

**SEMESTER- V**  
**Skill Based Subject III**  
**FOOD PROCESSING –I**

**Instructional Hours : 4**

**Sub. Code:13NDUS503**

**Max Marks :CIA-25; ESE-75**

**Credits : 3**

**Objectives**

- ✓ Enable the students to understand the control measures in handling the food commodities from harvest to consumption stage and gain knowledge about food processing methods.
- ✓ To make the students to get employment opportunities in Grains Processing Centres.

**UNIT –I**

**9 Hrs**

**Cereal technology** –Post harvest losses of cereal grains – Agents causing food losses – Prevention of losses - Agencies concerned with grain storage - Save Grain Campaign, Food Corporation of India, Warehouses.

**UNIT-II**

**9 Hrs**

**Processing of cereals** –Rice processing- By products of rice milling, Wheat processing, New wheat products, Processing of maize , Breakfast cereals - ready to eat cereals and ready to cook cereals.

**UNIT-III**

**9 Hrs**

**Legume Technology** –Processing- decortication, germination and fermentation. New improved technologies of legume processing- Pulse milling-canning –quick cooking legumes- Instant Legume powders-Legume protein concentrates-By product-Utilization of legume processing.

**UNIT-IV**

**9 Hrs**

**Processing of oil seeds**-Methods of oil extraction-Solvent extraction –Rendering-Pressing with mechanical presses-Hydrogenation-Deodorization –Winterisation –Peanut butter preparation; Commercial Fat Products- Margarine, Mayonnaise.

## UNIT-V

9 Hrs

**Extruded Foods** – Principles of Extruders-Classification of extruders-Production of pasta-Merits and Demerits of Extruder technology-Uses of extruded foods-Packaging of extruded foods.

### TEXT BOOK

1. Devendra Kumar Bhatt and priyanka Tomar, *An Introduction to Food Science, Technology and Quality Management*, Kalyani Publishers – New Delhi (India) 2006.
2. Joneja G.C.L., *A practical guide to save grain compaign*, Dept. of food, Ministry of Agriculture and irrigation, New Delhi – 1998.
3. Norman N. Potter and Joseph. H. Hotchkiss, *Food Science*, CBS publishers and Distributors – New Delhi – 2005
4. Samuel A. Matz, *The Chemistry and Technology of cereals as Food and Feed* – CBS publishers and Distributors - New Delhi – 1996.
5. Srilakshmi.B, *Food Science*, New Age International Publishers, New Delhi- 2013
6. Subbulakshmi G, *Food Processing and Preservation*, New Age International Publishers, New Delhi-2013
7. Sivasankar.B, *Food Processing and Preservation*, Prentice- Hall of India Private Limited, New Delhi- 2007.

### REFERENCE BOOK

1. Akhtar Rseyaz, *Problem of food storage and losses in India*, Moshit publication, New Delhi – 2002
2. Donald.B. Brooker, Fred W.Bakker and carl W. Hall, *Drying and storage of grains and oil seeds* – CBS publishers and Distributors – New Delhi.
3. Harry W. Von Loesecke, *Outlines of Food Technology*, Agrobios publication, and Jodhpur. 2001.
4. Kent, N.L and Evers A.D, *Technology of cereals*, British library cataloguing in publication data – Great Britain – 1994.
5. Manay Shakuntala.M, Shadakshara Swamy, *Foods Facts and Principles*, New Age International Publishers, New Delhi- 2013 – 2001.

**SEMESTER- VI**  
**Skill Based Subject IV**  
**FOOD PROCESSING –II**

**Instructional Hours : 4**

**Sub. Code: 13NDUS604**

**Max Marks :CIA-25; ESE-75**

**Credits : 3**

**Objectives**

- ✓ Enable the students to understand the processing of food commodities from harvest to consumption stage and gain knowledge about food processing methods.
- ✓ To make the students to get employment opportunities in Food Processing Centres.

**UNIT-I**

**9 Hrs**

**Vegetable Processing** –Storage of vegetables-vegetables salads –Dehydrated vegetables –Canned vegetables-Pickled vegetables-Vegetable pastes-Juices-vegetable powders.

**UNIT-II**

**9 Hrs**

**Fruit Processing**-Ripening of fruits- Blanching-storage of fruits; Fruit products - Dried fruits-Canned fruits-Fruits syrup, Jams, Jellies, Marmalades-Fruit beverages –Fruit juices-Squashes (Pineapple & Grapes only) - Fruit powders; Fruit nectar , Fruit drinks , Cordial ,Punch.

**UNIT-III**

**9 Hrs**

**Dairy Technology**-Processing of milk-Cooling-Boiling-Pasteurization, Advantages and Types of pasteurization –Concentrating of milk- Homogenization – Cream separation- Manufacture of Butter, Ghee and Cheese; Preparation of Ice Cream, Srikhand, Condensed milk, Toned milk and Milk powders.  
Cultured fluid dairy products – Buttermilk , Source cream , Yoghurt.

**UNIT-IV**

**9 Hrs**

**Meat** – Preservation and Storage of Meat – Cured Meat, Sausages, Casings , Smoked meats, Poultry –Processing ; Poultry Meat Products; Egg Products – Refrigerated liquid products, Frozen egg products, Dried egg products, Speciality products. Fish processing & storage of fish , Fish meal & Fish oils.

## UNIT-V

9 Hrs

**Food Irradiation and Food Packaging**-Ionizing Radiation –Kinds of Ionizing Radiation and their applicability on Food Processing-Mode of action –Effects of Food Irradiation –Basic packaging materials-Types of packaging –Effects of packaging on nutritive value of foods.

### TEXT BOOK:

1. Devendra Kumar Bhatt and priyanka Tomar, *An Introduction to Food Science, Technology and Quality Management*, Kalyani Publishers – New Delhi (India) 2006.
2. Morris T.N, *Principles of fruit preservation*, Biotech Books, (third edition) 2004.
3. Norman N. Potter and Joseph. H. Hotchkiss, *Food Science*, CBS publishers and Distributors – New Delhi – 2005
4. Sivasankar.B, *Food Processing and Preservation*, Prentice- Hall of India Private Limited, New Delhi- 2007.
5. Srilakshmi.B, *Food Science*, New Age International Publishers, New Delhi- 2013

### REFERENCE BOOK:

1. Bhatia S.C, *Handbook of Food processing Technology*, vol I. Basic concepts and processing Aspects –Atlantic publishers &s Distributors (p) Ltd – 2008.
2. Bhutani R.C, *Fruit and vegetable preservation* – Biotech Books, Delhi – 2003.s
3. Manay Shakuntala.M, Shadakshara Swamy, *Foods Facts and Principles*, New Age International Publishers, New Delhi- 2013 – 2001.
4. Subbulakshmi G, *Food Processing and Preservation*, New Age International Publishers, New Delhi-2013