



## Course specification

### 1-Basic information

<b>Course Code:</b>	MST:5274
<b>Course title :</b>	Safety and technology of meat, poultry and fish products
<b>Academic year:</b>	5 <sup>th</sup> Academic year
<b>Program title:</b>	Bachelor of Veterinary Medical sciences
<b>Contact hours/ week</b>	4 hours/week, (2 Lect./week, 2 Practical/week)
<b>Approval Date</b>	

### 2-Professional information

#### **Overall aims of course:**

By the end of this course, the student should be able to perform ante-mortem inspection and post mortem examination of poultry and giving a judgment for different affections and diseases affecting them. Furthermore they will be able to set chemistry and technological properties of meat, and fish in addition to non-meat ingredients and describe chemical residues in meat and recycling of abattoir by- products as well as mention methods of meat, poultry and fish preservation.

#### **3- Intended learning outcomes of course (ILOs)**

##### **a-Knowledge and understanding:**

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

- a1. Know the poultry slaughter house construction and how to make ante-mortem and post-mortem examination
- a2. Describe meat chemistry, meat plant construction and further processing of meat products, and hazard analysis critical control points in meat processing plants.
- a3. Recognize chemical residues in meat and animal by-products.
- a4. Mention the different methods of food preservation and food packaging.
- a5. Recognize the signs of fish spoilage and different types of sea food poisoning

##### **b-Intellectual skills**

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

- b1. Recognize the post mortem changes and lesions in slaughtered animals, Fish and poultry.
- b2. Differentiate between fit and unfit with the judgment on different affections of meat, poultry and fish products.
- b3. Interpret the results of microbiological and chemical analysis of meat, fish and poultry products.
- b4. Understand the different methods of preservation

##### **C-Professional and practical skills**

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

- c1. Differentiate between different types of fresh and marine water fishes.
- c2. Operate laboratory examination of suspected meat, fish and poultry products.
- c3. Apply the hygienic measures in meat processing plants



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### **d-General and transferable skills**

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

- d1. Make decisions.
- d2. Manage time.
- d3. Work in group teams.

### 4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
5 <sup>th</sup> year- secondsemester, Meat hygiene Lec. 3hrs / week, pract. 2hrs/week	Meat plant design and construction	1	1	-
	Control of hygienic measures	2	-	2
	Chemistry of meat	2	2	-
	Technology of meat products	16	8	8
	Application of HACCP system in meat processing plants	3	3	-
	Introduction to preservation of meat. Preservation by drying	3	3	-
	Preservation of meat by smoking	2	2	-
	Preservation of meat by radiation	2	2	-
	Preservation of meat by low temperature	5	5	-
	Preservation of meat by high temperature	5	3	2
	Food packaging	1	1	-
	Fish morphology	7	1	6
	Post-mortem changes in fish flesh	1	1	-
	Fish spoilage	3	1	2
	Seafood poisoning	2	2	-
	Fish processing Fish products examination	3	1	2
	Poultry slaughterhouse construction	1	1	-
	Ante-mortem and post-mortem examination of poultry	3	1	2
	Poultry affections, processing faults and laboratory examination	3	1	2
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 abattoirs of animals and poultry as well as meat processing plants.



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**5.3 Practical sections:** Laboratory diagnosis of suspected meat, fish, poultry and meat products by chemical and microbiological methods, identification of meat species by laboratory 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	I.S	P&P.S	G.S
Written Exam	a1 to a3	b1 to b3		d1,d2
Practical Exam		b1 to b3	c1 to c3	d3
Oral Exam	a1 to a3	b1 to b3		d1 to d2
Student activities	a1 to a3			d1 to d2

#### 7.2. Assessment schedules/semester:

Method	Week(s)
Practical exams	During December
Written exams	Organized by the faculty administration
Oral Exam	Organized by the department
Student activities	Organized by the department

#### 7.3. Weight of assessments/ semester:

Assessment	Weight of assessment
Practical exams	20%
Final exams	50%
Oral Exam	20%
Student activities (posters, presentations, assays, ongoing exams.)	10%
	100%

### 8- List of references

#### 8.1. Notes and books

Departmental notes on:

- Text book of Meat Hygiene, Professor/ Fathy Ahmed Khalafalla, 2000. .  
Deposited No.17664



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- Text book of Meat Technology and Preservation, professor/ Fathy Ahmed Khalafalla, 2000. Deposited No.17664

#### **8.2. Essential books:**

- Handbook of meat product technology (M. D. Ranken, 2000) (faculty library)
- Animal welfare and meat science (N.G.Gregory, 1998) (faculty library)

#### **8.3. Recommended texts**

- Fundamental food microbiology (B. Ray, 1996) (Faculty library)
- Poultry meat science (R.I.Richardson, 1999) (faculty library)
- Food microbiology (W.C. Frazier, 1978) (Faculty library)

#### **8.4. Journals, Websites .....etc**

##### **Journals:**

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

##### **Websites:**

- cms.nelc.edu.eg
- www.pubmed.com
- www.foodprotection.org
- [www.sciencedirect.com](http://www.sciencedirect.com)
- [www.IDF.com](http://www.IDF.com)

**Course Coordinator**

Dr. Abdel-Rahim H.A. Hassan

**Head of Department**

Prof. Fathy A. Khalafalla



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Topics		Week	Intended learning outcomes of course (ILOs)			
			K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
1.	Meat plant design and construction	1	a2	-	-	
2.	Chemistry of meat	1-2	a2	b3	-	
3.	Technology of meat products	2-4	a2, a4	b2, b3	c2, c3	
4.	Application of HACCP system in meat processing plants	5	a3	-	c3	
5.	Introduction to preservation of meat. Preservation by drying	6	a4	-	-	
6.	Preservation of meat by smoking	6-7	a4	b4	-	
7.	Preservation of meat by radiation	7	a4	-	-	
8.	Preservation of meat by low temperature	8	a4	b4	-	
9.	Preservation of meat by high temperature	9	a4	b4	-	
10.	Food packaging	10	a4	-	-	
11.	Fish morphology	10		-	c1	
12.	Post catching handling of fish. Fish examination.	10-11		b3	-	
13.	Post-mortem changes in fish flesh	11		b1		
14.	Fish spoilage	11	a5		c1	
15.	Seafood poisoning	12	a5			
16.	Fish processing Fish products examination	12		b3	c2, c3	
17.	Poultry slaughterhouse construction	13	a1			



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18.	Ante-mortem and post-mortem examination of poultry	13	a3	b1	-	
19.	Poultry affections, processing faults and laboratory examination	13	a3	b3	-	



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