Course Description Form

1. Course Name:

Dairy Chemistry

2. Course Code:

DACH370

3. Semester / Year:

Second semester/third stage / 2024-2025

4. Description Preparation Date:

1/2/2024

5. Available Attendance Forms:

Presence

6. Number of Credit Hours (Total) / Number of Units (Total)

2 theoretical hours + 3 practical hours (75 hours) / 3.5 units

7. Course administrator's name (mention all, if more than one name)

Name: Dr.Saif Ali Mohammed
and : Roaa Adel

8. Course Objectives

1.Understand the chemical composition of milk, including proteins, fats, carbohydrates, minerals, and vitamins.
2. Study the chemical and physical changes that occur in milk during manufacturing processe such as pasteurization, fermentation, and drying.
3. Analyze the chemical properties of dairy products such as cheese, yogurt, and cream.
4. Apply chemical analysis methods used to assess the quality and safety of dairy products.
5. Identify the factors affecting the stability of milk and milk products during storage and distribution.
6. Enhance the ability to link chemical information to the industrial process in the producti and development of dairy products.

9. Teaching and Learning Strategies

1. Interactive Lecture
2. Brainstorming
3. Dialogue and Discussion
4. Assigning Reports
5. Conducting Monthly and Daily Exams
6. Self-Learning
7. Practical Training

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical	Theoretical:	THEORETICAL	THEORETICAL	Shortexams,

	3Practical	**a1**:The student learns about the chemical composition of milk and dairy products and understands the chemic and physical reactions th affect their properties during processing. **PRACTICAL** b1: The student is famili with dairy chemistry and laboratory tests.	A general introduction to milk and its chemical composition. **PRACTICAL** Separation of Milk proteins	audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	assignments, discussions
2	2Theoretical 3Practical	Theoretical: a1The student learns ab the chemical composition milk and dairy products understands the chemical physical reactions that af their properties dur processing. **Practical** B1: The student becomes familiar with dairy chemistry laboratory tests.	**Theoretical:** Milk fat **Practical:** Estimating the protein content in milk	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
3	2Theoretical 3Practical	**Theoretical:** **a1:** The student becomes familiar with the concept and origin of microbiology, and the characteristics and structures of microorganisms. **PRACTICAL** **b1:** The student becomes familiar with microbiology and laboratory experiments.	**Theoretical:** Milk fats **Practical:** Electrophoresis of milk proteins	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
4	2Theoretical 3Practical	**Theoretical:** **a1**:The student learns about the chemical composition of milk and dairy products and understands the chemic and physical reactions th affect their properties during processing. **PRACTICAL** b1: The student is fami with dairy chemistry	**Theoretical:** Milk fat **Practical:** **Estimating the** percentage of tyrosine in milk	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions

		laboratory tests.			
5	2Theoretical 3Practical	**Theoretical:** **a1**:The student learns about the chemical composition of milk and dairy products and understands the chemic and physical reactions th affect their properties during processing. **PRACTICAL** b1: The student is famili with dairy chemistry an laboratory tests.	**Theoretical:** Milk fat **Practical:** Estimating the percentage fat in milk	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
6	2Theoretical 3Practical	**Theoretical:** **a1**:The student learns about the chemical composition of milk and dairy products and understands the chemic and physical reactions th affect their properties during processing. **PRACTICAL** b1: The student is famili with dairy chemistry an laboratory tests.	**Theoretical:** Milk proteins **Practical:** Estimating free fatty acids, acidity, and acid value	**THEORETICAL** audio methods, Writing on the boardDirect dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
7	2Theoretical 3Practical	**Theoretical:** **a1**:The student learns about the chemical composition of milk and dairy products and understands the chemic and physical reactions th affect their properties during processing. **PRACTICAL** b1: The student is fami with dairy chemistry a laboratory tests.	**Theoretical:** Milk proteins **Practical:** Separating Lactose from milk sorting	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
8	2Theoretical 3Practical	**Theoretical:** **a1**:The student learns about the chemical	**Theoretical:** Milk proteins **Practical:**	**THEORETICAL** audio methods, Writing on the	Shortexams, assignments, discussions

		composition of milk and dairy products and understands the chemica and physical reactions th affect their properties during processing. **PRACTICAL** b1: The student is fami with dairy chemistry a laboratory tests..	Estimating lactose content	board Direct dialogue style **PRACTICAL** Assigning tasks and reports	
9	2Theoretical 3Practical	**Theoretical:** **a2:** The student identifies the factors that affect the growth of microorganisms. **Practical:** **c1:** The student examines different samples for the presence microorganisms.	**Theoretical:** Milk proteins **Practical:** Acidity estimation Calculated titratability Based on lactic acid, measuring milk pH	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
10	2Theoretical 3Practical	**Theoretical:** **a1**:The student learns about the chemical composition of milk and dairy products and understands the chemica and physical reactions th affect their properties during processing. **PRACTICAL** b1: The student is fami with dairy chemistry a laboratory tests..	**Theoretical:** Milk proteins **Practical:** Separating spoiled fats from phospholipids	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
11	2Theoretical 3Practical	**Theoretical:** **a1**:The student learns about the chemical composition of milk and dairy products and understands the chemica and physical reactions th affect their properties during processing. **PRACTICAL** b1: The student is famili with dairy chemistry and laboratory tests.	**Theoretical:** Milk sugars **Practical:** Measuring lipase activity	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
12	2Theoretical 3Practical	**Theoretical:** **a1**:The student learns	**Theoretical:** Milk Sugars	**THEORETICAL** audio methods,	Shortexams, assignments,

		their properties during processing. **PRACTICAL** b6: The student is famili with dairy chemistry and laboratory tests.			

11. Course Evaluation

t	Evaluation methods	Evaluation date (one week)	Grade	Relative weight %
1	Final theoretical report + theoretical practical reports	Theoretical 15 weeks Practical 1-15 weeks	7theoretical + 6 practical	13%
2	Short test 1 Quiz	3 weeks	4theoretical + 2practical	6%
3	Midterm exam (theoretical and practical)	9 weeks	10theoretical + 5 practical	15%
4	Short test 2 Quiz	12 weeks	4 theoretical + 2 practical	6%
5	Final practical test	practical exams week	20	20%
6	Final theoretical exam	theoretical exams week	40	40%
			100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Dairy Science, Dairy Research
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Dairy Chemistry And rely on the curriculum prepared by the subject teacher
Electronic References, Websites	

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Roaa Adel

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