



Course Descriptor

FSHN F480 NEW FOOD PRODUCT DEVELOPMENT

Proposed Academic Year	Fall2021-22	Last Reviewed Academic Year	Spring2021
Course Code	FSHNF480	Course Title	New Food Product Development
Credit hours	3 (2+1)	Level of study	Bachelor of Science
College / Centre	CAHS	Department	FSHN
Co-requisites	NIL	Pre-requisites	FSHN F311, FSHN F411, FSHN F313, FSHN F414, FSHN F211

1. COURSE OUTLINE

This course is designed to provide students with a basic understanding of the food product development process in the commercial food industry. Through lectures, field trips, and hands-on formulation activities, students will learn how to successfully initiate, organize, and carry out a product development project. Course will also provide basic knowledge about sensory analysis and food product development and to increase the students ability to critically study and analyze new products with sensory evaluation. In this course, issues such as food product related projects, their planning, recipe development, quality assurance, market research, type of food packaging and processes are covered. Furthermore, a general introduction to sensory analysis, methods of sensory analyses and how they are used will be inculcated with practical understanding of the different methods. Discussion will include evaluation design, panel selection, panel training, premises and sensory scales. Students should develop their ability to identify problems and choose sensory methods based on how the problem is formulated and the purpose; carrying out sensory tests; statistically analyzing, interpreting and presenting sensory data.

2. AIMS

The aims & Objective are to prepare students to be able to:

- Gain an understanding of the processes involved in the invention process, formulation, and development of new food products.
- Develop formulations to meet cost targets, ingredient statement, nutrition profile and sensory attributes of desired product.
- Develop an appreciation of the food industry and how innovation is critical to the industry.
- Cultivate basic food science principles to problem solve during product development.
- Develop and enhance team cooperation and communication skills.
- Have knowledge about sensory analysis in general and about different methods and know when to use them.
- Be able to plan, organize and carry out the most common sensory tests and have the skill to arrange, interpret and report sensory data.
- Be acquainted with setting design and its effect on sensory evaluation judges.
- Be acquainted with panel recruitment, selection and training.

3. LEARNING OUTCOMES, TEACHING, LEARNING and ASSESSMENT METHODS (Indicative)



Course Descriptor

FSHN F480 NEW FOOD PRODUCT DEVELOPMENT

Learning Outcomes (Definitive)	Teaching and Learning methods (Indicative)	Assessment (Indicative)
1. To understand and describe New Food product development, phases, ,product development process, key stages and new product failures & success	Class lectures, Power point presentations	<i>Take-home assignment; quiz /mid-term test / Final exam</i>
2. To understand basic concepts of functional, conventional and GM foods and good manufacturing practices used in food product development at industry	Class lectures, power point presentations, Take-home exercise of data.	<i>Take-home assignment; quiz /mid-term test / Final exam</i>
3. To understand Food packaging and labelling , purpose, examples, design and regulations	Lecture, power point presentations, complimentary Lab. Sessions	<i>Take-home assignment; quiz /mid-term test / Final exam</i>
4. Development of new food product and perform sensory evaluation for developed products	Class lectures, power point presentations, discussions, problem based learning through complimentary lab. sessions and project.	Mid- term / Lab project (food product development)
5. Describe the standards that govern food additives for food products	Class lectures, power point presentations, discussions.	<i>Take-home assignment; quiz /mid-term test / Final exam</i>

4. ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Assignments & Quiz	20%
LAB	20%
Mid-term Examination	20%
Final Examination	40%
TOTAL	100%

5. ACHIEVING A PASS

Students will achieve **3** credit hours for this course by passing **ALL** of the course assessments/ and achieving a **minimum overall score of 50%**.

6. COURSE CONTENT (Indicative)

LECTURE TOPIC	TIME (HOURS)
1. Role of government in food industry, Food processing from grower to consumer	3



Course Descriptor

FSHN F480 NEW FOOD PRODUCT DEVELOPMENT

6. COURSE CONTENT (Indicative)	
LECTURE TOPIC	TIME (HOURS)
1.Introduction to food product development, Product development process, product introduction, Product implementation, Careers in product development	3
2.New food product development phases, stage gate process, New product failures, New product success	3
3.Product policies and goals, Product development and new business strategy, New product opportunity analysis	3
4.Food packaging, purpose, Package design, Packaging examples, Food labelling, Information for consumer, Storage conditions	3
5.Freezing star rating system, Preparation instructions, Regional food product protection, E-codes groups, Bar codes	6
6.Nutrition information labelling, Guidelines daily amount, New labelling regulations and health claims	6
7.Functional foods, modified foods, conventional foods, Food additives Flavoring agents, Preservatives	6
8.Coloring agents, Emulsifiers, Stabilizers, Antioxidants, Harmful effects of food additives	3
9.Sensory evaluation, basic senses used in food analysis, How to describe odor, sound, flavor, taste and texture, Sensory roots, Sensory panel rooms, Sensory analysis questionnaires Sensory panel rooms, Sensory analysis questionnaires	3
10.Types of sensory tests, Types of scales, Sensory characteristics, Basic forces of eating, Requirements of sensory evaluation, Selection of panelists	3
11.Innovations in food product development, Benefits, concerns and possible impact of GM foods, High pressure processing, Microencapsulation, Ultrafiltration, Membrane technology	3
12.New food product development Lab Project	15
TOTAL HOURS	60
Plus RECOMMENDED INDEPENDENT STUDY HOURS	15
TOTAL COURSE HOURS	75

7. RECOMMENDED READING

Textbook:

- Earle, M., Earle, R., and Anderson, A. 2001. *Food Product Development*. CRC Press.
- Grap, E., Saguy, and Graf, E. 1991. *Food Product Development: From Concept to the Marketplace*. Kluwer Academic Publishers
- Kemp, S.E., Hollywood, T and Hort, J. 2009. *Sensory Evaluation: A Practical Handbook*. John Wiley & Sons Inc., New York, USA.



Course Descriptor

FSHN F480 NEW FOOD PRODUCT DEVELOPMENT

- Chambers, E. and Wolf, M.B. 2005. Sensory Testing Methods. American Society for Testing and Materials, West Conshohocken, Pennsylvania, USA.

- OER link: <https://openlibrary.org/>

<https://archive.org/>