Food Poisoning

(709P)

PhD COURSE SPECIFICATION

A. BASIC INFORMATION

University:	**Sadat City**
Faculty:	**Veterinary Medicine**
Program on which the course is given:	**PhD in Veterinary Medical Sciences (Dairy Hygiene and Control)**
Department offering the Course:	**Food Hygiene and Control**
Course code:	**709P**
Course title:	**Food Poisoning**
Lecture (hr/week):	**1**
Practical (hr/week):	**2**
Course coordinator:	**Prof .Dr. Abdel Rahman El Bagoury**

B. PROFESSIONAL INFORMATION

1) Overall aims of course

Upon successful completion of the course, the student will be able to:

- Understand the specific and advanced knowledge about food poisoning.
- Know the newly emerged food poisoning threats.
- Develop approaches for prevention and control of milk contamination.

2) Intended learning outcomes of course (ILOs)

a) KNOWLEDGE AND UNDERSTANDING

By the end of this course, the graduate should be able to:

a.1. Recognize the recent categorization of different types of food poisoning.
a.2. Realize the newly emerged food poisoning threats.
a.3. Recognize the nature of the causative agent of different types of microbial food poisoning and their mechanism of action inside the human body.
a.4. Describe different control methods to prevent milk contamination with food poisoning microorganisms
a.5. Identify the most risky categories of people sensitive for food poisoning (as immunocompromised people and children).

b) INTELLECTUAL SKILLS

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

b.1. Relate between the data available about food poisoning outbreak such as incubation period and the nature of the food to detect the causative agent of food poisoning.
b.2. Plan for suitable control measures for prevention of food poisoning.
b.3. Select the most appropriate technique for food analysis according to the available data.

c) PROFESSIONAL AND PRACTICAL SKILLS

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

c.1. Collect and prepare sample for microbial examination.
c.2. Prepare food samples for isolation and identification of food poisoning organisms and detection of their toxin.
c.3. Perform advanced analytical methods as PCR, and spectrophotometer for detection the causative agent of food poisoning in short time.
c.4. Apply modern technology for detection of toxin as ElISA technique.

d) . GENERAL AND TRANSFERABLE SKILL

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

d.1. Communicate effectively.
d.2. Utilize different sources of knowledge and information.
d.3. Demonstrate an ability to learn independently for a career of lifelong

learning.

d.4. Use information technology to serve the professional practice.

d.5. Manage time efficiently.

d.6. Set tools and indicators for assessment of the performance of others.

3) Topics and contents

Topic	No. of hours		
	Lect.	**Pract.**	**Total**
Introduction to modern theories and concepts of food poisoning	**4**	**-**	**4**
the newly emerged food poisoning threats	**8**	**-**	**8**
The nature of food poisoning microorganisms	**8**	**-**	**8**
The general symptoms and diagnosis of food poisoning	**8**	**-**	**8**
Food infection	**4**	**-**	**4**
Food intoxication	**4**	**-**	**4**
Toxicoinfection	**4**	**-**	**4**
Prevention and control measures of food poisoning	**4**	**-**	**4**
Sampling of Milk and its products	**-**	**2**	**2**
Preparation of collected samples for microbiological examination	**-**	**2**	**2**
Isolation and identification of food poisioning organisms according international standards.		**12**	**12**
Identification of food poisoning causing microorganisms - *Staphylococcus aureus* - *Clostridium botulinum* - *Clostridium perfringens* - *Salmonella* - *E.coli* - *Bacillus cereus* - *Listeria monocytogenes* - *Vibrio parahaemolyticus* By using Real Time PCR	**-**	**48**	**48**
Preparation of the food sample for toxin detection	**-**	**4**	**4**
Detection the toxin present in food by serology-based microslide gel double diffusion method and ELISA technique	**-**	**20**	**20**
Total	**44**	**88**	**132**

4) Teaching and learning methods

4.1. Lectures.
4.2. Practical.
4.3. Self-learning activities.

5) Student assessment

a. METHODS:

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

b. MATRIX ALIGNMENT OF THE MEASURED ILOS/ ASSESSMENTS METHODS:

	K.U (a)	**I.S (b)**	**P.P.S (c)**	**G.S (d)**
Written exam	1,2,3,4,5	1-3		**-**
Practical exam		2	1,2,3,4	**-**
Oral exam	3,4,5	1	-	**-**
Student activities (assay, seminar, etc.)	4,5	-	-	**1-6**

c. WEIGHT OF ASSESSMENTS:

Assessment	**Allocated Mark**	**Evidence**
Final written exam	**50%**	Marked and signed written paper
Practical exam	**20%**	Marked and signed practical exam paper
Oral exam	**20%**	Signed list of oral exam marks
Student assignments	**10%**	Representative samples of presented materials

6) List of references

6.1. Essential textbooks

- James M Jay. 2005. Modern Food Microbiology. IVth Edition. CBS publishers and Distributors, New Delhi.

- Bibek Ray. 2000. Fundamental Food Microbiology. CRC Press, New York.

- H. Michael Wehr, Joseph F. Frank.2004. APHA Standard Methods for the Examination of Dairy Products. 17Th Edition. American Public Health Association.

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6.2. Recommended books

- F. P. Downes, Keith Ito. 2001. Compendium of Methods for the Microbiological Examination of Foods. IVth Edition. American Public Health Association

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6.3. Periodicals

- J. of food science
- J. of milk and food technology.
- J. of Food Protection
- J. Food Microbiology
- J. of Dairy Science

6.4. Web sites

- www.who.org
- www.idf.org
- www.fao.orgwww.fda.org

7) Facilities required for teaching and learning

7.1 Data-show.
7.2 .
7.3 Network for technology transfer.
7.4 .
7.5 Computer.

	Course coordinators	Head of department
Name	Prof .Dr. Abdel Rahman El Bagoury	Prof. Dr. Abdel Rahman El Bagoury
Signature		

Matrix alignment of course topics and ILOs

Topic	No. of hours /week		Total hours	ILOs			
	Lect.	Pract.		K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Introduction to modern theories and concepts of food poisoning	4	-	4	1	1		1-6
the newly emerged food poisoning threats	8	-	8	2	1		1-6
The nature of food poisoning microorganisms	8	-	8	3	1		1-6
The general symptoms and diagnosis of food poisoning	8	-	8	3	3		1-6
Food infection	4	-	4	3	2,3		1-6
Food intoxication	4	-	4	3	3		1-6
Toxicoinfection	4	-	4	3	3		1-6
Prevention and control measures of food poisoning	4	-	4	4,5	1,2		1-6
Sampling of Milk and its products	-	2	2	-		1,2	1-6
Preparation of collected samples for microbiological examination	-	2	2	-		3	1-6
Isolation and identification of food poisioning organisms according international standards.	-	12	12			2,4	1-6
Identification of food poisoning causing microorganisms - *Staphylococcus aureus* - *Clostridium botulinum* - *Clostridium perfringens* - *Salmonella* - *E.coli* - *Bacillus cereus* - *Listeria monocytogenes*	-	48	48	-		3	

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	Lect.	Pract.		K.U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
) *Vibrio parahaemolyticus* By using Real Time PCR							
Preparation of the food sample for toxin detection	-	4	4			3,4	
Detection the toxin present in food by serology-based microslide gel double diffusion method and ELISA technique		20	20				
Total	44	88	132				