**Courses of Distinct program in food safety and quality**

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| **Title**: Food establishments management systems | **Credit hours** | |
| **Code Number: NDC 227** | **Lectures** | **Practical** |
| **Prerequisite courses:** | 2 | 1(1) |
| Quality Control System,Quality characteristics in food,Total Quality Management in Food Processing,Quality systems and ISO 9000 and HACCP specifications,Quality systems and ISO 9000 and HACCP specifications1 Production Policy (Product Cycle - Steps to Production of a New Product - Product Development)Management and training of workers in food establishments | | |

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| **Title:** Hygiene of food establishments | **Credit hours** | |
| **Code Number: FHC 327** | **Lectures** | **Practical** |
| **Prerequisite courses:** | 2 | 1(1) |
| **Course Contents:**   * Sources of food contamination and spoilage. * Diseases transmitted through food. * Chemical, physical and microbiological hazards and their control. * Facility Design. * Cleaning and Sanitation. * Personal Hygiene. * Pest Control. * Receiving, Storage and Transportation. * Hygienic production of food sources. * Good manufacturing practices (GMPs). * Good operational practices (GOPs). * Supplier control. * Audits and inspection programs. * Food safety management systems (FSMS). | | |

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| **Title: Food Safety and Quality Management systems** | **Credit hours** | |
| **Code Number: FHC 428** | **Lectures** | **Practical** |
| **Prerequisite courses:** | 2 | 1(1) |
| **Course Contents:**   * + Food safety issues; physical, chemical and microbiological contaminants, bovinespongiform encephalopathy (BSE), genetically modified organisms and geneticallymodified foods.   + Food safety system.   + Definitions and terminology in Quality Management Systems.   + History of quality control and quality management.   + Quality management theories and their authors.   **Physical and Chemical Contaminants and Additives**   * + Metals, mineral (soil, engine oil, stones), plant (leaves, twigs, pods and skins), animal(hair, bone, excreta, blood, insects, larvae).   + Safety evaluation of food ingredients.   + Major pathways by which chemical residues and contaminants enter the food chain.   + Agrochemicals and veterinary drugs, packaging materials, process equipment andingredient impurities.   + The nature, properties and function of various classes of food additives (colorants, flavors, sweeteners, thickening and gelling agents, and antioxidant preservatives).   + Radioactivity – residues as contaminants and residues from irradiation   **Natural Toxic Substances**   * + Mycotoxins   + Marine and Freshwater toxins (formally known as Phycotoxins)   + Plant toxins and toxic plants   + Toxic Mushrooms   **Microbiology Food Safety**   * + The significance of foodborne disease.   + Recent emerging pathogens including: Bacteria – *Escherichia coli* 0157:H7, *Listeriamonocytogenes, Salmonella typhimurium* (DT) 104.   + Non-bacterial agents – Protozoa; *Cryptosporidium parvum.*  Toxigenic fungi; mycotoxinsof *Aspergillus*. Foodborne viruses; gastroenteritis viruses.   + Spongiform encephalopathies; bovine spongiform encephalopathy (BSE).   + Factors affecting the emergence of pathogens. | | |

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| **Title: Milk preservation** | | **Credit hours** | |
| **Code Number: FHC 429** | **Lectures** | | **Practical** |
| **Prerequisite courses: FHC 416** | 2 | | 1(1) |
| **Course Contents:**  **Normal preservation of milk**  **Natural biopreservation of milk**  **Legal milk additives** | | | |

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| **Title: Animal by products & recycling** | **Credit hours** | |
| **Code Number: FHC 518** | **Lectures** | **Practical** |
| **Prerequisite courses:**516 | 2 | 1(3) |
| **Course Contents:**  Main characteristics of edible by products, Recovery and preparation of edible by products,  Microbiology of edible by products, Utilization of edible by products | | |

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| Title: Poultry & fish meat hygiene& control | **Credit hours** | |
| Code Number: FHC 528 | **Lectures** | **Practical** |
| Prerequisite courses:516 | 2 | 1(3) |
| **Course Contents:**  Ante- motem inspection of poultry, P.M. inspection of poultry, Processing faults of dressed broilers, pathological affections, rabbit slaughter & judgment of diseases, Fish morphology & identifications, Hazards of fish consumption,. Fish preservation, HACCP, ISO .Meat microbiology. | | |

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| Title: meat preservation | Credit hours | |
| Code Number: FHC 529 | Lectures | Practical |
| Prerequisite courses:516 | 2 | 1(3) |
| Course Contents:  Microbial growth curve, chilling, freezing, canning, curing, irradiation. | | |