SEMESTER S8

FUNDAMENTALS OF FOOD PROCESSING

Course Code	OEFTT831	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:0:0:0	ESE Marks	60
Credits	3	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	Theory

Course Objectives:

1. To understand the fundamental principles and concepts of food preservation and processing.
2. To introduce the role and significance of regulatory bodies in maintaining food standards, and emphasizes the essential principles of food safety and quality control.

SYLLABUS

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Module No.	Syllabus Description	Contact Hours
1	**Introduction to Food Basics** Food definition, Food constituents- Moisture, Carbohydrates, Proteins, Lipids, Vitamins and minerals, Food and its functions, Food groups, Major properties of food, Compositional and nutritional aspects- fruits and vegetables, dairy, cereals, pulses, oilseeds, fisheries, meat and poultry, consumer foods etc.	9
2	**Food spoilage and preservation** Perishable, semi perishable and non-perishable foods, Food deterioration- types and causes, Major microbes causing food spoilage, Factors affecting microbial growth, Principles and methods of food preservation- preservation by low temperature, high temperature, preservatives, dehydration and food irradiation	9
3	**Food Processing** Need of Food processing, Primary, Secondary and tertiary processing, Processed food products types and method of preparation- cereals and pulses, extruded products, fruits and vegetables, minimally processed	9

	products, dairy, flesh foods, confectionary and fermented products. Status of food processing sector in India- fruits and vegetables, dairy, cereals, pulses, fisheries, meat and poultry, consumer foods, Major challenges and growth potential.	
4	**Food processing regulation bodies** The role of Codex alimentarius commission, FSSAI, MOFPI, KINFRA, BIS, APEDA, MPEDA and AGMARK, Mega food parks and packaging Centers, Role of food technologist in society. **Food Safety** Introduction to food safety and food quality importance, Quality attributes of food, factors affecting quality, Principles of HACCP, ISO 22000, TQM, GHP, GMP, SOP and SSOP	**9**

Course Assessment Method
(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/ Microproject	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	**15**	**10**	**10**	**40**

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End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks **(8x3 =24marks)**	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. **(4x9 = 36 marks)**	**60**

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Provide a comprehensive understanding of food definition, its constituents, the functions of food and food groups.	**K1**
CO2	Understand the types and causes of food deterioration, and identify the major microbes responsible for food spoilage.	**K3**
CO3	Make use of the need for food processing and methods of preparation of processed food products.	**K3**
CO4	Explore the roles of key regulatory bodies in ensuring food safety and standards	**K3**

Note*: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create*

CO-PO Mapping Table:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											
CO2	3	2			1							
CO3	3	1	1		1							
CO4	3	2	1		1	1		1				

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Text Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Food Processing Technology: Principles and Practice	P. Fellows	CRC Press, Boca Raton, FL, USA	2000, 2nd Ed.
2	Food Microbiology	William C. Frazier and & Dennis C. Westfoff	Tata McGraw-Hill Education, New Delhi.	4th Ed. 1987
3	Fundamentals of Food Processing Operation	Heid, J.L. and Joslyn, M.A.	The AVI Publishing Co; Westport	1967.
4	Fundamentals Of Food Engineering	Stanley E. Charm	Medtech Science Press	2019

Reference Books				
Sl. No	**Title of the Book**	**Name of the Author/s**	**Name of the Publisher**	**Edition and Year**
1	Food processing Handbook Ed.	James G Brennan	WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	2006
2	Fundamentals Of Food Process Engineering,	Toledo R T	Springer, ISBN: 9783319900971	Fourth Edition 2018
3	Food process engineering and technology	Zeki Berk	ELSEVIER	2013
4	Elements of Food Technology	Norman W. Desrosier	Avi Pub Co	1977

Video Links (NPTEL, SWAYAM…)	
Module No.	**Link ID**
1	https://archive.nptel.ac.in/courses/126/105/126105011/
2	https://onlinecourses.nptel.ac.in/noc22_ag03/preview
3	https://onlinecourses.nptel.ac.in/noc22_ag03/preview
4	https://archive.nptel.ac.in/courses/126/105/126105011/

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