Course Specifications

Programme(s) on which the course is given: Bachelor degree of Veterinary Science

Major or Minor element of program: Major

Department offering the program: Theriogenology, obstetrics and artificial insemination

Department offering the course: Theriogenology, obstetrics and artificial insemination

Academic year / Level: 5th year (first semester)

Date of specification approval: 22 / 12 / 2009

A- Basic Information:

Title: **Artificial insemination and Obstetrics in farm animals**
Code: **512**
Lecture: **24**   Practical: **24**   Total: **48**

B- Professional Information:

1 – Overall Aims of Course:

1. Know the scientific knowledge about the general characteristics of normal semen in different farm animals.
2. Improve the genetic characters of farm animals using the processed semen of well selected male animal.
3. Insemination of the female farm animal in the proper time of insemination.
4. Know the scientific knowledge about the physiology of pregnancy, fertilization, normal development of the conceptus and placentation.
5. Deal with pregnancy diseases and disturbances.
6. Know signs for impending parturition, stages of parturition in different animals and general consideration of difficult parturition.

2 – Intended Learning Outcomes of Course (ILOs):

a- Knowledge and Understanding:
The graduate must acquire the basic knowledge and information about :-

a1- General characteristic of normal semen in different farm animals.
a2- Evaluation and processing of semen in different farm animals.
a3- Physiology of pregnancy, development of the conceptus, placentation.
a4- Diseases & disturbances of pregnancy and its diagnosis.

a5- Signs of impending parturition, stages of parturition and the normal & abnormal fetal presentation, position and posture.

b-Intellectual Skills:

The graduates must have the ability to:-
bl- Deal with the semen sample and how to improve the genetic properties of farm animals using the processed semen.
b2- Give the accurate diagnosis for any pregnancy disturbances.
b3- Deal with heavy pregnant female that approach parturition, and preparation required for parturition in different farm animals.
b4- Deal with training of males & semen collection in different farm animals.
b5- Evaluate the semen sample with gross and laboratory methods for evaluation.
b6- Deal with processing of both liquid and frozen semen from high valuable male farm animals.
b7- Deal with insemination of the female farm animals.

c-Professional and Practical Skills:

The graduates must attain the capacity to:-
cl- Train of valuable male farm animals to be used in breeding.
c2-Collect semen from different farm animals.
c3- Select semen using different methods for semen evaluation.
c4- Process liquid and frozen semen from well selected semen samples .
c5- Apply different techniques for insemination.

d- General and Transferable Skills:

The graduates must have the ability to:-
dl- Write a scientific reports about semen evaluation .
d2- Use printable sheets to report any result.
d3- Work in groups by training of the students using group teaching .
d4- Use internet to reach scientific information by searching in scientific web sites, and to use computer for preparation of a scientific report.
d5- Deal with animal's owner in suitable manner.

3- Contents:

Theoretical parts

Contents	No. of hours
Artificial Insemination A.I advantages, general characteristics of semen, spermatozoa and seminal plasma	2
Collection of semen in different domestic animals and methods of collection	2
Evaluation of bull semen, characteristic of semen in different domestic animals	2
Processing and storage of semen (liquid semen)	2
Frozen semen, advantage, forms of frozen semen, procedure of freezing each form and methods of insemination in different domestic animal	2
Obstetrics Physiology of pregnancy and early embryogenesis ,fertilization and development of conceptus	2
Formation and development extra embryonic membranes "placentation"	2
Diseases during pregnancy, foetal diseases	2
Reproductive disturbance	2
Physiology of parturition, theories of causes parturition	2
Stages of parturition	2
Dystocia and general consideration	2

Practical parts

Contents	No. of hours
Introduction for artificial insemination "History, advantages and disadvantages "	2
Collection of semen in different domestic animals and methods of collection.	2
Evaluation of bull semen I. Gross examination II. Microscopical examination 1. Assessment of the motility of spermatozoa.	2
Revision	2
II. Microscopical examination 2. Assessment of the morphology of spermatozoa.	2

II. Microscopical examination
    3. Assessment of the concentration of spermatozoa
    4. Assessment of the resistance of spermatozoa
	2

III. Special laboratory tests on the semen ejaculate	2
Revision	2
Processing and storage of liquid semen	2
Processing and storage of frozen semen	2

Different techniques of A.I in farm animals	2
General revision	2

4– Teaching and Learning Methods:

4.1- Lecturing.

4.2- Practical sessions to gain practical skills.

4.3- Discussion sessions.

4.4- Using case study to train the student how to analyze information and reach the suitable decision.

4.5- Using Data show for illustration of wide variety of cases by different scientific and clinical videos.

4.6- Using the experimental animals of the veterinary learning farm of the faculty.

5- Student Assessment Methods:

5.1 Written exam (assay). to assess a.l, a.2, a.3, a.4, a.5, c1, c2, c3 & c5.

5.2 Practical exam. to assess b.1, b.2, b.3, b.4, b.5, b.6, b.7, c.1, c.2, c.3, c4 & c5.

5.3 Oral exam. to assess a.l, a.2, a.3, a.4, b.1, b.2, b.3, b.4, b.5, b.6 & b.7.

5.4 Multiple choice exam. to assess b.1, b.2, b.3, b.4, b.5, b.6 & b.7.

Assessment Schedule:

Midterm exam (theoretical and practical) …. Week…......9

Final exam ....held at the end of the semester.

Practical exam... Week.......14

Oral exam………………. held at the end of the semester.

Weighting of Assessments:

Mid-Term Examination	20%
Final-term Examination	50%
Oral Examination	20%
Practical Examination	10%
Semester Work	--%
Other types of assessment	-- %

Total	100%

Any formative only assessments

6- List of References:

6.1- Course Note:

Department course notes "Artificial insemination and Obstetrics in farm animals"

6.2- Essential Books (Text Books): 4

None

6.3- Recommended Books:

6.3.1- Andrology and artificial insemination in farm animals (2005). By Sing, B.K.

6.3.2- Equine Artificial Insemination (2001), By Mina C. G, Davies Morel, CABI Publishing.

6.3.3- Pathways to pregnancy and parturition (2003) Senger, P.L, Cadmus.

6.3.4- Comparative Placentation "Structures, Functions and Evolution" **(2008).** By Peter Wooding, Graham Burton, Springer-Verlag Berlin Heidelberg.

6.4- Periodicals, Web Sites,

  6.4.1- Learning Reproduction in Farm Animals
    URL http://animalsciences.missouri.edu/reprod/images.htm

  6.4.2- Biology of reproduction
    URLhttp://www.biolreprod.org/content/80/6/1223.full

  6.4.3- Reproductive Pathology
     URLhttp://cal.vet.upenn.edu/projects/repropath/index.html

  6.4.4- The Visual guide to bovine obstetrics
  URLhttp://www.drostproject.vetmed.ufl.edu/drost_bovine_contents.html

7- Facilities Required for Teaching and Learning:

 -Appropriate teaching accommodation like veterinary learning farm, and teaching & laboratory rooms.

  -Teaching aids like overhead projectors, scientific posters and models of newly born of different farm animal species.

 - Data show is essential for presentation the theoretical and practical courses and to view clinical videos of different clinical cases.

 - Artificial insemination laboratory with advanced semen analysis apparatus and requirements & equipments for semen processing.

Course Coordinator:

(Course Professor): Dr. Mohammed Sabry Aref

Head of Department:

Prof. Dr. Abd elatif Shaker Seddek

 Date: 22 / 12 /2009