Beni-Suef University
Faculty of Veterinary Medicine
Department of Food Hygiene and Control

Program Specification for Ph Degree
2017-2018

A-Basic information:

1- Course title: **PhD degree in Hygiene and Control of Milk and milk products and eggs**
2- **Program type:** *Single*
3- **Department offering program:**
4- **Academic year:** *2017- 2018*
5- **Approval date of Department Council:**
6- **Approval date of Faculty Council:**
7-External evaluator: **Prof. Dr. Mustafa Khalil**

B-Professional information:

1- Overall aims of the program:

1-Recognize all theories, principles and basics of his/her area of learning and other related sciences.
2- Provide graduates the opportunity to develop communication skills.
3- Develop the ability of graduate to engage critically with scientific literature and to critically review and present their own research data.
4- Allow graduates to develop practical research project.

2- Intended learning outcomes of course (ILOs):

a- Knowledge and understanding:

By the end of this PhD program the graduate should be able to:

al- Describe advanced research techniques used in the field of Milk and dairy products hygiene.
a2- Be aware efficiently of national and international ethics and standards in the field of dairy quality and safety and its effect on community health and development.
a3- Connect up to date to the basis and principles of quality assurance system and HACCP programs required for production of safe food.
a4- Acquire up to date concepts in applying different experimental designs in

the field of food safety.

a5- Explain scientific research fundamentals, methodologies, ethics, and its various tools.

b- Intellectual capacity:

By the end of this PhD program the graduate should be able to:

b1-Analyze and solve the problems facing producing safe high quality milk and milk products using available resources.

b2- Perform scientific research studies with applied impact.

b3- Assess risks facing the dairy industry through application of Hazard Analysis and Critical Control Points (HACCP) and ISO 22000.

b4- develop creative approaches to solve technical problems or issues associated with running and researches project.

b5- publish scientific papers in reputable journals (with high impact factor).

c- Professional and practical skills:

By the end of this PhD program the graduate should be able to:

c1- Master the conventional and modern techniques to determine the safety and hygienic quality of milk, dairy products and eggs.

c2- Write and assess a professional and conclusive laboratory food report

c3 - Utilize the up to date technology in the field of dairy safety

c4- Plan a research project in the field of Milk and dairy products hygiene with a consideration to technical , ethical and safety issues and associated costs.

c5- Evaluate and improve the available and required material, tools and equipment in the field of dairy science.

d- General and transferable skills:

On successful completion of this program the graduate should be able to:

dl- Utilize different and recent sources of knowledge and information

d2- Demonstrate an ability to learn independently in preparation for a career of lifelong learning .

d3- Respect the importance of team work, Educate the others and managing time efficiently

d4- present research finding in oral and written from using arrange of appropriate soft ware (e.g., power point , word , excel and data base).

3- Academic standers:

* The faculty mission, vision and strategic objective are confirmed to the academic standard. The learning outcomes are inline with the department and the faculty mission.

* Postgraduates NARS (March 2009) Master degree chapter issued by national authority for quality assurance and accreditation of education (NAQAAE) and Veterinary medicine post graduate academic standards (ARS) for the faculty of

veterinary medicine, Beni-Suef University, Beni-Suef, Egypt are selected to confirm the appropriateness of the academic standards .
ARS (National Academic Reference Standards) prepared by NAQAAE.

4- Curriculum Structure and Contents

a-Program duration: 48 weeks.

b-Program structure: 3-5 preliminary courses

☒ **Hours/ week:**

Theoretical	5-8	Practical	6-8	Total	11-16

Preliminary courses

Code	Course title	Hours /week		Academic year	Teaching duration
		theoritical	practical		
According to selected courses	Selected (3-5) PhDcourses from the various Faculty Departments programs depending on the thesis title.	5-8	6-8	Preliminary year	36 weeks

D- Courses contents: See courses specification

5- Program Admission Requirements

* According to the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate Programs, applicants should have a master degree in the specialization subject he will register in one of the Egyptian Universities or an equivalent degree from any approved university or another recognized scientific institute.
* According to Beni-Suef University requirements, all applicants for postgraduate studies should fulfill preliminary courses on the following subjects:
1-English language (Toefl or equivalent degree)

* Admission to the program is open during March and September annually.

*The faculty council has the right to suspend the student enrolment for a certain period if he has acceptable excuse preventing him from continuing his study or research.

6. Regulations for Progression and Program Completion

After finishing the preliminary courses, the graduate student will be eligible to sit for the examination according to the following roles:

No. of course teaching hours/ week	Allowed written examined time	Degree	
		Theoretical	Practical and oral exam
≥ 3 hours	3 hours	50	50
≤ 3 hours	2 hours	25	25

-The faculty council has the right to deprive the applicant from entering the exams if his attendance courses is less than 75% .

-Failure or depriving from entering one or more course did not requires reexamination of successful passed courses.

-The applicant should submit a seminar within 2years after registration about his research and specialization subject filed that accepted by a committee of professors and assistant professors(3 in number).

-the applicant should submit the thesis that accepted by the judging committee in an open discussion and the following polices should be met:

-pass all preliminary curriculums successfully.

-acceptance of the seminar presented by the applicant.

-The applicant should publish at least two scientific papers from the thesis in local or international journals

Qualification grades:

Excellent	≥ 90
Very good	≥80
Good	≥70
Pass	≥60
Failed	45 to less than 60 weak
	Less than 45 Very weak

After passing, the graduate starts research for Ph.D. Thesis at the beginning of the second year.

The candidate will receive his degree after evaluating and approving the thesis by a committee according to University regulations.

7-Graduate student assessment

A: Assessment Tools

According the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate, students should be assessed at the end of preliminary year and the thesis should be evaluated and approved by a committee after at least three years from registration date according to University regulations.

Preliminary year

Assessments methods for each course	**practical exam**	**Oral exam**	**Written exam**
Time of Assessments	By the end of the year	By the end of the year	By the end of the year
Marks	25	25	50

Ph.D. Thesis:

The Ph.D. students should prepare a thesis in Milk Hygiene. The department and the ethical committees must approve the protocol of the research. The thesis includes a review part with a practical part. The thesis is supervised by two or more staff members and may include other specialties according to the nature of the research. The thesis should be evaluated and approved by a committee according to University regulations.

B- Matrix alignment of the measured ILOs

Assessments methods	Matrix alignment of the measured ILOs			
	K&U (a)	I.S (b)	P&P. S (c)	G&T. S (d)
Written exam	1,2,3,4	1,2,3,4	1,2,3	-----
Practical exam	1, 3,4	1,4	1,2,3	1.2.3
Oral exam	1,2,3,4	1,2,3,4	1,2,3	1,2,3

8- Evaluation of Program Intended Learning Outcomes

Evaluator	Tool	Sample
1. Post graduate Students	Questionnaire at the end of the program	All the PG students
4. External Evaluators	Review program and courses Attending the final exam	Once before implementation annual report
5. College Quality Assurance committee	Annual program reviewer	

Course coordinator **Head of the Department**

PhD Program Specification Matrix (Program Courses with ILOS)

Program ILOs		courses
Knowledge and understanding	a1	113,114,116,118thesis
	a2	113,119
	a3	115,117,118,119
	a4	113,114,115,116
	a5	114,
Intellectual skills	b1	113,114,115,117,118,119
	b2	116,117,118,119,thesis
	b3	113,114,115
	b4	116, 117,118,119,thesis
	b5	116,117,118,119,thesis
Professional and practical skills	c1	113,114, 115,116,117,118,119
	c2	113,114,115,116,117,118,119
	c3	113,115,116
	c4	Thesis, 113,
	c5	113,114,115,116
General and transferable skills	**d1**	113,114
	d2	113,115,118,119
	d3	113,114,115,116,117,118,119
	d4	114,115,116,117,118,119

Program aims – ILOS Matrix for the Bachelor program (BVSc)

مصفوفة اهداف البرنامج مع مخرجات التعلم المستهدفة

	Program aims / Program ILOS	Program aims		
		a- Provide the students with a profound cutting-edge education in the field of veterinary medicine to serve their community by solving problems .	b-Boast the students' knowledge and skills to be efficient and productive members in the field of veterinary medicine	c- Enhance the ability for self and continued learning via future outstanding and scientific research
Knowledge and understanding	a1- Describe advanced research techniques used in the field of Milk and dairy products hygiene.	√		
	a2- Be aware efficiently of national and international ethics and standards in the field of dairy quality and safety and its effect on community health and development.	√		
	a3- Connect up to date to the basis and principles of quality assurance system and HACCP programs required for production of safe food.	√		
	a4- Acquire up to date concepts in applying different experimental designs in the field of food safety.	√		
	a5- Explain scientific research fundamentals, methodologies, ethics, and its various tools.	√		
	a6- Familiarize the veterinary medications, uses, marketing, the impact of drug residues on human health and quality control of pharmaceutical practices.	√		
	a7- Recognize the public health importance including food hygiene	√		
	a8- Realize the basics of laws and ethical codes relevant to animals and food hygiene.	√		
Intellectual skills	b1-Analyze and solve the problems facing producing safe high quality milk and milk products using available resources.	√	√	√
	b2- Perform scientific research studies with applied impact.		√	√

Program aims Program ILOS		Program aims		
		a- Provide the students with a profound cutting-edge education in the field of veterinary medicine to serve their community by solving problems .	b-Boast the students' knowledge and skills to be efficient and productive members in the field of veterinary medicine	c- Enhance the ability for self and continued learning via future outstanding and scientific research
	b3- develop creative approaches to solve technical problems or issues associated with running and researches project.		√	√
	b4- publish scientific papers in reputable journals (with high impact factor).		√	√
	b5- Interpret the quality of fats, oils, egg, milk and their products and their fitness for consumption.		√	√
	b6- Adapt programs of hazard analysis and critical control points (HACCP) on dairy farms and dairy processing plants.		√	√
Practical and professional skills	c1- Master the conventional and modern techniques to determine the safety and hygienic quality of milk, dairy products and eggs.		√	√
	c2- Write and assess a professional and conclusive laboratory food report		√	
	c3 - Utilize the up to date technology in the field of dairy safety		√	
	c4- Plan a research project in the field of Milk and dairy products hygiene with a consideration to technical , ethical and safety issues and associated costs.		√	
	c5- Evaluate and improve the available and required material, tools and equipment in the field of dairy science.		√	
	c6-Write a report about hygiene and safety of food of animal origin for human consumption.		√	
	C7-Gain skillfully and appropriately use new information and remain current with the emerging biomedical knowledge and therapeutic options.		√	
	C8-Use appropriate safety		√	

Program aims Program ILOS		Program aims		
		a- Provide the students with a profound cutting-edge education in the field of veterinary medicine to serve their community by solving problems .	b-Boast the students' knowledge and skills to be efficient and productive members in the field of veterinary medicine	c- Enhance the ability for self and continued learning via future outstanding and scientific research
	procedures to protect clients and co-workers.			
	C9-Manage procedures related to food hygiene, public health issues, notifiable diseases and disposal of animal wastes.		√	
General and transferable skills	d1- Work under pressure and / or contradictory conditions.			√
	d2- Function in a multidisciplinary team.			√
	d3-Communicate appropriately verbally and non-verbally.			√
	d4-Organize and control tasks and resources.			√
	d5- Search for new information and technology as well as adopting life–long self learning ethics.			√

PhD Program Specification Matrix (Program ILOS with Academic standers ARS)

Academic standers / Program ILOs		Knowledge and understanding						Intellectual skills									Professional and practical skills						General and transferable skills						
		a1	a2	**a 3**	**a 4**	**a5**		**b 1**	**b 2**	**b 3**	**b4**	**b 5**	**b6**	**b7**	**b 8**	**b9**	**c1**	**c2**	**c3**	**c4**	**c5**		**d 1**	**d 2**	**d 3**	**d 4**	**d5**	**d 6**	**d 7**
Knowledge and understanding	a1				√																								
	a2					√																							
	a3			√																									
	a4	√																											
	a5		√																										
Intellectual skills	b1								√							√													
	b2									√					√														
	b3											√																	
	b4							√																					
	b5										√		√																
Professional and practical skills	c1																√												
	c2																	√											
	c3																			√									
	c4																				√								
	c5																		√										
General and transferable skills	**d1**																									√			√
	d2																								√				
	d3																							√			√		
	d4																											√	

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-113
Course title :	Milk and Milk Products Hygiene
Program title:	Ph.D. in Hygiene and Control of of Milk, Milk products, Fats & Oils and table eggs
Contact hours/ week	4 hrs/week
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1. 1- Acquire the academic background and practical experience about the production of good quality milk and its products, Fats & Oils and table eggs.
2. Recognize the chemical composition of milk, milk products and Fats & Oils and table eggs and their nutritive value.
3. Explain the quality and safety of milk and its products.
4. Understand the basis for hygiene of milk and its products, Fats & Oils and table eggs with the judgment on different defects which present.
5. Design HACCP system during milk production, milk products, fats & oils and table eggs.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a1. Explain the importance of study of hygiene of milk, milk products, Fats & Oils and table eggs and it's importance in public health.

a2. Discuss the milk composition and its nutritive value.

a3. Recognize the chemical properties of milk and its products, Fats & Oils and table eggs.

a4. Describe the sanitary and quality of produced milk and it's effect on dairy products.

a5. Summarize the keeping quality tests of milk, milk products, Fats & Oils and table eggs.

a6. Identify milk borne disease and related public health hazard.

b-Intellectual skills

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

b1. Take decisions regarding the quality of good milk.

b2. Apply differential diagnosis between normal and abnormal milk.

b3 Interpret di erent keeping quality tests used for examination of milk, milk products, Fats & Oils and table eggs

b4. Integrate with codex alimentarius.

b5. Perform the research plan of his/her PhD thesis.

b6. Risk assessment facing dairy industry.

Course specification of postgraduate

C- Professional and practical skills

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

c1. Apply di erent investigations for milk, milk products, Fats & Oils and table eggs hygiene.
c2. Demonstrate the methods of keeping quality tests.
c3. Prepare nal judgment report.
c4. Evaluate di erent laboratory techniques.
C5. design a plan for improvement.

d- General and transferable skills

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

d1- Enhance his/her computer and internet skills.
d2- Appreciate the importance of group working and cooperation.
d3- Enhance his/her communication skills.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 2h./week, Pract 2h./week)	Milk composition and it's importance in public health	8	4	4
	Sanitary and keeping quality tests	8	4	4
	Milk borne diseases and it's control	8	4	4
	Detection of abnormal milk	8	4	4
	Residues in milk (environmental, microbial and veterinary drugs)	12	6	6
	Clean milk production from farm to dairy plant	8	4	4
	Sanitation in dairy farm and plant	16	8	8
	Hygiene of fats, oils &eggs	16	8	8
	Hygiene of cream and butter	16	8	8
	Hygiene of cheese and fermented milk	16	8	8
	Hygiene of milk powder and concentrated milk	12	6	6
	Hygiene of ice cream	8	4	4
	Quality assurance and HACCP	8	4	4
	Student activities: - Dairy plant visits. - Writing assays - Internet search	-	-	-
	Total	144	72	72

Course specification of postgraduate

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of food and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Written Exam	a1 to a6	b1 to b6		
Practical Exam			c1 to c5	
Oral Exam	a1 to a6	b1 to b6	c1 to c5	d1 to d3

7.2. Assessment schedules

Method	Week(s)
Writing exam	**Week:45,46**
Practical exam	**Week:43,44**
Oral exam	**Week: 45,46**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**30%**
Oral exam	**20%**
total	100%

8- List of references

8.1. Notes and books

- Text book of milk Hygiene, Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy.
- Practical milk Hygiene, professor/ Professor/ Adel El-Kholy and prof/ Saadia El- Shinawy

8.2. 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).

Course specification of postgraduate

8.3. Recommended texts

- The science of providing milk for man 1st edition(Campbell And Marshall, 1975)
- Microbial food poisoning (A.R. Eley, 1992)
- Manuals of food quality (FAO, 1997)

8.4. Journals, Websites ……..etc

Journals:

- Journal of food protection

- Journal of applied bacteriology

- International journal of food microbiology

Websites:

- www.pubmed.com

- www.dairyfact.com

- www.foodprotection.org

Course Coordinators **Head of Department**

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Milk composition	1-2	**a1,a2**	**b1**	**c1**	d1-d3
2	Sanitary and keeping quality tests	3-5	**a5**	**b2**	**-**	-
3	Milk borne diseases	6-7	**a6**	**b3**	**c2**	-
4	Detection of abnormal milk	8-9	**a1**	**b4**	**-**	-
5	Residues in milk	10-12	**a4**	**-**	**c3**	-
6	Clean milk production	13-14	**a3**	**-**	**-**	-
7	Detergents and Chemical sterilizers	15-16	**-**	**-**	**c4**	-
8	Milking machine	17-18	**-**	**-**	**-**	-
9	Hygiene of fats, oils &eggs	19-22	**a4**	**b4**	**-**	-
10	Hygiene of cream and butter	23-26	**a5**	**b2**	**c2**	-
11	Hygiene of cheese and fermented milk	27-30	**a4**	**-**	**-**	-
12	Hygiene of milk powder and concentrated milk	31-33	**a4**	**b3**	**c3**	-

Course specification

13	Hygiene of ice cream	34-35	**a4**	**b4**	**-**	-
14	Quality assurance and HACCP	36	**a2**	**b2**	**c4**	-
15	Student activities: - Dairy plants visits - Writing assays - Internet search					

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-114
Course title :	Dairy microbiology
Program title:	Ph.D. in Hygiene and Control of of Milk, Milk products, Fats & Oils and table eggs
Contact hours/ week	4 hrs/ week
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1. Identify the sources and impact of microorganisms on milk, milk products, fats and oils and table eggs safety.
2. Acquire skills to analyze, create and modify some diagnostic techniques for isolation of different microorganisms.
3. Understand the basis for the microbiological examination of milk, milk products, Fats & Oils and table eggs.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Identify the different sources of microorganism in milk, milk products, Fats & Oils and table eggs.

a2. Explain the microbiological examination of the milk, milk products, Fats & Oils and table eggs.

a3. Describe the effect of microorganism on safety and quality of milk, milk products, Fats & Oils and table eggs

a4. Recognize the microbial ecology and its effect on shelf life of food.

b-Intellectual skills

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

b1. Take decisions regarding the quality of good milk.

b2. Apply differential diagnosis between normal and abnormal milk.

b3. Evaluate the used laboratory methods for the examination of milk and its products, Fats & Oils.

b4. Interpret di erent laboratory methods used for examination of milk and its products, Fats & Oils and table eggs.

b5. Integrate with codex alimentarius.

b6. Perform the research plan of his/her PhD thesis.

Course specification of postgraduate

C- Professional and practical skills

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

c1. Apply di erent microbiological investigations for milk and its products, Fats & Oils and table eggs.

c2. Demonstrate methods of sampling for examination of milk and its products, Fats & Oils and table eggs.

c3. Prepare final judgment report.

c4. Use di erent laboratory techniques.

c5. Evaluate the microbiological quality grade of produced di erent dairy products.

d- General and transferable skills

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

d1- Enhance of his/her management skills.

d2- Appreciate the importance of group working and cooperation.

d3- Enhance of his/her communication skills.

d4- Properly manage of time.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 2h./week, Pract 2h./week)	Sources of contamination (in the animal ,farm and plant)	12	6	6
	Factors affecting microbial growth (intrinsic and extrinsic)	12	6	6
	Microbiological examination of abnormal milk (mastitis milk)	12	6	6
	Food poisoning (food infection and food intoxication)	12	6	6
	Indicators organisms	12	6	6
	Microbiology of cream and butter	12	6	6
	Microbiology of cheese and fermented milk	16	8	8
	Microbiology of milk powder and concentrated milk	16	8	8
	Microbiology of ice cream	12	6	6

Course specification of postgraduate

	Microbiology of eggs	12	6	6
	Microbiology of fats and oils	4	2	2
	Food safety of ready to eat food	4	2	2
	Isolation of microorganisms from food (traditional and rapid method)	8	4	4
	Student activities: - Dairy plants visits - Writing assays - Internet search			
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of food and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Written Exam	a1 to a4	b1 to b6		
Practical Exam			C1 to c5	
Oral Exam	a1 to a4	b1 to b6	c1 to c5	d1 to d4

7.2. Assessment schedules

Method	Week(s)
Writing exam	**Week:45,46**
Practical exam	**Week:43,44**
Oral exam	**Week: 45,46**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**30%**
Oral exam	**20%**
total	100%

Course specification of postgraduate

8- List of references

8.1. Notes and books

- Text book of milk Hygiene, Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy.
- Practical milk Hygiene, professor/ Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy

8.2. 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).

8.3. Recommended texts

- - The science of providing milk for man 1st edition(Campbell And Marshall, 1975)
- Microbial food poisoning (A.R. Eley, 1992)
- Manuals of food quality (FAO, 1997)

Journals:

- Journal of food protection

- Journal of applied bacteriology

- International journal of food microbiology

Websites:

- www.pubmed.com

- www.dairyfact.com

www.foodprotection.org

Course Coordinators **Head of Department**

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Sources of contamination	1-3	**a1**	**b1**	**c1**	d1-d4
2	Factors affecting microbial growth	4-6	**A2**	**b2**	**C2**	-
3	Microbiological examination of abnormal milk.	7-9	**A2**	**b3**	**-**	-
4	Food poisoning	10-12	**a1**	**b4**	**-**	
5	Indicators organisms	13-15	**a1-a3**	**-**	**-**	-
6	Microbiology of cream and butter	16-18	**a1-a3**	**-**	**-**	**-**
7	Microbiology of cheese and fermented milk	19-22	**a1-a3**	**-**	**-**	**-**
8	Microbiology of milk powder and concentrated milk	23-26	**a1-a3**	**-**	**-**	**-**
9	Microbiology of ice cream	27-29	**a1-a3**	**-**	**-**	**-**
10	Microbiology of eggs	30-32	**A1-a3**	**-**	**-**	**-**
11	Microbiology of fats and oils	33	**A3**	**-**	**-**	**-**
12	Food safety of ready to eat food	34	**A3**	**b5**	**c3**	**-**
13	Isolation of microorganisms from food	35-36	**A4**	**b3**	**c4**	**-**

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14	Student activities: - Dairy plants visits - Writing assays - Internet search		-	-	**c1**	d1-d4

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-115
Course title :	Food technology and preservation
Program title:	Ph. D. degree in Hygiene and Control of Milk and Milk products, Fats & Oils and Eggs.
Contact hours/ week	4 hrs/ week
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1. Acquire the academic background and practical experience about the technology and Preservation of milk, milk products, Fats & Oils and table eggs.
2. Acquire skills to recognize the application of HACCP system in production of milk and its products.
3. Understand the basis for examination of milk and its products, Fats & Oils and Eggs with the judgment on different defects which present.
4. Determine the technological problems and its corrective action.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a1. Summarize the technology of milk, milk products, fats & oils and table eggs.

a2. identify the technological problems in milk, milk products, fats & oils and table eggs

a3. Explain the Lab. examination of the quality and safety of milk and its products, Fats & Oils and table eggs.

a4. Discuss the preservation methods of milk and its products, Fats & Oils and table egg products.

a5. Cooperate with dairy plants in diagnosis manufacturing problems.

a6. Realize the importance of milk byproducts.

b-Intellectual skills

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

b1. Take decisions regarding the quality of good milk.

b2. Apply sensory evaluation of dairy products.

b3. Evaluate the used laboratory methods for the examination of milk and its products, Fats & Oils.

b4. Interpret di erent laboratory methods used for examination of milk and its products, Fats & Oils and table eggs.

b5. Integrate with codex alimentarius.

b6. Perform the research plan of his/her PhD thesis.

b7. Interpret the relationship between economy and health, as well as control and legislation

Course specification of postgraduate

in the area.

C- Professional and practical skills

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

c1. Apply di erent investigations for milk and its products, Fats & Oils and table eggs.

c2. Demonstrate methods of sampling for examination of milk and its products, Fats & Oils and table eggs.

c3. Prepare nal judgment report.

c4. Use di erent laboratory techniques.

c5. able to conduct necessary sensory and physical evaluation of di erent products.

d- General and transferable skills

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

d1- Enhance of his/her computer and internet skills.

d2- Appreciate the importance of group working and cooperation.

d3- Enhance of his/her communication skills.

d4- Manage scientific meetings and time.

d5- Enhance of his/her effective presentation skills

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
	Milk processing (heat treatment)	12	6	6
	Manufacture of cream and related products	12	6	6
	Manufacture of butter and related products	12	6	6
	Manufacture of cheese and related products	12	6	6
	Manufacture of milk powder and related products	12	6	6
	Manufacture of concentrated milk and related products	12	6	6
	Manufacture of yoghurt and related products	12	6	6
	Manufacture of ice cream and related products	12	6	6
	Technology of fats and oils and related products	12	6	6
	Technology of eggs	12	6	6
	Dairy products defects (microbial and non microbial)	12	6	6

Course specification of postgraduate

	Food preservation methods (traditional and biological)	12	6	6
	Student activities: - Dairy plants visits - Writing assays - Internet search	-	-	-
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of food and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Written Exam	a1 to a6	b1 to b7		
Practical Exam			c1 to c5	
Oral Exam	a1 to a6	b1 to b7	c1 to c5	d1 to d5

7.2. Assessment schedules

Method	Week(s)
Writing exam	**Week:45,46**
Practical exam	**Week:43,44**
Oral exam	**Week: 45,46**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**30%**
Oral exam	**20%**
total	100%

8- List of references

8.1. Notes and books

- Text book of milk Hygiene, Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy.

Course specification of postgraduate

- Practical milk Hygiene, professor/ Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy.

8.2. 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).

8.3. Recommended texts

- - The science of providing milk for man 1st edition(Campbell And Marshall, 1975)
- Microbial food poisoning (A.R. Eley, 1992)
- Manuals of food quality (FAO, 1997)

8.4. Journals, Websites ……..etc

Journals:

- Journal of food protection

- Journal of applied bacteriology

- International journal of food microbiology

Websites:

- www.pubmed.com

- www.dairyfact.com

- www.foodprotection.org

Course Coordinators **Head of Department**

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Milk processing	1-3	**a1**	**b1**	**c1**	-
2	Manufacture of cream	4-6	**a2**	**b3**	-	-
3	Manufacture of butter	7-9	-	**b2**	-	-
4	Manufacture of cheese	10-12	**a1-a4**	-	-	-
5	Manufacture of milk powder	13-15	**a4**	**b5**	-	-
6	Manufacture of concentrated milk	16-18	-	**b1**	**c4**	-
7	Manufacture of yoghurt	19-21	**a4**	-	-	-
8	Manufacture of ice cream	22-24	**a1-a4**	-	-	-
9	Technology of fats and oils	25-27	-	**b2**	**c2**	-
10	Technology of eggs	28-30	**a3**	**b4**	**c4**	-
11	Dairy products defects	31-33	**a3,a4**	**b4,b5**	-	-
12	Food preservation methods	34-36	**a3,a4**	-	-	-
13	**Student activities:** - Dairy plants visits - Writing assays		**a4**	**b6**	**c3**	**d1-d5**

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-116
Course title :	Food analysis
Program title:	Ph.D. in Hygiene and Control of Milk, Milk products, Fats & Oils and Table eggs
Contact hours/ week	4 hrs / week
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1. Acquire the academic background and practical experience about the analysis of milk, milk products, Fats & Oils and Table eggs.
2. Acquire skills to recognize the application of HACCP system in production of milk and its products.
3. Understand the basis for examination of milk and its products, Fats & Oils and Table eggs with the judgment on different defects which present.
4. Practice the advanced methods in analysis.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a1. Summarize the physical and chemical analysis of milk, milk products, Fats & Oils and Table eggs.

a2. Describe the methods used for detection adulteration of milk, milk products, Fats & Oils and Table eggs.

a3. Explain the Lab. examination of the quality and safety of milk and its products, Fats & Oils and Table eggs.

a4. Discuss the physical and chemical properties of milk and its products, Fats & Oils and Egg products.

a5. Describe the efficiency of different heat treatment methods.

a6. Discuss the advanced methods in analysis.

b-Intellectual skills

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

b1. Take decisions regarding the quality of good milk.

b2. Apply differential diagnosis between raw and heat treated milk.

b3. Evaluate the used laboratory methods for the examination of milk and its products, Fats & Oils.

b4. Interpret di erent laboratory methods used for examination of milk and its products, Fats & Oils and Table eggs.

b5. Integrate with codex alimentarius.

Course specification of postgraduate

b6. Perform the research plan of his/her PhD thesis.
b7. Detect antibiotic residues in milk, milk products, table eggs, fats and oils.

C- Professional and practical skills

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

c1. Apply di erent investigations for milk and its products, Fats & Oils and Table eggs.
c2. Demonstrate methods of sampling for examination of milk and its products, Fats & Oils and Table eggs.
c3. Prepare nal judgment report.
c4. Use di erent laboratory techniques.
c5. Evaluate conventional and advanced methods used in analysis.

d- General and transferable skills

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

d1- Appreciate the importance of group working and cooperation.
d2- Enhance of his/her communication skills.
d3- Manage scientific meetings and time.
d4- Enhance of his/her effective presentation skills

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 2h./week, Pract 2h./week)	Sampling and physical properties of milk and milk products (principals and the acquired tools of analysis)	16	8	8
	Chemical examination of milk (quantitative and qualitative analysis)	20	10	10
	Chemical examination of milk products(quantitative and qualitative analysis)	20	10	10
	Chemical examination of fats and oils (analytical constant)	16	8	8
	Chemical examination of egg and related products	8	4	4
	Detection of heat treated milk	8	4	4
	Detection of residues (chemical and biological)	16	8	8
	Detection of preservatives	20	10	10
	Microbiological examination of milk products	20	10	10
	Student activities: - Food plants visits			

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	- Writing assays - Internet search			
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of food and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Written Exam	**a1 to a6**	**b1 to b7**		
Practical Exam			**c1 to c5**	
Oral Exam	**a1 to a6**	**b1 to b7**	**c1 to c5**	**d1 to d4**

7.2. Assessment schedules

Method	Week(s)
Writing exam	**Week:45,46**
Practical exam	**Week:43,44**
Oral exam	**Week: 45,46**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**30%**
Oral exam	**20%**
total	100%

8- List of references

8.1. Notes and books

- Text book of milk Hygiene, Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy.
- Practical milk Hygiene, professor/ Professor/ Adel El-Kholy and prof/ Saadia El-

Course specification of postgraduate

Shinawy.

8.2. 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).

8.3. Recommended texts

- The science of providing milk for man 1st edition(Campbell And Marshall, 1975)
- Microbial food poisoning (A.R. Eley, 1992)
- Manuals of food quality (FAO, 1997)

8.4. Journals, Websites ……..etc

Journals:-

- Journal of food protection
- Journal of applied bacteriology
- International journal of food microbiology

- **Websites:-**
- www.pubmed.com
- www.dairyfact.com
- www.foodprotection.org

Course Coordinators **Head of Department**

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Sampling and physical properties of milk and milk products	1-4	**a1**	**b1**	**c2**	-
2	Chemical examination of milk	5-9	**a1**	**b1,b4**	**c1**	-
3	Chemical examination of milk products	10-14	**a1-a5**	-	-	-
4	Chemical examination of fats and oils and Eggs	15-18	**a1-a5**	**b2**	-	-
5	Detection of heat treated milk	19-22	**a1-a4**	**b1**	**c2**	-
6	Detection of residues	23-26	**a4**	-	-	-
7	Detection of preservatives	27-31	**a5**	-	-	-
8	Microbiological examination of milk products	32-36	**a3**	**b3,b4,b5**	**c1,c4**	-
9	Student activities: - Food plants visits - Writing assays - Internet search		-	**b6**	**c3**	**d1-d4**

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-117
Course title :	Food poisoning
Program title:	Ph .D. degree in Hygiene and Control of Milk, Milk products, Fat & Oils and Eggs
Contact hours/ week	3 hr/week
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1. Acquire the academic background and practical experience about the food poisoning.
2. Acquire skills to recognize the application of HACCP system in production of milk and its products.
3. Understand the basis of conditions associated with occurrence different forms of food poisoning.
4. Acquire skills about control of food poisoning.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a1. To be acquainted with different forms of food poisoning and its public health hazard.
a2. Recognize the food infection food poisoning.
a3. Recognize the food intoxication food poisoning.
a4. Summarize the potential food poisoning.
a5. Describe the condition inimical to food poisoning.
a6. Identify hygienic precaution to prevent food poisoning.**b-Intellectual skills**

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

b1. Take decisions regarding the safety of good milk.
b2. Apply differential diagnosis between food infection and food intoxication.
b3. Evaluate the used laboratory methods for the examination of milk and its products, Fats & Oils.
b4. Interpret di erent laboratory methods used for examination of milk and its products, Fats & Oils and table eggs .
b5. Integrate with codex alimentarius.
b6 Perform the research plan of his/her PhD thesis.

C- Professional and practical skills

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

c1. Apply di erent investigations for milk and its products, Fats & Oils and table eggs.
c2. Demonstrate methods of sampling for examination of milk and its products, Fats & Oils

Course specification of postgraduate

and table eggs.
c3. Prepare nal judgment report.
c4. Use di erent laboratory techniques.
c5. Set up risk assessment of food poisoning organisms.

d- General and transferable skills

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

d1- Appreciate the importance of group working and cooperation.
d2- Enhance of his/her communication skills.
d3- Manage scientific meetings and time.
d4- Enhance of his/her effective presentation skills

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 1h./week, Pract 2h./week)	Microbial food poisoning A-Food infection type	15	5	10
	B- Food intoxication type	15	5	10
	C-New emerging food poisoning	15	5	10
	Chemical food poisoning	6	2	4
	Plant food poisoning	6	2	4
	Isolation of food poisoning organisms (traditional and rapid methods)	30	10	20
	Prevention and control of food poisoning	21	7	14
	Student activities: - Food plants visits - Writing assays - Internet search	-	-	-
	Total	108	36	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows
5.2- Self learning by preparing essays and presentations (computer researches and library)
5.3- Practical (models, samples of food and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods

Course specification of postgraduate

	K&U	I.S	P&P.S	G.S
Written Exam	**a1 to a6**	**b1 to b6**		
Practical Exam			**c1 to c5**	
Oral Exam	**a1 to a6**	**b1 to b6**	**c1 to c5**	**d1 to d4**

7.2. Assessment schedules

Method	Week(s)
Writing exam	**Week:45,46**
Practical exam	**Week:43,44**
Oral exam	**Week: 45,46**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**30%**
Oral exam	**20%**
total	100%

8- List of references

8.1. Notes and books

- Text book of milk Hygiene, Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy.
- Practical milk Hygiene, professor/ Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy

8.2. 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).

8.3. Recommended texts

- - The science of providing milk for man 1st edition(Campbell And Marshall, 1975)
- Microbial food poisoning (A.R. Eley, 1992)
- Manuals of food quality (FAO, 1997)

Course specification of postgraduate

8.4. Journals, Websites ……..etc

Journals:

- Journal of food protection
- Journal of applied bacteriology
- International journal of food microbiology

Websites:

- www.pubmed.com
- www.dairyfact.com
- www.foodprotection.org

Course Coordinators **Head of Department**

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Microbial food poisoning A-Food infection type	1-5	**a1,a2**	**b1,b2**	**c1**	-
2	B- Food intoxication type	6-10	**a3**	**b2**	**-**	-
3	Potential food poisoning	11-15	**a4**	**b3**	**-**	-
4	Chemical food poisoning	16-17	**-**	**-**	**-**	-
5	Plant food poisoning	18-19	**-**	**-**	**-**	-
6	Isolation of food poisoning organisms	20-29	**a5**	**b4**	**c4**	-
7	Prevention of food poisoning	30-36	**a6**	**b1**	**c3**	-
8	Student activities: - Food plants visits - Writing assays - Internet search			**b1-b3**		**d1-d4**

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-118
Course title :	Miscellanies course (Sources of Milk contamination, Mastitis, Diseases and durability of Fats & Oils and Eggs)
Program title:	Ph. D. degree in Hygiene and Control of Milk and Milk products, Fats & Oils and Table eggs
Contact hours/ week	2hr/week
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1. Acquire the academic background and practical experience about sources of milk contamination.
2. Acquire skills to recognize the application of HACCP system in production of milk and its products.
3. Understand the basis for examination of milk and its products, Fats & Oils and Table eggs with the judgment on different defects which present.
4. Recognize the different contaminants and its effect on public health.
5. Understand the mastitis and diseases transmitted through milk.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a1. Summarize the sources of milk contamination.

a2. Discuss the parameters control microbial growth.

a3. Explain the Lab. examination of the quality and safety of milk, its products Fats & Oils and Eggs.

a4. Discuss the diseases associated with milk & milk products contamination.

a5. Identify the indicators microorganisms.

a6. Identify microbial ecology and preservation.

a7. Detect the mastitis milk.

b-Intellectual skills

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

b1. Take decisions regarding the quality of good milk.

b2. Apply differential diagnosis between normal and abnormal milk.

b3. Evaluate the used laboratory methods for the microbiological examination of milk and its products.

b4. Interpret di erent laboratory methods used for microbiological examination of milk and its products.

Course specification of postgraduate

b5. Integrate with codex alimentarius.
b6. Perform the research plan of his/her PhD thesis.
b7. Detect antibiotic residues in milk, milk products, table eggs, fats and oils.

C- Professional and practical skills

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

c1. Apply di erent investigations for milk and its products.
c2. Demonstrate methods of sampling for examination of milk and its products.
c3. Prepare nal judgment report.
C4. Use di erent laboratory techniques.

d- General and transferable skills

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

d1- Enhance of his/her computer and internet skills.
d2- Appreciate the importance of group working and cooperation.
d3- Enhance of his/her communication skills.
d4- Manage scientific meetings and time.
d5- Enhance of his/her effective presentation skills

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 1h./week, Pract 1h./week)	Sources of milk contamination (interior and exterior)	6	3	3
	Factors affecting microbial growth (intrinsic and extrinsic)	8	4	4
	Problems associated with dairy contamination (deterioration and public health hazard)	6	3	3
	Contaminants and public health (environmental ,microbial and animal drugs)	8	4	4
	Microbiological examination of milk and milk products(isolation and identification)	8	4	4
	Fat and Oils quality and safety	8	4	4
	Preventive measures of milk contamination	8	4	4
	Mastitis and milk quality	8	4	4
	Milk borne diseases	6	3	3
	Egg quality	6	3	3

Course specification of postgraduate

	Student activities: - Dairy plant activities - Writing assays - Internet search	-	-	-
	Total	72	36	36

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of food and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Written Exam	a1 to a7	b1 to b7		
Practical Exam			c1 to c4	
Oral Exam	a1 to a7	b1 to b7	c1 to c4	d1 to d5

7.2. Assessment schedules

Method	Week(s)
Writing exam	**Week:45,46**
Practical exam	**Week:43,44**
Oral exam	**Week: 45,46**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**30%**
Oral exam	**20%**
total	100%

8- List of references

8.1. Notes and books

- Text book of milk Hygiene, Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy.

Practical milk Hygiene, professor/ Professor/ Adel El-Kholy and prof/ Saadia El- Shinawy

8.2. Essential books:

Course specification of postgraduate

- - 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).

8.3. Recommended texts

- The science of providing milk for man 1st edition(Campbell And Marshall, 1975)
- Microbial food poisoning (A.R. Eley, 1992)
- Manuals of food quality (FAO, 1997)

8.4. Journals, Websites ……..etc

Journals:

- Journal of food protection

- Journal of applied bacteriology

- International journal of food microbiology

Websites:

- www.pubmed.com

- www.dairyfact.com

- www.foodprotection.org

Course Coordinators **Head of Department**

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Sources of milk contamination	1-3	a1	b1	c1	-
2	Factors affecting microbial growth	4-7	a2	b2	-	-
3	Problems associated with dairy contamination	8-10	a3	-	c2	-
4	Contaminants and public health	11-14	a4	b3	-	-
5	Microbiological examination of milk and milk products.	15-18	a6	b4	c3	-
6	Fat and Oils quality	19-22	a5	b5	-	-
7	Preventive measures	23-26	-	b1	-	-
8	Mastitis and milk quality	27-30	a3	b3	-	-
9	Milk borne diseases	31-33	-	b4	-	-
10	Egg quality	34-36	a2	-	c4	-
11	Student activities: - Dairy plant activities - Writing assays - Internet search					d1- d5

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**Ph-119**
Course title :	Milk processing plant hygiene
Program title:	Ph.D. in Hygiene and Control of Milk, Milk products, Fat & Oils and Table eggs.
Contact hours/ week	4 hrs/ week
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1. Acquire the academic background and practical experience about the dairy plant construction and sanitation
2. Acquire skills to recognize the application of HACCP system in the plant during processing of milk and its products.
3. Understand the basis for impact of plant sanitation on quality and safety.
4. Able to select the suitable sanitation method and suitable sanitizers.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a1. Summarize the dairy plant construction and its relation to quality assurance programe.
a2. Discuss the plant sanitation.
a3. Explain the Lab. examination of the quality and safety of milk and its products, Fats & Oils and table eggs.
a4. Describe the different types of sanitizers.
a5. Interpret the relationship between the economy, sanitation and public health.

b-Intellectual skills

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

b1. Take decisions regarding the sanitary measures of dairy plant.
b2. Analyze laboratory report to diagnose the efficiency of sanitation.
b3. Evaluate the used laboratory methods for the examination of milk and its products, Fats & Oils with relation to plant sanitation.
b4. Interpret di erent laboratory methods used for examination of plant sanitation.
b5. Integrate with codex alimentarius.
b6. Perform the research plan of his/her PhD thesis.

C- Professional and practical skills

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

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c1. Apply di erent investigations for milk and its products, Fats & Oils and table eggs with relation to plant sanitation.
c2. Demonstrate methods of sampling for examination of plants.
c3. Prepare final judgment report.
c4. Use di erent laboratory techniques.

d- General and transferable skills

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

d1- Enhance of his/her computer and internet skills.
d2- Appreciate the importance of group working and cooperation.
d3- Enhance of his/her communication skills.
d4- Manage scientific meetings and time.
d5- Enhance of his/her effective presentation skills

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 2h./week, Pract 2h./week)	Sanitary construction consideration of dairy plant	24	12	12
	General dairy plant operating practice	24	12	12
	Types of soils in dairy plants	24	12	12
	Method of sanitation of dairy plants	24	12	12
	How to clean dairy equipments in the plant	24	12	12
	Implant of HACCP system	24	12	12
	Student activities: - Food plants visits - Writing assays - Internet search			
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows
5.2- Self learning by preparing essays and presentations (computer researches and library)
5.3- Practical (models, samples of food and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Written Exam	**a1 to a5**	**b1 to b6**	c1- c2- c3- c4	

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Practical Exam	a1- a2- a3	b1- b2- b3-	**c1 to c4**	
Oral Exam	**a1 to a5**	**b1 to b6**	**c1 to c4**	**d1 to d5**

7.2. Assessment schedules

Method	Week(s)
Writing exam	**Week:45,46**
Practical exam	**Week:43,44**
Oral exam	**Week: 45,46**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**30%**
Oral exam	**20%**
total	100%

8- List of references

8.1. Notes and books

- Text book of milk Hygiene, Professor/ Adel El-Kholy and prof/ Saadia El-Shinawy.

Practical milk Hygiene, professor/ Professor/ Adel El-Kholy and prof/ Saadia El- Shinawy

8.2. 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).

8.3. Recommended texts

- - The science of providing milk for man 1st edition(Campbell And Marshall, 1975)
- Microbial food poisoning (A.R. Eley, 1992)
- Manuals of food quality (FAO, 1997)

8.4. Journals, Websites ……..etc

Journals:

- Journal of food protection

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- Journal of applied bacteriology

- International journal of food microbiology

Websites:

- www.pubmed.com

- www.dairyfact.com

- www.foodprotection.org

Course Coordinators **Head of Department**

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology of lab animal		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	**Dairy plant construction**	1-6	**a1**	**b1**	**c1**	-
2	**Cleaning of dairy plants**	7-12	**a3**	**b4**	**c2**	-
3	**Dairy plant sanitation**	13-18	**a4**	**b1, b3**	**c4**	-
4	**Different detergent and sanitizers**	19-25	**a2**	**b2**	**c1, c3 , c4**	-
5	**Methods of sanitation**	26-31	**a3**	**-**	**-**	**-**
6	**Implant of HACCP system**	32-36	**a3**	**b3**	**-**	**-**
7	**Student activities:** - **Food plants visits** - **Writing assays** - **Internet search**		**-**	**-**	**-**	**d1-d4**