

## 28428 - Reproduction and Obstetrics

### Información del Plan Docente

<b>Academic Year</b>	2016/17
<b>Academic center</b>	105 - Facultad de Veterinaria
<b>Degree</b>	451 - Degree in Veterinary Science
<b>ECTS</b>	6.0
<b>Course</b>	3
<b>Period</b>	Second semester
<b>Subject Type</b>	Compulsory
<b>Module</b>	---

### **1.Basic info**

#### **1.1.Recommendations to take this course**

The student must have completed all the courses of first and second degree course and be enrolled in the subjects which in his case would have been pending in these courses.

It is necessary to have a solid knowledge of anatomy and animal histology, biology and physiology. Also important is the understanding of the endocrine basis applicable to the study of reproductive function.

#### **1.2.Activities and key dates for the course**

The dates and key milestones of the subject are described in detail, along with those of other subjects of the degree of Veterinary Medicine, on the website of the Faculty of Veterinary Medicine (link <http://veterinaria.unizar.es/gradoveterinaria/>) . This link will be updated at the beginning of each academic year.

### **2.Initiation**

#### **2.1.Learning outcomes that define the subject**

The student, for passing this subject, must demonstrate that

1. It is able to know, understand and explain the basics of each of the steps involved in the process of reproduction and reproduction biotechnologies and obstetric techniques.
2. It is capable of interrelating different concepts and knowledge to apply to treatments playback control, facing planning, optimization and resolution of pathology, using techniques and most appropriate treatments.
3. It is able to properly use the scientific terminology of this matter.
4. It is able to handle basic scientific instrumentation and to obtain data by performing various tests in the laboratory and

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analyze the data to get results that can interpret and can use.

5. You have acquired the necessary skills to perform certain both laboratory and animal tests and is able to interpret them.

### 2.2.Introduction

The subject of Reproduction and Obstetrics is compulsory and is taught in the third year of the Bachelor of Veterinary Science, in Clinical Sciences Module. It is a subject of half-yearly and consists of a total of 6 ECTS (150h), with 40% of presence. It will be a specific subject within its block, including the subjects of "Reproduction and reproductive disorders" and "Obstetrics" (RD1837 / 2008).

the study of reproduction in the male and the female, control and reproductive techniques as well as pregnancy, childbirth and the postpartum period, followed by the pre care and post natal care for mothers and newborn will be addressed together with medical and / or surgical resolution of the problems of labor. Besides clinical pathophysiology and technology of reproduction in the male and the female, as well as factors affecting reproductive ability, obstetrical disorders, neonatal pathology and mammary gland will be studied. aspects of assisted reproduction are also discussed.

### 3.Context and competences

#### 3.1.Goals

The subject and its expected results meet the following approaches and objectives:

The general objective to be achieved with the subject focuses on the students to know in depth the aspects, both physiological and pathological and technological, affecting the reproductive organ function pets to apply them in their control, management and resolution problems.

The specific objectives to be achieved to achieve the overall objective are:

1. Understand the main concepts, principles and terms in which the subject of Reproduction and Obstetrics and its importance within the veterinary profession is based.
2. Remember the anatomical configuration and physiological function of those parts or organ systems of domestic animals, either directly or indirectly involved in the reproductive function in both the female and the male, as well as disorders related theretology .
3. Know and understand the techniques of biotechnology applicable in the field of animal breeding to improve production and / or economically, reproductive performance of domestic and useful species.
4. Know and understand the reproductive phenomena that are necessary to achieve pregnancy and diagnosis
5. Know and understand the reproductive phenomena concurring before, during and after childbirth, and obstetric situations applicability.

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6. Know and understand the various methods of diagnosis and treatment of various pathological conditions directly related to reproductive function in various domestic species way.
7. Establish the basic bibliography of consultation and encourage their use. Besides objective of the course will enhance the development of several generic skills, defendants in the professional field.

### 3.2.Context and meaning of the subject in the degree

Reproduction and Obstetrics, as a compulsory subject within the module Clinical Sciences in the Department of Animal Medicine and Surgery, should be that students acquire the necessary skills to be able to attend the fourth grade Reproduction species integrated in the module " Animal Clinical Sciences and Health "and optimize learning and the implementation of the knowledge acquired in the last degree course (" Practicum "). And finally, the application of all this knowledge into their professional work as a veterinarian.

### 3.3.Competences

To pass the course, students will be more competent to ...

#### *Transversal skills*

1. Analyse, synthesize, solve problems and make decisions in the areas of veterinary professionals.
2. Teaming, uni or multidisciplinary and show respect, appreciation and sensitivity to the work of others.
3. Maintain ethical behaviour in the exercise of their responsibilities to the profession and society.
4. Disclose information obtained during the professional practice of veterinary fluently, oral and written, with other colleagues, authorities and society in general.
5. Write and present professional reports, while maintaining the necessary confidentiality.
6. Search and manage information related to veterinary activity.
7. Know and apply the scientific method in professional practice including evidence-based medicine.
8. Know advice and professional help
9. Be aware of the need to maintain current knowledge, skills and attitudes of professional skills through a process of continuous training.

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10. Know the rights and duties of the veterinarian, with special emphasis on ethical principles.
11. Know the organizational, economic and management aspects in all those fields of the veterinary profession.

### *Specific skills*

1. Manage anatomico-physiological concepts reproductive endocrinology both male and female.
2. Perform history and clinical examination of the animals from reproductively.
3. Collect and forward all types of samples with its report, as support for reproductive clinic.
4. Perform basic analytical techniques and interpret their clinical, biological and chemical results in the field of reproduction.
5. Apply knowledge of the different biotechnologies of animal reproduction.
6. Have the basis for planning, diagnosis, monitoring and maintenance or interruption of pregnancy.
7. Assist in childbirth, postpartum and in basic newborn care.
8. Identify possible changes that may occur to the reproductive system in both male and female, facing his diagnosis, using various general and instrumental techniques, including necropsy.
9. Apply the most common medical and surgical treatments in animals reproductive clinic level and basic care to ensure the proper reproductive functioning.
10. Diagnose and resolve obstetrical problems through surgical techniques doctor.
11. Addressing reproductive emergency room and Veterinary first aid

- With the objectives reflected in the Grade skills in Veterinary Medicine (Order ECI / 333/2008) for this subject, which are addressed:

1. Reproduction, childbirth and postpartum: Care and diseases.
2. Assisted Reproduction.

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3. Methods and procedures for clinical examination, additional diagnostic techniques and interpretation.
4. Diagnosis.

### 3.4.Importance of learning outcomes

The student who has passed the course will be able to understand and analyse the fundamentals of Reproduction and Obstetrics as a basis for solving problems associated with it, as well as for control and planning allowed the company to successfully their profession all levels, since reproduction has a large impact on other parameters. Knowing in depth both physiological and pathological and technological aspects that affect the reproductive organ function pets can apply them in their control and management.

## 4.Evaluation

### Evaluation activities

The student must demonstrate achievement of learning outcomes, and therefore the general and specific objectives by the following evaluation activities:

#### (1) Written tests of theoretical teaching

An examination at the end of the semester. Will be held as per schedule approved by the Board of the Centre.

It will consist of forty multiple-choice questions and short questions (80% of the final grade). Errors in the test will not qualify with negative points.

#### (2) Evaluation of the practical sessions

Attendance at practical sessions is compulsory.

The attendance and participation in all practice sessions along with the realization of a theoretical and practical, objective test represent up to 15% of the final grade. If unable to attend any of the sessions, the student must take an examination consistent practices in an objective test of theoretical and practical character.

The note obtained in this section will be saved for subsequent courses.

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(3) Presentation of group work (seminar sessions)

Attendance at public speaking of works is compulsory.

Is scored, the exhibition of the same (clarity, communication skills and discussion of results, etc.). Will mean up to 5% of the final grade.

### FINAL SCORE

The final score is the sum of all evaluation activities.

Evaluatory activity	Percentage of the final grade
Theoretical teaching evaluation	80%
Practical teaching evaluation	15%
Presentation of work	5%

To pass the course the student must:

- Get at least 5 out of 8 (25 questions) in the written test score of theoretical teaching
- Overcoming the evaluation of the practical sessions in the laboratory, teaching Nave and Holdings
- Present the group work

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The scores obtained during the course of the activities described in paragraphs 2 and 3 will remain in the 2nd call of the same course for students who have not passed the subject in the first call. In addition the note obtained in paragraph 2 and 3 will be saved for subsequent courses

### Endpoints and demand levels

Ratings System:

According to the Regulation of Learning Assessment Standards of the University of Zaragoza (agreement of the Governing Council of the University of Zaragoza, of December 22, 2010, BOUZ 01-11), the results obtained by the student will be graded in according to the following numerical scale from 0 to 10, with one decimal, which may be added corresponding qualitative rating:

0 to 4.9: Fail

5.0 to 6.9: Pass

7.0 to 8.9: B

9.0 to 10: A

The mention of 'Distinction' may be awarded to students who have achieved a score greater than or equal to 9.0. Their number may not exceed five per cent of the students enrolled in the corresponding academic year.

This grading system is in accordance with the provisions of Article 5 of Royal Decree 1125/2003 of 5 September (BOE September 18), establishing the European credit system and the grading system established in university degrees official and valid throughout the national territory.

### Tests for distance learners or those that arise in other various calls for the first

A final exam will include:

1. Written examination of theoretical teaching: Consist of forty multiple-choice questions and short questions (80% of the final grade). Errors in the test will not qualify with negative points.

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2. Evaluation of practical teaching: the student must take an exam consisting of an objective test practice theory and practice. It will be graded up to 15%.

3. Evaluation of the presentation of a job. It will be graded up to 5% of the mark

The final grade is the sum of the notes of each assessment activity.

### 5. Activities and resources

#### 5.1. General methodological presentation

The learning process that is designed for this subject is based on ....

Theoretical knowledge of the main concepts of Animal Reproduction and Obstetrics, and practices at both laboratory and field applications.

Practical activities are aimed scheduled an approximation to reality through observation and direct manipulation, and previous training courses scheduled for the fourth and fifth degree course.

#### 5.2. Learning activities

They will be developed based on:

- Theoretical classes
- Practical classes
- Seminars
- Presentation of work

**Lectures hours: 39 h**

Non-contact hours: 58.5 h.



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Teaching-learning methodology:

Participatory teaching master classes. The classes are supported with ICT technologies and traditional systems. Students have previously graphic material exposed through the virtual platform of the course (Moodle) and deposit notes in the Reprography Service of the Faculty. the participation of students in posing questions or discussion of issues of particular relevance to difficulty or compression of the issues is encouraged.

### 2. Lab:

Hours: 17 h

Non-contact hours: 8.5 h

Teaching-learning methodology:

A total of 17 hours of practice will be held in the laboratories of Reproduction at the seminar, teaching ship and farms, distributed in 7 sessions of varying lengths depending practice. They will be taught according to the groups scheduled in the middle.

Students will have scripts and specific materials for their understanding and realization.

Initially an explanation recalling the foundation of practice and then the students will practice under constant supervision of teachers will be held. At the end of each session the results will be analysed and the emerging doubts will be resolved.

### 3. Seminar Sessions

Hours: 4 h

Non-contact hours: 8 h

Teaching-learning methodology:

Complementary activity to strengthen the related concepts with various topics of the subject by exposing papers prepared in advance by each participant group.

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### 5.3.Program

1. Program of lectures:

In 4 thematic blocks, with the timing and allocation of hours below.

#### PART I: FUNDAMENTALS OF ANIMAL REPRODUCTION

Unit 1. Introduction: Concept of the subject. Application of anatomical and physiological foundations endocrinological of reproduction in the female.

Unit 2. Puberty and sexual cycle in females. External factors.

Unit 3. Implementation of the anatomical and physiological foundations endocrinological of reproduction in the male.

Unit 4. Puberty in male and female hormonal cycle. External factors.

Unit 5. Formation of semen.

#### BLOCK II: REPRODUCTIVE BIOTECHNOLOGY

Unit 6. Introduction to reproduction biotechnology. Semen collection.

Unit 7. Contrasting seminal. Spermogram: meaning and evaluation

Unit 8. Dilution of semen. Types diluents.

Unit 9. seminal Conservation: refrigeration, freezing. Thawing.

Unit 10. Types of artificial insemination. Factors governing the success of artificial insemination.

Unit 11. Control of the sexual cycle. Main products used. Management techniques.

Unit 12. In vitro fertilization. Applications.

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Unit 13. Embryo Transfer. Methodology transfer in different species.

Unit 14. micromanipulation of embryos.

### BLOCK III: OBSTETRICS

Unit 15. Concept of obstetrics. Migration of gametes. Survival of gametes.

Unit 16. Fertilisation: phases and stages of fertilization. Anomalies of fertilization.

Unit 17. Segmentation and migration of the embryo. maternal recognition of pregnancy.

Unit 18. Implementation: morphological and endocrinological aspects. Types of implementation.

Unit 19. Placentation. Types of placenta. Physiological endocrinology placenta. Umbilical cord.

Unit 20. Gestation. Care of the pregnant female. Development and growth  
foetal.

Unit 21. Gestation: Diagnostics of pregnancy.

Unit 22. Pelvimetry and foetal position. Valuation methods.

Unit 23. Delivery: Concept. Stages of labour. Management and hygiene. Birth control.

Unit 24. Puerperium.

Unit 25. Lactation: Mammary gland. Colostrum. Milk. Artificial feeding.

### SECTION IV: REPRODUCTION PATHOLOGY

Unit 26. Sterility and infertility in the male anatomical, functional and congenital causes.

Unit 27. Interventions in the male reproductive

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Unit 28. Sterility and infertility in the female anatomical, functional and congenital causes.

Unit 29. Embryonic mortality. Abortion. Induction of abortion.

Unit 30. Gestation: Mother Diseases

Unit 31. Gestation: Diseases of foetal appendages and foetus. Foetal suffering.

Unit 32. Dystocia. Classification of dystocia. Obstetric manoeuvres. Obstetric material.

Unit 33. Dystocia of maternal origin. Resolution.

Unit 34. Dystocia of foetal origin, non-invasive obstetric manoeuvres.

Unit 35. Invasive obstetric manoeuvres on the mother and the unborn baby

Unit 36. Accidents consecutive childbirth. Pathology of puerperium

Unit 37. Pathology of the mammary gland in the male and female

Unit 38. Pathology of the newborn

Unit 39. Interventions in the male reproductive

### 2. Lab:

1. Artificial insemination techniques in teaching anatomical models Location: Laboratory Genitals.

Duration: 3 h

2. Seminal Technology

Place of delivery: Laboratory semen. Duration: 2.5 h

3. Assisted Reproduction: handling of oocytes and embryos Place of delivery: Laboratory embryos

Duration: 2.5 h

4. Foetal position and obstetric manoeuvres

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Place of delivery: Reproduction Seminar

Duration: 1.5 h

5. Blockages and obstetric interventions.

Place of delivery: Seminar Playing, teaching ship.

Duration: 2.5h

6. Diagnostic techniques in reproduction

Place of delivery: Laboratory semen.

Duration: 3 h

7. Care delivery

Place of delivery: Livestock farm.

Duration: 2 hours

### 5.4.Planning and scheduling

The dates and key milestones of the subject are described in detail, along with the other subjects in the third course in the Degree of Veterinary Medicine, on the website of the Faculty of Veterinary Medicine (link: [http://veterinaria.unizar.es / gradoveterinaria /](http://veterinaria.unizar.es/gradoveterinaria/)). This link will be updated at the beginning of each academic year.

Safety standards in practice

\* PROPER ATTIRE: each of the practices should be assisted with proper clothing:

- Teaching farm: overalls, reinforced boots and mask and protective glasses if necessary

- Laboratory: glasses, mask, lab coat

- Students collaboration: lab coat

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(<http://uprl.unizar.es/seguridad>)

### 5.5. Bibliography and recommended resources

<http://psfunizar7.unizar.es/br13/eBuscar.php?tipo=a>