



## Course Specification of Dairy and Dairy product Hygiene

I. Course Identification and General Information:						
1	Course Title:	Dairy and Dairy product Hygiene				
2	Course Number & Code:	PA576				
3	Credit hours:	C.H				Total
		Theoretical	Practical	Training	Seminar	
		2	1	0	0	
4	Study level/ semester at which this course is offered:	Fifth Year: Second Semester				
5	Pre –requisite (if any):	MI352, MI355, MI353, MI357				
6	Co –requisite (if any):	None				
7	Program (s) in which the course is offered:	Bachelor's degree (B. Sc.) Veterinary medicine				
8	Language of teaching the course:	English				
9	Location of teaching the course:	Faculty of veterinary medicine				
10	Prepared by:	Faris Mohammed Ahmed Al-zailay				
11	Date of approval:					

### II. Course description:

نائب العميد لشئون الجودة  
 الجامعة  
 د. عبدالرقيب الشامي  
 محمد عباس

عميد الكلية  
 د. عبدالرؤف الشوكاني

عميد مركز التطوير وضمان الجودة  
 أ.د. هدى العماد

رئيس  
 أ.د. القاسم



To provide students with basic knowledge of hygienic milk and dairy products; to gain the skills to analyze milk samples, dairy products.

To gain knowledge: about Composition of milk, Milk production and biosynthesis of milk, Nutritive value of milk, physical properties, milk constituents, Effect of diseases on Milk constituents, Dairy microbiology, Milk-borne diseases, clean milk production, heat treatment of milk, Quality assurance and production control, Criteria for evaluation of milk and dairy products.

To gain Skills: about assisted detection of adulteration of milk and dairy products, detection of abnormal milk, detection of physical properties, tests for hygienic quality, chemical analysis of milk and dairy products.

### III. Intended learning outcomes (ILOs) of the course:

#### (A) Knowledge and Understanding:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Knowledge and Understanding.

Program Intended Learning Outcomes (Sub- PILOs) in: Knowledge and Understanding		Course Intended Learning Outcomes (CILOs) in: Knowledge and Understanding	
After completing this program, students will be able to:		After completing this course, students will be able to:	
A1-	Demonstrate a sound knowledge and understanding of concepts and principles of general culture, basic science, and that support veterinary medicine.	a1-	Outline the chemical composition and microbiology of dairy products.
A2-	Clarifies basic concepts, principles, and theories related to animal production, animal health and nutrition, behavior management, breeding and care that is related to animal ethical codes.	a2-	Shows knowledge and understanding about milk-borne pathogens and spoilage organisms

#### Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of Knowledge and Understanding to Teaching and Assessment Methods:

رئيس	عميد مركز التطوير وضمان الجودة	عميد الكلية	نائب العميد لشئون الجودة
أ.د. القاسم	أ.د. هدى العماد	د. عبدالرؤف الشوكاني	د. عبدالرقيب الشامي
			محمد عباس



Course Intended Learning Outcomes (CILOs) in Knowledge and Understanding		Teaching strategies/methods to be used	Methods of assessment
completing this course, students will be able to:		<ul style="list-style-type: none"> <li>▪ Lecture</li> <li>▪ Dialogue and discuss</li> <li>▪ Practical practice</li> <li>▪ Scientific visits</li> <li>▪ Field clinical training</li> <li>▪ brain storming</li> <li>▪ self-learning</li> </ul>	<ul style="list-style-type: none"> <li>▪ Written examination</li> <li>▪ Quiz</li> <li>▪ Oral examination</li> <li>▪ Practical examination</li> <li>▪ Activities</li> <li>▪ Reports evaluation</li> </ul>
a1-	Outline the chemical composition and microbiology of dairy products.		
a2-	Shows knowledge and understanding about milk-borne pathogens and spoilage organisms		

**(B) Intellectual Skills:**

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: **Intellectual Skills**

Program Intended Learning Outcomes (Sub-PILOs) in Intellectual skills		Course Intended Learning Outcomes (CILOs) in Intellectual Skills	
After completing this program, students will be able to:		After completing this course, students will be able to:	
B2-	Predicts an appropriate medical diagnosis for the most common disease states through analysis of clinical story data and the results of medical examinations of a sick animal.	b1-	Judge the different defects which present the milk products
B3-	Design appropriate nursing and treatment care plans for different diseases that affect animals, prioritizing treatment.	b2-	Discuss the chemical pollutants & suitable measures.

**Teaching And Assessment Methods For Achieving Learning Outcomes:**

Alignment of Learning Outcomes of Intellectual Skills to Teaching Methods and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in Intellectual Skills.		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		<ul style="list-style-type: none"> <li>▪ Dialogue and discuss</li> <li>▪ Lecture</li> </ul>	<ul style="list-style-type: none"> <li>▪ Written examination</li> <li>▪ Oral examination</li> </ul>
b1-	Judge the different defects which present the milk & milk products		

رئيس عميد الكلية نائب العميد لشئون الجودة  
 أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
 محمد عباس



b2-	Discuss the chemical pollutants & suitable control measures.	<ul style="list-style-type: none"> <li>▪ Practical practice</li> <li>▪ Problem solving</li> <li>▪ Working in groups</li> <li>▪ Scientific visits</li> <li>▪ Field clinical training</li> <li>▪ Simulation and demos</li> <li>▪ Researches and projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Practical examination</li> <li>▪ Performance notice</li> <li>▪ Achievement file</li> <li>▪ Reports evaluation</li> <li>▪ Proposal evaluation</li> </ul>
-----	--	---	--

### (C) Professional and Practical Skills:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: **Professional and Practical Skills**

Program Intended Learning Outcomes (Sub-PILOs) in Professional and Practical Skills		Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills	
After completing this program, students will be able to:		After completing this course, students will be able to:	
C1-	Accurately records a comprehensive pathological story of a sick animal including information on healthy behavior and the necessary checks.	c1-	Apply ideal methods to collect and transfer the samples for physical and chemical examination of milk & milk products.
C4-	Treat animal patients safely and effectively taking into account the evaluation of the results, the appropriate modification of the treatment plan and the accurate description of the appropriate medications.	c2-	Perform full microbiological examination of milk and milk products.

### Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of Professional and Practical Skills to Teaching and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		<ul style="list-style-type: none"> <li>▪ Practical practice</li> </ul>	- Written examinations
c1-	Apply ideal methods to collect and transfer the samples for physical and chemical examination of milk & milk products.	<ul style="list-style-type: none"> <li>▪ Problem solving</li> <li>▪ Working in groups</li> </ul>	- Oral examinations - Practical examination
c2-	Perform full microbiological examination of milk and milk products.	<ul style="list-style-type: none"> <li>▪ Problem solving</li> </ul>	- Performance notice

رئيس عميد مركز التطوير وضمان الجودة عميد الكلية نائب العميد لشئون الجودة  
الجامعة  
أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
محمد عباس



		<ul style="list-style-type: none"> <li>▪ Scientific visits</li> <li>▪ Case study</li> <li>▪ Field clinical training</li> <li>▪ Simulation &amp; demos</li> <li>▪ Researches and projects</li> </ul>	<ul style="list-style-type: none"> <li>- Achievement file</li> <li>- Reports evaluation</li> <li>- Proposal evaluation</li> </ul>
--	--	---	---

### (D) General / Transferable Skills:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: **General / Transferable skills**

Program Intended Learning Outcomes (PILOs) in General / Transferable skills		Course Intended Learning Outcomes (CILOs) in General / Transferable skills	
After completing this program, students will be able to:		After completing this course, students will be able to:	
D2-	Develops his scientific, professional and research capabilities and follow what is emerging in his field of specialization and using computer applications and information and communication technology.	d1-	Demonstrate appropriate professional attitudes and behaviors in different practice situations.
D4-	Works in normal conditions, crises and epidemics, alone and effectively within a medical team.	d2-	Draw the way by which he should be able to work effectively as a member of a team in the delivery of services to community.

### Teaching And Assessment Methods For Achieving Learning Outcomes

Alignment of Learning Outcomes of General and Transferable skills to Teaching and Assessment Methods

Course Intended Learning Outcomes (CILOs) in General and Transferable Skills		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		<ul style="list-style-type: none"> <li>▪ Dialogue and discuss</li> <li>▪ Working in groups</li> <li>▪ Scientific visits</li> <li>▪ Researches and projects</li> <li>▪ Self learning</li> </ul>	<ul style="list-style-type: none"> <li>▪ Achievement file</li> <li>▪ Reports evaluation</li> <li>▪ Proposal evaluation</li> <li>▪ Performance evaluation</li> <li>▪ Practical examination</li> </ul>
d1-	Demonstrate appropriate professional attitudes and behaviors in different practice situations..		
d2-	Draw the way by which he should be able to work effectively as a member of a team in the delivery of services to community.		

رئيس عميد الكلية نائب العميد لشئون الجودة  
أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي محمد عباس



		<ul style="list-style-type: none"> <li>▪ Simulation and demos</li> <li>▪ Problem solving</li> </ul>	
--	--	---	--

IV. Course Content:					
1 – Course Topics/Items:					
a – Theoretical Aspect					
Order	Topic List / Units	CILOs (symbols)	Sub-topic List	Number of weeks	Contact hours
1	Introduction, Milk production	a1, a2, b1, b2, c1, c2	Nutritive value of milk, Biosynthesis	1	2
2	Physical properties of milk	a1, a2, b1, b2, c1, c2		1	2
3	milk constituents	a1, a2, b1, b2, c1, c2	Major Components	1	2
4	Chemical composition	a1, a2, b1, b2, c1, c2	Minor Components	1	2
5	Heat treatment of milk	a1, a2, b1, b2, c1, c2	Boiling, pasteurization & sterilization	2	4
6	Milk-borne diseases	a1, a2, b1, b2, c1, c2		1	2
7	Sources of contamination	a1, a2, b1, b2, c1, c2	Interior & Exterior of udder	1	2
8	Mastitis and milk quality	a1, a2, b1, b2, c1, c2		1	2
9	Residues and contaminants	a1, a2, b1, b2, c1, c2	Antibiotic Residues	2	4
10	Drying of milk	a1, a2, b1, b2, c1, c2	Spray and Roller drying	1	2
11	Concentrated milk	a1, a2, b1, b2, c1, c2	Sweetened & Unsweetened	1	2
12	Clean milk production, HACCP system in dairy plants	a1, a2, b1, b2, c1, c2	detergent and sanitizer	1	2
<b>Number of Weeks /and Units Per Semester</b>				<b>14</b>	<b>28</b>

رئيس عميد مركز التطوير وضمان الجودة عميد الكلية نائب العميد لشئون الجودة  
 أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
 محمد عباس



<b>b- Training Aspect:</b>				
Order	Training Tasks	CILOs (symbols)	Number of weeks	Contact hours
1	Introduction, Sampling	a1, a2, b1, b2, c1, c2	1	2
2	Physical & chemical examination	a1, a2, b1, b2, c1, c2	1	2
3	Determination of keeping quality raw milk	a1, a2, b1, b2, c1, c2	2	4
4	Detection the efficiency of heat treatment	a1, a2, b1, b2, c1, c2	1	2
5	Standard plate count	a1, a2, b1, b2, c1, c2	1	2
6	Mastitis and milk quality	a1, a2, b1, b2, c1, c2	1	2
7	Isolation of pathogenic M.Os, fecal pollution and indicators M.Os	a1, a2, b1, b2, c1, c2	1	2
8	Residues in milk	a1, a2, b1, b2, c1, c2	1	2
9	Milk production examination	a1, a2, b1, b2, c1, c2	2	4
10	Detection of preservatives in milk	a1, a2, b1, b2, c1, c2	1	2
11	Detection of adulteration in milk	a1, a2, b1, b2, c1, c2	1	2
12	Student activities: Dairy plants visits	a1, a2, b1, b2, c1, c2	1	2
<b>Number of Weeks /and Units Per Semester</b>			<b>14</b>	<b>28</b>

#### **V. Teaching strategies of the course:**

- Lectures depending on the sharing efforts of the students and supported with macromedia and multimedia aids.
- Training visits to dairy farms as well as milk processing plants.
- Practical sections: Laboratory examination of milk, milk products, by chemical and microbiological methods.
- Self-learning (Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library).
- Summer training course.
- Assays and reviews.
- Discussion groups.

#### **3-Assessment Methods:**

رئيس عميد الكلية نائب العميد لشئون الجودة  
 أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاتي د. عبدالرقيب الشامي  
 محمد عباس



- Written examination: For assessment of knowledge, back calling and Intellectual skills.
- Practical examination: For assessment of practical and professional skill.
- Oral examination: For assessment of knowledge and Intellectual skills.
- Student activities: For assessment of knowledge and general and transferable skills.

### I. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes (CILOs symbols)
1	Participation, quizzes and assignments	2-14	10	10%	a1, a2, b1, b2, c1, c2
2	Mid-Term Exam	8	10	10%	a1, a2, b1, b2, c1, c2
3	Mid-Term Practical Exam	8	10	10%	a1, a2, b1, b2, c1, c2
4	Final Practical Exam	15	10	10%	a1, a2, b1, b2, c1, c2
5	Oral Exam	16	5	5%	a1, a2, b1, b2, c1, c2
	Final Exam	16	55	55%	a1, a2, b1, b2, c1, c2
<b>Total</b>			<b>100</b>	<b>100%</b>	

### II. Students' Support:

Office Hours/week	Other Procedures (if any)
From Saturday to Wednesday at 8:00 a.m. till 2 p.m.	Student can contact with me via e-mail

### III. Learning Resource (MLA style or APA style)S:

1- Required Textbook(s) ( maximum two )

رئيس عميد مركز التطوير وضمان الجودة عميد الكلية نائب العميد لشئون الجودة  
الجامعة  
أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
محمد عباس





	<ul style="list-style-type: none"> <li>• Dairy Science and Technology, Second Edition (Food Science and Technology), 2005 P. Walstra, Jan T. M. Wouters, Tom J. Geurts</li> <li>• Alan, H. Varnam, Jane P. and Sutherland: Milk and milk products. Chapman &amp; H</li> </ul>
<b>2- Recommended Readings and Reference Materials</b>	
	<ol style="list-style-type: none"> <li>1- A.H.Varnam: Food borne pathogens. Wolfe publishing Ltd.</li> <li>2- RK. Robinson: Modern dairy technology. Library of congress.</li> <li>3- Sara Martimore and Carole Wallace: HACCP A practical approach.</li> <li>4- Wilkie F. Harrigan: Laboratory methods in food microbiology. Academic press limited.</li> </ol>
<b>3- Essential References</b>	
	<ul style="list-style-type: none"> <li>- Dairy microbiology Vol. I and II, 2nd , 1990edition, (Robinson, R.K)</li> <li>- Marth and Steel (Applied dairy microbiology)</li> <li>- Milk and milk products, 1997 (Sutherland &amp; Varnam)</li> </ul>
<b>4- Electronic Materials and Web Sites etc.</b>	
	<ul style="list-style-type: none"> <li>- <a href="http://WWW.PubMed.com">WWW.PubMed.com</a></li> <li>- Intrnational of veterinary information services (IVIS)</li> <li>- <a href="http://www.Vet.net.com">www.Vet.net.com</a></li> <li>- journal of food protection</li> <li>- Science Direct web site</li> </ul>
<b>5- Other Learning Material:</b>	
	<ul style="list-style-type: none"> <li>- <b>Department notes:</b> available for students to purchase from the department.</li> <li>- White board, overhead projector and data show presentations used during teaching.</li> <li>- Laboratory , apparatus, Chemicals, glasses reagents and media, Kits</li> </ul>

<b>X. Course Policies:</b>	
<b>1</b>	<b>Class Attendance:</b> Mandatory to attend all course lectures
<b>2</b>	<b>Tardiness:</b> Not allowed at all. Students must be in class or in the practical session 10 minutes prior to the beginning of lectures or practical session
<b>3</b>	<b>Exam Attendance/Punctuality:</b> Attendance is mandatory; absence is accepted with valid excuse
<b>4</b>	<b>Assignments &amp; Projects:</b>

رئيس عميد مركز التطوير وضمان الجودة عميد الكلية نائب العميد لشئون الجودة  
الجامعة  
أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
محمد عباس



	All assignments and projects are to be submitted on their due date. Any assignment turned in after the due date will not be accepted without valid and reasonable excuse
5	<b>Cheating:</b> Not tolerated and may lead to <b>EXPELLING</b> the student from the program
6	<b>Plagiarism:</b> Not tolerated <b>AT ALL</b> and may lead to <b>EXPELLING</b> the student from the program
7	<b>Other policies:</b> <ol style="list-style-type: none"> <li>1. All devices must be on silent or at least on vibration during lectures/labs</li> <li>2. Before any exam (written, oral) we must check student's identity (student's card, ID, passport). Without any of these documents, the student will not be allowed in the exam room.</li> <li>3. Any of type/ form of cheating is not allowed no matter what.</li> <li>4. Maintain silence during lectures/exam and disturbance is not allowed. For any questions students should raise their hand and wait for permission to talk.</li> </ol>

## Course Plan of Dairy and Dairy product Hygiene

X. - Information about Faculty Member Responsible for the Course:							
Name of Faculty Member	Faris M. A. Al-zailay	Office Hours					
Location & Telephone No.	Dhamar Governorate 770667223	SAT	SUN	MON	TUE	WED	THU
E-mail	<a href="mailto:Farisvet4@gmail.com">Farisvet4@gmail.com</a>	8am 2pm	8am 2pm	8am 2pm	8am 2pm	8am 2pm	-

XI. Course Identification and General Information:	
Course Title:	Dairy and Dairy product Hygiene

رئيس      عميد مركز التطوير وضمان الجودة      عميد الكلية      نائب العميد لشئون الجودة  
 الجامعة  
 أ.د. القاسم      أ.د. هدى العماد      د. عبدالرؤف الشوكاتي      د. عبدالرقيب الشامي  
 محمد عباس



2-	Course Number & Code:	PA576				
3-	Credit hours:	C.H				Total
		Th.	Seminar	Pr.	F. Tr.	
		2	-	1		3
4-	Study level/year at which this course is offered:	Fifth Year: Second Semester				
5-	Pre –requisite (if any):	MI352, MI355, MI353, MI357				
6-	Co –requisite (if any):	None				
7-	Program (s) in which the course is offered	Bachelor's degree (B. Sc.) Veterinary medicine				
8-	Language of teaching the course:	English				
9-	System of Study:	Regular / Semester				
10-	Mode of delivery:	Lecturers, practical				
11-	Location of teaching the course:	Faculty of veterinary medicine				

<b>II. Course Description:</b>	
<p>To provide students with basic knowledge of hygienic production of milk and dairy products; to gain the skills to analyze milk samples, dairy products.</p> <p>To gain knowledge: about Composition of milk, Milk production and biosynthesis of milk, Nutritive value of milk, physical properties, milk constituents, Effect of diseases on Milk constituents, Dairy microbiology, Milk-borne diseases, clean milk production, heat treatment of milk, Quality assurance and production control, Criteria for evaluation of milk and dairy products.</p>	

<b>II. Intended learning outcomes (ILOs) of the course:</b>

رئيس عميد مركز التطوير وضمان الجودة عميد الكلية نائب العميد لشئون الجودة  
أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
محمد عباس



After completing this course, students will be able to:

- a1- Outline the chemical composition and microbiology of dairy products.
- a2- Shows knowledge and understanding about milk-borne pathogens and spoilage organisms.
- b1- Judge the different defects which present the milk & milk products
- b2- Discuss the chemical pollutants & suitable control measures.
- c1- Apply ideal methods to collect and transfer the samples for physical and chemical examination of milk & milk products.
- c2- Perform full microbiological examination of milk and milk products.
- d1- Demonstrate appropriate professional attitudes and behaviors in different practice situations.
- d2- Draw the way by which he should be able to work effectively as a member of a team in the delivery of services to community.

## V. Course Content:

### A – Theoretical Aspect:

Order	Topics List	Week Due	Contact Hours
1	Introduction, Milk production	1	2
2	Physical properties of milk	2	2
3	milk constituents	3	2
4	Chemical composition	4	2
5	Heat treatment of milk	5,6	4
6	Milk-borne diseases	7	2
7	Mid-Term Exam	8	2
8	Sources of contamination	9	2
9	Mastitis and milk quality	10	2
10	Residues and contaminants	11,12	4
11	Drying of milk	13	2
12	Concentrated milk	14	2

رئيس عميد الكلية نائب العميد لشئون الجودة  
 أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
 محمد عباس



13	Clean milk production, HACCP system in dairy plants	15	2
14	Final Exam	16	2
<b>Number of Weeks /and Units Per Semester</b>		<b>16</b>	<b>32</b>

<b>b- Training Aspect:</b>			
Order	Training Tasks	Week Due	Contact hours
1	Introduction, Sampling	1	2
2	Physical & chemical examination	2	2
3	Determination of keeping quality raw milk	3,4	4
4	Detection the efficiency of heat treatment	5	2
5	Standard plate count	6	2
6	Mastitis and milk quality	7	2
7	Mid-Term Exam	8	2
8	Isolation of pathogenic M.Os, fecal pollution and indicators M.Os	9	2
9	Residues in milk	10	2
10	Milk production examination	11,12	4
11	Detection of preservatives in milk	13	2
12	Detection of adulteration in milk	14	2
13	Student activities: Dairy plants visits	15	2
14	Final Exam	16	2
<b>Number of Weeks /and Units Per Semester</b>		<b>16</b>	<b>32</b>

رئيس عميد الكلية نائب العميد لشئون الجودة  
 أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
 محمد عباس



## V. Teaching strategies of the course:

- Lectures depending on the sharing efforts of the students and supported with macromedia and multimedia aids.
- Training visits to dairy farms as well as milk processing plants.
- Practical sections: Laboratory examination of milk, milk products, by chemical and microbiological methods.
- Self-learning (Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library).
- Summer training course.
- Assays and reviews.  
Discussion groups.

## VI. Assessment Methods:

- Written examination: For assessment of knowledge, back calling and Intellectual skills.
- Practical examination: For assessment of practical and professional skill.
- Oral examination: For assessment of knowledge and Intellectual skills.
- Student activities: For assessment of knowledge and general and transferable skills.

No.	Type of Assessment Tasks	Week Due	Mark	Proportion of Final Assessment
1	Participation, quizzes and assignments	2-14	10	10%
2	Mid-Term Exam	8	10	10%
3	Mid-Term Practical Exam	8	10	10%
4	Final Practical Exam	15	10	10%
5	Oral Exam	16	5	5%
	Final Exam	16	55	55%
	<b>Total</b>		<b>100</b>	<b>100%</b>

## II. Learning Resources:

1.

1- Required Textbook(s) ( maximum two ).

رئيس عميد مركز التطوير وضمان الجودة عميد الكلية نائب العميد لشئون الجودة  
الجامعة  
أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
محمد عباس



	<ul style="list-style-type: none"> <li>• Alan, H. Varnam, Jane P. and Sutherland: Milk and milk products. Chapman &amp; Hall.</li> <li>• Dairy Science and Technology, Second Edition (Food Science and Technology), 2005 P. Walstra, Jan T. M. Wouters, Tom J. Geurts</li> </ul>
<b>2- Essential References.</b>	
	<ul style="list-style-type: none"> <li>- Dairy microbiology Vol. I and 2 2nd , 1990edition, (Robinson, R.K)</li> <li>- Dairy Science and Technology, Second Edition (Food Science and Technology) , 2005 P. Walstra, Jan T. M. Wouters, Tom J. Geurts</li> <li>- Marth and Steel (Applied dairy microbiology)</li> <li>- Milk and milk products, 1997 (Sutherland &amp; Varnam)</li> </ul>
<b>3- Electronic Materials and Web Sites etc.</b>	
	<ul style="list-style-type: none"> <li>- <a href="http://WWW.PubMed.com">WWW.PubMed.com</a></li> <li>- International of veterinary information services (IVIS)</li> <li>- <a href="http://www.Vet.net.com">www.Vet.net.com</a></li> <li>- journal of food protection</li> <li>- Science Direct web site</li> </ul>

<b>XI. Course Policies:</b>	
<b>1</b>	<b>Class Attendance:</b> Mandatory to attend all course lectures
<b>2</b>	<b>Tardiness:</b> Not allowed at all. Students must be in class or in the practical session 10 minutes prior to the beginning of lectures or practical session
<b>3</b>	<b>Exam Attendance/Punctuality:</b> Attendance is mandatory; absence is accepted with valid excuse
<b>4</b>	<b>Assignments &amp; Projects:</b> All assignments and projects are to be submitted on their due date. Any assignment turned in after the due date will not be accepted without valid and reasonable excuse
<b>5</b>	<b>Cheating:</b> Not tolerated and may lead to <b>EXPELLING</b> the student from the program
<b>6</b>	<b>Plagiarism:</b> Not tolerated <b>AT ALL</b> and may lead to <b>EXPELLING</b> the student from the program
<b>7</b>	<b>Other policies:</b>

رئيس عميد مركز التطوير وضمان الجودة عميد الكلية نائب العميد لشئون الجودة  
 أ.د. القاسم أ.د. هدى العماد د. عبدالرؤف الشوكاني د. عبدالرقيب الشامي  
 محمد عباس



1. All devices must be on silent or at least on vibration during lectures/labs
2. Before any exam (written, oral) we must check student's identity (student's card, ID, passport). Without any of these documents, the student will not be allowed in the exam room.
3. Any of type/ form of cheating is not allowed no matter what.
4. Maintain silence during lectures/exam and disturbance is not allowed. For any questions students should raise their hand and wait for permission to talk.

رئيس  
أ.د. القاسم

عميد مركز التطوير وضمان الجودة  
أ.د. هدى العماد

عميد الكلية  
د. عبدالرؤف الشوكاني

نائب العميد لشئون الجودة  
الجامعة  
د. عبدالرقيب الشامي  
محمد عباس