

## **MBH-452: FOOD MICROBIOLOGY**

**52 hrs**

### **UNIT- I**

**(13 h)**

**Food and its constituents:** carbohydrates, proteins, fats & oils, vitamins, minerals, fiber and water-properties and significance. Food as substrate for microorganisms, Extrinsic and Intrinsic factors influencing microbial growth, Microbes important in food: molds, yeasts, bacteria. Detection of food spoilage, Food- borne Infection & Intoxication: Bacterial, Fungal, Nematodal, Protozoal. Spoilage of fruits, vegetables, cereals, meat, fish, sea foods, poultry and canned foods.

### **UNIT- II**

**(13 h)**

Milk handling & processing, microbial contamination of milk, Biochemical activities of milk: Souring, Lactosis, Proteolysis. Milk - borne infections, **Probiotics and their importance.** Fermented dairy products- buttermilk, sour cream, cheese, yoghurt, Pasteurization and its types, Fermented Foods- Bread, Cocoa, Vinegar, Sausage, Oriental foods- Shoyu, Tofu, Idli. **Food preservation:** Classification- physical, chemical and biological.

### **UNIT- III**

**(13 h)**

**Principles of Food Packaging:** Types of containers, Food packaging materials and forms, Package testing, Packages with special features, Safety of food packaging. **Food Processing** and Environment: Food Sanitation in manufacture and Retail trade, Properties and requirements of processing water, Waste water and waste solids disposal, up-gradation and treatment.

### **UNIT- IV**

**(13 h)**

**Food Safety, Risks and Hazards:** Microbiological consideration in Food Safety, Effects of processing and storage on Microbiological safety, **Microbiological methodology, Food Laws and Regulations-** HACCP, FSSAI, BIS, Federal Food, Drug and Cosmetic Act, International Food Standards and Codex Alimentarius.