Universitat Autònoma de Barcelona

2019/2020

Animal Reproduction

Code: 102661
ECTS Credits: 6

Degree	Type	Year	Semester
2502445 Veterinary Medicine	OB	3	1

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Teachers

Juan Enrique Rodríguez Gil
Maria Teresa Mogas Amorós
Maria Jesús Palomo Peiró

Prerequisites

There are no official prerequisites. However, it would be advisable for the student to have acquired some knowle
DA.

Objectives and Contextualisation

The Animal Reproduction course is a third year subject that provides the knowledge related to the physiology of reproductic

1.- Recognizes and differentiates the anatomical and functional characteristics of the genital apparatus, both male and fema

2.- Understands the neuro-endocrine and gonadal mechanisms that control the appearance and development of the sexual

3.- Acquires a methodical and reasoned knowledge of the physiological reproductive processes that leads to the formation

4.- Knows the physiological changes that occur during pregnancy, both in the mother and in the fetus, as well as their endo

5.- Understands when, how, with what and why an specific therapeutic abortion and/or induction of the parturition technique

6. - Knows the physiology and management of the newborn animal and understands lactation as the final phase of the repr

Competences

- Analyse, synthesise and resolve problems and make decisions.
- Apply the basic cures that guarantee the correct function of the reproduction cycle and the resolution of obstetric problems.
- Comunicar la informació obtinguda durant l'exercici professional de manera fluïda, oralment i per escrit, amb altres col·legues, autoritats i la societat en general.
- Demonstrate knowledge and understanding of the aspects of organisation, finance and management in all fields of the veterinary profession.
- Demonstrate knowledge of English to communicate both orally and in writing in academic and professional contexts.
- Draft and present satisfactory professional reports, always maintaining the required confidentiality.

Learning Outcomes

1. Analyse, synthesise and resolve problems and make decisions.
2. Attain a methodical and reasoned knowledge of the physiological reproduction processes that lead to the formation of gametes and to fecundation, as well as the factors that determine sexual behaviour and coupling.
3. Communicate information obtained during professional exercise in a fluid manner, orally and in writing, with other colleagues, authorities and society in general.
4. Demonstrate knowledge of English to communicate both orally and in writing in academic and professional contexts.
5. Develop in an applicative manner the different forms of artificial insemination, as well as the different dilution, conservation and semen manipulation techniques (refrigeration, freezing, sexing...).
6. Draft and present satisfactory professional reports, always maintaining the required confidentiality.
7. Evaluate the different methods for inducing and synchronising the oestrous cycle, with special theoretical and practical reference to the different guidelines that should be followed.
8. Evaluate the importance of foetal development (foetal physiology and statics), as well as the characteristics of the pelvic channel (pelvimetry) in the satisfactory resolution of normal delivery.
9. Explain the mechanisms that cause delivery in domestic mammals, as well as the zoological and economic importance of the correct establishment of puerperium and lactation and the importance of correctly handling the neonate (handling guidelines, use of colostrum, examination guidelines...).
10. Identify new embryo biotechnologies: transfer of embryos, their in vitro production and conservation, and recent embryonic biotechnologies (cloning, sexing, transgenesis, mother cells, etc.).
11. Identify when, how, with what and why therapeutic abortion and the induction of delivery should be used in different domestic species.
12. Master techniques for exploration of the male and female reproduction apparatus in different species.
13. Recognise the physiological changes produced during gestation both in the mother and in the foetus, as well as their endocrine characteristics.
14. Use the most practical methods for the diagnosis of gestation and know of the advantages and disadvantages of each in different domestic species.

Content

The content of the "Animal Reproduction" subject is structured in 5 items, which are organizad as follows:

1.- First item: This item review of the functional anatomy and the inspection of the male and female genital tract ir

THEORETICAL CLASSES:

Reproduction: Definition. Importance

Inspection of the male: external exploration. Internal exploration

PRACTICAL CLASSES:

• Inspection of the female reproductive system.

• "In vivo" exploration of the female reproductive system.

2.- Second item: this item analyzes the physiology of reproduction under a chronological system. In this manner.

THEORETICAL CLASSES

• Estral cycle (by species): phases of the cycle. Changes in behavior and the inspection of the reproductive syste

• Control of oestrus (by species). Hormone and handling methods to synchronize or induce oestrus. Methods for

• Seminology (1): composition of the semen. Biological characteristics. Sperm metabolism.

• Seminology (2): short and long term conservation. Extenders to be used and their features.

• Fertilization: folliculogenesis. Maturation of the oocyte. Sperm capacitation and acrosomal reaction. Fertilization

• Embryo Transfer: applications. Preparation of donor females and receptors. Collection, evaluation and conserva

PRACTICAL CLASSES

• Vaginal cytology in the bitch.

• Oestrus synchronization and artificial insemination

• "in vitro" Fertilization

• Cryopreservation of gametes

• Semen analysis

• Obtención de semen en varias especies

SEMINARS

• Estral Cycles (DA)

• Artificial insemination on the bitch

• Control of the estrous cycle (DA)

• Reproductive biotechnologies

• Semen analysis

• Germoplasm conservation

SEMINARS

- Oestrus cycles (DA)
- Articial insemination in the bitch
- Control of oestrus cycle (DA)
- Reproductive biotechnologies
- Semen analysis.
- Germoplasm conservation

3.- Third item: this item includes gestation, diagnosis gestation techniques and those that allow us to inhibit or int

THEORETICAL CLASSES:

• Gestation diagnosis (by species): Type of placenta. Maternal recognition of gestation. Endocrinology. Clinical di

• Interruption of gestation (by species): Indications. Products to be used in each period.

• Fetus: Nutrition and metabolism. Endocrinology. Development

• Pelvimetry and fetal statics: fetal diameters. Pelvimetry. Attitude. Situation. Presentation. Position

SEMINARS:

• Management of reproductive data in pigs

4.- Fourth item: this item analyzes the physiology of parturion as well as the techniques that allow to induce and s

THEORETICAL CLASSES

• Eutocyc part. Definition. Induction phase. Expulsion phase (by species).

• Parturition synchronization and induction strategies. Recommendations and strategies (by species).

• Neonatology: physiological characteristics of the newborn (by species). Inspection and determination of the phy

• Puerperium: definition and physiological characteristics. Involution, regeneration and reassumption of cycles. Handling of puerperium according to the species.

Methodology

Learning will be taught in a combined way, with theoretical teaching taught in the form of lectures and practical te

Thus, in accordance with the objectives of the subject, the development of the course will be based on the followi

Theoretical teaching. Master classes

Master classes will be taught with projected screening aids so that the student can follow the explanations. The n

Practical teaching

The practical classes approach the theoretical models to reality and reinforce, complete and allow students to ap

In some cases the practical classes will be done in small groups in order to make possible the student's contact v

Clinical cases (7 two-hour sessions)

The aim of this teaching tool will be the resolution and discussion of clinical cases through which physiological co

There will be specific problems of physiology and reproductive technologies throughout the course. Prior to a clas

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Clinical cases	9	0.36	1, 2, 4, 5, 10, 7
Magistral classes	23	0.92	2, 4, 5, 12, 9, 10, 11, 13, 14, 7, 8
Practical classes	21	0.84	1, 2, 4, 5, 12, 10, 14, 7
Type: Autonomous			
Resolution of cases	23	0.92	1, 2, 4, 5, 10, 7
Study	72	2.88	2, 4, 5, 12, 9, 10, 11, 13, 14, 7, 8

Assessment

The subject will be evaluated through the
cases delivered during the year and through
two exams.

Each case will be scored from 0 to 10. The final grade of the cases will be the arithmetic mean of the delivered or
English will also include the
individual assessment of this competence. Students who
defend and deliver case 1, case 2 or both in English will have a bonus in the case note up to a maximum of 1 poi

- 0-0.34 points: the student does not receive any type of bonus

- 0.35- 0.84 points: 5% applies to the final mark of the subject

- 0.85- 1 point: 10% applies to the final mark of the subject

Both the first exam and the second test consist of 40 questions. Questions have
four possible answers from which
only one is correct. Each question wrongly answered rest
0.33 points. The
60% of the content of the exam will correspond to what was explained during the
theoretical classes and the other
40% will be based on the matter that has been explained during the
practical classes. The duration of each exam is 60 minutes.

Final mark of the subject: The mark of the first exam represents
30% of the final mark of the subject. The second exam's score represents another
30%. Finally, the final note from
cases will represent the remaining
40% of the final mark. All three parts must be approved with
$\geq$5. Notes
$\leq$ 4.99 will be considered as suspended.

If the
mark of the exam is <5 points, the student will be able to present to a
recovery exam. If the
mark of cases is <5 points, the student will be able to recover this part through the realization and delivery of a w

It will be considered
not presented when the student does not take the exam

Regarding the students who
repeat the subject, it
is not necessary for them to repeat the practical classes. In order to evaluate these students, they must be prese

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes

Cases	40%	0	0	1, 2, 3, 4, 5, 10, 6, 7
Exams	60%	2	0.08	2, 4, 5, 12, 9, 10, 11, 13, 14, 7, 8

Bibliography

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edition, 1996. Text of physiology of reproduction and obstetrics structured by species with a very appropriate app

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