مركز الاعتماد وضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

Course Syllabus

1	**Course title**	Reproductive Physiology
2	**Course number**	**632751**
3	**Credit hours**	3 hrs.
	Contact hours (theory, practical)	3 , 0
4	**Prerequisites/corequisites**	Not applicable
5	**Program title**	M.SC. in Animal Production
6	**Program code**	
7	**Awarding institution**	The University of Jordan
8	**School**	Agriculture
9	**Department**	Animal Production
10	**Course level**	Not applicable
11	**Year of study and semester (s)**	First semester 2020/2021
12	**Other department (s) involved in teaching the course**	None
13	**Main teaching language**	English
14	**Delivery method**	**X** Face to face learning ☐Blended ☐Fully online
15	**Online platforms(s)**	☐Moodle ☐ Microsoft Teams ☐Skype ☐Zoom ☐Others……
16	**Issuing/Revision Date**	10/10/2021

17 Course Coordinator:

Name: Prof. **Mufeed A. Alnimer**	Contact hours: 9.30 – 10.30 (Sun, Tue, Thu)
Office number: **032**	Phone number: **22383**
Email: **amufeed@ju.edu.jo**	

18 Other instructors: No other instructors.

19 Course Description:

This course will deep in reproductive physiology terminologies and processes of farm animals in addition to the latest reproductive biotechnologies and its role in farm management. It involves the study of the female and male reproductive tract and its origin, estrus cycle and the role of hormones in it, the sperm journey in the female reproductive tract, fertilization process, gestation periods and hormones of pregnancy, periods of parturition, measurements of reproductive status, causes of low fertility and the importance of modern reproductive technologies to avoid reproductive failure.

20 Course aims and outcomes:

A- Aims:

The General objective of this course is to give the M.SC students the opportunity to build a wide knowledge related to reproductive processes and technologies in order to be able to increase their elasticity in solving reproductive management problems especially those requests the application of latest techniques and biotechnologies.

B- Students Learning Outcomes (SLOs):

Upon successful completion of this course, students will be able to:

Program SLOs* / SLOs of the course	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)	SLO (7)	SLO (8)	SLO (9)	SLO (10)	SLO (11)	SLO (12)
(1) Student should have the scientific knowledge regarding concepts and subjects of reproduction and reproductive biotechnologies in farm animals.	X	X		X				X			X	
(2) Student should be capable to combine between all subjects regarding the reproductive processes in order to give proper decisions.			X	X				X	X		X	
(3) Student should understand how to apply the modern reproductive technologies in efficient management of farm animals in order to obtain the most possible fertility outcomes.	X							X		X		
(4) The student's ability to solve reproductive problems in farm					X	X			X			X

animals in order to avoid its negative effect on farm management.												
(5) The capability of student to apply the modern reproductive biotechnologies on farm animals in order to distinguish its beneficial effects on fertility and productivity.				X	X		X					X
(6) Preparing scientific reports on various topics related to reproductive processes, management and technologies of farm animals based on different resources including scientific papers in refereed journals.				X				X				X
(7) Applying topics of the course especially those about reproductive technologies in the field.		X		X				X	X		X	
(8) The student has the skill to manage and improve the reproductive status of farm animals depending on the acquired knowledge and skills in this course.			X			X	X					
(9) The student uses all his energies with the acquired skills and knowledge in this course to		X		X		X			X			

improve the level of knowledge and skills of others especially farmers.												

***Program SLOs:**

1. Create and implement plans, programs and systems to help in the development of animal production.

2. Work in research institutions and conduct research applied research to tackle current issues in animal production.

3. Demonstrate effective communication skills with livestock producers especially at a local level to provide the appropriate extension services.

4. have an ability to implement the results of scientific studies to take the appropriate decisions

5. Utilize critical thinking capabilities and problem solving skills in providing solution for outstanding issues facing the livestock sector in Jordan.

6. Have the ability to work as a manager in the animal production companies and enterprises.

7. Draw strategies and working plans to improve efficiency and productivity.

8. Have the ability to perform scientific projects under the supervision of faculty members.

9. Have scientific writing capabilities and use of scientific literature.

10. Lead technical teams of different animal production enterprises.

11. Have the ability to Identify the basic concepts, processes, and methods of conducting scientific research.

12. Develop the writing ability of technical reports.

21. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	INTRODUCTION AND OBJECTIVES The reproductive system: Origin and development	**See the students learning outcomes (SLOs) table**	**Face to Face**	**Not Applicable**	**Not Applicable**	**Home works, Quizzes and exams**	▪ Chapter 1 and 2, Hafez and Hafez, Reproduction in Farm Animals, 2000. ▪ Animal reproduction and reproductive biotechnologies internet sites.
2	2.1	The reproductive system: ▪ Differentiation of reproductive system ▪ Anatomy and physiology of reproductive system						
3	3.1	Hormones of reproduction: ▪ Nature of hormones ▪ Function of hormones ▪ Regulation of endocrine activity						
4	4.1	Hormones of reproduction: ▪ Anti-hormones, sex hormones ▪ placental hormones ▪ prostaglandins hormones						▪ Chapter 3, Hafez and Hafez, Reproduction in Farm Animals, 2000. ▪ Animal reproduction and reproductive biotechnologies internet sites.
5	5.1	The Estrous Cycle ▪ Hormones that regulate estrous cycle ▪ Phases and time sequence of the cycle.						▪ Chapter 4, Hafez and Hafez, Reproduction in Farm Animals, 2000.

6	6.1	The Estrous Cycle ▪ Ovarian and tubular changes ▪ Artificial control of the estrous cycle						▪ Animal reproduction and reproductive biotechnologies internet sites.
7	7.1	Ovulation and Fertilization ▪ Ovigenesis ▪ Ovulation ▪ Fertilization						▪ Chapter 5, 6, 8 and 31, Hafez and Hafez, Reproduction in Farm Animals, 2000. ▪ Animal reproduction and reproductive biotechnologies internet sites.
8	8.1	Ovulation and Fertilization ▪ *In vitro* fertilization (IVF) ▪ Superovulation and embryo transfer (ET)						
9	9.1	Spermatozoa in the reproductive tract ▪ Site of semen deposition ▪ Sperm transport ▪ Survival of sperm ▪ Interaction between sperm and female tract						▪ Chapter 6 and 7, Hafez and Hafez, Reproduction in Farm Animals, 2000. ▪ Animal reproduction and reproductive biotechnologies internet sites.
10	10.1	Gestation ▪ Preparation of the reproductive tract for pregnancy ▪ Periods of the ovum, embryo and fetus. ▪ Uterus changes during pregnancy ▪ Extra embryonic membranes ▪ Hormones of pregnancy ▪ Pregnancy diagnosis						▪ Chapter 8, 9, 10 and 28, Hafez and Hafez, Reproduction in Farm Animals, 2000. ▪ Animal reproduction and reproductive biotechnologies internet sites.
11	11.1	Parturition: ▪ Initiation of parturition ▪ Normal and abnormal presentation of the fetus ▪ Stages of parturition ▪ Involution of the uterus						▪ Chapter 10, Hafez and Hafez, Reproduction in Farm Animals, 2000. ▪ Animal reproduction and reproductive biotechnologies internet sites.

12	12.1	Conception rates ▪ Factors affecting on conception rates ▪ Sterility ▪ Reduced fertility						▪ Chapter 23, 24 and 25, Bearden and Fuquay, Applied Animal Reproduction, 1997. ▪ Animal reproduction and reproductive biotechnologies internet sites.
13	13.1	Reproductive efficiency ▪ Measures of reproductive efficiency ▪ Causes of return to service						▪ Chapter 19, Bearden and Fuquay, Applied Animal Reproduction, 1997. ▪ Animal reproduction and reproductive biotechnologies internet sites.
14	14.1	Causes of low fertility ▪ Inheritance ▪ Anatomical abnormalities ▪ Pathological causes ▪ Age of the animal ▪ Season of the year ▪ Endocrine disturbances						▪ Chapter 21, 23, 24 and 25, Bearden and Fuquay, Applied Animal Reproduction, 1997. ▪ Animal reproduction and reproductive biotechnologies internet sites.
15	15.1	Management factors which affect reproductive efficiency ▪ Husbandry practices ▪ Age at first breeding ▪ Calving interval						▪ Chapter 23, 24 and 25, Bearden and Fuquay, Applied Animal Reproduction, 1997. ▪ Animal reproduction and reproductive biotechnologies internet sites.

22 Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform

First Exam	15%	Class material until week 6	See the students learning outcomes (SLOs) table	Sunday 21/11/2021	Face to face
Second Exam	15%	Class material until week 11		Sunday 19/12/2021	Face to face
Participation, Reports and Quizzes	20%	Along the semester		Different dates	Face to face
Final Exam	50%	All class materials		According to administration and registration unit	Face to face

23 Course Requirements

None

24 Course Policies:

A- Attendance policies: Each student is expected to take their own notes (part from the exam) and to attend class. Absence from lectures shall not exceed 15%. Students are expected to attend all lectures but if a student is absent from class, it is their responsibility to get the material that was missed. You must get any handouts or notes from your classmates.

B- Absences from exams and submitting assignments on time: Make-up exams will be given to students with acceptable excuses-- all effort must be made to contact the instructor if a student will not make an exam time. Exams must be made up within 3 days of the scheduled exam. An acceptable excuse will be reviewed on a case by case basis. Students that do not show up for a test without previous discussion with the instructor will receive a zero for that test- the instructor will not try to contact the student—it is the students job to know when the exams are and show up for the exams and also reschedule with the instructor prior to the exam if necessary. Students that reschedule a test that have received approval from the instructor and do not appear for the rescheduled time will receive a zero. Extreme cases will be reviewed on a case by case basis.

C- Health and safety procedures: Not applicable.

D- Honesty policy regarding cheating, plagiarism, misbehavior: According to UJ regulations.

E- Grading policy: See the previous section.

F- Available university services that support achievement in the course: According to UJ regulations.

25 References:

A- Required book(s), assigned reading and audio-visuals:

- Hafez, B and Hafez, E.S.E. Reproduction in Farm Animals. 7th ed. Williams & Wilkins, Philadelphia, USA. 2000
- Bearden, H.J. and Fuquay, J.W. Applied Animal Reproduction, 6th ed. Prentice Hall Publishers, Upper Saddle River, New Jersey. 2004.

B- Recommended books, materials and media:

- Senger PL. Pathways to pregnancy and parturition. 1st ed. Pullman, WA: Current Conceptions, Inc.; 2003.
- Ball, P.J.H and Peters, A.R. Reproduction in Cattle. Third Edition. Blackwell Publishing; 2004.

26 Additional information:

No

Name of Course Coordinator: Prof. Mufeed Alnimer. Signature: ---------- Date: 10/10/2021
Head of Curriculum Committee/Department: ---------- Signature: ----------
Head of Department: ----------Signature: ----------
Head of Curriculum Committee/Faculty: ----------Signature: ----------
Dean: ---------- Signature: ----------