



Beni Suef University  
Faculty of Veterinary Medicine

### 1-Basic information

<b>Course Code:</b>	THR 5273
<b>Course title:</b>	Artificial Insemination, In Vitro Fertilization and Embryo Transfer
<b>Academic year:</b>	5 <sup>th</sup> Academic year
<b>Program title:</b>	Bachelor of Veterinary Medical Sciences
<b>Contact hours/ week</b>	Lecture: 2hrs/week and practical 3hrs/week
<b>Approval Date</b>	

### 2-Professional information

#### Overall aims of course:

The main objective of the course is that the student acquires knowledge, critical thinking and technical skills in collection, evaluation and processing of semen, as well as to acquire the successful application of invitro fertilization and embryo transfer.

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

#### a- Knowledge and understanding:

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

- a1- Recognize different methods of semen collection.
- a2- Illustrate different methods of evaluation of semen.
- a3- Describe preservation of semen and techniques of insemination
- a4- identify the technique of IVF and embryo transfer.

#### b-Intellectual skills

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

- b1-Differentiate different methods of semen collection.
- b2- Interpret efficiency of semen collection and evaluation.
- b3- Score percentage of conception, pregnancy and calving rates after AI.
- b4- Discriminate possible causes of limitations of using IVF and ET techniques.

#### C- Professional and practical skills

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

- c1- Implement, proper collection and evaluation of semen.
- c2- Maximize a herd reproductive potential through AI, IVF and ET
- c3- Choose and prepare good cows as an oocytes donors and embryo recipients.
- c4- Assess the efficiency of admit modern technologies in the field of AI, IVF and ET.

#### d- General and transferable skills

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

- d1. Use information technology & information resources.
- d2- Practice continuous self learning & self evaluation.
- d3- Work in group.
- d4- Communicate with dairy specialists.
- d5-. Participate in private business



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#### 4-Topics and contents

Course	Topic	Weeks	Hours	Lecture	Practice
(Lec. h./week, Pract. h./week) Second semester	Semen collection	1st & 2nd	10	4	6
	Semen evaluation	3rd 4th & 5th	15	6	9
	Semen processing	6th , 7th & 8th	15	6	9
	Insemination Techniques	9th & 10th	10	4	6
	In vitro and in vivo fertilization	11th & 12th	10	4	6
	Embryo Transfer	13th	5	2	3
Total		13	65	26	39

#### 5-Teaching and learning methods

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

#### 6-Teaching and learning methods for the students with disabilities

Not Applicable

#### 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	a2, a3 & a4	b1,b3,b4	c1,c3,c4	d1,d3,d4,d5
Practical Exam	a1,a2 & a3	b2,b4	c2,c3, c4	d2,d4,d5
Oral Exam	a1-a4	b1-b4	c1-c4	d1-d5
Student Activities				d1 to d5

##### 7.2. Assessment schedules/semester:

Method	Week
Practical exam	14 <sup>th</sup>
written exam	15 <sup>th</sup> to 18 <sup>th</sup>
Oral Exam	15 <sup>th</sup> to 18 <sup>th</sup>
Student activities	Along the semester

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

Assessment	Weight of assessment
Practical exams	30%
written exams	50%
Oral Exam	20%
Student activities	----
Total	100%

#### 8- List of references

##### 8.1. Notes and books

Artificial insemination Departmental notes

##### 8.2. Essential books:



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- Peter J. Chenoweth and Steven P. Lorton: Animal andrology: theories and applications, ISBN-13: 978 1 78064 316 8, © CAB International 2014.
- Robert, S. Youngquist and Walter R. Threlfall: CURRENT THERAPY IN LARGE ANIMAL THERIOGENOLOGY, SECOND EDITION, ISBN 13: 978-0-7216-9323-1 ISBN 10: 0-7216-9323-7, Copyright © 2007, 1997 by Saunders, an imprint of Elsevier Inc.
- H. Joe Bearden, John W. Fuquay, Scott T. Willard. Applied animal reproduction, Prentice Hall College Div, 1996-08-12. 4th Ed.
- G. W. Salisbury, N. L. VanDemark, J. R. Lodge, Physiology of reproduction and artificial insemination of cattle. 2<sup>nd</sup> Ed. 1978, San Francisco : W. H. Freeman.

### **8.3. Recommended texts**

- Current therapy of theriogenology

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

#### **Journals:**

- Reproduction in domestic animals
- Theriogenology
- Animal reproduction science
- Reproductive toxicology
- Journal of fertility, development

#### **Websites:**

<http://www.evssar.org/> **the largest Society for Small Animal Reproduction**

<http://www.reproductiverevolutions.com/>

<http://www.ivis.org/home.asp>

<http://vetrepropath.com/repro.html/> Veterinary Reproductive Pathology

<https://www.theriogenology.org/> American College of Theriogenologists

<https://www.zoetisus.com/reproduction/home.aspx>

### **Course Coordinators**

Dr. Abdeltawab Abdelrazek Yassin

### **Head of Department**

Prof. Dr. Mahmoud Mohamed Hussein



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Topics	week	Intended learning outcomes of course (ILOs)			
		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
Semen collection	1st & 2nd	a1	b1 &b2	c1	d1&d2&d3
Semen evaluation	3rd 4th & 5th	a2	b2	c1	d5
Semen processing and Storage	6th , 7th & 8th	a3	b3	c1	d1-d4
Insemination Techniques	9th & 10th	a4	b3	c1	d1&d2&d3
In vitro and in vivo fertilization	11th & 12th	a4	b4	c2, c3 & c4	d1&d4
Embryo Transfer	13th	a3	B4	c2, c3 & c4	d1&d3