22ELCT307 DEVELOPMENT OF PROCESSED PRODUCTS

Source: https://cdn.shopify.com/s/files/1/1176/6366/products/food_preserving_1024x 1024.jpg?v=1552408498

Hours Per Week :

L	T	P	C
2	0	2	3

PREREQUISITE KNOWLEDGE: Basics of of unit operations in food industry and food product characteristics. .

COURSE DESCRIPTION AND OBJECTIVES:

This course helps students to acquire basic knowledge about food processing and also to study the processing methods of various food materials like fruits & vegetables, dairy products, cereals, meat, poultry, fish and bakery products. This course gives idea about importance of value addition in different types of food products.

MODULE-1

UNIT-1 **8L+0T+8P=16 Hours**

UNIT OPERATION:

Process design, Process flow chart with mass and energy balance, unit operations and equipment's for processing, new product development.

UNIT-2 **8L+0T+8P=16 Hours**

VALUE ADDITION:

Technology for value added products from cereal, pulses and oil seeds, milling, puffing, flaking, roasting, bakery products, snack food, extruded products, oil extraction and refining.

PRACTICES:

- Visit to milk plant.
- Visit to daland oil mill.
- Visit to fruit/vegetable processing plants.
- Study of processing operations and equipment/machinery.
- Process flow diagram and study of various models of the machines used in a sugar mill.

MODULE-2

UNIT-1 **8L+0T+8P=16 Hours**

VALUE ADDED PRODUCTS:

Technology for value added products from fruits, vegetables and spices, Canned foods, frozen foods, dried and fried foods, fruit juices, sauce, sugar based confection, candy, fermented food product, spice extracts.

UNIT-2 **8L+0T+8P=16 Hours**

ANIMAL PRODUCE:

Technology for animal produce processing, meat, poultry, fish, egg products, health food, nutraceuticals and functional food, organic food.

SKILLS:

- ✓ *Develop various food products by acquiring strong basic knowledge about food processes.*
- ✓ *Design and modify food processing techniques.*
- ✓ *Analyze the food processes based on material and energy balance.*
- ✓ *Apply emerging technologies for development of new food products.*

PRACTICES:

- Process design and process flow chart preparation.
- Preparation of different value added products.
- Visit to roller wheat flour milling.
- Visit to rice milling.
- Visit to spice grinding mill.

COURSE OUTCOMES:

Upon successful completion of this course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Apply knowledge of unit operation in calculation of mass balance or energy balance in different food processing operations.	Apply	1	1, 2, 4, 7
2	Apply and develop different process equipments for animal produce, meat, fish and egg products.	Apply	2	1, 2, 4, 6, 7, 11, 12
3	Analyze the problems which rises during processing of value added products, extruded products or different milled, refined, bakery products, roasted or ready to eat products.	Analyze	1	1, 2, 4, 6, 7
4	Evaluate the trend and current scenario of frozen food products, canned food products or fermented products and detect arising problems.	Evaluate	2	1, 2, 4, 6, 7, 11, 12
5	Creative Study of current products due to proper maintenance of diet and come out with new idea of product development and proper maintenance of diet.	Create	2	1, 2, 4, 6, 7, 11, 12

TEXT BOOKS:

1. Geankoplis C. J. “Transport processes and unit operations” Prentice-Hall, 2009.
2. Rao, D. G. “Fundamentals of Food Engineering PHI Learning Pvt. Ltd” New Delhi, 2011.

REFERENCE BOOKS:

1. Norman N. Potter and Joseph H. “Hotchikss. Food Science” Chapman and Hall Pub, 2009.
2. Acharya, K T “Everyday Indian Processed foods” National Book Trust, 2015.
3. MudambiSumati R., Shalini M. Rao and M V Rajgopal, “Food Science” New Age InternationalPublishers, 2003.
4. Negi H.P.S., Savita Sharma, K. S. Sekhon. “Hand book of Cereal technology” Kalyani Pub.