Department of Food Technology

College of Agricultural Engineerng 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: 2022/2023

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	

Name	**Dina suad ali**
Date of Employment	2008
Years of Service	13 years
College	Agricultural Engineering Sciences
Department	Food Technology

Education and Certificates

Degrees	Department	University	Country	Date of Completion
BSc	Food technology	Baghdad University	Iraq	1997
MSc	Food technology	Baghdad University	iraq	2002

7. Teacher's academic profile	

Name	Nawa Nawras Rashid
Date of Employment	2009
Years of Service	12 years
College	Agriculture collage
Department	Food Technology

Education and Certificates

Degrees	Department	University	Country	Date of Completion
BSc	Food technology	Sallahaddin University-Erbil	erbil	2009
MSc	Dairy technology	Alexandria University	Egypt	2015

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.

- define and specify chemical composition and standards
- state the food and nutritive value
- explain the principle of making
- comprehend the churning theories
- identify the churning devices/type of churns
- outline the features of continuous butter making…etc.

11. Student's obligation

At the end of this course, the learner will be able to :

- 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, Yeild 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 :-	Dina Suad Ali
2	** quiz or homework 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:- 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	7. Washing the butter 8. Salting 9. Working the butter 10. Packing the butter 11. Storage of butter ** quiz or homework	Dina Suad Ali
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	

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