



Department of Animal Resources
College of Agricultural Engineering
Sciences
Salahaddin University- Erbil
Subject: Dairy Science and Technology
Course Book: 2nd Year/ 2nd Semester
Lecturer's name: Dr. Salih M. S. Zebari
Academic Year: 2022/2023

Course Book

1. Course name	Dairy Science Technology
2. Lecturer in charge	Dr. Salih M. S. Zebari
3. Department/ College	Animal Resources
4. Contact	e-mail: salih.salih@su.edu.krd Tel: (optional)
5. Time (in hours) per week	Theory: 2h Practical: 3h
6. Office hours	3 hours
7. Course code	DST
8. Teacher's academic	<p>Dr. Salih M. S. Zebari</p> <p>Academic profile:</p> <p>I am a Lecturer at the Department of Animal Resources at Salahaddin University with a Ph.D. degree in Food Authenticity and Quality Control. I have a B.Sc. degree in Animal Resources (Salahaddin University- Erbil), PG Diploma in Food Production Management (University of Nottingham, UK), M.Sc. in Food Safety and Quality Management (University of Greenwich, London), and a Ph.D. in Food Authenticity and Quality Control (University of Plymouth, UK). My research Interest includes Food Authenticity & Fraud Detection Approaches, Food Security and Quality Control, Analyzing Food Hazards & Metal Detection, Assessing Consumers' Perception & Trust, Product Development & Sensory Analysis, Human Nutrition, Nutrition Assessment and Public Health,</p>
9. Keywords	Dairy, milk, milk products,

10. Course overview:

This course provides a comprehensive introduction to the science and technology of dairy and their products.

Students should acquire a sufficient knowledge and understanding of the field of Dairy Science and Technology to allow them to appreciate the complexity of the subject including the production, safety and health benefits, quality control and health regulations governing the placing of dairy products on the market.

11. Course objective:

1. Have a critical knowledge of the chemistry, composition, structure and function of milk components.
2. Have a knowledge of the steps involved in processing of milk, cheese and yoghurt.
2. 3. Have a critical knowledge of the nutrient value of dairy produce and their role in preventing certain conditions and diseases.
3. 4. To appraise the student of new technological developments in the dairy industry.
4. 5. Have an a critical knowledge of issues related to safety, quality assurance and health regulations for the production and sale of dairy products.

12. Student's obligation

1. Attend all lectures/ teaching hall
2. Student engagements and activities will be monitored
3. Student should prepare for quizzes in each session
4. Show respect and dress appropriately
5. Respect fellow students and their ideas
6. Mobile phones should be switched off or at least keep it in silent mode
7. Performing the official tests/ exams
8. If a student missed more than 5% of total hours during the course, he/ she will be informed by dept. for initial warning, and if reached to 10% or more will be informed to be expelled from that course in the that academic year.
9. Provide reports and give presentation

13. Forms of teaching

- 1- Lecture presentation by lecturer using data show or board or both
- 2- Brainstorming and Group discussion
- 3- Direct questions
- 4- Use of relevant pictures/ educational films
- 5- Lectures slides will be distributed in Power Point/ PDF format to be print it or in word document
- 6- Digital copy of each lecture will be given to all students weekly to obtain their hard copy

before the lecture day. All the covered topics will be presented as power point presentations.

14. Assessment scheme:

The grades scheme as follows:

One writing exams.

Several activities during the course including: attendances, reports, quizzes, posters, workshops etc.

Midterm: 50%

Midterm exam(s): 15% (Theory)

50% (Practical)

Activities: ,attendances, quizzes,Reports.....5% (Theory+ Practical)

Final examination 50%

Theory 50%

A. Activities during the course include: quizzes, seminar presentation, daily attendance, active participation, reports, posters,

B. First Midterm exam will be around 4th to 6thWeeks

C. Final semester exams will be at the end of course.

15. Student learning outcome:

- understand the basic science of dairy and their products.
- understand the treatment used in milk and milk products.
- able to provide overview about the topics.

16. Course Reading List and References:

17. The Topics:

W	Theoretical Topics	No. of hours	Date
1	What is Milk	2h + 3h	February /2023
2	Variability of Milk Components		
3	Milk Biosynthesis		
4	Physico- Chemical Properties of Milk		

5	Milk Chemistry		
5	Milk Chemistry		
6	Milk Microbiology		
7	Common Steps dairy technology		
8	Heat Treated Milks		
9	Homogenization		
10	Milk Fat Separation		
11	Standardization		
12	Yoghurt		
13	Cream		
15	Butter and related products		
W	Practical Topics	No. of hours	Date
1	<i>Milk Sampling</i>	3	
2	<i>Quality control test for milk sampling</i>	3	
3	Determination of Milk Acidity	3	
4	<i>Milk Specific gravity (Density)</i>	3	
4	Milk Fat determination	3	
5	Milk Fat Separation (Skim Milk)	3	
6	Milk Scanner	3	
7	<i>The determination of Total Solids in milk</i>	3	

8	Yogurt making	3	
<p>19. Examinations:</p> <p>1. Compositional, 2. Definitions, 3. True or false type of exams, 4. Multiple choices, 5- Fill the blanks, 6- Matching between two groups, 7- Select the most appropriate words or statements</p> <p>Compositional questions: In this type of exam the questions usually starts with Explain how, What are the reasons for...?, Why...?, How....? With their typical answers Examples should be provided Theory.....</p> <hr/> <p>Practical</p>			
<p>20. Extra notes:</p> <p>For practical session, students need to bring their lab coats. We must have some scientific trips to food factories/ or food companies to see the manufacturing process and hygienic conditions. The planned schedule is flexible and may change depending on the local circumstances including unexpected holidays.</p>			
<p>21. Peer review</p> <p>This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section. <i>(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).</i></p>			