

28433 - Equine Integrated Course

Syllabus Information

Academic year: 2023/24

Subject: 28433 - Equine Integrated Course

Faculty / School: 105 - Facultad de Veterinaria

Degree: 451 - Degree in Veterinary Science

ECTS: 7.0

Year: 4

Semester: Annual

Subject type: Compulsory

Module:

1. General information

The general objective of the subject is that the undergraduate student acquires an adequate level of integrated theoretical and practical knowledge of equine production, clinic and health that will serve as a starting point for their subsequent professional development.

This objective and the contents of the subject are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement: 3 (Objective 3.3), 4 (4.3 and 4.4), 8 (8.1, 8.6 and 8.9), 9 (9.5), 11 (11.A), 12 (12.B and 12.5) and 15 (15.1).

It is recommended that the student has previously acquired the competencies acquired in previous subjects, and that they takes simultaneously or has taken the other Integration subjects of this same academic year, such as Companion Animals (Pets) and Ruminants.

2. Learning results

The student, in order to pass this subject, must demonstrate that:

1. - Knows how to estimate the main nutritional requirements of the horse in its different productive and physiological states, is able to analyse and elaborate a basic feed ration and to explain and recommend the essential guidelines for a correct nutritional management.
2. - Knows the different production systems of sport equines in their different components, as well as the main equestrian disciplines and uses of the horse and understands the characteristics and dimensions of the facilities commonly used in the equine industry and the main guidelines for handling horses and the consequences derived from handling errors.
3. - Knows the objectives and selection criteria in equine selection schemes in Spain, their genetic parameters and genetic evaluation models.
4. - Is able to apply the basic protocols of physical restraint, tranquilization, sedation, anaesthesia, monitoring and pain management in the equine species.
5. - Is able to know and recognize the main infectious and parasitic processes affecting equines and make the differential diagnosis with other pathologies. They must also demonstrate that they know the different diagnostic tests that allow the identification of the causal agent and that they have acquired the necessary skills to perform some of them, as well as to apply the therapeutic protocols and the appropriate strategies for the prevention, control and/or eradication of infectious and parasitic processes.
6. - Knows how to apply the standard necropsy technique in the equine species, knows how to recognize the main lesions in this species, knows how to explain the pathogenesis of the lesions detected, and can orient towards possible ethiological diagnoses and their differentials from the lesions observed.
7. - Knows and understands the symptomatology, ethiology, pathogenesis, predisposing factors, differential diagnosis, basic diagnostic aids, essential treatments and prognosis of the main pathologies that affect the different organic systems and apparatuses of the adult horse and knows how to use the related terminology.
8. - Understands the characteristics and reproductive control of equids and applies reproductive biotechnologies.
9. - Knows the mechanisms involved in labour, its control and the techniques that favour it, as well as the medical and surgical treatments applied in obstetric and reproductive processes
10. - Understands the physiological differences between neonates and adult horses and understands the symptomatology, ethiology, pathogenesis, predisposing factors, differential diagnosis, basic diagnostic aids, essential treatments and prognosis of the main pathologies affecting the different apparatuses and organ systems of foals and neonates and knows how to use the related terminology.

3. Syllabus

FIRST MIDTERM EXAM (35 hours of theory, 10 hours of practice and 5 hours of multimedia self-viewing)

THEORY: 35 hours

BLOCK 1 (5 h)

- Topic 1: General information on equine management, facilities and official documentation.
- Topic 2: Equine nutrition 1.
- Topic 3: Equine nutrition 2.
- Topic 4: Criteria for selection and performance control in equine sport and saddle breeds.
- Topic 5: Sedation and anaesthesia of equines.

BLOCK 2: RESPIRATORY (7 h)

- Topic 6: Upper airways 1: nasal cavity, sinuses and pharynx.
- Topic 7: Upper tract 2: guttural pouches, larynx, and trachea.
- Topic 8: Low airways 1: Non-infectious diseases. Equine asthma, HPIE.
- Topic 9: Low tracks 2: Pneumonia. Affections of the pleural cavity and costal wall, pleuropneumonia.
- Topic 10: Bacterial infectious and infectious respiratory diseases.
- Topic 11: Viral infectious and contagious respiratory diseases.
- Topic 12: Respiratory system injuries.

BLOCK 3: LOCOMOTOR (11 h)

- Topic 13: Semiology and diagnosis. Diagnostic anaesthesia.
- Topic 14: Hoof care, basics of normal and therapeutic shoeing (half class).
- Topic 15: Laminitis (1 and a half classes).
- Topic 16: Pathologies of the corneal sheath.
- Topic 17: Bone pathologies.
- Item 18: Osteoarthritis (Degenerative Joint Disease).
- Topic 19: Podotrochlear syndrome and caudal hoof pain.
- Topic 20: Ligament and tendon pathologies.
- Topic 21: Developmental orthopedic diseases.
- Topic 22: Muscular pathologies. Pathologies of the back.
- Topic 23: Injuries, trauma emergencies, bandages.

BLOCK 4: OTHER APPLIANCES AND SYSTEMS (13 h)

- Topic 24: Main cardiac arrhythmias and murmurs.
- Topic 25: Main urinary pathologies: bladder stones, acute and chronic renal failure.
- Topic 26: Endocrine, metabolic and hepatic: hyperlipemia, hyperlipidemia, gallstones, pituitary adenoma, insulin resistance syndrome, equine metabolic syndrome.
- Topic 27: Main pathologies in equine ophthalmology (this subject is taught in the second part of the term , after ophthalmology in Companion Animal Integration)
- Topic 28. Main non-infectious or parasitic neurological diseases.
- Topic 29: Infectious neurological diseases 1.
- Topic 30: Infectious neurological diseases 2.
- Topic 31: Neurological parasitic diseases. Notifiable and systemic diseases of parasitic and parasitic origin.
- Topic 32. Notifiable and systemic diseases of infectious origin 1.
- Topic 33: Notifiable and systemic diseases of infectious origin 2.
- Topic 34. Dermatology: cutaneous neoplasms, processes of allergic origin.

- Topic 35: Dermatology: parasitic and infectious etiologies.
- Topic 36. Block 4 injuries.

PRACTICES FIRST MIDTERM EXAM: 10 hours

- Practice 1: Practice of ration elaboration (2 hours). L3 type practice (12 groups) in computer classroom (Antonio de Vega)
- Practice 2: Multidisciplinary case-based learning session: My horse makes noises when breathing...! My horse coughs and/or has a nose discharge...!(2hours)(6groups)
- Practice 3: Lameness examination: inspection and static examination with practice horses (1.5 hours) (24 groups) to be performed with practice horses at the Veterinary Hospital of the UZ.
- Practice 5: Lameness test: lameness simulator in computer classroom (1.5 hours) (12 groups)
- Practical 5 Perineural anesthesia and arthrocentesis of the distal extremity of the horse, toe dissection (3 hours). (24 groups) with slaughterhouse specimens in the surgical laboratory.

NON-FACE-TO-FACE ACTIVITIES OF MULTIMEDIA MATERIAL VIEWING: 3 hours of independent work

Students should view (individually or in groups) the following multimedia materials. These activities should be carried out in coordination with the indicated theoretical classes.

- Activity 1: Viewing of nutrition videos: The horse digestive system, Horse digestion guide Equine Nutrition Feedstuffs and The horse body condition (English) (1 hour) (before topics 2 & 3)
- Activity 2: Viewing CD Equad upper airways (English) (before topic 6) (1 hour)
- Activity 3: Work with computerized lameness simulator (after topic 23) (1 hour)

SECOND MIDTERM EXAM (25 hours of theory, 17.5 hours of practice and 3 hours of multimedia self-viewing)

THEORY: 25 hours

BLOCK 6: REPRODUCTION (8 h)

- Topic 49. Examination of the mare (including cytology and uterine biopsies) and control of the estrous cycle
- Topic 50. Male examination, semen collection, evaluation and preservation
- Topic 51: Infertility in males and females
- Topic 52. Natural mating, artificial insemination and embryo transfer
- Topic 53: Reproductive and sexually transmitted diseases of infectious and parasitic type, including infectious abortions
- Topic 54. Gestation management. Problems during pregnancy and non-infectious miscarriages
- Topic 55. Labour, induction, dystocia, cesarean section and problems during the puerperium
- Topic 56. Genital surgery of the male and female genital tract

BLOCK 5: GASTROINTESTINAL (12 h)

- Topic 37. Oral cavity
- Topic 38. Parasitic diseases with special repercussions in the digestive tract 1
- Topic 39: Parasitic diseases with special impact on the digestive tract 2 (including dictyocaulosis)
- Topic 40. Gastrointestinal diseases whose main symptom is NOT acute colic: SUGE, esophageal obstruction, malabsorption: inflammatory bowel disease and chronic diarrhea
- Topic 41. Colic syndrome: classification and exploration. Importance of endotoxemia in equine clinical practice 1
- Topic 42: Colic syndrome: classification and exploration. Importance of endotoxemia in equine clinical practice2
- Topic 43. Colic medical treatments and fluid therapy
- Topic 44. Decision-making, generalities, surgical treatment of colic and its complications
- Topic 45. Pathologies that cause colic in the stomach and small intestine
- Topic 46. Pathologies causing colic in the cecum and greater colon (including acute colitis)
- Topic 47. Pathologies that originate colic in the minor colon. Other clinical processes: laceration and rupture of the rectum, prolapse, peritonitis, abdominal hernias
- Topic 48. Injuries of the gastrointestinal tract

BLOCK 7: NEONATOLOGY AND PEDIATRICS (4 h)

- Item 57: Birth: fetal viability, neonatal resuscitation, adaptation to extrauterine life. The normal neonate, warning signs of a sick neonate. Hypoxic ischemic encephalopathy
- Topic 58. Lack of passive immunity transfer. Neonatal sepsis. Neonatal isoerythrolysis
- Topic 59. Other common pathologies of neonates and foals: scrotal and umbilical hernia, umbilical remnants and bladder pathologies, arthritis/septic polyarthritis
- Topic 60. Lesions blocks 6 and 7

SECOND MIDTERM PRACTICES: 17.5 hours

- Practice 6: Qualitative and quantitative coprology of parasitic processes. Stool culture. Post-mortem parasitological diagnosis (2 hours). (12 groups) in the parasitology laboratory.
- Practice 7: Multidisciplinary case-based learning session: Help: my horse has colic! (2hours)(6groups)
- Practice 8: Obtaining, evaluation and preparation of seminal doses (1.5 hours). (24 groups) in the reproductive biotechnology laboratory.
- Practice 9: Genital exploration of the mare (2 hours). (24 groups) to be carried out in the training shed with practice mares.
- Practice 10: Multidisciplinary case-based learning session: There is no way to get this mare pregnant...! Danger: miscarriages!.... (2 hours) (6 groups)
- Practice 11: Multidisciplinary case-based learning session: My mare just had a foal, but she is very weak, something is wrong with her My foal is in trouble!(2hours)(6groups)
- Practice 12: Multidisciplinary case-based learning session: I just bought a horse: what does it eat, what should its habitat be like, what documentation is needed, what do I deworm/vaccinate it with? (2 hours) (6 groups)
- Practice 13: Necropsy technique in horses: visualization of the necropsy technique applied to the equine species, visualization and interpretation of the equine digestive tract, visualization of other internal organs (2 hours). (7 groups) in the necropsy room (to be convened depending on the availability of cadavers) **TO BE TAUGHT THROUGHOUT THE ACADEMIC YEAR BUT WILL BE EVALUATED IN THE SECOND MIDTERM EXAM**
- Practice 14: Advanced clinical examination-pre-purchase examination (2 hours). (24 groups), which will be carried out with practice horses in the training shed. **WILL BE TAUGHT THROUGHOUT THE ACADEMIC YEAR BUT WILL BE EVALUATED IN THE SECOND MIDTERM**

NON-FACE-TO-FACE ACTIVITIES OF MULTIMEDIA MATERIAL VIEWING: 6 non-classroom hours of autonomous work.

Students should view (individually or in groups) the following multimedia materials. These activities should be carried out in coordination with the indicated theoretical classes.

- Activity 4: Viewing CDs Equine Dental (English) (before topic 37) (1 hour)
- Activity 5: Viewing of the interactive program Nasogastric Tube (English) (before topic 40) (1 hour)
- Activity 6: Viewing DVD Equine Colic (English) (before item 41) (2 hours)
- Activity 7: Reproduction ultrasound and sexing in mares (Spanish)- (before Topic 49) (0.5 hours)
- Activity 8: Viewing of Foal in Mare CDs (several languages, including Spanish) (before Topic 55) (1 hour)
- Activity 9: Viewing of videos on reproductive tract surgery (before topic 56) (0.5 hours)

4. Academic activities

The teaching-learning methodology combines different types of teaching resources that will be used for the integrated learning (combining the different subjects) of the contents of the subject and that have been specified in the previous section. In short, they are:

- Participative master classes (60 hours)
- Practical sessions (27.5 h): Multidisciplinary problem solving and case studies (10 h), Laboratory practices (2 h), Computerized practices (3.5 h), Clinical practices (12 h)
- Tutored work (7 hours): discussion of clinical cases based on images and teaching cartoons
- Seminars (1 h): presentation of the experimental design
- Autonomous student work (63 hours): this also includes 9 hours of autonomous viewing of multimedia material
- Assessment tests (3.5 hours).

5. Assessment system

Theory (75%):

Two written tests, one at the end of each term, which may consist of a combination of multiple choice, short answer and essay questions. It will be necessary to achieve at least 50% of the maximum grade of the exam.

The grades of the theory mid-term exams are kept for the exams of the same academic year.

Practices (25%):

This 25% of the practical part will only be counted if the two theory parts have been passed separately. It is distributed as follows:

Part 1 (10%): Use of the practical sessions.

Parts 2 and 3 (15%): Two written exams, one at the end of each term. Only students who have attended more than 75% of the practical sessions of the respective midterm exam (in the same academic year or in previous years) may take this exam. It will be held on the same day as the theoretical tests. A combination of multiple-choice, short-answer and medium-development questions, documented questions with multimedia files, and case and problem solving may be used. No minimum grade is required to pass these parts. The evaluation of tutored work may compensate for deficits in this section.

The grade for the practical part is maintained for subsequent years, as long as there are no significant changes in the practical program of the subject-

In the multiple-choice questions of the written exams, incorrect answers will be penalized with the value of the question divided by the number of incorrect options.

Overall test

Students may be evaluated by means of a global test consisting of the midterm theoretical exams and a practical exam that may include both demonstrations of skills in the laboratory and on animals, biomodels or specimens, as well as written questions.