SEMESTER- 6th **Major/Minor-I**

Subject: Food Science and Technology

Title: Technology of Meat, Fish and Poultry **Code: BFS22C601**

Credits: (4 + 2) Theory: 04 Practical: 02 Contact Hours: 64 T + 64 L

Part-1 THEORY (4 CREDITS)

Course Objectives:

- *To acquaint the students with nutritional significance of meat.*
- *To introduce the students to meat fish and poultry processing.*
- *To familiarize students about the preparation and preservation of meat, fish and poultry products.*

Learning outcomes:

- *Understand the economic importance of meat and poultry industry in J&K.*
- *Know the importance of meat and poultry in human health.*
- *Formulation of various traditional meat products of J&K.*
- *Accomplish the learning of preservation methods of meat, fish and poultry products.*

UNIT- 1 **(16 HOURS)**

- Scope of meat industry in India with special reference to J&K
- Sources of meat, composition and nutritive value of meat
- Structure of muscle - Microscopic structure of meat.
- Factors affecting meat production and quality
- Slaughtering of meat animals and poultry
- Inspection and grading of meat

UNIT- 2 **(16 HOURS)**

- Conversion of muscle to meat. Factors affecting post mortem changes in meat.
- Color, flavor, tenderness, juiciness and water holding capacity, and their relation to quality.
- Meat tenderization and aging.
- Preservation of meat by freezing, curing, pickling and smoking of meat.
- Traditional meat products of J&K.

UNIT- 3 **(16 HOURS)**

- Poultry: Types of poultry birds, slaughtering and dressing.

- Eggs: Structure, composition, nutritive value and functional properties.
- Factors affecting egg quality.
- Preservation of eggs by different methods. Preparation of egg powders.

UNIT- 4 (16 HOURS)

- Types of fish, composition, structure. Post mortem changes in fish
- Handling of fresh water fish. Spoilage of fish & factors affecting spoilage.
- Preservation of fish by freezing, glazing, canning, smoking, freezing, irradiation and dehydration.
- By product utilization of meat industry.

References

1. Lawre's Meat Science 7th Ed. Lawre. R. A. & Ledward, D. A
2. Throntons Meat Hygiene.
3. Developments in Meat Science by Lawrie.
4. Poultry Meat Science by R. Ian Richardson, G. C. Mead
5. Poultry Quality Evaluation: Quality Attributes and Consumer Values by Cecile Berri, Massimiliano Petracci
6. Handbook on Fish Processing and Preservation by Rabinarayan Mishra

Part- 2: Laboratory course (Credits: 02)

- Survey of meat and fish products available in market.
- Slaughtering of poultry birds.
- Determination of meat to bone ratio in chicken
- Study of post-mortem changes in fish.
- Studying different cuts of meat.
- Determination of pH, moisture and color of meat.
- Preparation of meat pickle.
- Preparation and evaluation of traditional meat products.
- To evaluate freshness of fish, dressing of fish and dressing percentage
- Quality evaluation of eggs.
- Visit to local slaughterhouse.

References

1. Practical Handbook on Meat Science and Technology by Jhari & Sharma Davinder Kumar & Sahoo
2. Meat Products Handbook: Practical Science and Technology by G Feiner
3. Post-harvest Technology of Fish and Fishproducts by K. K. Balachandran
4. Poultry Meat Processing and Quality by G. C. Mead

SEMESTER- 6th **MAJOR-2**

Subject: Food Science and Technology

Title: Food Quality Assurance **Code: BFS22C602**

Credits: (4 + 2) Theory: 04 Practical: 02 Contact Hours: 64 T + 64 L

Part-1 THEORY (4 CREDITS)

Course Objectives:

- *To deliberate on quality control of foods.*
- *To introduce students to the subjective quality evaluation of foods.*
- *To learn about the different hazards associated with foods.*
- *To disseminate knowledge about adulteration of foods.*

Learning outcomes:

- *Understand the food quality management systems.*
- *To comprehend various food safety laws and standards.*
- *Adopt preventive measures to limit hazards in foods.*
- *Detection of adulterants in foods.*

UNIT- 1 **(16 HOURS)**

- Food quality: Overview, objectives and importance
- Properties of foods– Color, gloss, flavour, consistency, viscosity, texture &their relationship with quality.
- Food quality control and assurance: Definition, objectives and Importance- Subjective & objective methods of quality evaluation.
- Sampling: Types, Preparation & preservation of sample.
- Quality evaluation of foods–Fruits, vegetables, cereals, dairy products, meat, poultry, and processed food products.

UNIT- 2 **(16 HOURS)**

- Sensory evaluation–Definition, objectives.
- Sensory Panel: Untrained, semi-trained and trained panelist, criteria for selection of sensory panelists, factors affecting selection of panelist.
- Sensory evaluation methods – Difference tests (Paired comparison, Duo Trio, Triangle), Rating (ranking, single sample, two sample, multiple sample, hedonic), sensitivity threshold test.

UNIT- 3 **(16 HOURS)**

- Food Safety Hazards: Physical, chemical & biological hazards in foods and their control.
- Food adulteration: Common adulterants in dairy, oil, cereals and processed food products.
- Food additives classification, functional role and safety issues.

UNIT- 4 **(16 HOURS)**

- National & international Food laws – Food Safety and Standards Act 2006, Codex Alimentarius Commission.
- HACCP: Principles, importance and applications, Good Manufacturing Practices (GMP).
- Establishment of food testing laboratory– Infrastructure requirement, design and accreditation considerations.
- Quality management systems: Concept, total quality management (TQM), ISO 9001:2000 quality management systems.

References

1. Food Quality Assurance: Principles and Practices by Inteaz Alli
2. Food Quality Evaluation by Eram S Rao.
3. Food Analysis by Pomeranz.
4. Food Analysis by S. Suzanne Nielsen
5. Guide to Quality Management Systems for the Food Industry by Ralph Early
6. Quality Assurance for the Food IndustryA Practical Approach by J. Andres Vasconcellos
7. Total Quality Assurance for the Food Industries by W. A. Gould, WA Gould

Part- 2: Laboratory course (Credits: 02)

- To examine the quality of fruits and vegetables- firmness, TSS and visual examination.
- To examine the quality of meat-color, texture, flavour.
- To examine the quality of milk-acidity, specific gravity, TS, SNF & fat content.
- Sensory methods for measuring food attributes- Difference tests and Rating tests.
- Determination of adulterants in milk, ghee, edible oil, chillies, honey & saffron.
- Preparation of HACCP for a given food industry.
- Visit to a food quality control laboratory.

References

1. Food Quality Assurance: Principles and Practices by Inteaz Alli
2. Food Quality Evaluation by Eram S Rao.
3. Food Analysis by Pomeranz.
4. Food Analysis by S. Suzanne Nielsen
5. Quality Assurance for the Food IndustryA Practical Approach by J. Andres Vasconcellos