DISCIPLINE SPECIFIC ELECTIVE COURSE
DSE HP 8B1: FOOD PROCESSING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course(if any)
		Lecture	Tutorial	Practical / Practice		
Food Processing DSE HP 8B1	**4**	**2**	**0**	**2**	**Class XII**	**Studied Food Science DSE HP 3B1**

Learning Objectives

- To provide a foundational understanding of food processing, including its definition, classification, and the importance of primary, secondary, and tertiary processing methods.
- To gain knowledge of various methods of food processing and preservation across different food categories such as fruits, vegetables, milk, cereals, fats, oils, and meat, with emphasis on their principles and applications.
- To equip students with practical skills in food processing and preservation techniques, and understanding food processing operations through industry visits.

Learning Outcomes

The students will be able to

- Students will acquire understanding of food processing methods enabling them to produce safe, nutritious, and shelf-stable food products.
- Students will be able to evaluate, compare and critically assess the application of different processing methods for specific food products in industrial applications.
- Students will develop hands-on proficiency in processing diverse food products for small scale enterprises.

SYLLABUS OF DSE HP 8B1

THEORY
(Credits 2; Hours 30)

UNIT I: Introduction to food processing **6 hours**

This unit provides an introduction to food processing, its definition and types

- Definition, and classification of food processing including primary, secondary and tertiary food processing.
- Significance, scope, present scenario and future prospects of food processing in India

UNIT II: Methods of food processing for plant-based foods **12 hours**

This unit provides knowledge of food processing methods used to process plant-based food products

Primary, secondary, tertiary and minimal processing methods for

- **Fruits and vegetable processing-** Drying, dehydration, canning, sterilization, processing with salt and sugar
- **Processing of cereals-** milling, parboiling, malting and processing of breakfast cereals (flaked, puffed, expanded products)
- **Processing of fats and oils-** Extraction, refining, degumming, neutralization, bleaching, deodorization. Hydrogenation, winterizing and fractionation, interesterification, plasticizing and tempering.

UNIT III: Methods of processing for milk and milk products **6 hours**

This unit provides knowledge of food processing methods for milk and milk products.

- **Milk and milk products processing** – Pasteurization, homogenization, sterilization, production of important milk products

UNIT IV: Methods of processing for meat, fish poultry and egg products **6 hours**

This unit provides knowledge of food processing methods used to process meat, fish. Poultry and eggs.

- **Meat, fish, poultry and egg processing-** Processing of meat products: dried, smoked, salted products and sausages. Poultry processing and poultry products. Egg processing and preservation.

PRACTICAL
(Credits 2; Hours 60)

- Identification of the food items on the basis of primary, tertiary and secondary processing. **4 Hours**
- Processing of fruits and vegetables by salt/sugar **12 Hours**
- Processing of by fruits and vegetables drying/dehydration and freezing **16 Hours**
- Processing of cereals (malting/flaking/puffing/ value added cereal or millet products) **8 Hours**
- Demonstration of processing of milk and milk products (curd/butter/buttermilk/ghee processing) **8 Hours**
- Evaluation of preserved meat/poultry products. **4 Hours**
- Visit to food processing industry **8 Hours**

Essential Readings

- Manay, N.S., & Shadaksharaswamy, M. (2008). *Food-Facts and Principles, Third Edition*.New Age International (P) Ltd. Publishers, New Delhi.
- Mathur, P. (2018). *Food Safety and Quality Control*. Orient BlackSwan Pvt. Ltd., Hyderabad.
- Potter, N.N., & Hotchkiss, H.J. (1996). *Food Science, Fifth Edition*. CBS Publication, New

Delhi.
- Srilakshmi, B. (2014). *Food Science, 6th Edition.* New Age International Ltd., Delhi.
- Suri, S., & Malhotra, A. (2014). Food Science Nutrition and Safety. Delhi: Pearson India Ltd.

Suggested Readings

- Raina, U., Kashyap, S., Narula, V., Thomas, S., Suvira, V.S., & Chopra, S. (2010*). Basic Food Preparation: A Complete Manual, Fourth Edition.* Orient Black Swan Ltd.
- Sethi, M., & Rao, E.S. (2011). *Food science- Experiments and applications, Second Edition.* CBSpublishers & Distributors Pvt Ltd.
- Sivashankar, B. (2002). *Food Processing and Preservation.* PHI learning Pvt. Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time