

## **DEPARTMENT OF MICROBIOLOGY**

### **COURSE OUTCOMES: 2020-21**

#### **SEMESTER I: Introduction to Microbiology & Microbial Diversity**

- Explain relationship and apply appropriate terminology relating to the structure ,genetics, metabolism and ecology of prokaryotic microorganisms ,algae ,viruses and fungi.
- Demonstrate appropriate laboratory skills and techniques related to isolation, staining ,identification and control of microorganisms.

#### **SEMESTER II: Microbial Biochemistry and Metabolism**

- Explain working principle and application of colorimetry, chromatograph, spectrophotometry and Gel Electrophoresis.
- Knowledge on microbial Nutrition, Bacterial growth, metabolism and Respiration.
- The students will get first-hand experience on separation methods.

#### **SEMESTER III: Microbial Genetics & Molecular Biology**

- Develop Knowledge on microbial genetics and molecular biology and instrumentation.
- To develop knowledge and skill related to Genetic engineering
- To be able expertise in cloning techniques

#### **SEMESTER IV: Immunology and Medical Biology**

- Explains non-specific body defenses and the immune response.
- Develop knowledge on disease transmission and control
- Demonstrate on collection and handling of laboratory specimens
- Develop information making personal health decision in regard to infectious diseases.

#### **SEMESTER V: Environmental & Agricultural Microbiology**

- The students will have fundamental concepts in soil microbiology, soil microbial diversity,
- Basic concepts of nitrogen fixation. And plant growth promotion.
- Understanding the role of microorganisms in treatment of solid and liquid waste.
- The students will acquire knowledge on application of microorganism in agro-environment
- Fields.
- Knowledge on plant disease control.

#### **SEMESTER V: Food and Industrial Microbiology**

- The course aim to improve general principles and food microbiology.
- It is assume that students will have got basic information on spoilage, principle of food preservation and single cell proteins.

#### **SEMESTER VI: Microbial Biotechnology (Elective)**

- Student should be able to demonstrate with the wide diversity of microbes and their potential for use in microbial biotechnology .
- It is assume that students will have get outlines of intellectual property rights

**SEMESTER VI: Microbial Diagnosis in Health Clinics (Clust-I)**

1. Develop knowledge on disease transmission and control.
2. Demonstrate on collection, handling and diagnosis of laboratory specimens.
3. Develop information making personal health decision in regard infectious diseases

**SEMESTER VI: Microbial Quality Control in Food and Pharma Industries**

1. Develop knowledge and skill on microbiological laboratory safety- General rules and regulations
2. Develop skills on disinfections of instruments and equipments in laboratory and hospital

**SEMESTER VI: Biofertilizers and Biopesticides (Clust-III)**

1. Develop knowledge and skills on mass multiplication and field application of biofertilizers and biopesticides.
2. Production of Bacterial Biofertilisers
3. Field application techniques of Biofertilisers



Signature of Lecturer IN-Charge

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