# Advances in Equine Medicine and Surgery

Code: 102640
ECTS Credits: 6

2024/2025

| Degree | Type | Year |
|---|---|---|
| 2502445 Veterinary Medicine | OT | 5 |

## Contact

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## Teachers

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## Teaching groups languages

You can view this information at the end of this document.

## Prerequisites

The student has to have passed through Equine Medicine and Surgery ( 4th year subject)

## Objectives and Contextualisation

This subject has mainly a clinical focus. The student will have to apply the skills and knowledge gathered in other subjects such as Exploratory Methods, Animal Health, Animal Reproduction and Equine Medicine and Surgery.

The Objectives are:

1) learning through resolution of practical clinical cases

2) obtain exposure to typical examples of clinical daily practice of an equine practitioner

3) develop the necessary skills to perform diagnostic and therapeutic procedures in horses

## 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.
- Assess and undertake epidemiological studies and therapeutic and preventive programs in accordance with the standards of animal welfare, animal health and public health.
- Attend to emergencies and perform first aid in veterinary science.
- Collect, preserve and issue all types of samples with the corresponding report.
- Demonstrate knowledge and understanding of standards and laws in the veterinary field and regulations on animals and their trade.
- Demonstrate knowledge and understanding of the general bases of medical and surgical treatments.
- Demonstrate knowledge of the rights and duties of the veterinarian, with a special focus on ethical principles
- Diagnose different individual and collective animal diseases, and know about prevention measures, with emphasis on zoonoses and notifiable disease.
- Diagnose the most common diseases using different general and instrumental techniques.
- Have basic knowledge of the profession, and in particular of the organisation and functions of professional practice.
- Make clinical records and accurate and complete clinical exploration of animals.
- Perform basic analytical techniques and interpret the clinical, biological and chemical results, and interpret the results of tests generated by other laboratories.
- Perform the most common medical and surgical treatments of animals.
- Prescribe and dispense medicines correctly and responsibly in accordance with legislation, and ensure that the medicines and waste are stored and eliminated properly.
- Properly apply the principles of sterilisation of surgical equipment and the principles of surgical asepsis.
- Recognise when euthanasia is necessary and perform it humanely by employing the appropriate method.
- Safely perform sedations and regional and general anaesthesia, and evaluate and control the pain.
- Seek and manage information related with professional activity
- Treat and handle animals in a safe and humanitarian manner, and instruct other people to properly employ these techniques.

## Learning Outcomes

1. Analyse, synthesise and resolve problems and make decisions.
2. Apply advanced knowledge of internal medicine in small, equine and exotic animals.
3. Apply ethical values that govern the behavior of veterinarians in clinical practice in relations with other veterinarians.
4. Apply specific knowledge of sedation in horses and regional anaesthesia to perform examinations and clinical and surgical procedures.
5. Apply the concepts acquired for recognition and manipulation of instruments, manipulation of tissues, haemostasis, drainage and sutures, as well as helping effectively in surgical interventions recognising the typical instruments of surgical specialities (traumatology and orthopaedics, thoracic surgery, ophthalmology, neurology, exotic...).
6. Apply the necessary basic knowledge to deal with an animal with a neurological disorder (small, equine and exotic animals).
7. Be responsible for the medication and daily care of patients (small, equine and exotic animals).
8. Defend the ethical values that determine the decision making in diagnostic procedures, medical or surgical treatment or any medical procedure, subject to the rights of animals and their owners.
9. Define the problems found in physical examinations or clinical record of an animal, and produce a list of problems, differential diagnosis and the diagnostic protocol in all clinical specialities and for different species.
10. Demonstrate basic notions and practices of assisted reproduction in pets and equines.

11. Demonstrate knowledge of the general principles of the medical and surgical treatments of ophthalmological disorders of small, equine and exotic animals.
12. Describe the basic procedures applied to emergencies that affect equines and exotic animals
13. Describe the main diseases and injuries derived from sports training and competition.
14. Determine the ideal positions to obtain radiographic images of the different pathological processes and X-rays and use and apply contrast methods in small, equine, exotic and zoo animals.
15. Diagnose and treat the main behavioural problems of small, equine and exotic animals.
16. Diagnose and treat the main dermatological disorders that affect small, equine and exotic animals.
17. Diagnose, treat and issue prognosis of the main problems with neonate and geriatric patients that affect small, equine and exotic animals.
18. Dispense and administer fluids, drugs and other treatments indicated (O2?) for sick animals.
19. Distinguish the different perineural or regional protocols and anaesthesia for the diagnosis of the main orthopaedic problems in equines.
20. Evaluate whether the concepts of asepsis-antisepsis, preparation of surgery and preparation of the surgical patient and the material and instruments to be used have integrated properly, along with their application to the operating theatre depending on the type of intervention and the animal species.
21. Explain the regulations applied to the planning and operation of different veterinary establishments (surgeries, clinics and hospitals) that treat small, equine and exotic animals.
22. Fill in anamnesis and exploration records in all clinical specialities.
23. Hold animals when performing examinations, caring or taking samples in a way that causes the minimum possible stress and be able to explain to other people how to do the same.
24. Identify and treat the processes that affect the reproduction apparatus of male and females in small, equine and exotic animals.
25. Identify the biopsy techniques that can be applied for obtaining samples of different organs and tissues.
26. Identify the conditions in which euthanasia is the only possible option, or the most suitable, depending on the general state of the sick animal and appropriately propose this to the owners.
27. Identify the general principles of medical and surgical treatments of the main problems derived from sports competition.
28. Identify the main contagious diseases that affect equines and plan and assess diagnostic, therapeutic and preventive programs.
29. Identify the regulations that affect breeding of animals with congenital disorders and/or acquired hereditary aetiology (small, equine, exotic and zoo animals).
30. Immobilize the limb of an injured horse by means of specific bandages.
31. Interpret X-rays and echography, and have basic knowledge of the interpretation of MR and IMR applied to clinical cases. Know the indications and limitations of different techniques (with and without contrast, type of apparatus, limitations...) in small, equine, exotic and zoo animals
32. Interpret the results of diagnostic tests (analytical tests, X-rays, echography, endoscopy, PCR, serology...) that are fundamental for advanced diagnosis in the medication and surgery of small, equine and exotic animals.
33. Locate lesions in the nervous system, establish differential diagnoses, diagnostic protocol, treatment and prognosis of small and equine animals.
34. Perform a hemogram and blood test with emergency equipment, and recognise the limitations of these systems and defend interpretations.
35. Perform differential diagnoses and diagnostic plans, taking into account the available complementary techniques applied to all clinical specialities and different species.
36. Perform nasogastric and nasoesophageal scans and handle and place endovenous catheters in different animal species.
37. Perform the basic surgical procedures of different clinical specialities and take samples in small, equine, exotic and zoo animals.
38. Plan the most suitable anaesthetic protocol depending on the animal species and the general state of the patient, as well as the type of intervention required.
39. Practise the most basic perineural anaesthesia techniques.
40. Prepare an animal for echography, recognise the type of probe and suitable positioning for exploration of the different organs and/or tissues in small, equine, exotic and zoo animals.
41. Prepare an animal for endoscopy and interpret the images for the exploration of the different organs and/or tissues in small, equine, exotic and zoo animals.
42. Properly apply euthanasia to small, equine and exotic animals.

43. Properly calculate the doses of medicine for different animal species. Know the limitations of some drugs depending on the species or even the breed, as well as the specific contraindications.
44. Properly fill in forms requesting biopathological and histopathological analyses of pertinent samples of pet, equine, exotic or zoo animals.
45. Recognise personal limitations and know when to ask for professional advice and help.
46. Recognise regulations related with animal trading and actions and responsibilities of the veterinary surgeon (pre and post purchase reports and examinations of small, equine and exotic animals).
47. Recognise the adverse effects that different medications can cause and observe established pharmacovigilance legislation
48. Recognise the disorders that require urgent assistance and know how to prioritise them by severity.
49. Recognise the main problems that will require emergency surgery.
50. Recognise the moment when a case needs to be passed to a specialist for diagnosis and/or treatment, and if required, or not, an urgent examination.
51. Seek and manage information related with professional activity
52. Show responsibility regarding the need to perform necessary complementary tests on the patient and know how to evaluate the meaning and integrate it in the evolution of hospitalised patients of different species.
53. Stabilise critical animals.
54. Use the necessary basic knowledge to deal with an animal with a cardiologic disorder (small, equine and exotic animals).

## Content

THEORY IN CLASSROOM

INTRODUCTION (1H)

DIGESTIVE SYSTEM (4H)

Weight loss

Diarrhea

Anorexia

Surgical colic

SPORTS MEDICINE ( 6H)

Exercise intolerance

Exhaustion

Lameness

Pre purchase examination

Hoof problems, shoeing

INTERNAL MEDICINE (5 H)

Anemia

Chronic fever of unknown origin

Urinary disorders

Coughing and nasal discharge in the adult

The down horse

NEONATOLOGY AND REPRODUCTION (9 HRS)

The weak neonate foal

The foal with limb deformities

The mare with foaling problems

The subfertile male

Equine assisted reproduction techniques. Embryo transfer

OTHERS (5H)

Accidents, fractures, emergency situations

Common ophthalmological problems

Alopecia and pruritus

Behavioural problems stereotypies

SEMINARS

Each student must select, prepare and present a clinical case seen during the clinical rotation. It should be a 10 minute long PPT presentation and each clinical case presented will have teacher supervision and discussion

Diagnostic imaging seminar explaining the main techniques currently employed with several clinical case examples

Anesthesia Seminar which will cover the most routine iv and gas inhalation procedures in horses as well as discussion of selected scientific articles

Infectious disease outbreak management seminar, where the student goes through the recommended guidelines

CLINICAL PRACTICAL LABS

HOSPITAL rotation

Rectal palpation lab for colic diagnosis in a horse model

Rectal palpation lab for reproductive purposes in a horse model

Bandaging and splinting lab in horse model

Examination of a horse's eye, in a live horse

## Activities and Methodology

| Title | Hours | ECTS | Learning Outcomes |
|---|---|---|---|
| Type: Directed | | | |
| Anesthesia seminar | 2 | 0.08 | |

| | | |
|---|---|---|
| Bandaging and splinting lab for orthopaedic emergencies | 2 | 0.08 |
| Clinical case presentation seminar | 6 | 0.24 |
| Diagnostic imaging | 2 | 0.08 |
| Equine opfthalmological exam | 2 | 0.08 |
| Infectious disease outbreak management | 2 | 0.08 |
| Practical hours transferred to MICE | 9 | 0.36 |
| Rectal examination in the mare | 2 | 0.08 |
| Rectal palpation lab | 2 | 0.08 |
| Theory Classes | 30 | 1.2 |
| Type: Supervised | | |
| Hospital practical sessions | 16 | 0.64 |
| Type: Autonomous | | |
| Clinical Case preparation | 10 | 0.4 |
| Home study | 61.75 | 2.47 |

Teaching will have a clinical focus. In the classroom there will be discussion of clinical cases to be prepared in advance and under the theoretical background established for each class. Student participation and case solving will be much valued.

Each student will prepare and present a clinical case seen during the Equine Hospital rotation.

In the specialized seminars and wetlabs student active participation is essential. The labs include rectal palpation, fracture immobilization, how to deal with an emergency, ophthalmic examination amongst others

The Rotation through the Equine Hospital and through Equine Reproduction will be supervised. The student will attend, observe and participate in the routine of an Equine Referral Hospital, including patient care, case management and diagnostic and treatment procedures.The student will learn about professional communication with the owners and referring veterinarians. This practical rotation will be one week long where the student spends 4 mornings from 9:30 to 13:30 h and sharing time in Internal Medicine, Reproduction and Equine Surgery

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

## Assessment

## Continous Assessment Activities

| Title | Weighting | Hours | ECTS | Learning Outcomes |
|---|---|---|---|---|
| Clinical Case Presentation | 20% | 0.25 | 0.01 | 1, 51, 8, 11, 52, 12, 13, 14, 19, 21, 27, 29, 26, 28, 38, 47, 49, 46, 48, 45 |

| | | | | |
|---|---|---|---|---|
| Hospital Practical sessions | 20% | 0 | 0 | 1, 4, 42, 5, 2, 6, 3, 51, 43, 8, 9, 10, 15, 16, 17, 18, 53, 35, 37, 36, 34, 24, 25, 30, 32, 31, 33, 44, 22, 38, 39, 40, 41, 50, 7, 23, 54, 20 |
| Practical examination | 20% | 1 | 0.04 | 1, 4, 42, 5, 2, 6, 3, 43, 8, 9, 10, 15, 16, 17, 18, 53, 35, 37, 36, 34, 24, 25, 30, 32, 31, 33, 44, 22, 38, 39, 40, 41, 50, 7, 23, 54, 20 |
| Theory Exam | 40% | 2 | 0.08 | 1, 51, 8, 11, 52, 12, 13, 14, 19, 21, 27, 29, 26, 28, 38, 47, 49, 46, 48, 45 |

1.Theoretical exam (40% total grade) Writen examination consisting of the resolution of 4-5 clinical cases. Some questions may be written in to guide the resolution of each case. The retake examination could be in an oral format if very few students are taking it. Students that want to improve their grades can take the retake test and the valid grade will be the second one. CT1 CT4, CT6, CT7

2.Practical exam (20% of final grade) In this practical exam the student has to demonstrate the abilities acquired in the seminars and practical labs. The teacher wll propose short practical exercises that each student must perform individually. Attendance to the practical labs and seminars is compulsory. Retake test is possible and same applies as for the theoretical exam

3.Evaluation of Hospital practical rotation (20% of final grade) will be done through evaluation sheets filled in by the clinicians including points for attendance, punctuality, interest, performance of tasks, formality, professionalism. Attendance to these is also compulsory. CT4 CT7

4.Clinical case presentation evaluation (20% of final grade). Individual evaluation will consider aspects such as oral communication skills, scientific terminology used, presentation design, understanding and discussing the case and searching for appropriate bibliography CT4 CT6 CT7

THE STUDENT WHO HAS NOT ATTENDED ANY OF THE EVALUABLE ACTIVITIES IS CONSIDERED NON-EVALUABLE.

In order to pass this subject it is mandatory to have at least 4,5 /10 points in all 4 parts of the evaluation

THIS SUBJECT DOES NOT HAVE A SINGLE ASSESSMENT.

## Bibliography

Same list as in catalan

## Software

Not necessary any special software.

## Language list

| Name | Group | Language | Semester | Turn |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| (PAUL) Classroom practices | 1 | Catalan | second semester | morning-mixed |
| (TE) Theory | 1 | Catalan | second semester | afternoon |