MBH-452: FOOD MICRIOBIOLOGY **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.