

19FT214 MEAT FISH & POULTRY PROCESS TECHNOLOGY

Hours Per Week :

L	T	P	C
3	-	-	3

Total Hours :

L	T	P	WA/RA	SSH/HS	CS	SA	S	BS
45	-	30	25	45	-	-	5	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 :

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes	POs
1	Ability to apply basic food preservation principles and processing on meat, fish and poultry products.	1
2	Analyse the effect of different composition, nutritive value on spoilage and factors affecting the spoilage of meat, fish and poultry.	2
3	Investigate the impact of various methods of preservation of muscle food.	4
4	Design and Development of processing to minimize waste and by-product utilization.	3

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 transportation of meat, fish and poultry.



Source:

<https://www.india-retailing.com/2017/01/31/food-grocery-processed-chicken-just-5-percent-total-poultry-market/>

UNIT - I**L-9**

INTRODUCTION TO MEAT, POULTRY AND FISH : Scope of meat, poultry and fish industry in india; Current levels of production, consumption and export of category products; Structure and composition of muscle and associated tissue - muscle tissue, skeletal muscle, skeletal muscle fiber, myofibrils, myofilaments, smooth muscle, cardiac muscle, epithelial tissue, nervous tissue, connective tissues, adipose tissue, muscle bundles and associated connective tissues; Muscle and fibre types; Chemical composition of skeletal muscle safety/health and hygienic considerations.

UNIT - II**L-9**

POST MORTEM CHANGES IN MEAT: Slaughtering and stunning of meat by different scientific methods - mechanical, electrical, chemical methods, ritual/religious methods of slaughter, jewish, halal, jhatka and spanish methods; Dressing and cutting of carcass in sheep, pig and buffalo; Conversion of muscle to meat - homeostasis, exsanguination, circulatory failure to muscle, post-mortem pH decline, rigor mortis, enzymatic degradation; Properties of fresh meat - water holding capacity, color, pigments.

UNIT - III**L-9**

MEAT PROCESSING AND PRESERVATION : Ante-mortem examination of meat animals; Processing - scientific techniques of slaughtering, dressing, post-mortem inspection, storage, tenderization, meat cuts and grades, packaging; Beef, mutton, pork as human foods - cured meat products, sausages, by-products, frozen and canned meat products; Principles of various meat preservation techniques - chilling, freezing, curing, smoking, thermal processing, canning, dehydration, irradiation and hurdle concept; Restructured meat products - tumbling, massaging, chunking, forming, tearing and forming; Value added meat products - luncheon meats, meat patties, meat loaves, meat balls and meat nuggets.

UNIT - IV**L-9**

EGG : Basic properties of egg - structure, composition, nutritional and functional characteristics of eggs; Grading; Spoilage; Storage; Transportation of whole eggs; Processing of eggs for liquid products (white, yolk and whole egg) and solid products (albumen powder and whole egg powder) for preservation through freezing & drying; Poultry - pre-slaughter care and consideration; Operations in preparation of dressed poultry - its storage and marketing, quality and safety considerations, utilization of by-products, Poultry cuts.

UNIT - V**L-9**

FISH : Types, catch, examination; Care in handling & transportation; Processing of shell-fish, crabs, oysters, lobsters, frog legs for domestic and export markets; Processing of fish-filleting and freezing, canning, salting & drying of fish; Fish product and by products - production of fish paste, fish oils, sauce, fish protein concentrates, by products of fish processing industry.

TEXT BOOKS:

1. G. C. Mead, "Poultry Meat Processing and Quality", Woodhead Publishing, 2004.
2. C. G. Scanes, G. Brant, and M. E. Esminger, "Poultry Science", Prentice Hall, 2004.
3. R. Martin, R. Collete, and J. Slavin, "Fish Inspection, Quality Control and HACCP", Technomic Publishing Co., 1997.

REFERENCE BOOK:

1. L. M. L. Nollet, and F. Tolbra, "Advanced Technologies of Meat Processing", CRC Press, 2006.