Subject Code : P8FSE4

ELECTIVE IV -FOOD MICRO BIOLOGY AND SANITATION

(Hour of Instruction per week : 6 Including 3 hours Practicals)

OBJECTIVES:

To enable students

1. Understand the common organisms associated with food borne illnesses
2. Gain knowledge on the necessity for cleaniness in preparation and service of foods

S.No.	TOPICS	COURSE OUTLINE	RELATED EXPERIENCE (PRACTICALS)
UNIT I			
	Fundamentals of Microbiology	Introduction: Development of Microbiology and food sanitation Bacteria: Morphology, reproduction Physiology, growth curve and Biochemical changes in bacteria Yeasts: Morphology, Methods of multiplication process of hybridization, physiology, classification and importance of Yeasts. Molds: Morphology, multiplication, physiology and nutrition, significance of molds and common household molds Viruses: Discovery, bacteriophages Morphology, reproduction, human Viral diseases, identification and Control and viruses in relation to Food science	preparation of media for cultivating micro organisms Inoculation of the media Isolation of pure culture
	General Principles of Food Preservation:	Physical - High temperature, Low temperature, Drying - Water activity, Irradiation, High Pressure Processing Specialization, modification of atmosphere. Chemical - Organic acids, esters, nitrite, Sulplur dioxide and ' natural food Preservative.	
	Microbiology Of natural Products	Water: Sources, bacteriology of water supplies, bacteriological examination and purification of water	Standard qualitative analysis of water to determine the water Portability. a. Presumptive test b. Confirmed test c. Standard plate Count

	Air: Sources, kinds and numbers Importance of state of suspension, Diseases transmitted by air and Treatment of air.	
UNIT III		
Microbiology of Milk and milk products:	kinds of micro organisms in milk, Sources of contamination, Pathogens in milk, control of Micro organisms, quality and Methods of study. Microbiology of dairy products - fermented milk Butter and cheese.	1 Standard plate count of milk 2. Direct microscopic count of organism in milk. 3. Reductase test using methylene Blue or resa Zurin
Microbiology of fleshy foods	Flesh foods: Bacteria found in meat, microbiology of Poultry, fish and meat products.	
UNIT IV		
Microbiology of Fruits and Vegetables;	External Contamination preservation and Spoilage of fruits. Contamination And control of microorganisms in Vegetables	Demonstration of bacteria in Various food products such vegetables, fruits soft drinks, meat, Canned food Products, etc.,
Microbiology of Cereal and cereal Products	Cereal and Cereal products: Organism associated with grains classification and control of molds in bread	
Sale of sugar	Sugar spices and salt: Effect of salt on micro Organisms, role of sugars in Foods and role of spices in food	
UNIT V		
Principles of Food spoilage	Food spoilage Microbiological biochemical, biological physical and chemical factors spoilage and examination of canned food, Methods of food preservation, food borne diseases and their outbreak	Demonstration of of bacteria in meat under market conditions examination of canned fruits and preserved vegetable products.
Sanitation And safety	Personal hygiene: Care of hand and habits, sanitation in handling food Equipment plant extension, plant Construction, equipment personal Facilities, water supply and sewage Disposal.	
	Linen: Sanitary handling and care of Different types of table linen Causes for kitchen accidents and prevention,	

Causes, falls, burn, suffocation, poisoning, Injury by sharp instruments. Solving the Accident problem-education in safety habits.

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