye. This includes bacteria, archaea, viruses, fungi, prions, protozoa and algae, collectively known as 'microbes'.

Microbiology focuses on organisms that are very small using various tools, which is a process done by microbiologists. As microbes are essential for human life and as microbes can cause human diseases, microbiology is therefore very important.

Microbiologists aim:

Is to solve a range of problems affecting our health, the environment, climate and food and agriculture.

Depending on the employer, this can include:

- Studying the prevention, diagnosis and control of infections and specific diseases.
- Ensuring food and drink is safe to consume.

The main purpose of microbiological testing of foods is to validate and verify process control measures in the context of a properly implemented hazard analysis and critical control points system.

Knowledge:

To impart knowledge of the basic principles of bacteriology, virology, mycology, immunology and parasitological including the nature of pathogenic microorganisms, pathogenesis, laboratory diagnosis, transmission, prevention and control of diseases common in the country.

The student will be able to identify:

- common infectious agents and the diseases that they cause.
- They will be able to evaluate methods used to identify infectious agents in the clinical microbiology lab.
- The student will also be able to recall microbial physiology including metabolism, regulation and replication.

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PROGRAMME OBJECTIVES

A fundamental understanding of how a cell works has come through the study of microorganisms.

- Microbiology has helped to treat and prevent diseases which are caused by viruses, bacteria, protozoa and fungi.
- In medicine, for example, microbiology led to the discovery and development of: Antibiotics, and. Vaccines.
- Studying the prevention, diagnosis and control of infections and specific diseases.
- Ensuring food and drink is safe to consume.
- Understanding the role that microbes play in climate change.
- Developing green technologies.

Microbiology is really interesting due to a number of reasons.

- It includes laboratory work, computational work, field work, etc., that is, something for everybody.
- More importantly, microbiology enhances our understanding of various diseases and their cures, soil characteristics and fertility, etc
- Microbiology also is an applied science, helping agriculture, health and medicine and maintenance of the environment, as well as the biotechnology industry.
- Microorganisms are extremely important in our everyday lives.

The scope in this field is immense due to the involvement of microbiology in many fields like :

medicine, pharmacy, dairy, industry, clinical research, water industry, agriculture, chemical technology and nanotechnology.

A microbiologist can innovate new diagnostic kits, discover new drugs, teach, research, etc.

Health related jobs:

- Pathologist.
- Clinical Laboratory Scientist.
- Public Health Lab Scientist.
- Laboratory Technician.
- Bio safety Officer.

- Contamination Control.