Course Description Form

1. Course Name:
Principles of Food industry
2. Course Code:
PRFI111
3. Semester / Year:
First Semester/First level / 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) / 3.5 unit
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Layla Azhar Ahmed Email:laylaazhar@uomosul.edu.iq Name :Mead Waleed Sadallah Email: mead.almola1985@uomosul.edu.iq

8. Course Objectives

- The learner should be able to define the concept of food industry science that is related to manufacture and preservation of food materials.
- Choose several preservation methods that rely on reducing the moisture content in food to stop spoilage and food spoilage.
- Differentiate between different food components.
- Understanding the basic units that make up carbohydrates, proteins and fats.
- Distinguish between essential and non-essential amino acids.
- Familiarity with the properties of unsaturated fatty acids.
- Realizing the purpose of eating food to obtain energy.
- Identify the components of meat and the difference between white and red meat.
- A comprehensive study of the various types of preservation methods and choosing the most appropriate to the taste of consumers.

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	B6: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	C5:The methods for estimating the specific gravity of sugar and salt solutions used in food industries involve using a balance, a Westphal balance, and a density bottle."	"Estimating the specific gravity of sugar and salt solutions."	Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam
3	2Theoretical	B2 The student is aware of the importance of water to the human body and the types of water found in food	Food ingredients, Part one	Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam

	3Practical	B7: Understand the types of hydrometers and their utilization in estimating specific gravity, concentrations, and density of sugar and salt solutions in food manufacturing.	"Sugar and salt solutions (hydrometers)."	Interactive lecture Brainstorming Dialogue and discussion Self-education	Semester exam 1, final exam
4	2Theoretical	A1 The student learns about the basic components of food, such as carbohydrates, proteins, and fats	Food ingredients, part two	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 1, final exam, report
	3Practical	A5: 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.	Using hydrometers to measure the saturation level of salt solutions.	Interactive lecture Brainstorming Dialogue and discussion Self-education	
5	2Theoretical	C2 The student explains the properties of fatty acids involved in the synthesis of fats	Division of fats as a chemical classification	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 1, final exam, report
	3Practical	C5:Furthermore, refractometers can 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	Refractometers		
6	2Theoretical	C3 The student suggests a way to compare the types of dyes found in foods	Dyes in foods	Interactive lecture Brainstorming Dialogue discussion Self-education	Short exam, final exam
	3Practical	C6: 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	The Pearson square	Interactive lecture Brainstorming Dialogue discussion Self-education	Short exam, final exam

		proportions of solute or solvent using the Pearson square method.			
7	2Theoretical	C4 The student is familiar with the most important staple foods such as meat and eggs	Main foods	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
	3Practical	C7: 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.	"Food preservation by drying"	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
8	2Theoretical	A2 The student learns about oils and fats and the stages of their production	Oils and fats, part one	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
	3Practical	A6: It allows understanding the importance of food preservation by refrigeration and the steps followed in the process of refrigerating and processing fruits and vegetables.	"Food preservation by refrigeration"	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
9	2Theoretical	B3 The student judges efficiency of oils and extraction methods	Oils and fats, part two	Interactive lecture Brainstorming Dialogue discussion Self-education reporting	Semester exam 2, final exam
	3Practical	B8: Judging the efficiency of the freezing process in food manufacturing.	"Food preservation by freezing"	Interactive lecture Brainstorming Dialogue and discussion Self-education and reporting	Semester exam 2, final exam
10	2Theoretical	A3 The student learns about the most important types of rancidity occurs in foodstuffs, especially fatty ones	Damage to oils and fats	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam

	3Practical	A7: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	Blanching in food industries"	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
11	2Theoretical	B4 The student masters the method manufacturing various types of tea	Tea	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
	3Practical	B9: The student masters the practical method of assessing the efficiency of the blanching process by detecting the enzymes peroxidase and oxidase.	"Evaluating the efficiency of the blanching process"	Interactive lecture Brainstorming Dialogue and discussion Self-education	Final exam
12	2Theoretical	E1 The student identi methods for drying processing coffee seeds	coffe	Interactive lecture Brainstorming Dialogue discussion Self-education	Final exam
	3Practical	E3: 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	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
13	2Theoretical	A4 The student learns about the types of preservation methods	Food preservation methods	Interactive lecture Brainstorming Dialogue discussion Self-education	Final exam
	3Practical	A8: 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.	"Marmalade making"	Interactive lecture Brainstorming Dialogue discussion Self-education	Final exam

14	2Theoretical	B5 The student is familiar with the stages of food canning	Heat preservation	Interactive lecture Brainstorming Dialogue discussion Self-education	Short exam , Final exam
	3Practical	B10: 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.	Jelly making	Interactive lecture Brainstorming Dialogue and discussion Self-education	Short exam , Final exam
15	2Theoretical	E2 The student identifies the most important preservatives used in food manufacturing	Preservatives	Interactive lecture Brainstorming Dialogue discussion Self-education	Short exam , Final exam
	3Practical	E4: 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	Interactive lecture Brainstorming Dialogue discussion Self-education	Short exam , Final exam

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	/

Instructor of theoritical part

Dr. Layla Azhar Ahmed

Instructor of practical part

Mead Waleed Sadallah

الأستاذ الدكتور
سمية خلف بدوي
رئيس قسم علوم الأغذية

Chairman of the scientific committee

Prof. Dr. Moafak mahmood ahmed

Head of the department of Food science

Prof. Dr. Sumiya kalaf badawi