



Course specification

1-Basic information

Course Code:	S4-MIHG
Course title :	Hygiene and Control of Milk, Milk products, Fats & Oils and Eggs
Academic year:	4th Academic year
Program title:	B. Sc. Veterinary Medical sciences
Contact hours/ week	5 hours/week, (3 Lect./week, 2 Practical/week)
Approval Date	

2-Professional information

Overall aims of course:

The aim of this course is to provide the student with the basic knowledge about:

- 1- Hygienic production of Milk, Milk products, Fats & Oils and Eggs.
- 2- Microbiology of milk, milk products and eggs.
- 3- Assessing the quality and safety of milk, milk products and eggs at both farm and plant.
- 4- Assessing the quality of fats & oils.
- 5- Contaminants in milk, milk products and eggs.
- 6- HACCP system and quality assurance.

3- Intended learning outcomes of course (ILOs)

A-Knowledge and understanding:

By the end of this course the student should be able to:

- a1. Recall the milk composition and its nutritive value.
- a2. Outline the relationship between the milk production and the sources of contamination.
- a3. Recognize the production of clean milk and milking procedures..
- a4. Identify the quality and safety of milk and its products.
- a5. Describe fat & oils and eggs hygiene.
- a6. Recognize the chemical residues in milk & milk products.
- a7. Define the HACCP system in production of milk & milk products.
- a8. Recognize milk technology, processing of milk products & egg products.
- a9. Describe the different forms of milk spoilage.
- a10. Mention microbial ecology and preservation.
- a11. Outline the base for construction of dairy plant.



Course specification

b- Intellectual skills

By the end of this course the student should be able to:

- b1. Identify the quality of good milk.
- b2. Differentiate between normal & abnormal milk.
- b3. Judge the different defects which present the milk & milk products, fat & oils and eggs
- b4. Identify milk & milk borne disease, food poisoning and suitable control measures.
- b5. Discuss the chemical pollutants & suitable control measures.
- b6. Discuss the impact of heat treatment on quality of milk and milk products

c- Professional and practical skills

By the end of this course the student should be able to:

- c1. Collect milk and milk products samples for physical and chemical examination of milk & milk products.
- c2. Assess the quality of milk, milk products, fat, oil and eggs.
- c3. Demonstrate the critical points during milk and milk products processing.
- c4. Detect and isolate contaminating and food poisoning microorganisms in milk & milk products.
- c5. Practice the technology and processing of some dairy products.
- c6. Perform full microbiological examination of milk and milk products.
- c7. Detect residues in milk and milk products.
- c8. Get experience in detection of the adulteration of milk and milk products.
- c9. Examine milk for detection of subclinical mastitis.

d- General and transferable skills

By the end of studying the course, the student should be able to:

- d1. Decision making.
- d2. Manage time.
- d3. Work in group teams.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
Title (Lec. 3 h./week, Pract. 2h./week) 4th year first term	Introduction	2	2	-
	Sampling	3	1	2
	Milk composition and its examination	11	5	6
	Physical properties	5	3	2
	Sanitary tests	7	3	4
	Detection of preservatives in milk	4	2	2
	Milk fermentation	1	1	-
	Detection of abnormal milk	5	3	2
	Sources of milk contamination and Factors affecting microbial growth	3	3	-
	Milk borne diseases	2	2	-
	Food poisoning	1	1	-



Course specification

	Isolation of pathogenic M.Os, fecal pollution and indicators M.Os	7	3	4
	Clean milk production	1	1	-
	Heat treatment of milk	5	3	2
	Construction and sanitation of dairy farm and plant	4	2	2
	Milking process	1	1	
	Quality assurance & HACCP	3	3	-
	Total	65	39	26
Title (Lec. h./week, Pract. h./week) 4 th year second term	Cream and cream based products & examination	5	3	2
	Butter and related products & examination	10	6	4
	Cheese & examination	5	3	2
	Fermented milk products & examination	5	3	2
	Concentrated milk products & examination	5	3	2
	Milk powder & examination	5	3	2
	Ice cream and related products & examination	5	3	2
	Food preservation	5	3	2
	Residues	2	2	-
	Edible fats and oils	8	4	4
	Table egg hygiene	10	6	4
	Total	65	39	26

5-Teaching and learning methods

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

6-Teaching and learning methods for the students with disabilities

Office hours and special meeting

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	IS	P&P.S	G.S
Written Exam	a1 to a10	b1 to b5		
Practical Exam			c1 to c9	
Oral Exam	a1 to a10	b1 to b5	c1 to c9	d1 to d3



Beni-Suef University
Faculty of Veterinary Medicine

Course specification

7.2. Assessment schedules/semester:

Method	Week(s)
Practical exams	14 th week
Written exams	managed by the faculty
Oral Exam	managed by the department
Student activities	Along the semester

7.3. Weight of assessments:

Assessment	Weight of assessment
Practical exams	30%
Final exams	50%
Oral Exam	20 %
Student activity	
Total	100%

8- List of references

8.1. Essential books:

- Milk and milk products, 1997 (Sutherland & Varnam)
- Dairy microbiology Vol. I, 2nd , 1990edition, (Robinson, R.K)
- Dairy microbiology Vol. II, 2nd , 1990edition, (Robinson, R.K)

8.2. Recommended texts

- Principles of dairy science (G.H. Schmidt. 1988)
- Microbial food poisoning (A.R. Eley, 1992)
- Fundamental food microbiology (B. Ray, 1996)
- Milk composition, production and biotechnology (1997)
- Manuals of food quality (FAO, 1997)
- Technology of dairy products (J.V. Patikh)
- Food microbiology (W.C. Frazier, 1978)

8.4. Journals, Websitesetc

Journals:

- Journal of food protection
- International journal of food microbiology
- Journal of dairy science
- Journal of Food science

Websites:

- cms.nelc.edu.eg
- www.pubmed.com
- www.foodprotection.org
- www.directscience.com
- www.IDF.com

Course Coordinators

Head of Department



Beni-Suef University
Faculty of Veterinary Medicine

Course specification



Course specification

Topics		Week	Intended learning outcomes of course (ILOs)			
			K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
1.	Introduction	1	-	-	-	
2.	Sampling	1	a9	-	c1	
3.	Milk composition and its examination	2	a1	-	c8	
4.	Physical properties	2,3	-	-	c1	
5.	Sanitary tests	3	a4	b1	-	
6.	Detection of preservatives in milk	4	-	-	-	
7.	Milk fermentation	5	a9	-	-	
8.	Detection of abnormal milk	6	-	b2	c9	
9.	Sources of milk contamination and Factors affecting microbial growth	7	a2	-	-	
10.	Milk borne diseases	8	-	b4	-	
11.	Food poisoning	9	-	b4	c4	
12.	Isolation of pathogenic M.Os, fecal pollution and indicators M.Os	10	a10	b3	c4,c6	
13.	Clean milk production	11	a3	b5	c3	
14.	Heat treatment of milk	11, 12	a8	b6	-	
15.	Construction and sanitation of dairy plant	12	a11	-	-	
16.	Quality assurance & HACCP	10	a7	-	C3	
17.	Milking process	13	a3	-	-	
18.	Cream and cream based products & examination	1	a4, a8	b3	c1, c2, c5	
19.	Butter and related products & examination	2,3	a4, a8	b3	c1, c2, c5	



Beni Suef University
Faculty of Veterinary Medicine

Course specification

20.	Cheese & examination	4	a4, a8	b3	c1, c2, c5	
21.	Fermented milk products & examination	5	a4, a8	b3	c1, c2, c5	
22.	Concentrated milk products & examination	6	a4, a8	b3	c1, c2, c5	
23.	Milk powder & examination	7	a4, a8	b3	c1, c2, c5	
24.	Ice cream and related products & examination	8	a4, a8	b3	c1, c2, c5	
25.	Food preservation	9	a10	-	-	
26.	Residues in milk	10, 11	a6	b5	c7	
27.	Edible fats and oils	11, 12	a5	b3	c2	
28.	Table egg hygiene	12, 13	a5,a8	b3	c2	
29.	Student activities: - Dairy plants visits. - Writing assays - Internet search - Milk products, Fat & Oils and Eggs samples collection and preparation		-	-	-	d1-d3



Beni Suef University
Faculty of Veterinary Medicine