



TARA GOVERNMENT COLLEGE SANGAREDDY

(AUTONOMOUS)

Department of Microbiology Course Specific Outcomes

Paper I – General Microbiology

1. Students have developed a good knowledge of Definition and cope, History of Microbiology and contributions of prominent scientists in this field
2. Students will be acquainted with different types of Microscopy, Staining methods to study different bacterial structures.
3. Students will learn Different classification systems i.e. place of microbes in the living world, characteristics of different groups of microorganisms
4. Students will understand the structure of bacterial cell and variant components of bacterial cell. Structures of TMV, HIV viruses etc.

Paper II- Microbial Diversity

1. Students will be familiar with the basic concepts and elements of Biodiversity and conservation. The basic concepts of classification and taxonomy of living organisms including Bergys Manual of Determinative Bacteriology.
2. Understand General characteristics of eubacteria, Microbial richness with reference to the Archaea bacteria and extremophiles, Gram negatives and Gram positives.
3. Familiar with eukaryotic microbial diversity like Algae, Fungi and Protozoa.
4. Students will learn Microbial Ecosystems in terms of microbial interactions, cultivated and uncultivated microorganisms, and Micro biome for sustainable agro ecosystems.

Paper III- Food & Environmental Microbiology

1. Students will develop understanding about fermented foods- Health aspects, processing and fermentation, types of microorganisms in milk, microbial products of milk etc.
2. Microbial spoilage of foods, food preservation methods, food quality, Methods of quality assessment of foods.
3. Microorganisms in air and water, water pollution, water borne pathogenic microorganisms, Aerobic and anaerobic sewage treatment.
4. Student will be conversant with soil properties and soil microorganisms, methods of enumeration of soil microorganisms, Microbial plant interactions, Microbial biodegradation and carbon, Nitrogen cycles.

Paper IV- Medical Microbiology & Immunology

1. Students will understand basic concepts of Normal flora of human body, Host pathogen interactions some of the air borne and food borne & contact diseases.
2. Students will develop thorough understanding of food and water borne viral infections like Polio myelitis, Insect borne and zoonotic infections.
3. The main concepts of Defense role of Immune system of the host and basic components and mechanisms involved in immune system with relation to the pathogenic microorganisms.
4. Understanding the immunological disorders like Hypersensitivity and auto immune disorders and different Ag- Ab reactions.

Paper V- Molecular biology & Microbial Genetics

1. Students will be familiar with the concepts of fundamentals of Genetics like Mendalian Laws, DNA structure, DNA and RNA as genetic material, replication of DNA etc.
2. The concepts of Mutations. Physical and chemical mutagens, DNA damage & repair mechanisms ,various gene transfer methods are learned
3. Students will know concepts of gene, types of RNA, transcription in Prokaryotes, genetic code, regulation of gene
4. Students will learn Genetic engineering, gene cloning methods, Genomic and cDNA libraries and applications of Recombinant DNA technology& Genetic engineering.

Paper VI- Pharmaceutical Microbiology

1. Acquired detailed knowledge of history of chemotherapy, Paul Ehrlich contributions, drug action in microbes, and development of synthetic drugs.
2. Types of antibiotics and classification, non medical uses of antibiotics, Principles of chemotherapy.
3. The phenomenon of drug resistance, mode of action of important drugs.
4. Microbiological assays for growth promoting substances, drug sensitivity testing methods and assays for antibiotic assays.