

**Jordan University of Science and Technology**  
**Faculty of Agriculture**  
**Department of Nutrition and Food Technology**  
**Semester 2007**

<b>Course Information</b>	
<b>Course Title</b>	Introductory Dairy Science
<b>Course Number</b>	NF 374
<b>Prerequisites</b>	NF 275
<b>Course Website</b>	
<b>Instructor</b>	Reyad R. Shaker
<b>Office Location</b>	C1L3
<b>Office Phone</b>	22110
<b>Office Hours</b>	
<b>E-mail</b>	
<b>Teaching Assistant</b>	
<b>Course Description</b>	

<b>Text Book</b>	
<b>Title</b>	Milk and Milk Products
<b>Author(s)</b>	Varnam, A.H. and Sutherland, J.P
<b>Publisher</b>	Chapman and Hall, UK
<b>Year</b>	1996
<b>Edition</b>	
<b>Book Website</b>	
<b>References</b>	

<b>Assessment Policy</b>		
<b>Assessment Type</b>	<b>Expected Due Date</b>	<b>Weight</b>
<b>First Exam</b>		25%
<b>Second Exam</b>		30%
<b>Final Exam</b>		40%
<b>Assignments</b>		5%

<b>Course Objectives</b>	<b>Weights</b>
1. The purpose of this course is to provide the theoretical information on the chemical composition, physical properties and microbiological quality of milk and their relation to processing.	
2. The course will provide the information of milk collection at the dairy farm and general milk treatments at the dairy plants.	

<b>Teaching &amp; Learning Methods</b>
Handout

<b>Learning Outcomes:</b> Upon successful completion of this course, students will be able to	
the nature of milk	
the chemical composition of milk and their relation to processing	
the microbiology of milk at farm level and the use of starter cultures	
the nature of chemical changes associated with processing	
general milk treatments like separation, pasteurization and other treatments	

<b>Useful Resources</b>

<b>Course Content</b>		
<b>Week</b>	<b>Topics</b>	<b>Chapter in Text (handouts)</b>
1	Introduction to course outline, milk industry in Jordan, and chemical composition of milk: milk fat	
	The nature of cream and the difference between the various types, rancidity and oxidation, milk proteins: protein fractions, casein and whey proteins, denaturation and coagulation of casein, acid and enzyme coagulation	
	Factors that influence the stability of casein and whey proteins, Lactose, minerals and vitamins, physical properties of milk and microbiology of milk	
	Starter cultures, milk collection at the dairy farms and milk reception	
	General milk treatment: clarification and separation	
	Standardization and homogenization	
	Heat treatment	