Semester III

Processing of Cereals, Pulses, Oilseeds and Sugar Crops

Unit I

Processing of Wheat: Composition of Grain and Environmental effects on its Processing Quality, Principles and Equipment of Wheat Milling, Aging of Flour, by products, Chemical Improvers, Bleaching and Maturing Agents, Properties of Dough, Manufacture of Wheat based products- Bread, Biscuits etc, Processed Cereal Food for Infants

Unit II

Processing of Rice: Composition, Rice Milling operations and different types of Huller, Parboiling of Rice, Rice Milling and its effective value on cooking quality, Rice milling By products and their Utilization, Processed and Prepared Mixes based on Rice.

Unit III

Processing of Corn: Composition, Processing of Corn for manufacture of Corn Grits, Meal and Flour. Manufacture of Corn Flakes, Corn Syrup, Corn Starch, Corn Steep Liquor, Corn Oil and Canned Corn.

Sorghum: Chemical Composition, Refining and Nutritive Value.

Unit IV

Processing of Sugar Crops and Tubers: (Sugarcane, Sugar beet crops and their difference) Sugar Production and Manufacturing, Types and Grades of Sugars, Products of Sugars (Alcohol, Beer, Wine, Sugar Syrups)

Processing of Barley: Quality of Grains, Processing Methods and uses in Brewing Industry

Processing of Millets: Composition, Processing Methods and Mode of Utilization in product development

Unit V

Processing of Pulses and Legumes: Composition, Anti nutritional Factors, Processing Method, Methods of Cooking

Processing of Oilseeds: Composition, Processing of Oilseeds as Protein Concentrates: Properties and Uses of Oil seed Meals, Technology of Vegetable Protein Concentrate and Isolates. Barrier compounds in the Utilization of Oilseed Protein. Low Cost Protein food from Oilseeds

An Introduction to common adulterants of oilseeds and sugar crops.
Processing of Milk And Milk Products

Unit I

Importance of Milk Industry in India: Composition and Characteristics of Milk, Collection, Chilling, Transportation, Cream Separation, Standardization, Pasteurization, Sterilization, Homogenization, Packaging, Storage and Distribution of Fluid Milk.

Unit II

Technology of Fermented Milk Products: Principles and Practices of Manufacture, Packaging, Storage, Marketing of Dahi, Butter, Yoghurt, Shrikhand etc
Cheese: Manufacture of Hard, Semi Hard, Soft and Processed Cheeses, Storage, Grading and Marketing of Cheese, Cheese Defects and Their Control

Unit III

Technology of Frozen Milk Products: Classification, Manufacture, Packaging, Storage and Marketing of Ice Cream, Defects of Frozen Products and Their Control.

Unit IV

Technology of Evaporated and Dried Milk: Manufacture of Non Sweetened/Sweetened Condensed Milk, SMP, WMP and Dairy. Packaging and Storage Defects and their Control.

Unit V

Technology of Dairy by-products: Utilization of Skim Milk, Buttermilk and Whey for Manufacturing Casein, Lactose etc
Introduction to milk and milk products adulteration.
Processing of Meat, Poultry and Egg Products

Unit I

Introduction to Meat Processing:

Unit II


Unit III


Unit IV


Unit V

Raw Material: Quality Parameters and Evaluation Procedures

Introduction to adulteration of meat and meat products
Entrepreneurship in Food Processing, Food Standards and Food Laws

Unit I

**Entrepreneurship in Food Processing:**
*Introduction to Marketing and Economics:* Demand, Supply, Sample Survey Techniques, Marketing Information, Consumer Trends and Behavior.
*Different Financial Institutions:* NABARD, WTO, World Bank
*Food Standards and Laws and Food Safety:* International and National scenario, BIS, AGMARK, FSA (Food Safety Authority of India)

Unit II

**Production Management:** Product design and development, Plant location, Plant Layout, Routing, Scheduling, CPM and PERT, Inventory Control, Quality Control and its techniques.

Unit III

**Marketing:** Concept, Demand and supply, Company orientation towards the market place, Marketing mix, Creating Customer Value, Satisfaction and loyalty, Market segmentation, Consumer trends and Behavior.

Unit IV

**Introduction to Operation Research:** Definition and Application
**Plant Design Concepts:** General design Considerations, Plant Location and Location theory Models
**Production and Process Design:** Flow charts and their design, Equipment Selection, Planning and Design of Service Facilities.

Unit V