



Beni-Suef University
Faculty of Veterinary Medicine
Department of Theriogenology

Program Specification for Ph Degree
2017-2018

A-Basic information:

- 1- **Course title:** *PhD VSC. Specialty:-*
- 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-Recognize all theories, principles and basics of his/her area of learning and other related sciences.
- 2- Provide graduates the opportunity to develop communication skills.
- 3- Fortify research skills of PhD candidates and support graduates in terms of scientific writing, proposal design and critical thinking.

2- Intended learning outcomes of course (ILOs):

a- Knowledge and understanding:

By the end of this PhD program the graduate should be able to:

- a1- Describe advanced research techniques used in the field of Theriogenology
- a2- Apply their knowledge and understanding of Theriogenology to the critical analysis and discussion of the scientific literature.
- a3- Test and validate different hypotheses in relation to their PhD program.
- a4-Develop their scientific knowledge and research experiences.

b- Intellectual capacity:

By the end of this PhD program the graduate should be able to:

- b1- Identify , conceptualize and define research problems and questions
- b2- critically evaluate the research data and develop new approach to deal with the research questions
- b3- Develop creative approaches to solve technical problems or issues associate with running and researches project.
- b4- Identify , summarize and evaluate prior researches finding in a specific area
- b5- Troubleshoot with technical difficulties by examining and analyzing the data; selecting corrective steps.
- b6- Execute laboratory protocols with high precision and accuracy and ensure timely and precise record of all experimentation

c- Professional and practical skills:

By the end of this PhD program the graduate should be able to:

- 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- Plan a research project in the field of Theriogenology with a consideration to technical , ethical and safety issues and associated costs.
- c4- Write scientific abstracts, manuscripts, and/or reviews for publication in a timely manner

d- General and transferable skills:

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

- d1- Demonstrate an ability to learn independently in preparation for a career of lifelong learning .
- d2- Demonstrate interpersonal skills and team working ability by the successful completion of collaborative learn assignment and the honors researches projects
- d3- Present research finding in oral and written from using arrange of appropriate soft ware (e.g., power point , word , excel and data base).
- d4- Interact with researchers in the Reproductive and Developmental Science Program
- d5- Train and guide new students in laboratory techniques.

3- Academic standers:

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

ARS (National Academic Reference Standards) prepared by NAQAAE.

4- Curriculum Structure and Contents

a-Program duration: 48 weeks.

b-Program structure: 3-5 preliminary courses

☒ Hours/ week:

Theoretical Practical Total

Preliminary courses

Code	Course title	Hours /week		Academic year	Teaching duration
		theoretical	practical		
According to selected courses	Selected (3-5) PhD courses from the various Faculty Departments programs depending on the thesis title.	5-8	6-8	Preliminary year	36 weeks

D- Courses contents

See courses specification

5- Program Admission Requirements

* According to the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate Programs, applicants should have a master degree in the specialization subject he will register in one of the Egyptian Universities or an equivalent degree from any approved university or another recognized scientific institute.

* 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)

* Admission to the program is open during March and September annually.

*The faculty council has the right to suspend the student enrolment for a certain period if he has acceptable excuse preventing him from continuing his study or research.

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 written examined time	Degree	
		Theoretical	Practical and oral exam
≥ 3 hours	3 hours	50	50
≤ 3 hours	2 hours	25	25

-The faculty council has the right to deprive the applicant from entering the exams if his attendance courses is less than 75% .

-Failure or depriving from entering one or more course did not requires reexamination of successful passed courses.

-The applicant should submit a seminar within 2years after registration about his research and specialization subject filed that accepted by a committee of professors and assistant professors(3 in number).

-the applicant should submit the thesis that accepted by the judging committee in an open discussion and the following polices should be met:

-pass all preliminary curriculums successfully.

-acceptance of the seminar presented by the applicant.

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

Qualification grades:

Excellent	≥ 90
Very good	≥ 80
Good	≥ 70
Pass	≥ 60
Failed	45 to less than 60 weak
	Less than 45 Very weak

After passing, the graduate starts research for Ph.D. 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.

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 after at least three years from registration date according to University regulations.

Preliminary year

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

Ph.D. Thesis:

The Ph.D. students should prepare a thesis in **Theriogenology**. The department and the ethical committees must approve the protocol of the research. The thesis includes a review part with a practical part. The thesis is supervised by two 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.

B- Matrix alignment of the measured ILOs

Assessments methods	Matrix alignment of the measured ILOs			
	K&U (a)	I.S (b)	P&P. S (c)	G&T. S (d)
Written exam	a1, a3, a4	b1, b2, b4	c2, c4, c5	d3
Practical exam	a2, a3, a4	b2, b3, b5, b6	c1, c2, c3	d2, d4, d5
Oral exam	a1	b1, b6		d1, d2, d3

8- Evaluation of Program Intended Learning Outcomes

Evaluator	Tool	Sample
1. Post graduate Students	Questionnaire at the end of the program	All the PG students
4. External Evaluators	Review program and courses Attending the final exam	Once before implementation annual report
5. College Quality Assurance committee	Annual program reviewer	

PhD Program Specification Matrix (Program Courses with ILOS)

Program ILOs		courses
Knowledge and understanding	a1	PhD-153 to PhD-161
	a2	PhD-153 to PhD-161
	a3	Thesis
	a4	PhD-153 to PhD-161 and Thesis
Intellectual skills	b1	PhD-153, PhD-154, PhD-157 and Thesis
	b2	Thesis+principal course
	b3	Thesis
	b4	Thesis
	b5	Thesis
	b6	Thesis
Professional and practical skills	c1	PhD-153 to PhD-161 and Thesis
	c2	Thesis+principal course
	c3	Thesis
	c4	Thesis
General and transferable skills	d1	Thesis
	d2	Thesis
	d3	Thesis
	d4	Thesis
	d5	Thesis

PhD program specification matrix (Program ILOs with Academic standards, ARS)

Academic standers	Program ILOs	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	b8	b9	c1	c2	c3	c4	c5	c6	d1	d2	d3	d4	d5	d6	d7
Knowledge and understanding	a1	X		X	X																								
	a2	X	X	X	X																								
	a3	X	X																										
	a4		X	X	X	X																							
Intellectual skills	b1						X	X	X																				
	b2						X	X	X				X																
	b3						X	X																					
	b4								X					X	X														
	b5									X			X	X	X														
	b6											X			X														
Professional and practical skills	c1																												
	c2																X	X	X										
	c3															X	X	X	X										
	c4																	X											
General and transferable skills	d1																							X					
	d2																						X	X			X		
	d3																						X		X		X	X	
	d4																						X			X			
	d5																						X	X				X	

Program aims – ILOS Matrix for the PhD program (PhD-VSC)

Program ILOS		Program aims	Program aims		
			1- Recognize all theories, principles and basics of his/her area of learning and other related sciences.	2-Provide graduates the opportunity to develop communication skills.	3-Fortify research skills of PhD candidates. And support graduates in terms of scientific writing, proposal design and critical thinking
Knowledge and understanding	a.1 Describe advanced research techniques used in the field of Theriogenology	√			
	a2- apply their knowledge and understanding of Theriogenology to the critical analysis and discussion of the scientific literature.	√	√		
	a3- test and validate different hypotheses in relation to their PhD program.	√	√	√	
	a4-Develop their scientific knowledge and research experiences.	√			
Intellectual skills	b1- Identify , conceptualize and define research problems and questions	√	√	√	√
	b2- critically evaluate the research data and develop new approach to deal with the research questions		√	√	√
	b3- develop creative approaches to solve technical problems or issues associate with running and researches project.		√	√	√
	b4- identify , summarize and evaluate prior researches finding in a specific area	√	√	√	√
	b5- Troubleshoot with technical difficulties by examining and analyzing the data; selecting corrective steps.				√
	b6- Execute laboratory protocols with high precision and accuracy and ensure timely and precise record of all experimentation				√

Program ILOS		Program aims		
		1- Recognize all theories, principles and basics of his/her area of learning and other related sciences.	2- Provide graduates the opportunity to develop communication skills.	3- Fortify research skills of PhD candidates. And support graduates in terms of scientific writing, proposal design and critical thinking
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- Plan a research project in the field of Theriogenology with a consideration to technical , ethical and safety issues and associated costs.	√		√
	c4- Write scientific abstracts, manuscripts, and/or reviews for publication in a timely manner	√	√	√
General and transferable skills	d1- Demonstrate an ability to learn independently in preparation for a career of lifelong learning .		√	√
	d2- Demonstrate interpersonal skills and team working ability by the successful completion of collaborative learn assignment and the honors researches projects		√	√
	d3- present research finding in oral and written form using appropriate software (e.g., power point , word , excel and data base).	√	√	√
	d4- Interact with researchers in the Reproductive and Developmental Science Program		√	
	d5- Train and guide new students in laboratory techniques.		√	

Course coordinator

Dr. Rabie L. Abdel Aziz

Head of the Department

Prof. Dr. Mahmoud M. Hussein



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	PhD-153
Course title :	Diseases of the female genital system
Program title:	Philosophy Doctor of Veterinary sciences
Contact hours/ week	4 (2 hours theoretical, 2 hours practical)
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1-provide advanced knowledge about molecular mechanisms of diseases of the female genitalia.
- 2- Give good background knowledge on diagnosis and treatment of female genital system pathologies using novel approaches.
- 3- Supply PhD students with theoretical and practical experience in advanced 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. Recall most important concepts in gynecology.
- a.2. Describe most up-to-date techniques for diagnosis of fertility problems in female animals.
- a.3. Analyze the efficiency of modern reproductive management protocols on economic basis.
- a.4. Recognize the principles of estrus detection and synchronization based on recent understandings of ovarian dynamics
- a.5. Familiarize modern approaches for solving infertility problems upon recent knowledge regarding metabolomics and proteomics.
- a.6. List main factors affecting puberty and cyclicity in female animals.

b-Intellectual skills

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

- b.1. Analyze ovarian causes of infertility.
- b.2. Interpret the economic efficiency of novel heat synchronization technologies.
- b.3. Demonstrate various environmental modifications to maximize reproductive efficiency in female animals.
- b.4. compare between different methodologies for reproductive management of non-pregnant cows.
- b.5. Summarize available techniques for obtaining uterine specimens.

C- Professional and practical skills

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



Course specification of postgraduate

- c.1. Use different lab techniques to investigate cellular and molecular basis of reproductive pathologies.
- c. 2. Practice uterine cytological examination.
- c.3. Diagnose pregnancy and various reproductive tract pathologies using US.
- c.4. Evaluate the effects of novel reproductive programs on dairy herd performance.
- c.5. Design professional worksheets for investigation of major infertility problems as repeat breeding.

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.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	Functional anatomy of female genital system	12	6	6
	Factors affecting age of puberty in females	12	6	6
	Pregnancy diagnosis and investigation of infertility problems in non-pregnant cows	12	6	6
	Factors affecting estrous cycle in female animals	12	6	6
	Basis of estrus detection and ovulation synchronization in farm animals	12	6	6
	Oogenesis, ovulation and fertilization	12	6	6
	Ovarian causes of infertility	12	6	6
	Pathologies of the female genital system	12	6	6
	Repeat breeder syndrome	28	14	14
	Endocrine causes of reproductive failure in females	12	6	6
Environmental causes of infertility in	8	4	4	



Course specification of postgraduate

	female farm animals			
	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, slaughterhouse materials, stained slides 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,a4,a5,a6	b1,b2,b3		
Practical Exam	a2,a3,a6	b3,b5	c1,c2,c3,c4,c5	d1,d3
Oral Exam	a1, a2	b1, b3, b4, b5	c2,c3,c5	d1, d2

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 Meckinnon, SAUNDERS, 11830 Westline Industrial Drive St. Louis, Missouri 63146, USA



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

8.3. Recommended texts

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8.4. Journals, Websitesetc

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



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Phd-154
Course title :	diseases of the male genital system
Program title:	Philosophy doctor of Veterinary sciences
Contact hours/ week	4 (2 hours theoretical, 2 hours practical)
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1-Obtain advanced knowledge about the male genitalia and diseases of the genital system.
- 2- Confer updated information regarding sire selection and breeding soundness of male animals.
- 3- Supply Philosophy Doctor students with advanced theoretical and practical experience in 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. Recall the important concepts in andrology..
- a.2. Mention the basic managerial tools of peri-pubertal male animals.
- a.3. Explain basic procedures for raising breeding male animals.
- a.4. State most important diseases causing abortion and novel diagnostic tests.
- a.5. Recognize components of andrological sheet and breeding soundness exams.
- a.6. Restate genetic profiling and sire selection tools.

b-Intellectual skills

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

- b.1. Discriminate diseases causing abortion.
- b.2 Interpret steps for teaser male animal preparation .
- b.3. differentiate between methods of sire selection.
- b.4. Relate different molecular and cytological findings to different forms of male animal infertility.
- b.5. Describe different methods of genetic profiling in breeding soundness examination of sires.

C- Professional and practical skills

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

- c.1. Use novel technology to control the peri-pubertal period for better fertility in sires.
- c. 2. Practice available methodology regarding preparation of teasers.
- c.3. Carry out professional work in breeding soundness examination of sires.
- c.4. Perform available up-to-date diagnostic tests for identification of causal agents of abortion.



Course specification of postgraduate

- c.5. Draft a work sheet for andrological investigation.
- c.6. Carry out available molecular investigations of infertility in breeding sires.
- c.7. Apply different types of Preputial sampling and analyses.

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.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	Functional anatomy of male genital system	12	6	6
	Peri-pubertal management of male animals	12	6	6
	Raising of males intended for breeding	12	6	6
	Hormonal management of libido in male animals	12	6	6
	Preparation of teasers	12	6	6
	Scheme for andrological examination	12	6	6
	Preputial sheath sample testing	12	6	6
	Diseases causing abortion	12	6	6
	Molecular and cytological diagnosis of male animal infertility	28	14	14
	Evaluation of breeding soundness and genetic analysis of sires	12	6	6
	Sire selection	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)



Course specification of postgraduate

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	I.S	P&P.S	G.S
Final Exam	a1,a2,a3,a4,a6	b1,b2,b3,b4,b5		d1,d2
Practical Exam	a5	b1,b3,b5	c1,c2,c3,c4	d1,d2,d3,d4
Oral Exam	a1,a2,a3	b1,b3,b4,b5	c2,c3,c4	d1,d2

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

Journals:

- Theriogenology Journal
- Animal reproduction science
- Reproduction



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

-Reproduction, fertility and development

Websites:

WWW.Science direct

WWW. Pubmed.com

[WWW.Scholar](#) google.com

[WWW.welly](#) 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)
1	Functional anatomy of male genital system in animals	1 st w- 3rd w	1,2,3	1,2,3	1,2,3	1,2,3,4
2	Peri-pubertal management of male animals	4 th w- 6 th w	1,2,3	1,3	1,2,3	1,2,3,4
3	Raising of males intended for breeding	7 th w- 9 th w	1,2	1,2,3,4,5	1,2,3	1,2,3,4
4	Hormonal management of libido in male animals	10 th w- 12 th w	1,2	1,2,3	1,2,3	1,2,3,
5	Preparation of teasers	13 th w- 15 th w	1,3	1,2,3,5	1,2,3	2,3,4,
6	Scheme for andrological examination	16 th w – 18 th w	2	1,2,3,4	1,2,3	1,2,4
7	Preputal sheath sample testing	19 th w – 21 st w	1	1,2,3	1,3	1,3
8	Diseases causing abortion	22 nd w – 24 th w	2,3	1,2,4	1,2	1,2,4
9	Molecular and cytological diagnosis of male animal infertility	25 th w- 31 st w	1,2,3	1,2,3,4,5	2,3	2,3,4
10	Evaluation of breeding soundness and genetic analysis of sires	32 nd w- 34 th w	1,2,3	1,2,3	1,2,3	1,3,4
11	Sire selection	35 th w- 36 th w	1,3	1,2,3	1,2,3	1,2,4



Course specification of postgraduate

1-Basic information

Course Code:	PhD -155
Course title :	Veterinary Obstetrics
Program title:	Philosophy doctor of Veterinary sciences
Contact hours/ week	4
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1- Supply Philosophy Doctor students with advanced knowledge in veterinary obstetrics.
- 2- Provide good background knowledge on novel approaches for manipulation of abnormal delivery in female animals.
- 3- Supply Philosophy Doctor students with theoretical and practical experience in 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. Mention the most important anatomical variations of the birth canal in different animals and relevant obstetrical significance.
- a.2. List different stages of gestation and labour in animals.
- a.3. State forms of abnormal delivery in different female animals.
- a.4. Record applied strategies to prevent difficult birth in female animals.
- a.5. Enumerate different obstetrical instruments, medications and equipment.
- a.6. Familiarize genetic selection as a tool for prevention of dystocia in the future.
- a.7. Familiarize fetotomy and cesarean section as obstetrical techniques.

b-Intellectual skills

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

- b.1. Tabulate anatomical differences in the birthway among different female animals.
- b.2 .Compare between prevalent forms of dystocia in female animals.
- b.3. Describe hormonal induction of delivery in pregnant farm animals.
- b.4. Criticize strategies for prevention of dystocia.
- 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. Practice available obstetrical procedures for delivering in normal birth.
- c. 2. Apply complicated surgical approaches to manage sever dystocia.
- c.3. Carry out professional work in pelvimetry.
- c.4. Design an obstetrical examination sheet for application of obstetrical schemes.
- c.5. Use suitable medications for application of epidural analgesia in obstetrical cases.



Course specification of postgraduate

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.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	Bony and soft birth canal in different animals	15	9	6
	Stages of normal pregnancy and parturition and birth-help in animals	15	9	6
	Fetal and maternal dystocia in different animal species	15	9	6
	Hormonal management of parturition in animals	15	9	6
	Strategies for prevention of dystocia in female animals	15	9	6
	Obstetrical instruments, equipment and medications	15	9	6
	Cellular and molecular basis of diseases in pregnant female animals	15	9	6
	Pelvimetry and genetic selection of heifers for easy calving	15	9	6
	Cesarean section	35	21	14
	Fetotomy	25	15	10
	Total	180	108	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 and data show).



Course specification of postgraduate

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	a2,a3,a4,a5,a7	b1,b2,b3,b4,b5	c1	d1,d3
Practical Exam	a7	b1,b2,b3	c1,c2,c3	d1,d2,d3,d4
Oral Exam	a1,a2,a5,a6	b1,b4,b5	c3,c5	d1,d2

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

Journals:

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

Websites:

WWW.Science direct



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

WWW. Pubmed.com

WWW.Scholar google.com

WWW.welly 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)			
	Veterinary obstetrics		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Bony and soft birth canal in different animals	1 st w- 3 rd w	1	1		1,2,3,4
2	Stages of normal pregnancy and parturition and birth-help in animals	4 th w- 6 th w	2		1,4,5	1,2,3,4
3	Fetal and maternal dystocia in different animal species	7 th w- 9 th w	3	2	2,4,5	1,2,3,4
4	Hormonal management of parturition in animals	10 th w- 12 th w		3		1,2,3,4
5	Strategies for prevention of dystocia in female animals	13 th w- 15 th w	4	2,4	3	1,2,4
6	Obstetrical instruments, equipment and medications	16 th w – 18 th w	5		5	1,2,3,4
7	Cellular and molecular basis of diseases in pregnant female animals	19 th w – 21 st w	2			1,4
8	Pelvimetry and genetic selection of heifers for easy calving	22 nd w – 24 th w	6	4	3	2,3,4
9	Cesarean section	25 th w- 31 st w	7	1,5	2,5	1,3,4
10	Fetotomy	32 nd w- 36 th w	7	1,5	2,5	1,2,3,4



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	PhD -156
Course title :	Reproduction and immunity
Program title:	Master of Veterinary sciences
Contact hours/ week	4
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1- Give advanced knowledge about the link between immunity and reproduction in male and female animals.
- 2- Provide solid background knowledge on diagnosis of immunological causes of infertility in animals.
- 3- Provide Philosophy Doctor 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. Define innate and adaptive immunity.
- a.2. List roles of innate and adaptive immunity in animal health and reproduction.
- a.3. state common elements of immune and reproductive function in farm animals.
- a.4. Discuss role of immune elements in incidence of fertility problems in cattle herds.
- a.5. Mention role of immunity in early pregnancy in animals.
- a.6. Identify immune traits associated with better fertility in ruminants.

b-Intellectual skills

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

- b.1. Distinguish common elements of immune and reproductive function in animals.
- b.2. Debate role of inflammatory mediators in animal health and fertility.
- b.3. Compare between innate and adaptive immunity in male and female animals.
- b.4. Describe molecular basis of immunologic causes of infertility in animals.
- b.5. Differentiate between immunosuppressive diseases affecting animal reproduction.
- b.6. Demonstrate immune events during early pregnancy in cattle.

C- Professional and practical skills

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

- c.1. Measure certain immune indicators in healthy and infertile animals.
- c. 2. Carry out necessary steps for diagnosis if immunosuppressive diseases affecting reproduction.
- c.3. Examine the expected breeding values of some immune traits in relation to animal health and fertility.



Course specification of postgraduate

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.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	Principles of immunity	6	4	2
	Common elements of immune and reproductive function in male and female animals	12	6	6
	Role of cytokines and inflammatory mediators in peripartum health in ruminants	12	6	6
	Immunology of early pregnancy in farm animals	14	10	4
	Immunologic tests	12	2	10
	Molecular background of immunologic forms of infertility in female animals	20	5	15
	Molecular background of immunologic forms of infertility in male animals	24	6	18
	Immune traits as markers for better health and fertility in farm animals	12	3	9
	Immunosuppressive diseases affecting male and female genital systems	28	7	21
	Total		140	49

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).



Course specification of postgraduate

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,a6	b1,b2,b3,b4,b5	c1	b1,b4
Practical Exam	a4,a5,a6	b1,b2,b5	c1,c2,c3	b3,b4
Oral Exam	a1,a2,a3	b1,b2,b3,b4,b6		b1,b2,b3

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
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

8.4. Journals, Websitesetc

Journals

- Theriogenology Journal
- Animal reproduction science
- Reproduction



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

-Reproduction, fertility and development

Websites:

WWW.Science direct

WWW. Pubmed.com

[WWW.Scholar](#) google.com

[WWW.welly](#) 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)
	Immunity and reproduction					
1	Principles of immunity	1 st w- 3 rd w	1	3		1,2,3,4
2	Common elements of immune and reproductive function in male and female animals	4 th w- 7 th w	1,2	1	1	1,2,3,4
3	Role of cytokines and inflammatory mediators in peripartum health in ruminants	8 th w- 10 th w	1,2,3,4	1,2	1,3	1,2,3,4
4	Immunology of early pregnancy in farm animals	11 th w- 12 th w	3,5	1,2,6	1,3	1,2,3,4
5	Immunologic tests	13 th w- 15 th w			1,3	2,3,4
6	Molecular background of immunologic forms of infertility in female animals	16 th w – 20 th w	3,4	1,2,3,4	1,3	1,2,3,4
7	Molecular background of immunologic forms of infertility in male animals	21 st w – 26 th w	3,4	1,2,3,4	1,3	1,3,4
8	Immune traits as markers for better health and fertility in farm animals	27 th w – 29 th w	6		3	1,2,3,4
9	Immunosuppressive diseases affecting male and female genital systems	30 th w- 36 th w		5	2	1,2,3,4



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	PhD -157
Course title :	Artificial insemination in ruminants
Program title:	Philosophy Doctor of Veterinary sciences
Contact hours/ week	4
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1- Confer advanced knowledge about recent advances in artificial insemination in ruminants.
- 2- provide Up-to-date information on semen analysis.
- 3- supply Philosophy Doctor students with 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 novel concepts in artificial insemination.
- a.2. Familiarize normal ejaculate composition and metabolism in small and large ruminants.
- a.3. Identify different techniques of semen collection from ruminants.
- a.4. Review gross and microscopic features of semen ejaculates.
- a.5. List the steps of manual and automated semen evaluation.
- a.6. Explain semen processing protocols.
- a.7. State principles of sexed semen production and use.
- a.8. Mention novel approaches for raising and management of AI sires.

b-Intellectual skills

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

- b.1. Differentiate between different techniques for examination of semen in ruminants.
- b.2 Interpret overall ejaculate characters for genetic improvement.
- b.3. demonstrate the basics of CASA.
- b.4. compare between different techniques of AI in ruminants.
- b.5. describe challenges in sexed semen production.
- b.6. Compare between conventional and sexed semen in ruminants.

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.
- c. 2. Practice CASA on ruminant semen.
- c.3. Carry out professional work for determination of characters of frozen semen under field conditions.
- c.4. Design semen examination work-sheet and evaluation scheme.



Course specification of postgraduate

c.5. Choose suitable straws to improve herd status based on evaluation of sire's sheets.

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.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	Technical terms and introduction	12	12	-
	Composition of semen and semen metabolism	12	8	4
	Comparative features of semen in different ruminants	12	8	4
	Methods of semen collection in ruminants	12	6	6
	Macroscopic examination of ruminant semen	12	6	6
	Microscopic evaluation of ruminant semen (advanced)	12	6	6
	Computer-assisted semen analysis (CASA)	12	6	6
	Dilution of semen	12	6	6
	Semen preservation technology	12	6	6
	Raising and examination of AI sires	12	10	2
	Sexed semen technology	12	6	6
	Techniques of artificial insemination in ruminants	12	4	8
	Total		144	84

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows



Course specification of postgraduate

- 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	b1,b4
Practical Exam		b1,b2,b5	c1,c2,c3	b3,b4
Oral Exam	a1,a2,a3	b1,b2,b3,b4,b5		b1,b2,b3

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
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. Youngquist and Walter R Threlfall. 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:

8.4. Journals, Websitesetc

Journals:

- Theriogenology Journal
- Animal reproduction science
- Reproduction



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

-Reproduction, fertility and development

Websites:

WWW.Science direct

WWW. Pubmed.com

[WWW.Scholar](#) google.com

[WWW.welly](#) 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 of ruminants					
1	Technical terms and introduction	1 st w- 3 rd w	1			1,2,3,4
2	Composition of semen and semen metabolism	4 th w- 6 th w	2,4	2		1,2,3
3	Comparative features of semen in different ruminants	7 th w- 9 th w	2,4	2,6		1,2,3,4
4	Methods of semen collection in ruminants	10 th w- 12 th w	3		1	1,2,3,4
5	Macroscopic examination of ruminant semen	13 th w- 15 th w	4,5	1	1	2,3,4
6	Microscopic evaluation of ruminant semen (advanced)	16 th w – 18 th w	4,5	1,3,6	1,2,4	2,3,4
7	Computer-assisted semen analysis (CASA)	19 th w – 21 st w	2,4,5	3	2	2,3
8	Dilution of semen	22 nd w – 24 th w	6		1	2,3,4
9	Semen preservation technology	25 th w- 28 th w	3,6		1,3	1,2,3,4
10	Raising and examination of AI sires	29 th w- 31 st w	8		5	1,2,3,4
11	Sexed semen technology	32 nd w- 34 th w	2,3,4,5,6,7	2,3,5,6	1,2,3	2,3,4
12	Techniques of artificial insemination in ruminants	35 th w- 36 th w		4	3,5	1,2,4



Course specification of postgraduate

1-Basic information

Course Code:	PhD -158
Course title :	Artificial insemination in equine
Program title:	Philosophy Doctor of Veterinary sciences
Contact hours/ week	4
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1-Acquire advanced knowledge about artificial insemination in equine.
- 2- Provide adequate updated knowledge on AI and reproductive management in mare.
- 3- Supply Philosophy Doctor students with theoretical and practical experience in recent trends of artificial insemination 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. Recall novel concepts in AI.
- a.2. List different method for collection and examination of semen in equine.
- a.3. Declare the importance of AI to solve infertility problems in broad-mares.
- a.4. Familiarize computer-assisted semen analysis as a novel protocol for semen evaluation in equine.
- a.5. Recognize biochemistry and metabolism in equine semen.
- a.6. Mention the basis of pharmacologic ejaculation in stallion.

b-Intellectual skills

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

- b.1. Differentiate between different techniques for equine semen collection and preservation.
- b.2 Interpret overall ejaculate characters of stallion for genetic improvement.
- b.3. Clarify the main procedures for examination of stallion semen using CASA .
- b.4. Compare between different regimens of AI of estrous mares.
- b.5. Describe technical steps of shipping stallion semen.
- b.6. Determine technical procedures for raising and management of AI stallions.

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 novel AI techniques in estrous mares.
- c.3. Examine problem mares submitted to AI.
- c.4. Carry out necessary steps to receive and evaluate shipped cooled semen.
- c.5. Practice management of stallions intended for AI.



Course specification of postgraduate

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.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	Introduction to artificial insemination in equine	12	6	6
	Management and raising of AI stallions	12	6	6
	Biochemistry and metabolism of equine semen	12	6	6
	Pharmacologic semen collection	12	6	6
	Other methods of semen collection in equines	12	6	6
	Computer-assisted semen analysis of equine semen	12	6	6
	Processing of stallion semen	12	6	6
	Challenges facing semen preservation in equines	12	6	6
	Handling of problem mares submitted to AI	28	14	14
	Handling of Stallion semen under field conditions	8	4	4
	Sexed semen technology	4	2	2
	Novel techniques of artificial insemination in equines to improve pregnancy	4	2	2
	Total		140	70

5-Teaching and learning methods



Course specification of postgraduate

- 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,a4,a5	b2,b3,b4,b5		d1,d2,d3
Practical Exam	a3,a6	b2	c1,c2,c3,c4	d2
Oral Exam	a1,a2,a4,a5	b1,b5	c1,c4	d3,d4

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
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

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

8.3. Recommended texts



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

8.4. Journals, Websitesetc

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 of equine					
1	Introduction to AI in equine	1 st w- 3 rd w	1			1,2,3,4,
2	Management and raising of AI stallions	4 th w- 6 th w		6	5	1,2,3
3	Biochemistry and metabolism of equine semen	7 th w- 9 th w	5	2		1,2,3,4
4	Pharmacologic semen collection	10 th w- 12 th w	2,6	1	1	1,2,3,4
5	Other methods of semen collection in equine	13 th w- 15 th w	2	1	1	1,2,3
6	Computer-assisted semen analysis of equine semen	16 th w – 18 th w	2,4	2,3	1	1,2,3,4
7	Processing of stallion semen	19 th w – 21 st w		1	1	1,2,3,4
8	Challenges facing semen preservation in equine	22 nd w – 24 th w		1	1	1,2,3,4
9	Handling of problem mares submitted to AI	25 th w- 31 st w	3	4	2,3	1,2,3,4
10	Handling of Stallion semen under field conditions	32 nd w- 33 rd w		5	4	1,2,3
11	Sexed semen technology	35 th w		1,3	1	1,2,3,4
12	Novel techniques of AI in equines to improve pregnancy	36 th w	3	4	2,3	1,2,3,4



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	PhD -159
Course title :	Artificial insemination in Pet animals
Program title:	Philosophy Doctor of Veterinary sciences
Contact hours/ week	4
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1- Provide Philosophy Doctor students with advanced knowledge about artificial insemination in Pet animals.
- 2- Confer solid background knowledge on application of novel semen technology in Pet animals on individual and population levels.
- 3- Supply Philosophy Doctor 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. List important methods of semen collection from pets.
- a.2. Describe most important methodologies for evaluation of semen from Pet animals.
- a.3. Explain various ethics during application of artificial insemination in pet animals.
- a.4. Mention different methods for insemination of bitch.
- a.5. Review important anatomical specifications of reproductive systems in male and female pet animals.

b-Intellectual skills

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

- b.1. Differentiate between different techniques for semen preservation from Pet animals.
- b.2 Interpret overall ejaculate characters of Pet animals for genetic improvement.
- b.3. Discriminate between ejaculate properties in dog and ruminants.
- b.4. compare between different regimens of AI of estrous Bitches and queens.
- b.5. Summarize management of estrous bitches admitted to artificial insemination.

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 Pets.
- c. 2. Apply advanced tests on dog semen.
- 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



Course specification of postgraduate

- 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.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	Historical background and introduction into artificial insemination in Pets	9	3	6
	Collection of semen from Pets	9	3	6
	Characters of semen ejaculate of Pets	9	3	6
	Ethics applied during artificial insemination in pet animals	9	3	6
	Advanced semen evaluation	9	3	6
	Scheme for evaluation of semen in Pets	9	3	6
	Extension of semen in Pets	9	3	6
	Preservation of semen in Pets	9	3	6
	Freezing of semen of Pets	21	7	14
	Handling of semen of Pet animals under field conditions	6	2	4
	Management of bitch during AI	3	1	2
	Techniques of artificial insemination in Pets	3	1	2
Total		105	35	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
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Course specification of postgraduate

	K&U	I.S	P&P.S	G.S
Final Exam	a1,a2,a3	b1,b2,b3,b4	c1	d1,d2,d3
Practical Exam		b1,b2,b5	c1,c2,c3	d3,d4
Oral Exam	a1,a3,a4,a5	b1,b2,b3,b4,b5	c1,c2,c3	d1,d2,d3

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
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



Beni-Suef University
Faculty of Veterinary Medicine

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)
	Artificial insemination in pet animals					
1	Historical background and introduction into artificial insemination in Pets	1 st w- 3 rd w	5			1,2,3,4
2	Collection of semen from Pets	4 th w- 6 th w	1			1,2,3,4
3	Characters of semen ejaculate of Pets	7 th w- 9 th w		2,3		1,2,3,4
4	Ethics applied during artificial insemination in pet animals	10 th w- 12 th w	3			1,2,3,4
5	Advanced semen evaluation	13 th w- 15 th w	2		1,2,3	1,2
6	Scheme for evaluation of semen in Pets	16 th w – 18 th w	2		1,2,3	1,2
7	Extension of semen in Pets	19 th w – 21 st w		1	1	1,2,3
8	Preservation of semen in Pets	22 nd w – 24 th w		1	1	1,2,3,4
9	Freezing of semen of Pets	25 th w- 31 st w		1	1	1,2
10	Handling of semen of Pet animals under field conditions	32 nd w- 34 th w	3.4	4,5	3	2,4
11	Management of bitch during AI	35 th w		5		1,2,4
12	Techniques of artificial insemination in Pets	36 th w	4	4	3	1,2,3,4



Course specification of postgraduate

1-Basic information

Course Code:	PhD-160
Course title :	Artificial insemination in rabbits
Program title:	Master of Veterinary sciences
Contact hours/ week	4
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1-gain advanced knowledge about artificial insemination in rabbits.
- 2- provide solid background knowledge on application of novel semen technology in rabbits on individual and population levels.
- 3- supply Philosophy Doctor 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. Define artificial insemination and collectively list important methods of semen collection.
- a.2. describe most important methodologies for evaluation of semen from rabbits.
- a.3. Explain most important economic losses 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 preservation from rabbits.
- b.2 Interpret overall ejaculate characters of rabbits.
- b.3. discriminate between normal and abnormal ejaculates.
- b.4. compare between different regimens of AI of does.

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 and process semen of rabbits.
- c. 2. Apply novel artificial insemination protocols.
- c.3. Carry out professional work in evaluation of semen of rabbits 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. h./week, Pract h./week)	Historical background and introduction into artificial insemination in rabbits	9	3	6
	Handling of rabbit bucks	9	3	6
	Characters of semen ejaculate of rabbits	9	3	6
	Biochemistry and metabolism of semen	9	3	6
	Methods of semen collection in rabbits	9	3	6
	Scheme for evaluation of semen in rabbits	9	3	6
	Extension of semen in rabbits	9	3	6
	Preservation of semen of rabbits	9	3	6
	Handling of semen of rabbits under field conditions	21	7	14
	Sexed semen technology	9	3	6
	Techniques of artificial insemination in rabbits	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, 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	c1	d1,d4
Practical Exam		b1,b3,b4	c1,c2,c3	d3,d4
Oral Exam	a1,a2,a3	b1,b2,b3		d1,d2,d3



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

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
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, Websitesetc

Journals:

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

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)			
			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 st w- 3 rd w	1,2,3	1,		1,2,3
2	Handling of rabbit bucks	4 th w- 6 th w	1,2,3	1,3		1,2,3,4
3	Characters of semen ejaculate of rabbits	7 th w- 9 th w	1,2	3		1,2,3,4
4	Biochemistry and metabolism of semen	10 th w- 12 th w	1,2			1,2,3,4
5	Methods of semen collection in rabbits	13 th w- 15 th w	1,2,3	1,2	1,2,3	1,3,4
6	Scheme for evaluation of semen in rabbits	16 th w – 18 th w	1,3	3	1,2,3	1,2,3
7	Extension of semen in rabbits	19 th w – 21 st w	1,3	4	3	1,2,3,4
8	Preservation of semen of rabbits	22 nd w – 24 th w	1,3	1,2,3,4	1,2	2,4
9	Handling of semen of rabbits under field conditions	25 th w- 31 st w	1,2,3	1,2,3	3	1,2,4
10	Sexed semen technology	32 nd w- 34 th w	1,2,3	1,2,4	1,3	1,2,3,4
11	Techniques of artificial insemination in rabbits	35 th w- 36 th w	1,3	1,2	1,2,3	1,4



Course specification of postgraduate

1-Basic information

Course Code:	PhD -161
Course title :	<i>In vivo</i> and <i>in vitro</i> Embryo production
Program title:	Philosophy of Doctor of Veterinary sciences
Contact hours/ week	4
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- 1-gain advanced knowledge about production of embryos.
- 2- provid solid background knowledge on *in vivo* and *in vitro* production of embryos.
- 3- supply Philosophy Doctor 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 embryo transfer and collectively list important methods of embryo production.
- a.2. describe most important methodologies for evaluation of produced embryos.
- a.3. 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 techniques used for superovulation.
- b.4. compare between different regimens of embryo transfer.

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.

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. h./week, Pract h./week)	In vitro fertilization-embryo transfer	9	3	6
	Multiple ovulation-embryo transfer	9	3	6
	Ovum pick up-embryo transfer	9	3	6
	Protocols of superovulation	9	3	6
	Techniques of embryo collection	9	3	6
	Surgical and non-surgical embryo transfer	9	3	6
	Production of sexed embryos	9	3	6
	Fixed time embryo transfer	9	3	6
	Embryo transfer technology in equines	21	7	14
	Embryo transfer technology in small ruminants	9	3	6
	Novel applications of embryo micromanipulation	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, 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	d1,d4
Practical Exam		b1,b2,b4	c1,c2,c3	d3,d4
Oral Exam	a1,a2,a3	b1,b2,b3,b4		d1,d2,d3

7.2. Assessment schedules

Method	Week(s)



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

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:

-**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 NOTTINGHAM

8.3. Recommended texts

8.4. Journals, Websitesetc

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

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