ALAGAPPA UNIVERSITY, KARAIKUDI
DEPARTMENT OF NUTRITION AND DIETETICS

VALUE ADDED COURSE – IV

Offers value added courses on
FOOD PRODUCTS AND VALUE ADDITION

Course Code: 558VAC04 **Duration: 20 Hrs**

Summary of the content:

- Scope and Significance of Value-Added Food Products
- Types and Different methods of food Processing Techniques
- Specific food product development with value addition
- Quality Control and Food Safety
- Market Research and Analysis, Branding Packaging and Marketing.

Objectives:

- To Know the principles of new product design
- To gain the knowledge of food science, food processing and nutrition in the development of a new product.
- To understand marketing and safety issues to Food Product Development
- To acquire knowledge in relation to development of a new product with value addition.

COURSE CO-ORDINATOR:
Dr.P. Rameshthangam
Professor & Head i/c
Department of Nutrition and Dietetics
Alagappa University, Karaikudi.

Outcome:

After completion of the course, students will be able to:

- Apply the appropriate processing technology to create a new product.
- Explain the role of marketing efforts in the product development process
- Apply knowledge of value addition in relation to development of a new product
- Incorporate the input of different disciplines in product design.
- Understand how to function as a team and develop collaborative leadership in marketing.

Summary of the Course

This course equips individuals with the knowledge and skills to transform raw food into higher-value food products, extending shelf life and increasing market appeal. These courses typically cover topics like processing techniques, quality control, packaging, marketing, and even entrepreneurial aspects of starting a value-added food business.

<table>
<tr><th colspan="5">SYLLABUS</th></tr>
<tr><td>Course code: 558VAC04</td><td>Title of the Course</td><td>Food Products and Value Addition</td><td>T</td><td>Hours: 20</td></tr>
<tr><td colspan="5">Unit - I</td></tr>
<tr><td>Objective 1</td><td colspan="4">To know the principles and importance of value-added products</td></tr>
<tr><td colspan="5">UNIT-I. Introduction to Value-Added Food Products
Definition and Significance of Value-Added Food Products, importance of value addition in agriculture and the food industry, and its potential for enhancing profitability and market reach.
Types of Value-Added Products - Categorizing value-added products based on raw materials (dairy, cereals, fruits, vegetables) and processing methods.
Market Research and Analysis: consumer preferences, market trends, and competitor analysis.
Branding and Packaging: packaging and branding strategies for value-added products.
Sales and Distribution: Understanding sales channels, distribution networks, and promotional strategies</td></tr>
<tr><td>Outcome 1</td><td colspan="3">Learn about the concept of value addition</td><td>K1</td></tr>
<tr><td colspan="5">Unit - II</td></tr>
<tr><td>Objective 2</td><td colspan="4">To gain the knowledge of food processing and nutrition in the development of a new product</td></tr>
<tr><td colspan="5">UNIT-II. Processing Techniques
Thermal Processing: pasteurization, sterilization, canning, and their impact on food quality.
Drying and Dehydration: Different drying techniques, including their principles, types of dryers, and the impact of drying on food preservation and quality.
Fermentation: principles of fermentation, its role in food preservation and flavour development, and specific applications in traditional and modern food products.
Extrusion Technology: versatile processing method, principles, and applications.
Membrane Technology: Techniques and Uses of membrane technology (ultrafiltration, reverse osmosis)
Other Emerging Technologies: high-pressure processing, hurdle technology, and pulsed electric fields.</td></tr>
<tr><td>Outcome 2</td><td colspan="3">Acquire knowledge how food processing is important in understanding value addition.</td><td>K3</td></tr>
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Unit - III		
Objective 3	**To gain a clear understanding of the types and principles of preservation methods**	
UNIT-III. Preservation Methods: **Traditional Methods:** drying, salting, smoking, and pickling - principles and applications. **Modern Methods:** refrigeration, freezing, irradiation, and the use of preservatives. **Packaging and Storage:** role of packaging in food preservation, different packaging materials, and their properties, storage conditions for various food products.		
Outcome 3	**Learners practice food preservation methods to preserve food products**	**K2,K3**
Unit - IV		
Objective 4	To emphasize on the importance of food quality and food safety	
UNIT-IV. Quality Control and Food Safety: **Sensory Evaluation:** Learning to assess the sensory attributes (appearance, aroma, flavour, texture) of food products. **Physicochemical Analysis:** Understanding the analysis of food components (moisture, protein, fat, carbohydrates, etc.). **Microbiological Analysis:** Learning about microbial spoilage and foodborne pathogens and methods for their detection. **Food Safety Standards and Regulations:** Understanding food safety regulations, HACCP principles, and other relevant guidelines.		
Outcome 4	**Apply the role and significance of food law that ensures the quality and safety of the food products.**	**K5, K6**
Unit - V		
Objective 5	**To know the preparation of value added products**	
UNIT-V. Specific Products: **Value-Added Dairy Products:** Chhana, Paneer, different types of cheese, and value-added dairy-based sweets. **Value-Added Cereal Products:** breakfast cereals, snacks, and baked goods. **Value-Added Fruits and Vegetable Products:** jams, jellies, juices, pickles, dried fruits and vegetables. **Value-Added Spices and Herbs:** spice blends, spice powders, and value-added products from herbs. **Value-Added Meat and Poultry Products:** sausages, nuggets, Fish and prawn pickles, Fish sausage, fish ham, kamaboko, Fish cake, Fish sauce and Fish paste and other processed meat products.		
Outcome 5	**Create awareness of value added products and commercial value**	**K6**
Suggested Readings:		

- Cristobal Noe Aguilar, Mohammed Kuddus (2021), Value-Addition in Food Products and Processing Through Enzyme Technology, Academic Press Inc.
- G Subbulakshmi, Shobha A Udipi and Padmini S Ghugre (2022). Food Processing and Preservation, 2nd Edition.
- K.P. Sudheer & V. Indira (2007). Postharvest Technology of Horticultural Crops. Horticulture Science Series: v. 7
- Sankar Chandra Deka et al., (2021), Technologies for Value Addition in Food Products and Processes, Apple Academic Press Inc.
- Sunetra Roday (2018), Food Science and Nutrition. Oxford University
- Theodoros Varzakas & Constantina (2015). Tzia Handbook of Food Processing. CRC Press
- Vijay Sethi, Shruti Sethai, B.C. Dekka (1990), Processing of Fruits and Vegetables for Value Addition, Indus Publishing Company,India.

Web Resources:

- **https://foodsci.oregonstate.edu/value-added-food-product-development/what-value-added**
- **https://egyankosh.ac.in/bitstream/123456789/91808/1/Unit-13.pdf**
- **https://nesfp.nutrition.tufts.edu/sites/default/files/uploads/pl_value_added.pdf**
- **https://pmc.ncbi.nlm.nih.gov/articles/PMC11640996/**
- **https://www.slideshare.net/slideshow/value-added-products-from-vegetable/229478463**