



**Beni Suef University**  
**Faculty of Veterinary Medicine**  
**Department of Theriogenology**

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**Program Specification for Master Degree**  
**2017-2018**

**A-Basic information:**

- 1- **Program title:** *MVSC.*,
- 2- **Program type:** *Single*
- 3- **Department offering program:** *Theriogenology*
- 4- **Academic year:** *2017-2018*
- 5- **Approval date of Department Council:**
- 6- **Approval date of Faculty Council:**
- 7- **External evaluator:** Prof. Dr. Hassan Ali Helmy Mansour

**B-Professional information:**

**1- Overall aims of the program:**

- 1- Provide graduates the opportunity to develop communication skills.
- 2- Enable graduates to achieve competency in modern laboratory technology.
- 3- Allow graduates to develop practical research project.
- 4- Develop the ability of graduate to engage critically with scientific literature and to critically review and present their own research data.

**2- Intended learning outcomes of course (ILOs):**

**a- Knowledge and understanding:**

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

- a1- Define scientific research and research plans.
- a2- Compare between different types of proposals.
- a3- List different experimental designs.
- a4- Effectively type in academic language.

**b- Intellectual skills:**

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

- b1- Define research problems and questions

- b2- Critically evaluate their own research data.
- b3- Develop new approach to solving their research questions.
- b4- Develop creative approaches to solving technical problems or issues associated with running and researches project.
- b5- Evaluate prior research findings in a specific area

**c- Professional and practical skills:**

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

- c1- Apply the principles of good experimental design and analysis to their own research project.
- c2- Perform previously selected relevant statistical analyses on data obtained for their own research .
- c3- Practice effectively all types of relevant research work related to his master.
- C4- Carry out all steps of writing and criticism.

**d- General and transferable skills:**

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

- d1- Disseminate his research experiences through his work environment.
- d2- Share his results with his colleagues and in scientific events.

**3- Academic standers:**

\* The faculty mission, vision and strategic objective are confirmed to the academic standard. The learning outcomes are in line 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 .

**4- Program Structure and Contents**

**A- Program duration:** At least two academic years from the approval of registration by the Faculty Council and maximum four years. The faculty council has the right to give the applicant another period not exceed two years according to the supervisor request

The first year for preliminary courses study, while the second year for researches and preparation of the Master Thesis.

**B- Program structure: Hours/ week:**

**Basic course:-**

Theoretical 

4
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 Practical 

7
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 Total 

11
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**Subsidiary courses:-**

Theoretical 

4-8
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 Practical 

6-8
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 Total 

10-16
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**Master Thesis: completed during the second academic year.**

**C- Program courses:**

**1- basic courses**

Code	Course title	Hours /week		Academic year	Teaching duration
		Theoretical	Practical		
	Master Principal course	3	4	Preliminary year	36 weeks
	Research methods	1	3	Preliminary year	36 weeks

**2-subsidiary courses**

Code	Course title	Hours /week		Academic year	Semester
		Theoretical	Practical		
	Selected (3-5) courses depending on the thesis title from the various Faculty Master courses other than specialty of the Master.	5-6	6-9	Preliminary year	36 weeks

**D- Courses contents**

See master courses specification

**5- Program Admission Requirements**

- a- According to the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate Programs, applicants should have BVSc., from an Egyptian University or equivalent degree from any approved university, with at least general grade (Good) and (Very Good) in the specialized subject.
- b- Also if the student has postgraduate diploma in one specialization of total (3 hours) at least with general grade (Good) and (Very good) in the specialized subject.
- c- 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)
  - 2- Computer skills (ICDL) or equivalent computer course.
- d- Admission to the program is open during March and September annually after at least one year from the BVSc degree.

## 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 time for written exam.	Degree	
		Theoretical	Practical and oral exam
≥ 3 hours	3 hours	50	50
≤ 3 hours	2 hours	25	25

- It is mandatory to pass all the courses each chance except biostatic (212)
- The passing mark in each exam is  $\geq 60\%$ .
- The faculty council has the right to deprive the applicant from entering the exams if his attendance courses is less than 75% .

### Qualification grades:

<b>Excellent</b>	$\geq 90$
<b>Very good</b>	$\geq 80$
<b>Good</b>	$\geq 70$
<b>Pass</b>	$\geq 60$
<b>Failed</b>	45 to less than 60 weak
	Less than 45 Very weak

- After passing, the graduate starts research for Master 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.

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

## **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 according to University regulations.

### **1-Preliminary year**

<b>Assessments methods for each course</b>	<b>practical exam</b>	<b>Oral exam</b>	<b>Written exam</b>
<b>Time of Assessments</b>	By the end of the year	By the end of the year	By the end of the year
<b>Marks</b>	25	25	50

### **2-Master Thesis:**

All master-degree students should prepare a thesis in **Theriogenology**. The department council must approve the protocol (plan) of the research. The thesis is supervised by one 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. The applicant should publish at least one scientific paper from the thesis in local or international journals

## **B- Matrix alignment of the measured ILOs**

<b>Assessments methods</b>	<b>Matrix alignment of the measured ILOs</b>			
	<b>K&amp;U (a)</b>	<b>I.S (b)</b>	<b>P&amp;P. S (c)</b>	<b>G&amp;T. S (d)</b>
<b>written exam</b>	a3, a4	b3	c1,c2,c4	d2
<b>Practical exam</b>	a1	b1,b2,b3,b4	c1,c2,c3	d1,d2
<b>Oral exam</b>	a1,a2	b1,b3	c2	

**Master program specification matrix (Program ILOs with Academic Standards ARS)**

Academic standers	Knowledge and understanding						Intellectual skills							Professional and practical skills				General and transferable skills							
	a1	a2	a3	a4	a5	a6	b1	b2	b3	b4	b5	b6	b7	c1	c2	c3	c4	d1	d2	d3	d4	d5	d6	d7	
<b>Program ILOs</b>																									
Knowledge and understanding	a1	X																							
	a2		x	X																					
	a3			x		X																			
	a4					x	x																		
Intellectual skills	b1						X																		
	b2							x	x	x		x													
	b3						X	X			X		x												
	b4									X	x														
	b5						x	x		x		x	X			X									
Professional and practical skills	c1													X	x	X									
	c2													X			X								
	c3													X			X								
	c4														X		X								
General and transferable skills	d1																	x		x	X				X
	d2																		x				x	x	X

**Master program specification matrix (Program courses with ILOs)**

Program ILOs		Courses
<b>Knowledge and understanding</b>	a1	M- 153 + M-154 + M-155 + M- 156 + M157 + M-158 + M-159 + M-160 + M-161 + Thesis
	a2	M- 157 + M- 158 + M- 159 + Thesis
	a3	M- 161 + M- 162 + M-153 + Thesis
	a4	M- 161 + M- 162 + Thesis
<b>Intellectual skills</b>	b1	M- 161 + M- 159 + Thesis
	b2	M- 157 + M- 158 + M- 159 + Thesis
	b3	M- 161 + M- 162 + Theses
	b4	M- 153 + M-154 + M-155 + M- 156 + M157 + M-158 + M-159 + M-160 + M-161 + Thesis
<b>Professional and practical skills</b>	c1	M- 153 + M-154 + M-155 + M- 156 + M157 + M-158 + M-159 + M-160 + M-161 + Thesis
	c2	M- 153 + M-154 + M-155 + M- 156 + M157 + M-158 + M-159 + M-160 + M-161 + Thesis
	c3	All courses and Thesis
	c4	M- 157 + M- 158 + M- 159 + Thesis
<b>General and transferable skills</b>	<b>d1</b>	M- 157 + M- 158 + M- 159 + Thesis
	<b>d2</b>	M- 153 + M-154 + M-155 + M- 156 + M157 + M-158 + M-159 + M-160 + M-161 + Thesis



### Program aims – ILOS Matrix for the Mater program (M-VSC)

Program ILOS		Program aims	Program aims		
			a- Provide graduates the opportunity to develop communication skills.	b- Enable graduates to achieve competency in modern laboratory technology.	c- Allow graduates to develop practical research project.
Knowledge and understanding	a.1- Identify , conceptualize and define research problems and questions	√	√		
	a2- Compare between different types of proposals.	√			
	a3- List different experimental designs.	√	√		
	a4- Effectively type in academic language.	√			
Intellectual skills	b1- Identify , conceptualize and define research problems and questions		√		
	b2 - critically evaluate their own research data and develop new approach to solving their research questions		√		
	b3 - develop creative approaches to solving technical problems or issues associate with running and researches project.				
	b4 - identify , summarize and evaluate prior researches finding in a specific area		√		√
Practical and professional skills	c1- Apply the principles of good experimental design and analysis to their own research project .				√
	c2- Select and perform relevant statistical analysis on data obtained for their own research .		√		
	c3- perform effectively all types of relevant research work related to his master.	√	√		
	c4- carry out all steps of writing and criticism.				√
General and transferable skills	d1- d1- disseminate his research experiences through his work environment.		√		
	d2- share his results with his colleagues and in scientific events.				√

**Course coordinator**

**Dr/ Rabie L. Abdel Aziz**

**Head of the Department**

**Prof. Dr/ Mahmoud M. Hussein**



## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	Principal master course
<b>Course title :</b>	diseases of the female genital system
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	7 (3 hours theoretical and 4 hours practical)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1-gain advanced knowledge about the diseases affecting female genital system.
- 2- provide solid background knowledge on diagnosis and treatment of female genital system pathologies using novel approaches.
- 3- supply master students with theoretical and practical experience in veterinary gynecology

### 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. Define gynecology and collectively list important female genital tract pathologies and ways of their diagnosis and treatment.
- a.2. describe most important novel techniques in gynecological management in farm animals
- a.3. Explain most important economic losses due to genital pathologies and failure of reproduction in female farm animals.

**b-Intellectual skills**

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

- b.1. Take decisions regarding culling policies and disease prognosis.
- b.2 Interpret overall herd performance using farm records and herd approach for fertility management.
- b.3. differentiate between different forms of infertility in farm animals.
- b.4. compare between pathological forms of infertility in farm and pet animals
- b.5. describe different forms of infertility in different animals.

**C- Professional and practical skills**

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

- c.1. use different lab techniques to investigate cellular and molecular basis of reproductive pathologies.
- c. 2. Apply novel synchronization and resynchronization protocols.
- c.3. Carry out professional work in reproductive ultrasonography.

**d- General and transferable skills**

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

- d.1 . utilize group working and decision making
- d.2. participate in national and international scientific events.



## Course specification of postgraduate

- d.3. share field experiences with related veterinarians and owners of privately owned farms.  
d.4. Disseminate research outcomes into specialized journals.

### 4-Topics and contents

Course	Topic		No. of hours	Lectures	Practical
(Lec. 3 h./week, Pract 4 h./week)	Functional anatomy of female genital system	1 <sup>st</sup> w- 3 <sup>rd</sup> w	21	9	12
	Factors affecting age of puberty in females	4 <sup>th</sup> w- 6 <sup>th</sup> w	21	9	12
	Pregnancy diagnosis and investigation of infertility problems in female animals	7 <sup>th</sup> w- 9 <sup>th</sup> w	21	9	12
	Factors affecting estrous cycle in female animals	10 <sup>th</sup> w- 12 <sup>th</sup> w	21	9	12
	Basis of estrus detection and ovulation synchronization in farm animals	13 <sup>th</sup> w- 15 <sup>th</sup> w	21	9	12
	Oogenesis, ovulation and fertilization	16 <sup>th</sup> w – 18 <sup>th</sup> w	21	9	12
	Congenital forms of infertility	19 <sup>th</sup> w – 21 <sup>st</sup> w	21	9	12
	Pathologies of the female genital system	22 <sup>nd</sup> w – 24 <sup>th</sup> w	21	9	12
	Repeat breeder syndrome	25 <sup>th</sup> w- 31 <sup>st</sup> w	49	21	28
	Endocrine causes of reproductive failure in females	32 <sup>nd</sup> w- 34 <sup>th</sup> w	21	9	12
	Environmental causes of infertility in female farm animals	35 <sup>th</sup> w- 36 <sup>th</sup> w	14	6	8
	<b>Total</b>			<b>252</b>	<b>108</b>

### 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 stained tissues and data show).

### 7-Student assessment

#### 7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	LS	P&P.S	G.S



## Course specification of postgraduate

Final Exam	a1, a2, a3	b2, b3, b4, b5	c1	d2
Practical Exam		b2	c1, c2, c3	
Oral Exam	a1, a2	b1, b3, b4, b5		d1

### 7.2. Assessment schedules

Method	Week(s)
Final exam	During December
Practical exam	During December
Oral exam	During December

### 7.3. Weight of assessments

Assessment	Weight of assessment
Final exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## 8- List of references

### 8.1. Notes and books

#### 8.2. Essential books:

- **Current therapy in large animal theriogenology**, 2nd edition by Robert W. Youngquest and Walter R Threllfall. SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

- **Current therapy in equine reproduction** by Juan G Samper, Jonathan Pycock and Angus Meckinnon, SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

#### 8.3. Recommended texts

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

##### Journals:

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Reproduction, fertility and development

##### Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar google.com](http://WWW.Scholar.google.com)



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## **Course specification of postgraduate**

[WWW.wellyinterscience](http://WWW.wellyinterscience)

**Course Coordinator**

**Dr. Rabie L. Abdel Aziz**

**Head of Department**

**Prof. Dr. Mahmoud M. Hussein**



## 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)
	Diseases of the female genital system					
1	Functional anatomy of female genital system	1 <sup>st</sup> w- 3 <sup>rd</sup> w	1,2,3	1,2,3	1,2,3,	1,2,3,4,
2	Factors affecting age of puberty in females	4 <sup>th</sup> w- 6 <sup>th</sup> w	1,2,3	1,3,5	1,2,3	1,2,3,4,
3	Pregnancy diagnosis and investigation of infertility problems in female animals	7 <sup>th</sup> w- 9 <sup>th</sup> w	1,2	1,2,3,4	1,2,3	1,2,3,4,
4	Factors affecting estrous cycle in female animals	10 <sup>th</sup> w- 12 <sup>th</sup> w	1,2	1,2,3	1,2,3	1,2,3,4,
5	Basis of estrus detection and ovulation synchronization in farm animals	13 <sup>th</sup> w- 15 <sup>th</sup> w	1	2,3,5	1,3	1,2,3,4
6	Oogenesis, ovulation and fertilization	16 <sup>th</sup> w – 18 <sup>th</sup> w	2	1,2,4	1,2	1,2,3,4
7	Congenital forms of infertility	19 <sup>th</sup> w – 21 <sup>st</sup> w	1,3	1,2,3,4	2	1,2,3,4
8	Pathologies of the female genital system	22 <sup>nd</sup> w – 24 <sup>th</sup> w	1,2,3	1,4	2,3	1,3,4
9	Repeat breeder syndrome	25 <sup>th</sup> w- 31 <sup>st</sup> w	1,2,3	2,3,5	2	1,2,4
10	Endocrine causes of reproductive failure in females	32 <sup>nd</sup> w- 34 <sup>th</sup> w	1,2,3	1,2,5	2	2,3
11	Environmental causes of infertility in female farm animals	35 <sup>th</sup> w- 36 <sup>th</sup> w	1,2	1,3,5	1	1,3,4



## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	M-153
<b>Course title :</b>	diseases of the female genital system
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	2 hours theoretical and 2 hours practical
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1-Confer advanced knowledge about the female genital system and diseases affecting.
- 2- Provide solid background on diagnosis and treatment of female genital system pathologies using novel approaches.
- 3- Supply master students with theoretical and practical experience in veterinary gynecology.

### 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. List the different compartments of the female genital system.
- a.2. Describe novel breeding programs for management of reproduction in female animals
- a.3. Mention most important economic losses due to genital pathologies and failure of reproduction in female farm animals.

**b-Intellectual skills**

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

- b.1. Take decisions regarding culling policies and disease prognosis.
- b.2 Interpret overall herd performance using farm records and herd approach for fertility management.
- b.3. Differentiate between different forms of infertility in farm animals.
- b.4. compare between anatomical features of the genital systems in different female animals.
- b.5. Describe factors affecting age of puberty in female animals.

**C- Professional and practical skills**

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

- c.1. Use novel tools for pregnancy diagnosis in female animals.
- c. 2. Apply novel synchronization and resynchronization protocols.
- c.3. Carry out professional work in reproductive ultrasonography.

**d- General and transferable skills**

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

- d.1 . Utilize group working and decision making
- d.2. Participate in national and international scientific events.
- d.3. Share field experiences with related veterinarians and owners of privately owned farms.



## Course specification of postgraduate

d.4. Disseminate research outcomes into specialized journals.

### 4-Topics and contents

Course	Topic	Week	No. of hours	Lectures	Practical
(Lec. 2 h./week, Pract 2 h./week)	Functional anatomy of female genital system		12	6	6
	Factors affecting age of puberty in females	1 <sup>st</sup> w- 3rd w	12	6	6
	Pregnancy diagnosis and investigation of infertility problems in female animals	4th w- 6 <sup>th</sup> w	12	6	6
	Factors affecting estrous cycle in female animals	7 <sup>th</sup> w- 9 <sup>th</sup> w	12	6	6
	Basis of estrus detection and ovulation synchronization in farm animals	10 <sup>th</sup> w- 12 <sup>th</sup> w	12	6	6
	Oogenesis, ovulation and fertilization	13 <sup>th</sup> w- 15 <sup>th</sup> w	12	6	6
	Congenital forms of infertility	16 <sup>th</sup> w – 18 <sup>th</sup> w	12	6	6
	Pathologies of the female genital system	19 <sup>th</sup> w – 21st w	12	6	6
	Repeat breeder syndrome	22 <sup>nd</sup> w – 24 <sup>th</sup> w	28	14	14
	Endocrine causes of reproductive failure in females	25 <sup>th</sup> w- 31 <sup>st</sup> w	12	6	6
	Environmental causes of infertility in female farm animals	32 <sup>nd</sup> w- 34 <sup>th</sup> w	8	4	4
	Total	35 <sup>th</sup> w- 36 <sup>th</sup> w	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, slaughterhouse samples and data show).

### 7-Student assessment

#### 7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	IS	P&P.S	G.S





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written Exam	a1, a2, a3	b2, b3, b4, b5		
Practical Exam	A1, a3	b2	c1, c2, c3	
Oral Exam	a1, a2	b1, b3, b4, b5	C1, c3, c3	d3

### 7.2. Assessment schedules

Method	Week(s)
Writing exam	during December
Practical exam	during December
Oral exam	during December

### 7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## 8- List of references

### 8.1. Notes and books

#### 8.2. Essential books:

- **Current therapy in large animal theriogenology**, 2nd edition by Robert W. Youngquest and Walter R Threlfall. SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

- **Current therapy in equine reproduction** by Juan G Samper, Jonathan Pycock and Angus Meckinnon, SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

#### 8.3. Recommended texts

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

##### Journals:

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Reproduction, fertility and development

##### Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar google.com](http://WWW.Scholar.google.com)



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## **Course specification of postgraduate**

[WWW.wellyinterscience](http://WWW.wellyinterscience)

**Course Coordinator**

**Dr. Rabie L. Abdel Aziz**

**Head of Department**

**Prof. Dr. Mahmoud M. Hussein**



## 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)
	Diseases of the female genital system					
1	Functional anatomy of female genital system in different animals	1 <sup>st</sup> w- 3 <sup>rd</sup> w	1	4		1,2,3,4,
2	Factors affecting age of puberty in females	4 <sup>th</sup> w- 6 <sup>th</sup> w		5	2	1,2,3,4,
3	Pregnancy diagnosis and investigation of infertility problems in female animals	7 <sup>th</sup> w- 9 <sup>th</sup> w	3	1, 3	1, 3	1,2,3,4,
4	Factors affecting estrous cycle in female animals	10 <sup>th</sup> w- 12 <sup>th</sup> w	2, 3		2	1,2,3,4,
5	Basis of estrus detection and ovulation synchronization in farm animals	13 <sup>th</sup> w- 15 <sup>th</sup> w	2		2	1,2,3,4
6	Oogenesis, ovulation and fertilization	16 <sup>th</sup> w – 18 <sup>th</sup> w	2		2, 3	1,2,3,4
7	Congenital forms of infertility	19 <sup>th</sup> w – 21 <sup>st</sup> w	3	3,		1,2,3,4
8	Pathologies of the female genital system	22 <sup>nd</sup> w – 24 <sup>th</sup> w	3	3	3	1,3,4
9	Repeat breeder syndrome	25 <sup>th</sup> w- 31 <sup>st</sup> w	3	1, 3	3	1,2,4
10	Endocrine causes of reproductive failure in females	32 <sup>nd</sup> w- 34 <sup>th</sup> w	2, 3	3		2,3
11	Environmental causes of infertility in female farm animals	35 <sup>th</sup> w- 36 <sup>th</sup> w	3	2, 3	3	1,3,4



Beni-Suef University  
Faculty of Veterinary Medicine

## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	M-154
<b>Course title :</b>	diseases of the male genital system
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	4 (2 hours theoretical and 2 hours practical)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1-Gain advanced academic background about the affections of the male reproductive system in animals.
- 2- Supply master students with a solid and up-to-date information for diagnosis and treatment of male infertility.
- 3- Improve the student's attitude toward veterinary andrology.

### 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. list important male genital tract features and possible differences among species .
- a.2. Mention factors affecting male sexual desires and puberty.
- a.3. Explain most important causes of male animal infertility.

**b-Intellectual skills**

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

- b.1. Differentiate between pedigree testing schemes.
- b.2 Interpret overall male performance using pedigree testing for genetic improvement.
- b.3. differentiate between different forms of infertility in male animals.
- b.4. Analyze the underlying causes of reduced male sex drive.
- b.5. Design a professional decision tree for sire breeding soundness evaluation.

**C- Professional and practical skills**

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

- c.1. Use advanced techniques for diagnosis of male animal infertility.
- c. 2. Apply novel sire selection protocols.
- c.3. Carry out professional work in pedigree testing.

**d- General and transferable skills**

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

- d.1 . utilize group working and decision making
- d.2. participate in national and international scientific events.
- d.3. share field experiences with related veterinarians and owners of privately owned farms.
- d.4. Disseminate research outcomes into specialized journals.



## Course specification of postgraduate

### 4-Topics and contents

Course	Topic	week	No. of hours	Lectures	Practical
(Lec. 2 h./week, Pract 2 h./week)	Functional anatomy of male genital system	1 <sup>st</sup> w- 3 <sup>rd</sup> w	12	6	6
	Factors affecting age of puberty in males	4 <sup>th</sup> w- 6 <sup>th</sup> w	12	6	6
	Factors regulating spermatogenesis in male animals	7 <sup>th</sup> w- 9 <sup>th</sup> w	12	6	6
	Endocrine control of reproduction in male animals	10 <sup>th</sup> w- 12 <sup>th</sup> w	12	6	6
	Sexual desire in male animals and factors affecting	13 <sup>th</sup> w- 15 <sup>th</sup> w	12	6	6
	Failure of copulation in male animals, causes and treatment	16 <sup>th</sup> w – 18 <sup>th</sup> w	12	6	6
	Hereditary causes of infertility in male animals	19 <sup>th</sup> w – 21 <sup>st</sup> w	12	6	6
	Impotentia generandi	22 <sup>nd</sup> w – 24 <sup>th</sup> w	12	6	6
	Pedigree testing	25 <sup>th</sup> w- 31 <sup>st</sup> w	28	14	14
	Evaluation of breeding soundness of male animals	32 <sup>nd</sup> w- 34 <sup>th</sup> w	12	6	6
	Sire selection	35 <sup>th</sup> w- 36 <sup>th</sup> w	8	4	4
	Total			144	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, slaughterhouse male genitalia 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



## Course specification of postgraduate

Final Exam	a1,a2,a3	b2,b3,b4,b5	c1	
Practical Exam	a1,a2	b1,b2	c1,c2,c3	d1,d2,d3,d4
Oral Exam	a1,a2,a3	b1,b3,b4,b5	c3	

### 7.2. Assessment schedules

Method	Week(s)
Writing exam	During December
Practical exam	During December
Oral exam	During December

### 7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## 8- List of references

### 8.1. Notes and books

#### 8.2. Essential books:

- **Current therapy in large animal theriogenology**, 2nd edition by Robert W. Youngquest and Walter R Threllfall. SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

- **Current therapy in equine reproduction** by Juan G Samper, Jonathan Pycocock and Angus Meckinnon, SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

### 8.3. Recommended texts

#### Journals:

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Reproduction, fertility and development

#### Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar](http://WWW.Scholar.google.com) google.com
- [WWW.welly](http://WWW.wellyinterscience.com) interscience



Beni-Suef University  
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## **Course specification of postgraduate**

**Course Coordinators**

**Dr. Rabie L. Abdel Aziz**

**Head of Department**

**Prof. Dr. Mahmoud M. Hussein**



## 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	Functional anatomy of male genital system	1 <sup>st</sup> w- 3rd w	1			1,2,3,4
2	Factors affecting age of puberty in males	4th w- 6 <sup>th</sup> w	2	4		1,2,3,4
3	Factors regulating spermatogenesis in male animals	7 <sup>th</sup> w- 9 <sup>th</sup> w	2	2		1,2,3,4
4	Endocrine control of reproduction in male animals	10 <sup>th</sup> w- 12 <sup>th</sup> w			1,2	1,2,3,
5	Sexual desire in male animals and scoring	13 <sup>th</sup> w- 15 <sup>th</sup> w	2	4, 5	1, 2, 3	2,3,4,
6	Failure of copulation in male animals, causes, diagnosis and treatment	16 <sup>th</sup> w – 18 <sup>th</sup> w	2, 3	3, 5	1, 2, 3	1,2,4
7	Hereditary causes of infertility in male animals	19 <sup>th</sup> w – 21 <sup>st</sup> w	3	3, 4		1,3
8	Impotentia generandi	22 <sup>nd</sup> w – 24 <sup>th</sup> w	3	3, 5	2, 3	1,2,4
9	Pedigree testing	25 <sup>th</sup> w- 31 <sup>st</sup> w		1, 2, 5	2, 3	2,3,4
10	Evaluation of breeding soundness of male animals	32 <sup>nd</sup> w- 34 <sup>th</sup> w		1, 2, 5	2, 3	1,3,4
11	Sire selection	35 <sup>th</sup> w- 36 <sup>th</sup> w		1, 2, 5	1,2,3	1,2,4





## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	M-155
<b>Course title :</b>	Veterinary Obstetrics
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	5 (2 hours theoretical and 3 hours practical)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1- Allow master students to gather advanced knowledge about the physiology and pathologies in pregnant female animals.
- 2- Provide novel information regarding different obstetrical conditions in different female animals.
- 3- Aids master students to acquire advanced academic and practical experience in the field of veterinary obstetrics.

### 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. Recall the anatomical features of the bony and soft birthway in different animals.
- a.2. List various obstetrical conditions and their effects, diagnoses and maneuvers.
- a.3. Explain most important economic losses due to obstetrical disorders in farm animals.

**b-Intellectual skills**

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

- b.1. state obstetrical management in different female animals.
- b.2 score signs of fetal maturity, approaching term and stages of normal parturition.
- b.3. differentiate between different forms of fetal anomalies and dystocia.
- b.4. compare between forms of dystocia in farm and pet animals
- b.5. describe different types of interference in cases of dystocia.

**C- Professional and practical skills**

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

- c.1. use different approaches to manage cases of difficult birth in farm and pet animals.
- c. 2. Apply complicated surgical approaches to control dystocia in equines
- c.3. Carry out professional work in management of parturient females.

**d- General and transferable skills**

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

- d.1 . utilize group working and decision making
- d.2. participate in national and international scientific events.
- d.3. share field experiences with related veterinarians and owners of privately owned farms.
- d.4. Disseminate research outcomes into specialized journals.



## Course specification of postgraduate

### 4-Topics and contents

Course	Topic	Week	No. of hours	Lectures	Practical
(Lec. 2 h./week, Pract 3 h./week)	Functional; anatomy of the birth canal	1 <sup>st</sup> w- 3 <sup>rd</sup> w	15	6	9
	Factors affecting pregnancy in animals	4 <sup>th</sup> w- 6 <sup>th</sup> w	15	6	9
	Scheme for obstetrical approach	7 <sup>th</sup> w- 9 <sup>th</sup> w	15	6	9
	Endocrine control of pregnancy and parturition in female animals	10 <sup>th</sup> w- 12 <sup>th</sup> w	15	6	9
	Care of newborn and parturient female animals	13 <sup>th</sup> w- 15 <sup>th</sup> w	15	6	9
	Forms of dystocia in different animals	16 <sup>th</sup> w – 18 <sup>th</sup> w	15	6	9
	Diseases affecting pregnant dam	19 <sup>th</sup> w – 21 <sup>st</sup> w	15	6	9
	Fetotomy	22 <sup>nd</sup> w – 24 <sup>th</sup> w	15	6	9
	Cesarean section	25 <sup>th</sup> w- 31 <sup>st</sup> w	35	14	21
	Obstetrical medications, instruments and equipment	32 <sup>nd</sup> w- 36 <sup>th</sup> w	25	10	15
	Total		180	72	108

### 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 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
Final Exam	a1,a2,a3	b1,b2,b3,b4,b5	c1	d1
Practical Exam		b1,b2,b3	c1,c2,c3	d1,d2,d3,d4
Oral Exam	a1,a2,a3	b1,b2,b3,b4,b5		



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## **Course specification of postgraduate**

### **7.2. Assessment schedules**

Method	Week(s)
Writing exam	During December
Practical exam	During December
Oral exam	During December

### **7.3. Weight of assessments**

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## **8- List of references**

### **8.1. Notes and books**

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

- **Current therapy in large animal theriogenology**, 2nd edition by Robert W. Youngquest and Walter R Threlfall. SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

- **Current therapy in equine reproduction** by Juan G Samper, Jonathan Pycock and Angus Meckinnon, SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

#### **Journals:**

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Reproduction, fertility and development

#### **Websites:**

WWW.Science direct  
WWW. Pubmed.com  
[WWW.Scholar](http://WWW.Scholar.google.com) google.com  
[WWW.welly](http://WWW.wellyinterscience.com) interscience

**Course Coordinators**

**Dr. Rabie L. Abdel Aziz**

**Head of Department**

**Prof. Dr. Mahmoud M. Hussein**



Beni Suef University  
Faculty of Veterinary Medicine

## Course specification

	Topics	Week	Intended learning outcomes of course (ILOs)			
	Veterinary obstetrics		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Functional anatomy of the birth canal	1 <sup>st</sup> w- 3 <sup>rd</sup> w	1			1,2,3,4
2	Factors affecting pregnancy in animals	4 <sup>th</sup> w- 6 <sup>th</sup> w		2		1,2,3,4
3	Scheme for obstetrical approach	7 <sup>th</sup> w- 9 <sup>th</sup> w	2	1, 2, 3, 4, 5	1, 2, 3	1,2,3,4
4	Endocrine control of pregnancy and parturition in female animals	10 <sup>th</sup> w- 12 <sup>th</sup> w		2		1,2,3,4
5	Care of newborn and parturient female animals	13 <sup>th</sup> w- 15 <sup>th</sup> w		1, 2	1, 3	1,2,4
6	Forms of dystocia in different animals	16 <sup>th</sup> w – 18 <sup>th</sup> w	2, 3	3, 4, 5	1, 2, 3	1,2,3,4
7	Diseases affecting pregnant dam	19 <sup>th</sup> w – 21 <sup>st</sup> w	2, 3	3, 4	2	1,4
8	Fetotomy	22 <sup>nd</sup> w – 24 <sup>th</sup> w	2	5	1, 2, 3	2,3,4
9	Cesarean section	25 <sup>th</sup> w- 31 <sup>st</sup> w	2	5	1,2, 3	1,3,4
10	Obstetrical medications, instruments and equipment	32 <sup>nd</sup> w- 36 <sup>th</sup> w	2	1	1, 2, 3	1,2,3,4



Beni-Suef University  
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## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	M-156
<b>Course title :</b>	Reproduction and immunity
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	4 (1 hour theoretical and 3 hours practical)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1-Acquire up-to-date information about the link between immunity and reproduction in male and female animals.
- 2- provide valuable background on diagnosis of immunological causes of infertility in animals.
- 3- Supply master students with theoretical and practical experience in reproductive immunology.

### 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. list important genital tract pathologies of immunological origin.
- a.2. Describe most important novel techniques testing immune status of reproductive system in animals
- a.3. Explain most common reproductive diseases of immunologic origin and their effects.

**b-Intellectual skills**

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

- b.1. Suggest possible approaches for correction of immunity-related diseases.
- b.2. Differentiate between immunity-based reproductive diseases in farm animals.
- b.3. Discriminate between innate and adaptive immune responses in male and female genital systems.
- b.4. Describe basis of different immunologic tests related to reproduction.

**C- Professional and practical skills**

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

- c.1. use specific lab techniques to investigate immune reactions in different reproductive pathologies.
- c. 2. Apply novel immune tests helping in diagnosis of reproductive pathologies.
- c.3. Carry out preliminary work in reproductive immunology .

**d- General and transferable skills**

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

- d.1 . utilize group working and decision making
- d.2. participate in national and international scientific events.



## Course specification of postgraduate

- d.3. share field experiences with related veterinarians and owners of privately owned farms.  
d.4. Disseminate research outcomes into specialized journals.

### 4-Topics and contents

Course	Topic	Weeks	No. of hours	Lectures	Practical
(Lec. 1 h./week, Pract 3 h./week)	Principles of immunity	1 <sup>st</sup> w- 3 <sup>rd</sup> w	12	3	9
	Introduction to reproductive immunology in animals	4 <sup>th</sup> w- 7 <sup>th</sup> w	12	3	9
	Innate and adaptive immunity of the female genital system	8 <sup>th</sup> w- 10 <sup>th</sup> w	12	3	9
	Innate and adaptive immunity of the male genital system	11 <sup>th</sup> w- 12 <sup>th</sup> w	8	2	6
	Principles of immunologic testing	13 <sup>th</sup> w- 15 <sup>th</sup> w	12	3	9
	Immunologic forms of infertility in female animals	16 <sup>th</sup> w – 20 <sup>th</sup> w	20	5	15
	Immunologic forms of infertility in male animals	21 <sup>st</sup> w – 26 <sup>th</sup> w	24	6	18
	Immunity-based Pathologies of the female genital system (molecular level)	27 <sup>th</sup> w – 29 <sup>th</sup> w	15	3	12
	Immunosuppressive diseases affecting male and female genital systems	30 <sup>th</sup> w- 36 <sup>th</sup> w	29	8	21
	Total			144	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, Laboratory 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
Final Exam	a1,a2,a3	b1,b2,b3,b4	c1	d1



## Course specification of postgraduate

Practical Exam		b1,b2	c1,c2,c3	
Oral Exam	a1,a2,a3	b1,b2,b3,b4		

### 7.2. Assessment schedules

Method	Week(s)
Writing exam	During December
Practical exam	During December
Oral exam	During December

### 7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## 8- List of references

### 8.1. Notes and books

#### 8.2. Essential books:

- **Current therapy in large animal theriogenology**, 2nd edition by Robert W. Youngquist and Walter R Threlfall. SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

- **Current therapy in equine reproduction** by Juan G Samper, Jonathan Pycock and Angus Meckinnon, SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

#### 8.3. Recommended texts

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

##### Journals

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Reproduction, fertility and development

##### Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar](http://WWW.Scholar.google.com) google.com
- [WWW.welly](http://WWW.wellyinterscience.com) interscience



Beni-Suef University  
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## **Course specification of postgraduate**

**Course Coordinators**

**Dr. Rabie L. Abdel Aziz**

**Head of Department**

**Prof. Dr. Mahmoud M. Hussein**





## 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)
	Immunity and reproduction					
1	Principles of immunity	1 <sup>st</sup> w- 3 <sup>rd</sup> w		4		1,2,3,4
2	Introduction to reproductive immunology in animals	4 <sup>th</sup> w- 7 <sup>th</sup> w	1,2,3	4	3	1,2,3,4
3	Innate and adaptive immunity of the female genital system	8 <sup>th</sup> w- 10 <sup>th</sup> w	1,2	3		1,2,3,4
4	Innate and adaptive immunity of the male genital system	11 <sup>th</sup> w- 12 <sup>th</sup> w	1,2	3		1,2,3,4
5	Principles of immunologic testing	13 <sup>th</sup> w- 15 <sup>th</sup> w	1,2,3	4	1, 2, 3	2,3,4
6	Immunologic forms of infertility in female animals	16 <sup>th</sup> w – 20 <sup>th</sup> w	1,2,3	2	1, 2	1,2,3,4
7	Immunologic forms of infertility in male animals	21 <sup>st</sup> w – 26 <sup>th</sup> w	1,2,3	2	1, 2	1,3,4
8	Immunity-based Pathologies of the female genital system (molecular level)	27 <sup>th</sup> w – 29 <sup>th</sup> w	1,2,3	3, 4	1, 2, 3	1,2,3,4
9	Immunosuppressive diseases affecting male and female genital systems	30 <sup>th</sup> w- 36 <sup>th</sup> w	2,3	1, 2	3	1,2,3,4



## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	M-157
<b>Course title :</b>	Artificial insemination in ruminants
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	4 (2 practical, 2 theoretical)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1-Provide the students the opportunity to become familiar with merits of artificial insemination as a tool for genetic improvement in ruminants.
- 2- Supply noticeable knowledge on application of novel semen technology on individual and herd or flock levels.
- 3- Confer theoretical and practical experience in AI in ruminants.

### 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. Recall merits of AI and important methods of semen collection.
- a.2. Mention most important methodologies for evaluation of semen.
- a.3. Explain most important drawbacks due to improper handling of semen.

**b-Intellectual skills**

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

- b.1. Differentiate between different techniques for semen collection.
- b.2 Interpret overall ejaculate characters for genetic improvement.
- b.3. Discriminate between normal and abnormal ejaculates.
- b.4. compare between different techniques of AI.
- b.5. Describe different forms of frozen semen.

**C- Professional and practical skills**

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

- c.1. Use different techniques to collect, evaluate, process and preserve semen.
- c. 2. Apply novel timed artificial insemination protocols.
- c.3. Carry out professional work in evaluation of frozen semen under field conditions.

**d- General and transferable skills**

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

- d.1 . utilize group working and decision making
- d.2. participate in national and international scientific events.
- d.3. share field experiences with related veterinarians and owners of privately owned farms.
- d.4. Disseminate research outcomes into specialized journals.



## Course specification of postgraduate

### 4-Topics and contents

Course	Topic		No. of hours	Lectures	Practical
(Lec. 2 h./week, Pract 2 h./week)	Historical background and introduction into artificial insemination	1 <sup>st</sup> w- 3 <sup>rd</sup> w	12	6	6
	Collection of semen from ruminants	4 <sup>th</sup> w- 6 <sup>th</sup> w	12	6	6
	Characters of semen ejaculate in different ruminants	7 <sup>th</sup> w- 9 <sup>th</sup> w	12	6	6
	Biochemistry and metabolism of semen	10 <sup>th</sup> w- 12 <sup>th</sup> w	12	6	6
	Methods of semen collection in ruminants	13 <sup>th</sup> w- 15 <sup>th</sup> w	12	6	6
	Scheme for evaluation of semen in ruminants	16 <sup>th</sup> w – 18 <sup>th</sup> w	12	6	6
	Dilution of semen in ruminants	19 <sup>th</sup> w – 21 <sup>st</sup> w	12	6	6
	Preservation of semen in ruminants	22 <sup>nd</sup> w – 24 <sup>th</sup> w	12	6	6
	Forms of frozen semen in ruminants	25 <sup>th</sup> w- 28 <sup>th</sup> w	12	6	6
	Handling of frozen semen under field conditions	29 <sup>th</sup> w- 31 <sup>st</sup> w	12	6	6
	Sexed semen technology	32 <sup>nd</sup> w- 34 <sup>th</sup> w	12	6	6
	Techniques of artificial insemination in ruminants	35 <sup>th</sup> w- 36 <sup>th</sup> w	12	6	6
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, stains, AI center in Beni-suef, 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
Final Exam	a1,a2,a3	b1,b2,b3,b4,b5	c1	
Practical Exam		b1,b2,b5	c1,c2,c3	



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## Course specification of postgraduate

Oral Exam	a1,a2,a3	b1,b2,b3,b4,b5		
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### 7.2. Assessment schedules

Method	Week(s)
Writing exam	During December
Practical exam	During December
Oral exam	During December

### 7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## 8- List of references

### 8.1. Notes and books

- **Current therapy in large animal theriogenology**, 2nd edition by Robert W. Youngquest and Walter R Threllfall. SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

- **Artificial insemination in farm ruminants**, by Milad Manafi, InTech Janeza Trdine 9, 51000 Rijeka, Croatia

### 8.2. Essential books:

### 8.3. Journals, Websites .....etc

#### Journals:

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Reproduction, fertility and development

#### Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar google.com](http://WWW.Scholar.google.com)
- [WWW.welly interscience](http://WWW.wellyinterscience.com)

Course Coordinators

Head of Department



Beni-Suef University  
Faculty of Veterinary Medicine

## **Course specification of postgraduate**

**Dr. Rabie L. Abdel Aziz**

**Prof. Dr. Mahmoud M. Hussein**



## 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)
	Artificial insemination of ruminants					
1	Historical background and introduction into artificial insemination	1 <sup>st</sup> w- 3 <sup>rd</sup> w	1			1,2,3,4
2	Collection of semen from ruminants	4 <sup>th</sup> w- 6 <sup>th</sup> w	1	1	1	1,2,3
3	Characters of semen ejaculate in different ruminants	7 <sup>th</sup> w- 9 <sup>th</sup> w	2	2, 3	1	1,2,3,4
4	Biochemistry and metabolism of semen	10 <sup>th</sup> w- 12 <sup>th</sup> w	2	2, 3		1,2,3,4
5	Preparation of sexed semen in ruminants	13 <sup>th</sup> w- 15 <sup>th</sup> w	1	5	1	2,3,4
6	Scheme for evaluation of semen in ruminants	16 <sup>th</sup> w – 18 <sup>th</sup> w	2	1, 2, 3	1, 3	2,3,4
7	Dilution of semen in ruminants	19 <sup>th</sup> w – 21 <sup>st</sup> w	2, 3		1	2,3
8	Preservation of semen in ruminants	22 <sup>nd</sup> w – 24 <sup>th</sup> w		5	1	2,3,4
9	Forms of frozen semen in ruminants	25 <sup>th</sup> w- 28 <sup>th</sup> w		5		1,2,3,4
10	Handling of frozen semen under field conditions	29 <sup>th</sup> w- 31 <sup>st</sup> w	3	4, 5	3	1,2,3,4
11	Sexed semen technology	32 <sup>nd</sup> w- 34 <sup>th</sup> w			1, 2	2,3,4
12	Techniques of artificial insemination in ruminants	35 <sup>th</sup> w- 36 <sup>th</sup> w		4	2, 3	1,2,4



## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	M-158
<b>Course title :</b>	Artificial insemination in equine
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	4 (2 hours theoretical , 2 hours practical)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1- Provide master students with applied knowledge about artificial insemination in equine.
- 2- Make students familiar with AI technology in equines on individual and farm levels.
- 3- supply master students with theoretical and practical experience in AI in equines.

### 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. State merits and demerits of AI vs natural breeding in mare.
- a.2. Recall methods of semen collection from Stallion.
- a.3. Determine various techniques for evaluation of semen from Stallion.
- a.4. List basic steps of semen processing and suitable diluents.

**b-Intellectual skills**

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

- b.1. Differentiate between different techniques used for collection and processing of semen from stallion.
- b.2 Interpret overall ejaculate characters of stallion for genetic improvement.
- b.3. Discriminate between normal and abnormal ejaculates and normal biochemical characters of stallion semen.
- b.4. Compare between different regimens of AI of estrous mares.
- b.5. Describe technical challenges facing freezing semen of stallion.

**C- Professional and practical skills**

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

- c.1. use different lab techniques to evaluate, process and preserve semen of stallion.
- c. 2. Apply different protocols including sexed semen for insemination of estrous mares.
- c.3. Carry out the necessary professional steps for examination of stallion semen under field conditions.

**d- General and transferable skills**

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

- d.1 . utilize group working and decision making
- d.2. participate in national and international scientific events.
- d.3. share field experiences with related veterinarians and owners of privately owned farms.



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d.4. Disseminate research outcomes into specialized journals.

### 4-Topics and contents

Course	Topic		No. of hours	Lectures	Practical
(Lec. 2 h./week, Pract 2 h./week)	Historical background and introduction into artificial insemination in equines	1 <sup>st</sup> w- 3 <sup>rd</sup> w	12	6	6
	Collection of semen from Stallion	4 <sup>th</sup> w- 6 <sup>th</sup> w	12	6	6
	Characters of semen ejaculate of Stallions	7 <sup>th</sup> w- 9 <sup>th</sup> w	12	6	6
	Biochemistry and metabolism of semen	10 <sup>th</sup> w- 12 <sup>th</sup> w	12	6	6
	Methods of semen collection in equines	13 <sup>th</sup> w- 15 <sup>th</sup> w	12	6	6
	Scheme for evaluation of semen in equines	16 <sup>th</sup> w – 18 <sup>th</sup> w	12	6	6
	Dilution of semen in equines	19 <sup>th</sup> w – 21 <sup>st</sup> w	12	6	6
	Preservation of semen in equines	22 <sup>nd</sup> w – 24 <sup>th</sup> w	12	6	6
	Frozen semen from Stallion	25 <sup>th</sup> w- 31 <sup>st</sup> w	28	14	14
	Handling of Stallion semen under field conditions	32 <sup>nd</sup> w- 33 <sup>rd</sup> w	8	4	4
	Sexed semen technology	35 <sup>th</sup> w	4	2	2
	Techniques of artificial insemination in equines	36 <sup>th</sup> w	4	2	2
Total			140	70	70

### 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 stained samples, 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
Final Exam	1,2	2,3,5		1
Practical Exam	1	2,3, 4	1,2,3	2





## Course specification of postgraduate

Oral Exam	1,2,3,4	1	1,3	
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### 7.2. Assessment schedules

Method	Week(s)
Writing exam	During December
Practical exam	During December
Oral exam	During December

### 7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## 8- List of references

### 8.1. Notes and books

#### 8.2. Essential books:

**Current therapy in large animal theriogenology**, 2nd edition by Robert W. Youngquest and Walter R Threllfall. SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

- **Current therapy in equine reproduction** by Juan G Samper, Jonathan Pycock and Angus Meckinon, SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

- **Manual of equine reproduction** 2nd edition by Terry Blanchard et al., 2003. Mosby, 11830 Westline drive st; louse MO 63146.

### 8.3. Recommended texts

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

#### Journals:

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Reproduction, fertility and development

#### Websites:

WWW.Science direct  
WWW. Pubmed.com  
[WWW.Scholar google.com](http://WWW.Scholar.google.com)



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## **Course specification of postgraduate**

[WWW.wellyinterscience](http://WWW.wellyinterscience)

**Course Coordinators**

**Dr. Rabie L. Abdel Aziz**

**Head of Department**

**Prof. Dr. Mahmoud M. Hussein**



## 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)
	Artificial insemination of equine					
1	Historical background and introduction into artificial insemination in equines	1 <sup>st</sup> w- 3 <sup>rd</sup> w	1			1,2,3,4,
2	Collection of semen from Stallion	4 <sup>th</sup> w- 6 <sup>th</sup> w	2	1	1	1,2,3
3	Characters of semen ejaculate of Stallions and its evaluation	7 <sup>th</sup> w- 9 <sup>th</sup> w	3	2,3	1,3	1,2,3,4
4	Biochemistry and metabolism of semen	10 <sup>th</sup> w- 12 <sup>th</sup> w		2		1,2,3,4
5	Methods of semen collection in equines	13 <sup>th</sup> w- 15 <sup>th</sup> w	2	1	1	1,2,3
6	Scheme for evaluation of semen in equines	16 <sup>th</sup> w – 18 <sup>th</sup> w	2,3	2,3	1,3	1,2,3,4
7	Dilution of semen in equines	19 <sup>th</sup> w – 21 <sup>st</sup> w	4	1	1,3	1,2,3,4
8	Preservation of semen in equines	22 <sup>nd</sup> w – 24 <sup>th</sup> w		5	1,3	1,2,3,4
9	Freezing semen from Stallion	25 <sup>th</sup> w- 31 <sup>st</sup> w	4	5	1,3	1,2,3,4
10	Handling of Stallion semen under field conditions	32 <sup>nd</sup> w- 33 <sup>rd</sup> w		4,5	3	1,2,3
11	Sexed semen technology	35 <sup>th</sup> w			3	1,2,3,4
12	Techniques of artificial insemination in equines	36 <sup>th</sup> w		4	2	1,2,3,4



## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	M-159
<b>Course title :</b>	Artificial insemination in Pet animals
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	3 (1 hour theoretical, 2 hours practical)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1-Gain advanced knowledge about artificial insemination in Pet animals.
- 2- Provide solid background knowledge on application AI technology in Pet animals.
- 3- Supply master students with theoretical and practical experience in AI in Pet animals.

### 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. Mention the benefits and the ethics of AI in pet animals .
- a.2. Describe techniques of semen collection from Pet animals.
- a.3. Explain most important challenges during semen processing from dogs.
- a.4. List the necessary steps for insemination of bitch.
- a.5. State the problems occurring during semen preservation.

**b-Intellectual skills**

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

- b.1. Differentiate between different techniques for semen collection from Pet animals.
- b.2 Interpret overall ejaculate characters of Pet animals.
- b.3. Distinguish several parts of semen evaluation protocol for dog and Tomcat.
- b.4. compare between different regimens of AI of estrous Bitches and queens.
- b.5. describe technical challenges facing preservation semen of Pets.

**C- Professional and practical skills**

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

- c.1. Design well-planned protocol for insemination of pet females using different form of semen.
- c. 2. Practice the procedures of semen collection, evaluation and processing of semen from pets.
- c.3. Carry out professional work in evaluation of semen of Pet animals under field conditions.

**d- General and transferable skills**

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

- d.1 . utilize group working and decision making
- d.2. participate in national and international scientific events.
- d.3. share field experiences with related veterinarians and owners of privately owned farms.



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d.4. Disseminate research outcomes into specialized journals.

### 4-Topics and contents

Course	Topic		No. of hours	Lectures	Practical
(Lec. 1 h./week, Pract 2 h./week)	Historical background and introduction into artificial insemination in Pets	1 <sup>st</sup> w- 3 <sup>rd</sup> w	9	3	6
	Collection of semen from Pets	4 <sup>th</sup> w- 6 <sup>th</sup> w	9	3	6
	Characters of semen ejaculate of Pets	7 <sup>th</sup> w- 9 <sup>th</sup> w	9	3	6
	Biochemistry and metabolism of semen	10 <sup>th</sup> w- 12 <sup>th</sup> w	9	3	6
	Methods of semen collection in Pets	13 <sup>th</sup> w- 15 <sup>th</sup> w	9	3	6
	Scheme for evaluation of semen in Pets	16 <sup>th</sup> w – 18 <sup>th</sup> w	9	3	6
	Extension of semen in Pets	19 <sup>th</sup> w – 21 <sup>st</sup> w	9	3	6
	Preservation of semen in Pets	22 <sup>nd</sup> w – 24 <sup>th</sup> w	9	3	6
	Freezing of semen of Pets	25 <sup>th</sup> w- 31 <sup>st</sup> w	21	7	14
	Handling of semen of Pet animals under field conditions	32 <sup>nd</sup> w- 34 <sup>th</sup> w	6	3	4
	Sexed semen technology	35 <sup>th</sup> w	3	1	2
	Techniques of artificial insemination in Pets	36 <sup>th</sup> w	3	1	2
<b>Total</b>			<b>108</b>	<b>36</b>	<b>72</b>

### 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 stained samples, 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
Final Exam	a1,a2,a3	b1,b2,b3,b4	c1	d3
Practical Exam		b1,b2,b5	c1,c2,c3	d3,d4
Oral Exam	a1,a3	b1,b2,b3,b4,b5	c1,c2,c3	d1



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### 7.2. Assessment schedules

Method	Week(s)
Writing exam	During December
Practical exam	During December
Oral exam	During December

### 7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## 8- List of references

### 8.1. Notes and books

#### 8.2. Essential books:

- Small animal Theriogenology, by Jane Barber et al., 2003, SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA

#### 8.3. Recommended texts

##### Journals:

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Reproduction, fertility and development

##### Websites:

WWW.Science direct  
WWW. Pubmed.com  
[WWW.Scholar](http://WWW.Scholar.google.com) google.com  
[WWW.welly](http://WWW.wellyinterscience.com) interscience

Course Coordinators

**Dr. Rabie L. Abdel Aziz**

Head of Department

**Prof. Dr. Mahmoud M. Hussein**



## 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)
	Artificial insemination in pet animals					
1	Historical background and introduction into artificial insemination in Pets	1 <sup>st</sup> w- 3 <sup>rd</sup> w	1,2,3	1,2,3	1,2,3	1,2,3,4
2	Collection of semen from Pets	4 <sup>th</sup> w- 6 <sup>th</sup> w	1,2,3	1,3,4	1,2	1,2,3,4
3	Characters of semen ejaculate of Pets	7 <sup>th</sup> w- 9 <sup>th</sup> w	1,2	1,2,3,4	1,2,3	1,2,3,4
4	Biochemistry and metabolism of semen	10 <sup>th</sup> w- 12 <sup>th</sup> w	1,2	1,2,3	1,2,3	1,2,3,4
5	Methods of semen collection in Pets	13 <sup>th</sup> w- 15 <sup>th</sup> w	1,2,3	1,2,3,4,5	1,2,3	1,2
6	Scheme for evaluation of semen in Pets	16 <sup>th</sup> w – 18 <sup>th</sup> w	1,3	1,3,5	1,2,3	1,2
7	Extension of semen in Pets	19 <sup>th</sup> w – 21 <sup>st</sup> w	1,2,3	2,3,5	2,3	1,2,3
8	Preservation of semen in Pets	22 <sup>nd</sup> w – 24 <sup>th</sup> w	2,3	2,3,4	1,2,3	1,2,3,4
9	Freezing of semen of Pets	25 <sup>th</sup> w- 31 <sup>st</sup> w	1,2,3	2,4,5	1,2,3	1,2
10	Handling of semen of Pet animals under field conditions	32 <sup>nd</sup> w- 34 <sup>th</sup> w	1,2,3	1,2,3,4	1,2,3	2,4
11	Sexed semen technology	35 <sup>th</sup> w	1,2,3	2,3,4,5	1,2,3	1,2,4
12	Techniques of artificial insemination in Pets	36 <sup>th</sup> w	1,2,3	1,3,5	1,2	1,2,3,4



## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	M-160
<b>Course title :</b>	Artificial insemination in rabbits
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	3 (1 hour theoretical, 2 hours practical)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1-Ensure provision of adequate knowledge regarding AI in rabbits.
- 2- Provide novel and updated information on differences among AI in rabbits and other species.
- 3- Supply master students with theoretical and practical experience in AI in rabbits.

### 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. State the importance of AI in rabbits.
- a.2. describe most important methodologies for evaluation of semen from rabbits.
- a.3. Declare the challenges facing the storage of rabbit semen at low temperatures.

**b-Intellectual skills**

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

- b.1. Describe how to obtain an ejaculate from rabbits.
- b.2 Figure out different novel techniques for preparation of semen diluents for rabbits.
- b.3. discriminate between normal and abnormal ejaculates.
- b.4. Distinguish metabolic characteristics of rabbit semen.

**C- Professional and practical skills**

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

- c.1. Carry out the scheme for semen evaluation on rabbit ejaculate.
- c. 2. Collect semen from rabbits.
- c.3. Perform the necessary steps for insemination of does.
- c.4. Practice the protocol of semen preservation.

**d- General and transferable skills**

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

- d.1 . utilize group working and decision making
- d.2. participate in national and international scientific events.
- d.3. share field experiences with related veterinarians and owners of privately owned farms.
- d.4. Disseminate research outcomes into specialized journals.





## Course specification of postgraduate

### 4-Topics and contents

Course	Topic		No. of hours	Lectures	Practical
(Lec. 1 h./week, Pract 2 h./week)	Historical background and introduction into artificial insemination in rabbits	1 <sup>st</sup> w- 3 <sup>rd</sup> w	9	3	6
	Collection of semen from rabbits	4 <sup>th</sup> w- 6 <sup>th</sup> w	9	3	6
	Characters of semen ejaculate of rabbits	7 <sup>th</sup> w- 9 <sup>th</sup> w	9	3	6
	Biochemistry and metabolism of semen	10 <sup>th</sup> w- 12 <sup>th</sup> w	9	3	6
	Raising of rabbit bucks intended for AI	13 <sup>th</sup> w- 15 <sup>th</sup> w	9	3	6
	Scheme for evaluation of semen in rabbits	16 <sup>th</sup> w – 18 <sup>th</sup> w	9	3	6
	Extension of semen in rabbits	19 <sup>th</sup> w – 21 <sup>st</sup> w	9	3	6
	Preservation of semen of rabbits	22 <sup>nd</sup> w – 24 <sup>th</sup> w	9	3	6
	Problems with freezing rabbit semen	25 <sup>th</sup> w- 31 <sup>st</sup> w	21	7	14
	Novel technology for preparation of semen diluents	32 <sup>nd</sup> w- 34 <sup>th</sup> w	9	3	6
	Techniques of artificial insemination in rabbits	35 <sup>th</sup> w- 36 <sup>th</sup> w	6	2	4
	Total			108	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, slides of stained samples, 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
Final Exam	a1,a2,a3	b1,b2,b3	c1	
Practical Exam		b1,b3,b4	c1,c2,c3	d3,d4
Oral Exam	a1,a2,a3	b1,b2,b3,b4		d1

#### 7.2. Assessment schedules



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Method	Week(s)
Writing exam	During December
Practical exam	During December
Oral exam	During December

### **7.3. Weight of assessments**

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## **8- List of references**

### **8.1. Notes and books**

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

### **8.3. Recommended texts**

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

#### **Journals:**

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Livestock science

#### **Websites:**

WWW.Science direct  
WWW. Pubmed.com  
[WWW.Scholar google.com](http://WWW.Scholar.google.com)  
[WWW.welly interscience](http://WWW.wellyinterscience.com)

**Course Coordinators**

**Dr. Rabie L. Abdel Aziz**

**Head of Department**

**Prof. Dr. Mahmoud M. Hussein**



## 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)
	Artificial insemination in rabbits					
1	Historical background and introduction into artificial insemination in rabbits	1 <sup>st</sup> w- 3 <sup>rd</sup> w	1			1,2,3
2	Collection of semen from rabbits	4 <sup>th</sup> w- 6 <sup>th</sup> w		1	2	1,2,3,4
3	Characters of semen ejaculate of rabbits	7 <sup>th</sup> w- 9 <sup>th</sup> w	2	2,3	1	1,2,3,4
4	Biochemistry and metabolism of rabbit semen	10 <sup>th</sup> w- 12 <sup>th</sup> w		4	1	1,2,3,4
5	Raising of rabbit bucks intended for AI	13 <sup>th</sup> w- 15 <sup>th</sup> w		1	2	1,3,4
6	Scheme for evaluation of semen in rabbits	16 <sup>th</sup> w – 18 <sup>th</sup> w	2	2,3	1	1,2,3
7	Extension of semen in rabbits	19 <sup>th</sup> w – 21 <sup>st</sup> w			1	1,2,3,4
8	Preservation of semen of rabbits	22 <sup>nd</sup> w – 24 <sup>th</sup> w	3		4	2,4
9	Problems with long time storage of rabbit semen	25 <sup>th</sup> w- 31 <sup>st</sup> w	3		4	1,2,4
10	Novel technology for preparation of semen diluents	32 <sup>nd</sup> w- 34 <sup>th</sup> w		2		1,2,3,4
11	Techniques of artificial insemination in rabbits	35 <sup>th</sup> w- 36 <sup>th</sup> w			3	1,4



## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	M-161
<b>Course title :</b>	<i>In vivo</i> and <i>in vitro</i> Embryo production
<b>Program title:</b>	Master of Veterinary sciences
<b>Contact hours/ week</b>	3 (1 Theoretical, 2 practical)
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

- 1-Gain advanced knowledge about embryo transfer programs.
- 2- Provide solid background knowledge on *in vivo* and *in vitro* production of embryos.
- 3- Supply master students with theoretical and practical experience in 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:**

- a.1. Define various synonyms for embryo transfer.
- a.2. list important methods of embryo production and transfer.
- a.3. Describe most important methodologies for evaluation of produced embryos.
- a.4. Ascribe major steps for embryo collection.
- a.5. Explain most important economic benefits of embryo technology.

**b-Intellectual skills**

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

- b.1. Differentiate between different techniques for embryo production.
- b.2. Discriminate between different methods used for superovulation.
- b.3. Compare between different regimens of embryo transfer.
- b.4. Recognize novel embryo micromanipulation protocols.

**C- Professional and practical skills**

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

- c.1. use different lab techniques to preserve embryos.
- c. 2. Apply novel superovulation protocols.
- c.3. Carry out professional work in embryo transfer under field conditions.
- c.4. Practice preliminary work regarding embryo micromanipulation.
- c.5. Perform educational work on IVF/ET.

**d- General and transferable skills**

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

- d.1 . utilize group working and decision making
- d.2. participate in national and international scientific events.
- d.3. share field experiences with related veterinarians and owners of privately owned farms.
- d.4. Disseminate research outcomes into specialized journals.



## Course specification of postgraduate

### 4-Topics and contents

Course	Topic		No. of hours	Lectures	Practical
(Lec. 1 h./week, Pract 2 h./week)	In vitro fertilization-embryo transfer	1 <sup>st</sup> w- 3 <sup>rd</sup> w	9	3	6
	Multiple ovulation-embryo transfer	4 <sup>th</sup> w- 6 <sup>th</sup> w	9	3	6
	Ovum pick up-embryo transfer	7 <sup>th</sup> w- 9 <sup>th</sup> w	9	3	6
	Protocols of superovulation	10 <sup>th</sup> w- 12 <sup>th</sup> w	9	3	6
	Techniques of embryo collection	13 <sup>th</sup> w- 15 <sup>th</sup> w	9	3	6
	Surgical and non-surgical embryo transfer	16 <sup>th</sup> w – 18 <sup>th</sup> w	9	3	6
	Production of sexed embryos	19 <sup>th</sup> w – 21 <sup>st</sup> w	9	3	6
	Fixed time embryo transfer	22 <sup>nd</sup> w – 24 <sup>th</sup> w	9	3	6
	Embryo transfer technology in equines	25 <sup>th</sup> w- 31 <sup>st</sup> w	21	7	14
	Embryo transfer technology in small ruminants	32 <sup>nd</sup> w- 34 <sup>th</sup> w	9	3	6
	Novel applications of embryo micromanipulation	35 <sup>th</sup> w- 36 <sup>th</sup> w	6	2	4
	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 stained samples, 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
Final Exam	a1,a2	b1,b2,b3,b4	c1	
Practical Exam		b1,b2,b4	c1,c2,c3	d3,d4
Oral Exam	a1,a2,a3	b1,b2,b3,b4		d1



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### 7.2. Assessment schedules

Method	Week(s)
Writing exam	During December
Practical exam	During December
Oral exam	During December

### 7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## 8- List of references

### 8.1. Notes and books

#### 8.2. Essential books:

**-Laboratory production of cattle embryos**, 2nd edition by Ian Gordon, Biotechnology in Agriculture series, No 27. CABI Publishing, CAB International, Wallingford Oxon, OX10 8DE ,UK.\

**-Reproduction in domestic ruminants, Volume 7 by M.C. Lucy et al., 2010.** Nottingham University Press Manor Farm, Church Lane, Thrumpton Nottingham NG11 0AX, United Kingdom [www.nup.com](http://www.nup.com) NOTTINGHAM

### 8.3. Recommended texts

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

#### Journals:

- Theriogenology Journal
- Animal reproduction science
- Reproduction
- Reproduction, fertility and development

#### Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar](http://WWW.Scholar.google.com) google.com
- [WWW.welly](http://WWW.wellyinterscience.com) interscience

Course Coordinators

Head of Department



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## **Course specification of postgraduate**

**Dr. Rabie L. Abdel Aziz**

**Prof. Dr. Mahmoud M. Hussein**



## 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)
	In vivo and in vitro Production of embryos					
1	In vitro fertilization-embryo transfer	1 <sup>st</sup> w- 3 <sup>rd</sup> w	1,2,5	1	1,3,5	1,2,3,4
2	Multiple ovulation-embryo transfer	4 <sup>th</sup> w- 6 <sup>th</sup> w	1,2,3,4,5	1,2,3	1,2,3	1,2,3,4
3	Ovum pick up-embryo transfer	7 <sup>th</sup> w- 9 <sup>th</sup> w	1,2,3,4,5	1,3	1,3,5	1,2,3,4
4	Protocols of superovulation	10 <sup>th</sup> w- 12 <sup>th</sup> w	1	2	2	1,2,3,4
5	Techniques of embryo collection	13 <sup>th</sup> w- 15 <sup>th</sup> w	4	3	3	1,2,3,4
6	Surgical and non-surgical embryo transfer	16 <sup>th</sup> w – 18 <sup>th</sup> w	2	1,3	3,5	2,3,4
7	Production of sexed embryos	19 <sup>th</sup> w – 21 <sup>st</sup> w	1,2,3,4,5	1	1,2,5	1,2,3
8	Fixed time embryo transfer	22 <sup>nd</sup> w – 24 <sup>th</sup> w	1,2	1,3	3,5	1,4
9	Embryo transfer technology in equines	25 <sup>th</sup> w- 31 <sup>st</sup> w	1,2,3,4,5	1,3	3	1,2,3,4
10	Embryo transfer technology in small ruminants	32 <sup>nd</sup> w- 34 <sup>th</sup> w	1,2,2,3,4,5	1,2,3	1,2,3,5	2,3
11	Novel applications of embryo micromanipulation	35 <sup>th</sup> w- 36 <sup>th</sup> w	1,2,3	4	4	2,3,4