



## Course Description Form

1. Course Name:
Principles of Food Processing
2. Course Code:
PRFI111
3. Semester / Year:
First Semester/First grade / 2023– 2024
4. Description Preparation Date:
1/2/2024
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total)
2 hour theoretical + 3 hour practical ( 5 hour in week)75 hour / 3.5 unit
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Layla Azhar Ahmed Email: <a href="mailto:laylaazhar@uomosul.edu.iq">laylaazhar@uomosul.edu.iq</a> Name :Assistant Lecturer Mead Waleed Sadallah Email: <a href="mailto:mead.almola1985@uomosul.edu.iq">mead.almola1985@uomosul.edu.iq</a>
8. Course Objectives
<ul style="list-style-type: none"><li>• The learner should be able to define the concept of food industry science that is related to manufacture and preservation of food materials.</li><li>• Choose several preservation methods that rely on reducing the moisture content in food to stop spoilage and food spoilage.</li><li>• Differentiate between different food components.</li><li>• Understanding the basic units that make up carbohydrates, proteins and fats.</li><li>• Distinguish between essential and non-essential amino acids.</li><li>• Familiarity with the properties of unsaturated fatty acids.</li><li>• Realizing the purpose of eating food to obtain energy.</li><li>• Identify the components of meat and the difference between white and red meat.</li><li>• A comprehensive study of the various types of preservation methods and choosing the most appropriate to the taste of consumers.</li></ul>

## 9. Teaching and Learning Strategies

- Interactive lecture
- Brainstorming
- Dialogue and discussion
- Field Training
- Practical exercises
- Field project
- self education

## 10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical	B1 The student explains the concept of food industry science and its relationship to the manufacture and preservation of animal and plant foodstuffs	The importance of food industries and how they arise and develop	Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam
	3Practical	B1:The students are shown the importance of sugar and salt solutions in food industries, as well as the specifications of salts and sugars used in food manufacturing.	"Sugar and salt solutions"	Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam
2	2Theoretical	C1 Explains the most important factors that must be taken into consideration to establish a food processing plant	The main food industries and the methods used in establishing anew industry	Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam
	3Practical	C1:The methods for estimating the specific gravity of sugar and salt solutions used in	"Estimating the specific gravity of sugar and salt solutions."	Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam

		food industries involve using a balance, a Westphal balance, and a density bottle."			
3	2Theoretical  3Practical	B2 The student is aware of the importance of water to the human body and the types of water found in food  B2: Understand the types of hydrometers and their utilization in estimating specific gravity, concentrations, and density of sugar and salt solutions in food manufacturing.	Food ingredients, Part one  "Sugar and salt solutions (hydrometers)."	Interactive lecture Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam  Semester exam 1, final exam
4	2Theoretical  3Practical	A1 The student learns about the basic components of food, such as carbohydrates, proteins, and fats  A1: Familiarize yourself with the types of hydrometers used to measure the saturation level of salt solutions in food manufacturing, including the salinometer. Explain the important steps to consider when using hydrometers.	Food ingredients, part two  Using hydrometers to measure the saturation level of salt solutions.	Interactive lecture Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam, report
5	2Theoretical  3Practical	C2 The student explains the properties of fatty acids involved in the synthesis of fats  C2:Furthermore, refractometers can	Division of fats as a chemical classification  Refractometers	Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam, report

		measure the refractive index of other food substances such as oils and fats. The refractive index of these substances can offer insights into their purity, quality, or concentration			
6	2Theoretical  3Practical	C3 The student suggests a way to compare the types of dyes found in foods  C3: It suggests using the Pearson square method to prepare a specific solution, such as juices, with a certain concentration, or to adjust the concentration of a specific solution by adding calculated proportions of solute or solvent using the Pearson square method.	Dyes in foods  The Pearson square	Interactive lecture Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Short exam, final exam  Short exam, final exam
7	2Theoretical  3Practical	C4 The student is familiar with the most important staple foods such as meat and eggs  C4: Understanding the importance of using the drying process in food manufacturing to prolong the shelf life of food products and the various drying methods employed in the food industries.	Main foods  "Food preservation by drying"	Interactive lecture Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 2, final exam  Semester exam 2, final exam
8	2Theoretical  3Practical	A2 The student learns about oils and fats and the stages of their production  A2: It allows understanding the importance of food preservation by refrigeration and the steps followed	Oils and fats, part one  "Food preservation by refrigeration"	Interactive lecture Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 2, final exam  Semester exam 2, final exam

		in the process of refrigerating and processing fruits and vegetables.			
9	2Theoretical  3Practical	B3 The student judges the efficiency of oils and fats extraction methods  B3: Judging the efficiency of the freezing process in food manufacturing.	Oils and fats, part two  "Food preservation by freezing"	Interactive lecture Brainstorming Dialogue and discussion Self-education and reporting  Interactive lecture Brainstorming Dialogue and discussion Self-education and reporting	Semester exam 2, final exam  Semester exam 2, final exam
10	2Theoretical  3Practical	A3 The student learns about the most important types of rancidity that occurs in foodstuffs, especially fatty ones  A3:The student becomes acquainted with the importance of using the blanching process in food preservation and the significant changes and effects it induces in vegetables and fruits used in food manufacturing	Damage to oils and fat  Blanching in food industries"	Interactive lecture Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 2, final exam  Semester exam 2, final exam
11	2Theoretical  3Practical	B4 The student masters the method of manufacturing various types of tea  B4: The student masters the practical method of assessing the efficiency of the blanching process by detecting the enzymes peroxidase and oxidase.	Tea  "Evaluating the efficiency of the blanching process"	Interactive lecture Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 2, final exam  Final exam
12	2Theoretical	E1 The student	coffe	Interactive lecture	Final exam

	3Practical	identifies methods for drying and processing coffee seeds  E1: The steps of making jam, methods of preserving and storing it, and the types of fruits or vegetables used in its production are identified.	Jam making	Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 2, final exam
13	2Theoretical  3Practical	A4 The student learns about the types of preservation methods  A4: at low temperatures Through it, one learns about the meaning of marmalade, its method, steps of production, preservation, and the key ingredients involved in its manufacturing.	Food preservation methods  "Marmalade making"	Interactive lecture Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Final exam  Final exam
14	2Theoretical  3Practical	B5 The student is familiar with the stages of food canning  B5: It learns about the importance of knowing the method and steps of jelly making, methods of preserving and storing it, and understanding the concentrations of sweeteners and preservatives used in food industries.	Heat preservation  Jelly making	Interactive lecture Brainstorming Dialogue and discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Short exam , Final exam  Short exam , Final exam
15	2Theoretical	E2 The student identifies the most	Preservatives	Interactive lecture Brainstorming Dialogue and	Short exam , Final exam

	3Practical	important preservatives used in food manufacturing  E2: Identify the most important methods used in packing and packaging fruits and vegetables, as well as the techniques for storing and then distributing them.	Canning fruits and vegetables	discussion Self-education  Interactive lecture Brainstorming Dialogue and discussion Self-education	Short exam , Final exam
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## 11. Course Evaluation

T	Evaluation methods	Evaluation date ( one week)	Grade	Relative weight %
1	A report 1	fourth week	2.5	2.5
2	A report 2	fifth week	2.5	2.5
3	Short test (1) Quiz	sixth week	2	2
4	Short test (2) Quiz	The fourteenth week	2	2
5	Short test (3)	The fifteenth week	1	1
6	semester test ( 1)	sixth week	7.5	7.5
7	semester test ( 2)	eleventh week	7.5	7.5
8	Final theoretical test	Final theoretical exam	40	40
9	Practical field project	The fifteenth week	5	5
10	Laboratory evaluation	third and fifth week	2	2
11	Practical short test (1) Quiz	First week	1	1
12	Practical short test (2) Quiz	fourth week	0.5	0.5
13	Practical short test (3) Quiz	The fourteenth week	1	1
14	Live drawings and homework	6,8,9,10,11,12,13 weeks	5.5	5.5
15	Final practical test	Final practical exam	20	20
	Total	100	100	100

## 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Al-Aswad, M.B. , Abdul-Azis, O. F. and Soulaka. (2000). Principles of Food Processing. Dar Al-Kutub for Printing and Publishing . University of Mosul.
Main references (sources)	/
Recommended books and references (scientific journals, reports...)	/
Electronic References, Websites	/



The theoretical subject teacher

Dr. Layla Azhar Ahmed



The practical subject teacher

Mead Waleed Sadallah



Head of the Department of Horticulture and Landscape Design  
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