EBO-3004: Environmental and Applied Microbiology (Credits: 2)

Unit-I

1. Microbes as tools for understanding the biological processes: Physiology, biochemistry, genetics, molecular biology, genomics, proteomics
2. Microbes and environment: Pollution abatement, bioindicators, restoration of degraded ecosystems, biodegradation, bioremediation, biogenic gases, microbes in biological warfare
3. Application of microbes in fermentation processes: Types, design and maintenance of bioreactors, application of fermentation technology in industry
4. Medical microbiology: Microbes as causal agents of human and animal diseases; immunology: basic concepts, vaccines, immunotherapy.

Unit-II

1. Role of microbes in relation to agriculture: Nitrogen economy, plant health, biological control
2. Symbiotic associations: Concepts, types and applications
3. Microbes in food and dairy industry: Mushrooms, fermented foods, microbial spoilage of food and dairy products, toxins.
4. Extremophiles and their biotechnological applications.