

16FT403 MEAT, FISH AND POULTRY PROCESS TECHNOLOGY



Hours Per Week :

L	T	P	C
3	1	-	4

Total Hours :

L	T	P	WA/RA	SSH/HSB	CS	SA	S	BS
45	15	-	10	50	-	-	10	5

Course Description and Objectives:

This course deals with the various sources of animal foods such as meat, fish and poultry, technology involved in their value addition, preservation and storage. The objective of this course is to make students aware of various processing technology, equipments, handling and quality standards of meat, fish and poultry products.

Course Outcomes:

The student will be able to:

- understand sources and processing of meat, fish and poultry products.
- identify types, composition, nutritive value, spoilage and factors affecting the spoilage of meat, fish and poultry.
- understand handling and various methods of preservation like smoking, drying, canning, salting of meat, fish and poultry.
- gain knowledge on fermented meat products and their processing, packaging and storage.

SKILLS:

- ✓ Analyze the chemical composition and other sensory properties of meat.
- ✓ Suggest suitable processing methods for meat, fish and poultry products.
- ✓ Propose storage conditions for meat products and identify spoilage.
- ✓ Specify packaging solutions for efficient packaging of meat, fish and poultry products.

UNIT - 1

L-9, T-3

INTRODUCTION TO MEAT AND POULTRY INDUSTRIES: Introduction to meat and poultry industries, Pre-mortem selection of animals, Modern abattoir practices: Slaughtering techniques of animal and Slaughtering practices, Meat cuts and Portions of meat, Inspection and Grading of meat, Physico-chemical composition of muscle, Post-mortem changes in muscle, Conversion of muscle to meat.

UNIT - 2

L-9, T-3

CHEMICAL AND NUTRITIONAL COMPOSITION OF MEAT: The eating quality of meat: Colour, Water holding capacity (WHC), Juiciness, Texture and Tenderness, Odour, Taste, Meat microbiology and Safety, Spoilage characteristics of meat, Endogenous and Exogenous infections, Preventive (prophylaxis) measures for avoiding meat spoilage.

UNIT - 3

L-9, T-3

MEAT PROCESSING: Comminution, Emulsification, Curing, Smoking, Cooking, Ageing, Tenderization, Meat products: Meat emulsion, Fermented meats, Sausages, Ham, Bacon, Comminuted meat products, Meat analogs, Meat storage and Preservation: By temperature control- Refrigeration, Freezing, Thermal processing; By moisture control- Dehydration, Freeze drying, Curing, IMF meat; By microbial inhibition, Chemical preservation, Ionizing radiation, Packaging of meat products, Meat production, Processing and consumption trends, Meat plant sanitation and waste disposal; By-products from meat industries and their utilization.

UNIT - 4

L-9, T-3

POULTRY PROCESSING: Inspection of birds, Poultry slaughter and dressing, Factors affecting quality of poultry, classification of poultry meat, Composition and nutritional value of poultry meat, Processing of poultry meat, Spoilage and control, By-product utilization, Structure, Composition and functions of eggs, Abnormalities in eggs, Functions of eggs in food products, Inspection and grading for egg quality, Preservation and safe handling of eggs, Coagulation of eggs, Egg foams, Egg powder and Egg based products.

UNIT - 5

L-9, T-3

FISH PROCESSING: Fish as raw material for processing, Biochemical composition, Factors affecting the quality of product, Chilling and freezing of fish and other aquatic products, Physical, Chemical, Microbiological and sensory changes during storage, Principles of thermal processing, Decimal reduction time, Thermal death time, "Z" and "F" values, 12D concept, Determination of process time, Canning process for fish, Value added fish products.

TEXT BOOKS:

1. B. D. Sharma, "Meat and Meat Products Technology", 1st edition, Jaypee Brothers Medical Publishers Pvt. Ltd, 1999.
2. NIIR Board of Consultants, "Preservation of Meat and Poultry", 2nd edition, Asia Pacific Business Press Inc, 2005.

REFERENCE BOOKS:

1. R. A. Lawrie, "Meat Science", Paragon Press, 7th edition, Oxford, New York, 2006.
2. S. Sharma, "Modern Abattoir Practices and Animal By - Products Technology", 2nd edition, Jaypee Brothers Medical Publishers Pvt. Ltd, New Delhi, 2005.
3. Y. H. Hui, "Meat Processing and Meat Products Hand Book", 2nd edition, CRC press, Taylor & Francis, New York, 2012.
4. W. J. Stadel, y D. Newkirk and L. New, "Egg Science and Technology", 4th edition, CBS Publishers, New Delhi, 1995.

ACTIVITIES:

- o *Report on production and processing of local meat, fish and poultry products.*