

Academic Year/course: 2022/23

28442 - Clinical Practice: Production Animals

Syllabus Information

Academic Year: 2022/23

Subject: 28442 - Clinical Practice: Production Animals

Faculty / School: 105 - Facultad de Veterinaria

Degree: 451 - Degree in Veterinary Science

ECTS: 6.0

Year: 5

Semester: Annual

Subject Type: Compulsory

Module:

1. General information

1.1. Aims of the course

The general approach of this subject consists in the application of the theoretical-practical knowledge acquired in the subjects of integration of ruminants, pigs-poultry and rabbits. Our students through this learning system will be able to:

1. Manage, evaluate and improve both traditional and more specialized animal production systems.
2. Know the different types of livestock facilities and advising on their options improves to achieve optimal conditions of hygiene and biosecurity, environmental and animal welfare, and reducing the impact on the environment of livestock activities.
3. Carry out or supervise the main animal handling techniques.
4. Know the basis of animal feeding and feed manufacture, the fundamental raw materials in animal feeding, and to be able to formulate rations and evaluate their suitability.
5. Know the reproductive strategies and procedures applied to production, as well as -birth, postpartum and puerperium with their needs, care and associated pathologies.
6. Use the methods of clinical exploration, as well as the procedures of diagnosis of the different pathologies: clinical, pathological or laboratory, as well as their correct interpretation, knowing the etiology of the diseases that affect the systems of these animal species.
7. Know how to apply the different methods of fighting diseases, both preventive and curative, including medical, surgical or hygienic-dietetic treatments appropriate to each of them.
8. Know the zoonotic diseases and notifiable diseases, with the legal framework that regulate them.
9. Know the particular characteristics of the commercialization of animals and their products.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>), in such a way that the acquisition of the learning results of this topic provides training and competence to contribute to some extent to its achievement:

Goal 3: Good health and well-being

Goal 4: Quality education

Goal 5: Gender equality

Goal 8: Decent work and economic growth

Goal 10: Reduced inequalities

Goal 11: Sustainable cities and communities

Goal 12: Responsible consumption and production

Goal 13: Climate action

1.2. Context and importance of this course in the degree

The Clinical Practice Production Animals is taught in the fifth course of the Veterinary Degree throughout the ninth and tenth semesters. It includes the practical application in farm of the subjects of Production, Clinic and Health, and it is completed in

the Faculty with the postmortem study. It requires the training provided by the Integration subjects included in the 4th year and the basic and preparatory subjects included in the first three Veterinary degree courses.

The learning system is designed to enable students to acquire the competencies, skills and abilities in production, clinical and health that are necessary for their future professional performance with food-producing animals for human consumption. In addition, they will be able to check the connection of veterinarians with the Faculty, since the services of Ruminants Clinic and Pathology (Morphologic Diagnosis) will provide them with the necessary support within the framework of the Clinical Practice Production Animals in those cases that they consider necessary.

1.3. Recommendations to take this course

In order to make the most of the knowledge and skills that this subject can provide, it is necessary, although not compulsory, that the student has studied and passed all the pre-clinical subjects in the third year: Pharmacology and Pharmacotherapy, General Surgical Pathology, Surgery and Anaesthesiology, Toxicology, General Pathology and Propedeutics I and II, Image Diagnosis, General Pathology and Reproduction and Obstetrics.

It is especially necessary, although not compulsory, that students have passed fourth year Integration subjects related to this Practicum: Integration of Ruminants, Integration of Pigs and Integration of Poultry and Rabbits.

2. Learning goals

2.1. Competences

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

1. Act in animal farms taking suitable biosecurity measures.
2. Detect and correct structural deficiencies in facilities, inadequate ways of handling animals and their feeding, as well as to apply and assess compliance with animal welfare regulations.
3. Detect sick animals and initiating the diagnostic protocol, being able to follow the appropriate methodology to arrive at a diagnosis by means of clinical examination, necropsies and appropriate sampling, as well as its correct sending to support laboratories in the diagnosis and interpretation of the results.
4. Establish the most appropriate treatment and establish the corrective measures for control and, if possible, elimination of the problem.

In summary, student will demonstrate that it is able to assess the handling, health and welfare conditions of animals under practical conditions in the field, and if there are deficiencies, decide and impose the most appropriate corrective measures.

1. Day One Competences

1.1 Understand the ethical and legal responsibilities of the veterinarian in relation to animals under his/her care, the environment, clients, policies and society.

1.2 Demonstrate knowledge of the organization, management and legislation related to a veterinary business economics and employment rights.

1.3 Promote, monitor and maintain health and safety in the veterinary setting; demonstrate knowledge of systems of quality assurance; apply principles of risk management to their practice.

1.4 Communicate effectively with clients, the public, professional colleagues and responsible authorities, using language appropriate to the audience concerned and in full respect of confidentiality and privacy.

1.5 Prepare accurate clinical and client records, and case reports when necessary, in a form satisfactory to colleagues and understandable by the public.

1.6 Work effectively as a member of a multi-disciplinary team in the delivery of services.

1.7 Understand the economic and emotional context in which the veterinary surgeon operates.

1.8 Be able to review and evaluate literature and presentations critically.

1.9 Understand and apply principles of clinical governance, and practice evidence-based veterinary medicine.

1.10 Use their professional capabilities to contribute to the advancement of veterinary knowledge and One Health concept, in order to improve animal health and welfare, the quality of animal care and veterinary public health.

1.11 Demonstrate ability to cope with incomplete information, deal with contingencies, and adapt to change.

1.12 Demonstrate that they recognize personal and professional limits, and know how to seek professional advice, assistance and support when necessary.

1.13 Demonstrate an ability of lifelong learning and a commitment to learning and professional development. This includes recording and reflecting on professional experience and taking measures to improve performance and competence.

1.14 Take part in self-audit and peer-group review processes in order to improve performance.

1.15 Obtain an accurate and relevant history of the individual animal or animal group, and its/their environment.

1.16 Handle and restrain animal patients safely and with respect of the animal, and instruct others in helping the veterinarian perform these techniques.

1.17 Perform a complete clinical examination and demonstrate ability in clinical decision-making.

1.18 Develop appropriate treatment plans and administer treatment in the interests of the animals under their care with regard to the resources available.

- 1.19 Attend in an emergency and perform first aid in common animal species*.
- 1.20 Assess the physical condition, welfare and nutritional status of an animal or group of animals and advise the client on principles of husbandry and feeding.
- 1.21 Collect, preserve and transport samples, select appropriate diagnostic tests, interpret and understand the limitations of the test results.
- 1.22 Communicate clearly and collaborate with referral and diagnostic services, including providing an appropriate history.
- 1.23 Understand the contribution that imaging and other diagnostic techniques can make in achieving a diagnosis. Use basic imaging equipment and carry out an examination effectively as appropriate to the case, in accordance with good health and safety practice and current regulations.
- 1.24 Recognize signs of possible notifiable, reportable and zoonotic diseases as well as abuse and take appropriate action, including notifying the relevant authorities.
- 1.25 Access the appropriate sources of data on licensed medicines.
- 1.26 Prescribe and dispense medicines correctly and responsibly in accordance with legislation and latest guidance.
- 1.27 Report suspected adverse reactions through the appropriate channel.
- 1.28 Apply principles of bio-security correctly.
- 1.29 Perform aseptic procedures appropriately.
- 1.30 Safely perform sedation, and general and regional anaesthesia; implement chemical methods of restraint.
- 1.31 Assess and manage pain.
- 1.32 Recognize when euthanasia is appropriate and perform it with respect of the animal, using an appropriate method, whilst showing sensitivity to the feelings of owners and others, with due regard to the safety of those present; advise on disposal of the carcass.
- 1.33 Perform a systematic gross post-mortem examination, record observations, sample tissues, store and transport them.
- 1.34 Perform ante-mortem inspection of animals destined for the food-chain, including paying attention to welfare aspects; correctly identify conditions affecting the quality and safety of products of animal origin, to exclude those animals whose condition means their products are unsuitable for the food-chain.
- 1.35 Perform inspection of food and feed including post-mortem inspection of food producing animals and inspection in the field of related food technology.
- 1.36 Advise on, and implement, preventive and eradication programmes appropriate to the species and in line with accepted animal health, welfare and public health standards.

2.2. Learning goals

If students complete the course successfully, they should be able to:

1. Get to know the general characteristics of the livestock sectors in Spain, and their situation on a European and world scale. It includes the socio-economic and structural conditions of animal production and the marketing of its products, with reference to the legislative, geographical, economic, health and environmental frameworks.
2. Know production systems and animal handling techniques.
3. Know the characteristics of housing and facilities and their impact on different production systems and animal welfare.
4. Know the various factors that influence the quality of animal products, and is able to determine the causes of problems that may affect it.
5. Know the objectives and criteria of genetic selection, the techniques used in genetic improvement, and their impact on animal health and productivity.
6. Know the main types of feed, pasture and fodder involved in feeding and their use in each production system. Is able to formulate adequate rations to cover the requirements of the animals according to the stage of their productive cycle and production system and to evaluate the adequacy of the ingredients and nutritional levels used in the feeding of the animals.
7. Deal with the diagnosis of the main diseases affecting animals for slaughter, based on knowledge of their -etiology, epidemiology, pathogenesis, clinical symptomatology, and injuries produced. Know how to perform necropsies, choose the samples and request the most appropriate diagnostic techniques for each case and interpret the results.
8. Establish and apply the most appropriate treatment to each pathology and to implement prevention and control measures to prevent the appearance of the most important diseases.
9. Know and understands the reproductive characteristics and mechanisms involved in the birth of production animals, as well as the treatment of problems associated with it, and is able to control and organize the reproductive activity of animals.
10. Take a clinical history and write a veterinary report, as well as communicating with other professionals using correct technical language.
11. Know how to apply methods of technical and economic management and analysis of sustainability in the different livestock farms.

2.3. Importance of learning goals

The knowledge obtained through the subject Clinical Practice: Production Animals, represents the fundamental base on which the training of the veterinarian dedicated to production animals is based, which includes from the different productive systems to the clinic and health. This learning is clearly oriented towards professional practice.

Likewise, this knowledge is basic for the training of the veterinarian dedicated to Public Health, in order to carry out functions related to control programs (control, eradication or prevention), referring fundamentally to zoonotic diseases, and to food quality and safety, in reference to food of animal origin.

This training is necessary for the official veterinarian or qualified veterinarian when applying the legal aspects related to the regularization of livestock facilities, animal movements, health programs, animal welfare, etc.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that has achieved the intended learning outcomes through the following assessment activities

1. Compulsory attendance, with active participation, at farm visits and related seminars. Compulsory attendance at all scheduled practical activities of the postmortem section. (Learning outcomes 1-11). Including the seminars corresponding to this postmortem section (Learning outcomes 1-11).
2. Assessment report, carried out by the associated teacher at the end of the internship. In this activity the assimilation of knowledge will be evaluated, as well as the attitude of the student throughout the practices, in which he collaborates with the associate professor in his work as a veterinarian. This report may also be based on the results of objective tests related to what has been observed and learned in the practices (Learning Results 1-11).
3. Report made by the student, individually or in teamwork, on the practices carried out on the farm, or on relevant topics for the professional practice in the different animal species. In the postmortem section, students will prepare a pathology report that will include anamnesis (clinic history), gross morphological diagnosis and possible differential diagnosis on selected cases studied during their week of practice at the post mortem room (Learning outcomes 1-11). This report will be generally carried out individually, it will be evaluated by the corresponding professor up to 10 points and the score will be part of the final mark of this section.
4. The Postmortem Clinical Practice exam will consist on a written test evaluating the diagnostic skills acquired by students to interpret lesions (in any food-production specie and any location) and to associate them with an etiology or a specific disease. A total of 21 images of pathologic pieces will be shown on a screen during a reasonable time. Students will need to indicate the morphologic diagnosis of the lesion and associate it with an etiology or disease. Each one of the images will get a maximum of 1.5 points, or part of these points, in accordance with the correct part of the answer. Wrong answers will not imply negative marks (Learning outcomes 7, 8, and 10) .

Valuation criteria and requirement levels

The following sections and subsections constitute the evaluable parts of the Clinical Practice in supply species. All sections have to be passed individually, and a section or subsection will be considered approved if the score obtained is equal to or exceeds 50% of the maximum possible in that section, except in the Post-mortem Diagnosis section, where the minimum limit will be 60%. This same limit will apply to all 3 subsections of the livestock Practicum - (Ruminants, Pigs, and Poultry and Rabbits). Attendance at all activities of the different sections and subsections of the Clinical Practice is mandatory. Midterm exams are not possible due to the nature of the subject. The final grade will be obtained from the sum of the proportional parts of:

1. **Practicum Livestock 1** (subsection Ruminants) (25% of the total grade)

Grade of attitude, knowledge and participation during the visit, including the resolution of questions or practical activities raised by the teacher (60%) team reports on the visits made, or on relevant issues related to them (40%).

1. **Practicum Livestock 2** (Porcine subsection) (16.5% of the total grade)

Grade of attitude, knowledge and participation during the visit (30%), team reports on the visits made, or on relevant issues related to them (45%), clinical case to be resolved in a group (25%).

1. **Practicum Livestock 3** (subsection Poultry and Rabbits) (16.5% of the total score)

Grade of attitude, knowledge and participation during the visit (40%), individual reports on the visits carried out, or on relevant topics related to them (30%), individual evaluation on exercises, questions or problems that the teacher may raise during the visits or in seminars (30%).

4. **Postmortem Clinical Practice** (42% of the total score)

It is compulsory to attend the practical sessions, either to perform necropsies (normally five days, 11:00-13:00) as well as

those to attend necropsy diagnosis (at 13:00). A total of 20 hours attending necropsy diagnosis will be required. Students attending the sessions to perform necropsies will need to present a report on two selected cases. This report is also compulsory and -generally- it will be carried out individually. This report will be evaluated by the corresponding professor. The maximum mark in the postmortem section of this topic will reach 42 points, where 32 can be obtained in the image exam described above and 10 from the necropsy report. No matter the compulsory attendance to practical sessions, it is important to remark that the necropsy diagnosis at 13:00 is always open to all students of this topic: it is very advisable to attend as much as possible to see and discuss as many cases as possible. This will complete the student formation. In case of failure, the student will need to demonstrate learning outcomes through a global test.

Assessment system:

According to the national regulation Law 1025/2003, 5th of September which lays down the European system of credits and assessment system for the university degree.

0-4,9: FAIL.

5,0-6,9: PASS

7,0-8,9: GOOD (NT).

9,0-10: EXCELLENT (SB).

As the article 158 of the Statutes of the University of Zaragoza lays down, provisional grades will be displayed at least for 7 days and students will be able to review them on the date, time and place provided for that purpose.

The evaluation in the second call will be based on the sections and / or subsections failed and on the activities carried out whose result is considered insufficient. Thus, if the failure derives from the evaluation of the presentation of a case, and / or the student's reports, and / or the result of the postmortem diagnostic test, each of the failed parts will have to be repeated, for example, presenting a new case or report, or repeating the postmortem diagnostic test. If the failure derives from non-compliance with the attendance rules, this will directly entail the repetition of the subject in the following course, and in particular of the sections or subsections where the absences have occurred, since there is no possibility of repeating the practices within of the same academic year.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives.

The students are actively involved accompanying veterinary professionals in their work day on farms of various animal species. They will work on both productive and health aspects. In case of detecting interesting clinical problems in any of these visits, affected animals will be included in the section corresponding to the postmortem practicum.

The Practicum of poultry and rabbits presents special difficulties due to the strict conditions of biosafety and confidentiality with which the sector works. For this reason there may be times when it is not possible to ensure a sufficient number of authorized visits to commercial farms; In the event of such a situation, the Faculty plans, as an exceptional case, to transfer part of these practices to its own facilities, ensuring that the associate professor and the postmortem diagnostic teachers will present to the students a sufficiently representative number of clinical and practical cases.

The program of visits of this subject can vary in case of declaration of sanitary emergency.

4.2. Learning tasks

Visits to commercial farms of different species: Evaluate the management conditions, health and welfare of the animals; Propose corrective measures; Apply management and diagnostic techniques under the supervision of the teacher.

Seminars for the resolution of doubts from visits, extension of knowledge, or resolution of exercises, clinical cases and postmortem diagnosis.

Individual or team-based works.

Carrying out necropsies and learning the methodology of veterinary pathology diagnosis through the study of clinical cases

4.3. Syllabus

Milk cow: visits to the farm (7 hours total) and a seminar (1.5 hour).

Beef cattle: 4 hours of visits and 1 seminar of 1.5 hours duration.

Sheep: 2 farm visits, 3.5 hours each, and a seminar (1 hour).

Porcine: 2 visits to different farms (9 hours) and 6 hours of seminars aimed at solving doubts, preparation of reports, resolution of clinical cases, and deepening in certain relevant aspects.

Poultry (laying hens and chickens) and Rabbits. In all cases, 3 visits to different farms of 4 hours each, and 2 seminars of 1.5 hours oriented to resolve doubts, prepare reports, solve practical cases, and deepen in certain relevant aspects.

Necropsies: 10 hours per student performing necropsies sent to the Anatomopathological Diagnosis Service of the Faculty of Veterinary Medicine

Necropsy Diagnosis: Assistance of a minimum of 20 hours to the discussion of the macroscopic diagnosis of clinical cases referred to the Pathological Diagnosis Service of the Faculty of Veterinary Medicine

Pathology seminars: 8 on line, one-hour seminars per student.

4.4. Course planning and calendar

Activity	Hours
Practicum ruminants	22
Practicum porcine	15
Practicum poultry and rabbits	15
Practicum postmortem	38

The specific timetable of each group of practices in each of the activities scheduled will be published in advance on the website of the Faculty.

The works or reports requested by the teachers must be delivered as a general rule within one month after the corresponding activity is carried out.

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=28442>