Beni-Suef University
Faculty of Veterinary Medicine

Course specification

1-Basic information

Course Code:	MST:4258
Course title :	Animal By- Products
Academic year:	4th Academic year 2019-2020
Program title:	Bachelor of Veterinary Medical sciences
Contact hours/ week	2 hours/week, (1 Lect./week, 1 Practical/week)
Approval Date	

2-Professional information

Overall aims of course:

By the end of this course, the student should be able to explain what are the animal byproducts, know the categories of animal byproducts and list the benefits of animal byproducts. Moreover recognize uses of animal byproducts, mention the treatment plants for animal byproducts, set hygiene requirements for treatment plants and also describe the treatment of effluents. Furthermore recognize animal byproducts regulations and describe animal byproducts waste disposal.

3- Intended learning outcomes of course (ILOs)

a-Knowledge and understanding:

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

a1. Define animal byproducts.
a2. Classify different types of animal byproducts
a3. Describe animal byproducts treatment plant construction.
a4. Recognize the uses of animal by-products.
a5. list the edible and inedible animal byproducts
a6..Know methods of collection, loading and uploading of animal byproducts
a7. List the hygienic requirements for animal byproducts treatment site.
a8. Mention the methods of animal byproducts waste treatment .

b-Intellectual skills

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

b1. Recognize the different categories of animal byproducts.
b2. Differentiate between edible and non-edible byproducts.
b3. Mention the hygienic requirements for animal byproducts treatments .

C-Professional and practical skills

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

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c1. Categorize animal byproducts
c2. Design animal byproducts treatment plants.
c3. Apply the hygienic requirements in animal byproducts treatments.
c4. Learn how to collect and transfer animal byproducts
c5. Dispose animal byproducts waste

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
4th year- first semster,Meat hygiene Lec. 1hrs / week, pract. 1hrs/week	Definition and benefits of animal byproducts	2	1	1
	Categories of animal byproducts - Category 1 ABPs - Category 2 ABPs - Category 3 ABPs	2	1	1
	Uses of animal byproducts Bile Blood Bones Brains and spinal cords Fats and fatty acids Glands Hides and skins Hairs and wools, nails, horns, feathers, hooves Hearts Intestines Lungs Meat and bone meals Ovaries Proteins Stomachs and tripes Ruminant stomach as food Rumen and rennet Trachea a) Chondroitin sulphate	6	3	3
	Collection of animal byproducts	2	1	1

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	Loading and uploading of animal byproducts	2	1	1
	Treatment plants of animal byproducts Rendering plants: handling and storage plants Incinerators Landfill Anaerobic digestion (biogas) plants Composting Pet food plants	6	3	3
	Hygienic requirements for treatment plants	2	1	1
	Animal byproducts regulations	2	1	1
	Animal byproducts waste disposal	2	1	1
Total		26	13	13

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 animals byproducts treatment plants.

5.3 **Practical sections:** Categorize animal byproducts, design animal byproducts treatment plants, apply the hygienic requirements in animal byproducts treatments, disposal of animal byproducts waste

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 a8	b1 to b3	-	d1,d2
Practical Exam	-	b1 to b3	c1 to c5	d3
Oral Exam	a1 to a8	b1 to b3	-	d1 to d2
Student activities	a1 to a8	-	-	d1 to d2

7.2. Assessment schedules/semester:

Method	Week(s)
Practical exams	During December

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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%
Written 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

8.2. Essential books:

- Animal by-product processing & utilization (Ockerman, Herbert and Hansen, Conly L.) Technomic Publishing Company Inc., 2000.
- Animal by-products (ABPs): origins, uses, and European regulations, 1st Edition 2014 (Raffaella Leoci),Press Up S.r.l., Ladispoli (Roma), Italy.
- Meat Hygiene (J.F. Gracey and D.S. Collins) , ninth edition, 1992(faculty library)

8.3. Journals, Websites ……..etc

Journals:

- Journal of food protection
- International journal of food microbiology
- Meat science
- Journal of Food science
- Journal of animal and feed science

Websites:

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

Course Coordinator **Head of Department**

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Dr. Abdel-Rahim H.A. Hassan 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.	Definition and benefits of animal byproducts	1	a1			
2.	Categories of animal byproducts - Category 1 ABPs - Category 2 ABPs - Category 3 ABPs	2	a2			
3.	Uses of animal byproducts Bile Blood Bones Brains and spinal cords Fats and fatty acids Glands Hides and skins Hairs and wools, nails, horns, feathers, hooves Hearts Intestines Lungs Meat and bone meals Ovaries Proteins Stomachs and tripes	3-5	a3			

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	Ruminant stomach as food Rumen and rennet Trachea a) Chondroitin sulphate					
4.	Collection of animal byproducts	**6**	**a4**			
5.	Loading and uploading of animal byproducts	**7**				
6.	Treatment plants of animal byproducts Rendering plants: handling and storage plants Incinerators Landfill Anaerobic digestion (biogas) plants Composting Pet food plants	**8-10**	**a5**			
7.	Hygienic requirements for treatment plants	**11**	**a6**			
8.	Animal byproducts regulations	**12**	**a7**			
9.	Animal byproducts waste disposal	**13**	**a8**			