



Department of Food Technology

College of Agricultural Engineering science

University of Salahaddin - Erbil

Subject: Butter and Ice cream

Course Book – (Year 4)

Lecturer's name: Dina Suad Ali

Msc. Nawa Nawras Rashid

Academic Year: 2020/2021

Course Book

1. Course name	Butter and Icecream (Theory & Practical)																																											
2. Lecturer in charge	Dina Suad Ali																																											
3. Department/ College	Food Technology/ Agriculter college																																											
4. Contact	e-mail:dina.ali @su.edu.krd e-mail:Nawa.Nawras@su.edu.krd Tel:07504881523																																											
5. Time (in hours) per week	For example Theory: 2 wednesday 10:30-12:30 Practical: 3 Monday 8:30 – 11:30 , 11:30 – 2:30																																											
6. Office hours	Sunday –tuesday– Thursday (8:30 – 1:30)																																											
7. Teacher's academic profile	<table border="1"> <tr> <td>Name</td> <td colspan="4">Dina suad ali</td> </tr> <tr> <td>Date of Employment</td> <td colspan="4">2008</td> </tr> <tr> <td>Years of Service</td> <td colspan="4">13 years</td> </tr> <tr> <td>College</td> <td colspan="4">Agricultural Engineering Sciences</td> </tr> <tr> <td>Department</td> <td colspan="4">Food Technology</td> </tr> </table> <p>Education and Certificates</p> <table border="1"> <thead> <tr> <th>Degrees</th> <th>Department</th> <th>University</th> <th>Country</th> <th>Date of Completion</th> </tr> </thead> <tbody> <tr> <td>BSc</td> <td>Food technology</td> <td>Baghdad University</td> <td>Iraq</td> <td>1997</td> </tr> <tr> <td>MSc</td> <td>Food technology</td> <td>Baghdad University</td> <td>iraq</td> <td>2002</td> </tr> </tbody> </table>				Name	Dina suad ali				Date of Employment	2008				Years of Service	13 years				College	Agricultural Engineering Sciences				Department	Food Technology				Degrees	Department	University	Country	Date of Completion	BSc	Food technology	Baghdad University	Iraq	1997	MSc	Food technology	Baghdad University	iraq	2002
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8. Keywords	Milk Fat, Cream, Churning, Butter Processing, Butter Theory of Making Butter, Ice Cream, Composition of Butter &Ice cream, Over run of Butter & Ice cream....																				
9. Course overview: 1. Provide the students with the definition of the butter types, theories of butter formation, methods of butter production, and the training of students on the steps the industry and the accounts of revenue and also give the student the skills of the work of a small project for this product. 2. Provide the students with the definition of the ice cream types and how the different mixtures and the training of students on the steps the industry and the accounts of revenue and also give the student the skills of the work of a small project for this product.																					
10. Course objective: Provide the students with scientific knowledge about dairy fats and related products. <input type="checkbox"/> define and specify chemical composition and standards <input type="checkbox"/> state the food and nutritive value <input type="checkbox"/> explain the principle of making <input type="checkbox"/> comprehend the churning theories <input type="checkbox"/> identify the churning devices/type of churns <input type="checkbox"/> outline the features of continuous butter making...etc.																					
11. Student's obligation At the end of this course, the learner will be able to : <input type="checkbox"/> Knowledge of the most important components of the milk and their relation of Butter &Icecream.																					

- ☐ Identify factors affecting the quantity and quality of Butter & Icecream and the effect of nutrition, Yield and over run .
- ☐ Knowledge of the chemical composition of each component, its ratio, its influence on the Butter & Icecream properties.

12. Forms of teaching

Word Microsoft – Power point – Data show – White board

13. Assessment scheme

50% (Theory + Practical)

15% Theory: - 12% Exams (at least two) + 3% Quizzes, daily activity and homework.

35% Practical: - 30% Exams + 5% Quizzes and homework.

60% final examination: - 50% theory.

14. Course Reading List and References:

Main references	Useful references	Magazines and review (Internet)
1. Dairy fats and related products.	1. Dairy processing handbook	1. www.gigapedia.org
2. Milk fat processing.	2. Rural Dairy Technology	2. www.4shared.com
3. The science of icecream.	3. The technology of dairy products	3. www.osun.com

15. The Topics: Theory

No.	Title of the Subject	Lecture's name
1	The History of Butter Butter-making with fresh milk or cream Butter Structure Methods Of Butter Manufacture :- A. Traditional Method:- B. Batch Method C. Continuous Method :- ** quiz or homework	Dina Suad Ali
2	Nutritional information Butter Characteristics Making Butter ** quiz or homework	
3	Principle of churning	

	Basic Science of Butter Theory Type or Kinds Of Butter Composition of Butter General steps of butter making by churning:- <ol style="list-style-type: none"> 1. The separation of milk. 2. Cream neutralization. 3. Pasteurization 4. Cooling 5. Churning of cream 6. Draining the butter milk ** quiz or homework	
4	<ol style="list-style-type: none"> 7. Washing the butter 8. Salting 9. Working the butter 10. Packing the butter 11. Storage of butter ** quiz or homework	
5	Butter Yield ** quiz & homework	
6	Over Run ** quiz or homework	
7	Common Defects in Butter and Their Control ** quiz or homework	
8	History of Ice Cream What is ice cream Types of ice cream Nutritional values of ice cream Ice Cream Ingredients Function of each ingredient ** quiz or homework	
9-10	Mix Calculations for Ice Cream ** quiz or homework	
11-12	Ice Cream Manufacture ** quiz or homework	
12-14	Overrun Calculation Ice Cream Defects ** quiz or homework	

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15. The Topics: Practical

No.	Title of the Subject	Lecture's name
1	Butter quality (Butter characteristics) Quiz or homework	Nawa Nawras Rashid
2	Milk separation :A-Gravity separation B-Centrifugal separation. Separation of cream Quiz or homework	
3	Cream Types of cream Quiz or homework	
4	Butter Butter manufacturing Quiz or homework	Nawa Nawras Rashid
5	Neutralization of sour cream for butter manufacturing Principle of neutralization Procedure Quiz or homework	
6	Exam	
7	Buttermilk Production of cultured buttermilk Health benefits of buttermilk Quiz or homework	
8	Butter oil Requirement of high grad butter oil Ghee Quiz or homework	
9-10	Ice cream History of ice cream Composition of ice cream Quiz or homework	
11-12	Completing of ice cream composition Quiz or homework	
13-14	Calculation of ice cream mixes -simple mixes -complex mixes Quiz or homework	

19. Examinations:

Some kind of examination

Q) Fill the following blanks :

Q) Give the reasons of the following .

Q) Define (4) of the following terms:

Q) What are the :-

Q) Outline the :-

Q) Enumerate all kinds of

Q) Differentiate between