Benha University
Faculty of Veterinary Medicine
Department of Theriogenology

Course Specification for PhD Degree (2010- 2011)

Course Title: Reproduction and immunity

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Course specifications

Awarding Body:	Benha University
Teaching Body:	Faculty of Veterinary Medicine
Department responsible:	Theriogenology
Program on which the course is given:	PhD degree
Academic year / Level :	Post-graduate
Date of specification approval:	Ministerial Decree No 921, on 15/9/1987
Date of reviewing by department council:	28 /11 / 2010

A- Basic Information

Title	Reproduction and immunity			**Code:**	PVD5
Lecture:	2 hours	**Practice:**	2 hours	**Total:**	4 hours

B- Professional information:

1- Overall aims of course:

The overall aims of this course are preparation of the graduates to be able to:

- Efficiently be aware of the relationship between the immunology and reproduction
- Find out and how to solve the field problems related to immunological causes of lowering the fertility in male and female animals.
- Provide the candidate the opportunity to do researches have an application in the veterinary field.
- Realize the more recent techniques and diagnostic tools in the field of reproductive immunity.
- To achieve capability in modern laboratory technology to develop practical research project.

- To have the ability of data statistical analysis, results interpretation and dissertation preparation.

2- Intended Learning Outcomes of Course (ILOs)

a- Knowledge and understanding:

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

a.1. Describe the more advanced concepts regarding fertilization and maintenance of pregnancy.

a.2. Understand various proteins secreted during pregnancy with special emphasis to those proteins specific for pregnancy diagnosis.

a.3. Illustrate the advanced concepts about general immunology.

a.4. Identify the advanced concepts about the physiological immunological response related to reproduction and possible immunological responses that may adversely affect the reproductive performance.

a.5. Recognize the proteins produced during heat stress and their role in controlling reproduction in farm animals.

a.6. Be aware of the sperm iso- and auto-immunization and its role in reproductive failure of male and/or female origin.

a.7. Have knowledge about hormonal reproductive failure

a.8. Recognize the different procedures and disciplines those improve the fertility status of the herd.

b- Intellectual Skills:

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

b.1. Identify, conceptualize and define hormonal regulation of reproduction.

b.2. Differentiate between infertility problems arise due to immunological and non immunological causes.

b.3. Evaluate their own research data and develop new approach to solve their immunological causes of reproductive failure.

b.4. To develop creative approaches for solving the problems in the field of reproductive immunology.
b.5. Identify, summarize and evaluate previous researches adopted in the field of reproductive immunology.
b.6. Understand areas where further researches necessary and be aware of any which would be beyond current ethical codes.

c- Professional and Practical Skills:

By the end of this master course the graduate should be able to:

c.1. To handle those recent techniques and tools adopted to evaluate the fertility status and diagnose immunological infertility problems in farm animals.
c.2. Utilize the immunological response for pregnancy diagnosis, controlling and diagnosis infectious disease, controlling reproduction.
c.3. Perform essential laboratory skills related to the diagnosis of immunological causes lowering fertility in male and female animals.
c.4. Apply the principles of good experimental design and analysis to their own research project.
c.5. Select and perform relevant programs of statistical analysis on data obtained for their own research.
c.6. Plan and execute a research project in the field of reproductive immunity with a consideration to the technical, ethical and safety issues and associated costs.

d- General and Transferable Skills:

By the end of this course the graduates should be able to

d.1. To have the ability to learn independently in preparation for career of lifelong learning.
d.2. To have information retrieval and library skills.
d.3. To have interpersonal skills and team working ability by successful completion of collaborative learn assignment and the honors researches project.
d.4. To present research finding in oral and written from using arrange of appropriate soft ware(e.g., power point, word, excel and database)

3- Contents

No.	Topic	Lect./h	Pract./h	Total/h
1	Fertilization & pregnancy continuity	2	2	4
3	Specific proteins for pregnancy diagnosis	2	2	4
4	Specific proteins for heat stresses	2	2	4
5	Sperm auto-immunization	2	2	4
6	Sperm-iso-immunization	2	2	4
7	Hormonal reproductive failure	2	2	4
	Total	14	14	28

Teaching and Learning

4- Teaching Methods

4.1. Lectures

The department council assigns one of the teaching stuff to teach a special chapter in the course syllabus. The entire student will attend one class 3h/week. The teacher will use all the available teaching tools including data show and overhead projectors. The lectures usually take the form of open discussion

4.2. Discussion sessions

The student will be responsible for making a presentation about and discuss one subject (usually related to his thesis subject) in front of all department members

4.3. Information collection

The supervisors will make assignment for their student to collect data and make a complete review about one subject (usually related to his thesis subject).

4.4. Practical training / laboratory

The students will take the practical course 4hours/week under supervision of one of the department member 2 assistants. During the lab the student will do all practical syllabus by them self.

4.5. Research assignment field

The student will be responsible for searching for the most recent research pint and designs a plan for his research work.

4.6. Visits.

The student will chair in some visits to the surrounding villages and /or farms

4.7. Case studies.

The student will chair in diagnosis and handling cases came to the faculty educational hospital.

5- Student assessment methods

- Practical exam to assess professional and practical skills.
- Oral exam to assess knowledge and information and intellectual skills.
- Written exam to assess knowledge, information and intellectual skills.
- Assignments to assess management of clinical cases.

6- Student assessment grade:

Method	Weighting		Evidence
	Mark	%	
Written Examination	50	50	Marked and signed written paper
Oral Examination	20	20	Signed list of oral exam marks
Practical Examination	20	20	Marked and signed practical exam sheet
Seminar	10	10	**??????**
Total	**100**	**100**	

7- List of references

a- Course Notes

- A concise guide of theriogenology.

b- Essential Text Books:

- Animal breeding and infertility, Michael Meredith, 1995.
- Cattle embryo transfer procedure, John Curtis, 1991.
- Clinical obstetrics and gynecology, Lind Heimer, Davidson, 1994.
- Congenital malformations in lab and farm animals, Kalman, 1989.
- Ultrasonography in obstetrics and gynecology, Peter, Callen, 3rd Ed., 1994.

c- Recommended Reference Books:

- Fertility and infertility in veterinary practices, Laing, et al., 4th Ed., 1988.
- Physiology of reproduction and A.I. in cattle, Salisbury, et al., 1985.
- Reproduction in farm animals, Hafez, 7th Ed., 2000
- Veterinary Reproduction and obstetrics, Arthur, et al., 6th Ed., 1989.
- Current therapy in theriogenology, Morrow, 1980

d- Periodicals

- J. Animal reproduction & Fertility
- J. Fertility & Sterility
- Theriogenology.
- Benha veterinary medical journal.
- Veterinary record
- Journal dairy science
- Journal animal science

e- Web sites

- google.Com
- arabvet.com
- esarf.tripod.com/index.html.

f- Facilities required for teaching and learning:

1- Video Films.
2- Data-show.
3- Farm animals for clinical application
4- Network for technology transfer.
5- Overhead projector.
6- Laboratory kits for reproductive biotechnology.
7- Computer.
8- Field visits.

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Course Co-coordinator: **Head of Department**