AEI5470 Food Microbiology

Level	5
Course Code	AEI5470
Course Title	Food Microbiology
Credit value	4
Core/Optional	Optional (Agri)
Course Aim/s	The aim of this course is to understand the role of microorganisms in food, identification of microorganisms in food and their effect on human health.
Course Learning Outcomes (CLOs):	At the end of the course the students should be able to; CLO1: Discuss how environmental factors effect on microbial growth on foods PLO1] [PLO9][PLO12] CLO2: Differentiate food borne pathogenic microorganisms and food spoilage microorganisms [PLO1] [PLO9] [PLO12] CLO3: Enumerate the number of microorganisms in a given food sample using appropriate methods[PLO1][PLO9][PLO12] CLO4: Discuss the importance of controlling food borne diseases by assuring food safety [PLO1][PLO9][PLO12]
Content (Main topics, sub topics)	**Outline syllabus:** Unit 1: Food microbiology Session 01 : History of microorganisms in food Session 02 : Role and significance of microorganism in food Session 03 : Intrinsic parameters of food that effect microbial growth Session 04 : Extrinsic parameters of food that effect microbial growth Session 05 : Spores and their significance Session 06 : Microbial attachment and biofilm formation Session 07 : Beneficial microorganisms in Food - probiotics Session 08 : Pathogenic microorganisms in meat, seafood food Session 09 : Pathogenic microorganisms in processed food Session 10 : Pathogenic microorganisms in fresh and fermented fruit and vegetables Session 11 : Food spoilage microorganisms and Lactic acid bacteria Unit 2 : Detection and enumeration of microbes in food Session 12 : Culturing techniques of microorganism (pure culture,16 streak, 8streak) Session 13 : Quantification of microorganisms (cfu/ml, cfu/g, serial dilution) Session 14 : Physical methods of Identification of microorganisms I(staining, microscopy, agar droplet) Session 15 : Chemical methods of Identification of microorganisms II (MPN, selective media, immunologic methods) Session 16 : Sampling methods of enumerating microorganism (surface contaminants, food contaminants) Session 17 : Immunological methods to identify microorganisms Session 18 : Molecular methods to identify microorganisms Session 19 : Indicator microorganisms Unit 3: Food borne diseases and control of microorganisms in food Session 20 : Food borne listeriosis Session 21 : Food borne Gastroenteritis caused by Salmonella, Staphylococcus, Shigella, Vibrio Session 22 : Entero hemorrhagic E. Coli

	Session 23 : Mycotoxins Session 24 :Virus and other food borne biohazards Session 25 : Food preservation Session 26 : Hurdle technology in food preservation **Laboratory classes :Yes**