



## Course Descriptor

### FDST101 Introduction to Food Science

<b>ACADEMIC YEAR</b>	Fall 2020-21		
<b>Course Code &amp; Title</b>	FDST101	<b>Introduction to Food Science</b>	
<b>Credit hours</b>	3	<b>Level of study</b>	Bachelor of Science
<b>College / Centre</b>	College of Applied Science		
<b>Co-requisites</b>	NIL	<b>Pre-requisites</b>	CHEM 101, BIOL 101

#### 1. COURSE OUTLINE

The demand for food scientists is ever increasing because of the need to maintain a wholesome food supply and to improve the quantity, quality, safety, and variety of foods. To accomplish this task, the food scientist integrates knowledge of biology, chemistry, engineering, physics, and nutrition and applies them to the study of foods. This course introduces students to important food science concepts and presents an introduction to the chemical, physical and microbiological nature of food and how these factors are manipulated to produce food that is safe and of high quality. This course begins with an overview of food science, describes the interdisciplinary nature of the field, and presents avenues of advanced study and career opportunities in the field. It then explores key food groups and composition and the functional properties of the major food components. This course covers also food engineering concepts and applications, biotechnology, and the field of sensory evaluation and food product development, including marketing principles.

#### 2. AIMS

This course aims to equip students with basic information necessary to understand technological aspects of industrial food manufacturing systems. It enables the student to demonstrate an understanding of food science as a discipline and global food production systems. A wide variety of topics ranging from Identify major functional groups in food constituents, primary unit operations in food manufacturing systems.

Identify Define the broad scope of food engineering, Food product development and food safety issues. Students will be provided with case studies of recent food science problems including: visual aids; several summaries, study questions; references and other resources to learn more about the topic. Students will demonstrate their ability to understand various research methodologies used in food science; to understand basic concepts of food technology; to understand environmental issues related to food and to apply microbiological and chemical considerations to process controls.

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

<b>Learning Outcomes (Definitive)</b>	<b>Teaching and Learning methods (Indicative)</b>	<b>Assessment (Indicative)</b>
1. Define food science as a discipline, recognize the role of food science in a changing world	Lectures and seminars	<i>In-class tests, quizzes and Written Examination</i>
2. Discuss the various components of global food production systems, identify the major constituents found in	Lectures and seminars	<i>In-class tests, quizzes and Written Examination</i>



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foods, discuss foods that are rich in certain constituents, and discuss the characteristics that constituents impart to foods and their effect on quality, stability, and safety.		
3. Become familiar with food ingredients and their functions, Identify major functional groups in food constituents and the properties the groups impart to food components.	Lectures and seminars	<i>In-class tests, quizzes and Written Examination</i>
4. Recognize some of the primary unit operations in food manufacturing systems, their principles of operation, and primary function.	Lectures and seminars	<i>In-class tests, quizzes and Written Examination</i>
5. Distinguish the basic principles of food law and regulation and key aspects of food additives and nutritional labelling	Lectures and seminars	<i>Case study report, class presentation, Written Examination</i>
6. Identify food safety issues, Define the broad scope of food engineering, Food product development	Lectures and seminars	<i>In-class tests, quizzes and Written Examination</i>

#### 4. ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Assignments	10
Quizzes	20
Mid-term Examination	25
Final Examination	45
<b>TOTAL</b>	<b>100%</b>

#### 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)



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	<b>LECTURE TOPIC</b>	<b>TIME (HOURS)</b>
1	Overview of Food Science	2
2	Dimensions of Food science	3
3	Food processing industry	2
4	Food Chemistry -Carbohydrates	4
5	Food Chemistry- Fats, Proteins	5
6	Quality factors in foods	3
7	Human nutrition and food-	3
8	Understanding food processing	5
9	Understanding food preservation	4
10	Food additives	3
11	Food laws	3
12	Food microbiology	4
13	Food safety	3
14	Food Engineering	3
15	Food Product development	3
<b>TOTAL HOURS</b>		<b>45</b>
Plus <b>RECOMMENDED INDEPENDENT STUDY HOURS</b>		<b>15</b>
<b>TOTAL COURSE HOURS</b>		<b>60</b>



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#### 7.RECOMMENDED READING

1. Introduction to Food Science and Food Systems by Rick Parker Hardback; ISBN13: 978-1435489394 2nd Edition, 2017