



**Department of Food Technology**

**College of Agriculture**

**University of Salahaddin**

**Subject: Dairy Chemistry**

**Course Book – (Year 3)**

**Lecturer's name Dr. Nawal H. Sebo**

**Academic Year: 2019/ 2020**

## Course Book

<b>1. Course name</b>	<b>Dairy Chemistry</b>
<b>2. Lecturer in charge</b>	<b>Nawal Hurmiz Sebo</b>
<b>3. Department/ College</b>	<b>Agriculture/ Food Technology</b>
<b>4. Contact</b>	<b>e-mail - nawal.sebo@su.edu.krd : Tel: 07504451952</b>
<b>5. Time (in hours) per week</b>	<b>Theory: 2 + Practical: 6</b>
<b>6. Office hours</b>	<b>Sunday + Monday 9:30-12:00am</b>
<b>7. Course code</b>	
<b>8. Teacher's academic profile</b>	<b>M.Sc . 1987 , Ph.D. 2008 in food chemistry with excellent experience in different area of food technology subjects , Lecturing different subjects in food technology department for under graduate students, post graduate , assisting in laboratory sections teaching( Food Chemistry ,Dairy Chemistry Industrial Enzymes ,Cheese and Dairy Fermented product Technology ,Food and Dairy Science and Technology ,Biochemistry)and supervising many post graduate thesis . Participating in different activities in the college of Agriculture from administrational point of view and supervising the implementation of some dairy processing plants.</b>
<b>9. Keywords</b>	
<b>10. Course overview:</b>	<p><b>Cheese &amp; Dairy Fermented products are defined as food products mainly produced from milk and have been part of the human diet for a long period of time since milk is the first nutrient that all new born mammals typically encounter. Cheese &amp; Dairy Fermented products also play an important role in a healthy diet, nutritional value and for high-energy yielding foods. In addition, they also provide unparalleled and versatile taste and texture for personal enjoyment. Today, the availability and distribution of Cheese &amp; Dairy Fermented products result of combining the centuries-old knowledge of traditional milk products together with the applications of modern science and technology. As a result, current dairy industry is highly dynamic, with more new Cheese &amp; Dairy Fermented products constantly being formulated and introduced to the market around the world, thus offering an ever-increasing variety of nutritious and tasteful foods for human. This course provides general knowledge on Cheese &amp; Dairy Fermented products as well as on various</b></p>

processing technologies that allow human to transform milk into a variety of high quality products .

#### **10. Course overview:**

**-The course will cover water, sugar, protein, lipids, minerals, vitamins and enzymes in milk and the factors affected the compositions of milk and milk products**

**-The lab component will cover the principles of chemical and instrumental methods for the qualitative and quantitative analyses of moisture, protein, carbohydrate, lipids, minerals and vitamins. Students will perform experiments to determine major milk components using chemical and instrumental methods.**

**-This course deals with the chemical composition of milk ; physical, chemical and biochemical reactions and the impact of these reactions on food quality during postharvest/ processing, storage and utilization.**

**-This course relates to chemical, physical and functional properties of milk constituents and the variable effects of processing on those constituents using an array of both basic and recently developed chemical, biochemical and instrumental technologies in accordance with current food technology.**

#### **11. Course objective:**

**1-The aim of the course is to give scientific background and fundamentals knowledge of milk and milk products chemistry**

**2- Gain an understanding of relationship between milk compositions and milk processing.**

**3-to integrate concepts in chemistry, biochemistry, physics of milk**

**4-and to gain the ability to think critically about problems and issues in milk chemistry**

#### **12. Student's obligation**

**1- Attendance at lectures and labs is required.**

**2-The student will write notes on their notebook which are written on whiteboard besides the lecture on the data show.**

**3-Every lecture have a quiz.**

**13. Forms of teaching**

1- Data show, 2-Power point , 3- White board

**14. Assessment scheme**

Course content is assessed through two written examinations and class participation with an emphasis on problem solving related to real life situations that one may encounter in the food industry and written report. Teamwork is critical to the project and grading. Grades will count as below:

Time	theoretical	Practical
During semester	20	15
Participation Conservation and activity, quizzes	5	
Final	40	20

**15. Student learning outcome:**

1-: Students will demonstrate knowledge of the major core concepts in milk compositions.

2- Students will be able to describe the fundamentals of dairy products processing and Preservation.

3- Students will be able to explain, analyse and evaluate scenarios related to milk compositions.

4-The students will also be capable of using research literature on the subjects and analysing situations in which the dairy products processing principles may be utilized.

5-Understand factors that affect the milk compositions and milk products compositions shelf life and stability.

6- Have a general idea of major changes occur during dairy products processing.

7- Knowledge and understanding about the nature of milk compositions and human nutrition and an appreciation of the role of food to health.

**16. Course Reading List and References:**

1- Fundamentals of Dairy Chemistry.

2- Dairy Chemistry and Biochemistry.

3- A textbook of dairy chemistry

**17. The Topics:**

	Title of the Subject	Lecture's name		Le ex:
1st	Milk Composition	Dr.Nawal H. Sebo		ex:

<b>2nd</b>	<b>Factors affected milk compositions.</b>	<b>Dr.Nawal H. Sebo</b>	
<b>3rd</b>	<b>Physico Chemical properties of milk</b>	<b>Dr.Nawal H. Sebo</b>	
<b>4th</b>	<b>Milk lipids</b>	<b>Dr.Nawal H. Sebo</b>	
<b>5th</b>	<b>Milk fat constants</b>	<b>Dr.Nawal H. Sebo</b>	
<b>6th</b>	<b>Milk proteins,Caseins</b>	<b>Dr.Nawal H. Sebo</b>	
<b>7th</b>	<b>Milk proteins, whey proteins</b>	<b>Dr.Nawal H. Sebo</b>	
<b>8th</b>	<b>Milk sugar</b>	<b>Dr.Nawal H. Sebo</b>	
<b>9th</b>	<b>Milk vitamins</b>	<b>Dr.Nawal H. Sebo</b>	
<b>10th</b>	<b>Milk salts</b>	<b>Dr.Nawal H. Sebo</b>	
<b>11th</b>	<b>Effect of milk processing on milk properties</b>	<b>Dr.Nawal H. Sebo</b>	
<b>12th</b>	<b>Thermal stability of Milk</b>	<b>Dr.Nawal H. Sebo</b>	

13th	Milk products compositions	Dr.Nawal H. Sebo		
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**18. Practical Topics (If there is any)**

The Topics:	Lecturer's name

In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture

**20. Extra notes:**

Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.

**21. Peer review**

پیداچوونھوھی ھاوھل

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.

*(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).*

بیت لهلاپهن ھاوھلیکی ئهکادیمیوه سهیر بکریت و ناوهرۆکی بابتهکانی کۆرسهکه پهسهند بکات و جهند وشهیهک بنوسیت لهسهر شیاوی ناوهرۆکی لهسهر بکات.

که زانیاری ههبت لهسهر کۆرسهکه و دهبت پلهی زانستی له ماموستا کهتر نهبت.