Course Description Form

1. Course Name:
Food Chemistry
2. Course Code:
FOCH364
3. Semester / Year:
first Semester/third 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)
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8. Course Objectives

- That the learner be able to define the concept of identifying the nature of chemical and biochemical changes that occur in foods
- Choosing the appropriateness of the factors affecting some food components that have undesirable physiological properties.
- Differentiate between food components that make up most of the food and other components that are very few and have toxic effects or inhibitory action.
- Understanding that the molecules of most food components contain chemically active groups.
- Distinguish between different conditions such as temperature, humidity, and concentrat during food processing processes
- Familiarity with the physical structure that indirectly affects the chemical activity of foods
- .Realize that water content may vary from one food item to another.
- Determine the physical composition of the food item, such as texture, which determines degree of consumer acceptance of that food item
- A comprehensive study of the properties of food components and their behavior in foods

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 Distinguish between different conditions as temperature, humidity, concentration during processing processes concept of water as a general solvent and a basic component of many foods	Molecular water and natural properties of Water	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 1, final exam
	3Practical	c1 Clarifies the baking peak	Chemical lifting agents	Interactive lecture Brainstorming Dialogue discussion Self-education	Short pract test1
2	2Theoretical	C1The student explains most important properties of water and its types in food	Water activity	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 1, final exam
	3Practical	practical: c2 Proves the methoc detection of aldehyde ketone groups	Practical: Detection of effec aggregates	Interactive lecture Brainstorming Dialogue discussion Self-education	Laboratory evaluation
3	2Theoretical 3Practical	B2The student is familiar with the presence of carbohydrates in plant and animal cells, microorganisms, and classification Carbohydrates	Food carbohydrates, Partone	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 1, final exam

		Practical: C3 Shows the divisior proteins	Practical: Separation of proteins according to dissolution difference	Interactive lecture Brainstorming Dialogue discussion Self-education	Bring a report
4	2Theoretical 3Practical	A1The student learns about mechanism of bonding polysaccharides and most impor interactions monosaccharides	Food carbohydrates, Part two	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 1, final exam, report
		Parctical: B1 Applies the metho conducting the test	Parctical: Wellman Board Test	Interactive lecture Brainstorming Dialogue discussion Self-education	Short pract test 2
5	2Theoretical 3Practical	C2The student explains classification of food fats based on their chemical composition	Food fats, part one	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 1, final exam, report
		practical: c4 Examines the actio buffer solutions	practical : Acids and bases Regula solutions and measurement	Interactive lecture Brainstorming Dialogue discussion Self-education	Laboratory evaluation
6	2Theoretical 3Practical	C3The student suggests a suitable method to make fatty foods less likely to go rancid	Food fats, part two	Interactive lecture Brainstorming Dialogue discussion Self-education	Short exam, final exam
		Practical: D1Detects the descrip of the pH device	Practical: pH and its measurement	Interactive lecture Brainstorming Dialogue discussion Self-education	Homework
7	2Theoretical 3Practical	C4The student is familia with the most important changes occur in muscle proteins during the process of contraction relaxation	Food proteins, part one	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
		Practical: D2Shows some proper of pectin	Practical: Pectin Tests	Interactive lecture Brainstorming Dialogue discussion Self-education	Bring a report

8	2Theoretical 3Practical	A2The student learns about the most important functional characteristics of protei	Food proteins, part two	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
		practical: d3Demonstrates the stability of ascorbic acid	Practical: Estimating the amount of ascorbic acid and identifying its stability	Interactive lecture Brainstorming Dialogue discussion Self-education	Bring a report
9	2Theoretical 3Practical	B3The student explains the types of brown discoloration in foods and their products	Non-enzymatic brown discoloration, part one	Interactive lecture Brainstorming Dialogue discussion Self-education reporting	Semester exam 2, final exam
		Practical: B2Enzymatic bro variegation is applied	practical: Enzymatic variegation	Interactive lecture Brainstorming Dialogue discussion Self-education	Bring a report
10	2Theoretical 3Practical	A3The student learns about the scientific basis of non-enzymatic browning reactions	Non-enzymatic brown discoloration, part two	Interactive lecture Brainstorming Dialogue discussion Self-education	Semester exam 2, final exam
		practical: A1Recognize important types of tan coefficients	practical: Tanning reactions	Interactive lecture Brainstorming Dialogue discussion Self-education	Homework
11	2Theoretical 3Practical	B4The student explains the effects of enzymatic browning in relation to food processing	Enzymatic brown discoloration, part one	Interactive lecture Brainstorming Dialogue discussion Self-education	Final exam
		Practical: B3Caramel test applied	practical: Caramel	Interactive lecture Brainstorming Dialogue discussion Self-education	Bring a report

12	2Theoretical 3Practical	E1The student identifies methods for inhibiting non-enzymatic brown discoloration	Enzymatic brown discoloration, part two	Interactive lecture Brainstorming Dialogue discussion Self-education	Final exam
		Practical: B4Examines impregnation test legumes	Practical: Determination of the bulging coefficient and impregnation coefficient of legumes	Interactive lecture Brainstorming Dialogue discussion Self-education	Bring a report
13	2Theoretical 3Practical	A4The student learns about the chemical nature of enzymes	Food enzymes, part one	Interactive lecture Brainstorming Dialogue discussion Self-education	Final exam
		Practical: B5Shows Halvin's test	Practical: Oils & Fats	Interactive lecture Brainstorming Dialogue discussion Self-education	Bring a report
14	2Theoretical 3Practical	B5The student is familiar with the harmful and beneficial effects of enzymes	Food enzymes, part two	Interactive lecture Brainstorming Dialogue discussion Self-education	Short exam , Final exam
		Practical: C5Applies perox number	Practical: Peroxide number estimat	Interactive lecture Brainstorming Dialogue discussion Self-education	Short exam
15	2Theoretical 3Practical	E2The student identifies food components and their effect on changing food components during food manufacturing	A field visit to a food laboratory and submitting a report on the relationship of food chemistry to food processing	Interactive lecture Brainstorming Dialogue discussion Self-education	Short exam , Final exam

		practical: d4Chromotografi applies thin layer	practical: The use of thin layer chromotogravi	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)	Food Chemistry/Prof. Dr. Basil Kamil Dalaly and Dr. Kamil Al.Rikabi
Main references (sources)	/
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field of Food Chemistry
Electronic References, Websites	/

Instructor of theoritical part

Dr. Layla azhar ahmed

Instructor of practical part

Israa maan ahmed

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