Information about the subject

Degree: Bachelor of Science Degree in Veterinary Medicine

Faculty: Faculty of Veterinary Medicine and Experimental Sciences

Code: 1260302 **Name:** Veterinary Surgery II

Credits: 6,00 **ECTS Year:** 4 **Semester:** 1

Module: Module of Clinical Sciences and Animal Health

Subject Matter: Clinical Sciences and Animal Health **Type:** Compulsory

Department: Veterinary Medicine and Surgery

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

Module of Clinical Sciences and Animal Health

Subject Matter	ECTS	Subject	ECTS	Year/semester
Alterations in Structure and Function, and Fundamentals of Diagnosis	36,00	Clinical diagnostic techniques I (Clinical Propedeutics)	6,00	3/1
		Clinical Diagnostic Techniques II (Imaging Diagnosis)	6,00	3/1
		Histopathology and General Pathological Anatomy	6,00	2/1
		Physiopathology and general integrated Pathology I	6,00	2/1
		Physiopathology and general integrated Pathology II	6,00	2/2
		Special pathological anatomy	6,00	2/2
Pharmacology and Therapeutics	12,00	Pharmacology and Toxicology	6,00	3/1
		Pharmacotherapy, preventive medicine and veterinary hygiene	6,00	5/1
Clinical Sciences and Animal Health	60,00	Clinic and health in equines	6,00	3/2
		Clinic and health in water animals	6,00	5/1
		Clinic and health in wild and exotic animals	6,00	3/2

Clinical Sciences and Animal Health	Clinic and health on the farm I	6,00	4/1
	Clinic and health on the farm II	6,00	4/2
	Epidemiology	6,00	3/1
	Pet Clinic	6,00	3/2
	Reproduction and Obstetrics	6,00	3/1
	Veterinary Surgery I	6,00	3/2
	Veterinary Surgery II	6,00	4/1

Recommended knowledge

Prerequisites: Having notions of Anatomy, Physiology and General Pathology, Companion Animal Clinic, Diagnostic Techniques (I & II) and Veterinary Surgery I.

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

R1 The student knows and understands the concepts and terminology presented in the module Veterinary Surgery I.

R2 The student knows the basic concepts of surgical biology.

R3 The student correctly applies the principles of asepsis and antisepsis.

R4 The student is able to identify a pathology and propose a treatment of the digestive system in small animals.

R5 The student is able to identify a pathology and propose a treatment of the musculoskeletal system in small animals.

R6 The student is able to identify a pathology and propose a treatment of the genitourinary system in small animals.

R7 The student is able to identify a pathology and propose a treatment of the cardiorespiratory system in small animals.

R8 The student is able to identify a pathology and propose a treatment of the endocrine system in small animals.

R9 The student is able to evaluate a patient from an anaesthetic point of view and propose an anaesthetic protocol.

Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB2	Capacity to apply knowledge to work or occupation in a professional way and have the competences that are proved by preparing and arguing topics and problem-solving in their specific field of study.			x	
CB3	Capacity to gather and interpret relevant data usually within their specific field of study and capacity to make judgments that include reflection on relevant social, scientific or ethical issues.				x
CB4	Capacity to communicate information, ideas, problems and solutions at specialist and non-specialist levels.		x		
CB5	Capacity to develop those learning skills needed to undertake further studies with a high degree of autonomy.			x	

GENERAL		Weighting			
		1	2	3	4
CG0	Capacity to speak well in public.	x			
CG2	Understanding and applying prevention, diagnosis and individual or collective treatment , and control of animal diseases, individually or in groups, with special attention to zoonoses.			x	
CG3	Understanding and applying control of animal breeding, management, health, reproduction, protection, and feed as well as improving production.	x			
CG5	Understanding and applying laws, regulations and administrative provisions in all areas of the veterinary profession and public health, understanding the ethical implications of health in a changing global context.		x		
CG6	Developing professional practice, acquiring skills related to teamwork, with an efficient use of resources and quality management.				x

CG7	Identifying emerging risks in all areas of the veterinary profession.	x

SPECIFIC		Weighting			
		1	2	3	4
E24	Knowing and applying methods and procedures of clinical examination, additional diagnostic techniques and their interpretation.				x
E25	Knowing and applying imaging diagnostic and radiation biology.			x	
E26	Knowing and applying necropsy.	x			
E27	Knowing and applying recognition and diagnosis of different types of injuries and their association with pathological processes.			x	
E28	Knowing and applying the clinical study of patients and medical, surgical or hygienic-dietary treatments required, as well as sporadic diseases affecting groups.		x		
E29	Knowing and applying diagnosis.				x
E30	Knowing and applying surgical techniques used in veterinary.				x
E31	Knowing and applying animal anesthesia and resuscitation.				x
E32	Knowing and applying reproduction, birth and postpartum: care and disease.				x
E33	Knowing and applying assisted reproduction.			x	
E34	Understanding and applying fish pathology.		x		
E36	Knowing and applying pharmacotherapy.		x		
E39	Knowing and applying transmission and maintenance of disease and methods of study of disease in populations.	x			
E40	Knowing and applying infectious and parasitic diseases related to veterinary practice including diagnosis and control.	x			
E41	Knowing and applying zoonoses and public health.		x		

E42	Knowing and applying the promotion of collective health in animals, including wildlife, in order to maximize the economic performance in a social, ethical and healthy way.	x			
E43	Knowing and applying technical measures and regulations for the prevention, control and eradication of animal diseases.		x		

TRANSVERSAL		Weighting			
		1	2	3	4
T1	Capacity of analysis, synthesis, implementation of knowledge for problem-solving and decision-making.			x	
T2	Understanding and applying the scientific method to professional practice including evidence-based medicine.			x	
T3	Basic knowledge of the veterinary profession: legal, economic, administrative, planning and time management issues and the veterinarians' society together with the importance of monitoring quality, standardization and protocols of veterinary practice.		x		
T4	Mastering fluency in oral and written mother tongue communication, listening and responding effectively using a language appropriate to audience and context.		x		
T6	Using information technology to communicate, share, search for, collect, analyze and manage information, especially related to the veterinarian practice.		x		
T7	Ability to adapt to new situations, self-critical ability, being aware of personal limitations and understanding when and where seeking and obtaining advice and professional help.			x	
T8	Efficient and effective work, both independently and as a member of a multidisciplinary team or unit, showing respect, appreciation and sensitivity to the work of others.				x
T9	Keeping an ethical behaviour in the exercise of given responsibilities toward the profession and society.			x	
T10	Ability to learn, to research, and to be aware of the need to keep knowledge updated, and attending training programs.		x		

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4, R5, R6, R7, R8, R9	40,00%	Written assessment of acquired knowledge and skills. The test may consist of a series of open-ended questions or multiple-choice questions about the theoretical contents of the module and/or practical exercises (problem-solving).
R2, R5	15,00%	Evaluation of the use of the practical lessons in the classroom, of problems or computer science, seminars and tutorials, by means of participation, computer-supported problem solving and the elaboration of the corresponding reports.
R4, R5, R6, R7, R8, R9	15,00%	Evaluation of the practical laboratory work, which must demonstrate the competences acquired by the student and his or her ability to use them to solve the different situations and problems that arise in a laboratory; this assessment may consist of one of the following methods, or a combination of several of them: an individual written test, the individual or group performance of a laboratory experience, the delivery of an individual or group report on the work carried out in the laboratory.
R2, R3, R9	10,00%	Evaluation of practical work in a clinic through which the student must demonstrate the competences acquired and the ability to use them to solve the different situations and problems that arise in a clinic; this assessment may involve one of the following methods, or a combination of several of them: a written individual test, the individual or group performance of a clinical experience, the delivery of an individual or group report on the work carried out in the laboratory.

R1, R4, R5, R6, R7, R8, R9	10,00%	Evaluation of group work through a system of continuous assessment throughout the course based on the delivery of assignments the objectives and content of which will be proposed by the teacher.
R1, R4, R5, R6, R7, R8, R9	10,00%	Evaluation of activities in which the student must do some research individually and structure information related to each of the topics through a system of continuous assessment throughout the course based on the delivery of papers, the objectives and contents of which will be proposed by the teacher.

Observations

This subject cannot be assessed through a single assessment.
Attendance at practical sessions is compulsory. During the practical sessions, the lecturer will monitor the attendance and attitude of each student. Factors such as attention, level of participation and interest shown during the practical session will be taken into account.
The use of artificial intelligence (AI) tools is subject to the lecturer's discretion, who may establish specific limits or conditions depending on the training or assessment activity.

1. The average grade must be equal to or higher than 50%, in order to be averaged with the rest of the items. The written test represents 40% of the final grade. Thus, an exam on theoretical knowledge will be taken. The theoretical exam will consist of 40 multiple-choice questions (each question with 4 options, of which only one is correct. The proportion of 3 incorrect questions will subtract a correct one.) and short answer questions (quote, list,...). Failure to pass the theoretical part will render it impossible to pass the course as a whole. 2. On the same day that the theoretical test is carried out, the exploitation of practical sessions in the classroom will be evaluated (15%) through a problem that the student will have to solve in situ. 3. On the same day that the theoretical test is carried out, an imaging test will be carried out, which will be used to evaluate the practical work in the laboratory (15%). 4. The evaluation of the practical work in the clinic (10%) will be carried out at the end of the clinical practice week, where an oral practical test will be carried out. 5. The evaluation of the group work (10%) will be carried out by means of the oral presentation in pairs or trios of one of the clinical cases studied in the hospital training sessions. 6. The evaluation of the practical work in the clinic (10%) will be carried out at the end of the clinical practice week, where an oral practical test will be carried out.
Global assessment:
For the final grade, the results of the different evaluation activities are weighted. In order to pass the course, it will be necessary to obtain, as a minimum, a grade equal to or higher than 50 points out of 100 in eaach of the sections marked with an asterisk (*) and in the course's final grade. If the minimum grade of 50 is not obtained in these sections but other evaluation items have been passed, these passed grades will be kept for the two calls of the following year, given that they have passed the required competencies.

Honours with distinction:
In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong.

MENTION OF DISTINCTION:
In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with 9 Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

M1 On-site training activity aimed primarily at acquiring knowledge acquisition skills. It is characterised by the fact that students are spoken to. Also called master class or exposition, it refers to the oral presentation made by the teacher, (with the support of blackboard, a computer and a projector for the display of texts, graphs, etc.), in front of a group of students. They are expository, explanatory or demonstrative sessions of contents. The size of the group is determined by the limit or physical capacity of the classroom; therefore, it is a single group.

M2 On-site training activity aimed primarily at obtaining knowledge application and research skills. Knowledge is built through interaction and activities. The activity consists of supervised monographic sessions with shared participation (teachers, students, experts). The size of the group is variable, from one large group to various small groups, with a minimum of 6 students to ensure interaction. The evaluation will be based on follow-up records kept by the teacher. Participation and the development of the capacity to problematize should be taken into account.

M3 On-site group-work training activity oriented toward problem solving under the supervision of a teacher. It would correspond to "Animal-free supervised practical work", type e1, from the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students, to differentiate it from a master class.

M4 On-site training activity in groups that takes place in the classroom. It includes working with documents and formulating ideas without handling animals, organs, objects, products, or corpses (e.g., work with articles or documents, clinical case studies, diagnostic analyses, etc.). It would correspond to "Animal-free supervised practical work", type e1, from the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students.

M5 On-site training activity in groups that takes place in the Computer Lab where the computer is used as support for learning. It includes work with computer models, specific software, Web queries, etc. It would correspond to "Animal-free supervised practical work", type e1, from the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students.

M6 On-site training activity in groups carried out in the laboratory. It includes the sessions where the students develop laboratory experiments, make dissections or use the microscopes for the study of histological or histopathological samples actively and autonomously, under the supervision of the professor. It also includes work with healthy animals, objects, products, corpses (e.g., animal handling, bacteriological practices, physiology or biochemistry, meat inspection, etc.). It would correspond to the "Supervised practical non-clinical animal work" type e2 of the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students.

M7 On-site training activity that is defined as the clinical practical work developed in the Veterinary Clinical Hospital or clinical centres ascribed to the University, as well as itinerant clinical practices, mainly with ruminants, equids, pigs, birds and aquatic animals. Also included are necropsies, surgical workshops and training in clinical examination techniques or diagnosis with healthy patients. In these practical sessions the student will always work with animals, which can be healthy (e.g. propaedeutic or obstetrics) or clinical cases (individual or collective), including a protocol or work scheme, being supervised by a teacher and assuming the provision of a service. This type of training corresponds to type e3 of the EAEVE European evaluation called "Clinical Training" (strickly hands-on)". The size of the group will be 5 students or fewer.

M8 A set of on-site training activities carried out by the teacher to provide personalised attention to the student or in small groups with the aim of reviewing and discussing the materials and topics presented in classes, seminars, readings, carrying out projects, etc. The aim is to ensure a truly comprehensive education of the student rather than a mere transfer of information. It is, therefore, a personalized assistance relationship in which the tutor assists, facilitates and guides one or more students in the learning process.

M9 Set of processes that attempt to evaluate the learning outcomes of students expressed in terms of acquired knowledge, capacities, skills or abilities developed and manifested attitudes. It covers a wide range of activities that can be developed for students to demonstrate their training (e.g. written, oral and practical tests, projects or assignments). It also includes the Official Calls.

M10 Autonomous training activity, including activities and coursework, bibliographic searches. The results obtained from unsupervised group and teamwork will be evaluated, with particular attention paid at the time of evaluation to the acquisition of specific knowledge development skills through group work.

M11 Autonomous training activities related to personal study, or the preparation of individual course assignments. The individual preparation of readings, essays, problem solving, papers, reports, etc. will be evaluated through presentations or submissions during theoretical classes, practical classes, seminars and/or tutorials. The evaluation of the submitted papers will consider the structure of the paper, the quality of the documentation, originality, spelling and presentation.

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theoretical lessons (TL) M1	R1, R2, R3, R4, R5, R6, R7, R8, R9	60,00	2,40
In-Classroom Practice (ICP) M4	R1, R3, R5	5,00	0,20
Laboratory Practice (LP) M6	R3, R4, R6, R7, R8, R9	12,50	0,50
Clinical Practice (CP) M7	R3, R4, R5, R6, R7, R8, R9	12,50	0,50
Tutorial M8	R1, R2, R3, R4, R5, R6, R7, R8, R9	1,00	0,04
Evaluation (Ev) M9	R2, R4, R5, R6, R7, R8, R9	2,00	0,08
TOTAL		**93,00**	**3,72**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Group work M10	R1, R2, R3, R4, R5, R6, R7, R8, R9	17,00	0,68
Individual work M11	R1, R2, R3, R4, R5, R6, R7, R8, R9	40,00	1,60
TOTAL		**57,00**	**2,28**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
UD-1 DIGESTIVE SYSTEM SURGERY	Unit 1. Surgical Pathology of the oral cavity and salivary glands. Unit 2. Surgical Pathology of the esophagus Unit 3. Surgical Pathology of the stomach Unit 4. Surgical Pathology of the small and large intestine. Unit 5. Surgical Pathology of the anus and perineum Unit 6. Surgical Pathology of the liver, pancreas and biliary system.
UD-2 SURGERY OF THE MUSCLE-SKELETAL SYSTEM	Unit 8. Basic concepts in the treatment of fractures I. Unit 9. Basic concepts in the treatment of fractures II. Unit 10. Approach to the resolution of fractures in the anterior limb. Unit 11. Approach to the resolution of fractures in the posterior limb. Unit 12. Basic principles of joint pathology. Unit 13. Hip joint pathology. Unit 14. Knee joint pathology Unit 15. Shoulder joint pathology Unit 16. Elbow joint pathology. Unit 17. Surgical pathology of the spine I Unit 18. Surgical pathology of the spine I Unit 19. Introduction to Intracranial Surgery.
UD 3.- SURGERY OF THE CARDIORESPIRATORY SYSTEM	Unit 21. Surgical Pathology of the naso- and oropharynx. Unit 22. Surgical Pathology of the Larynx. Unit 23. Surgical Pathology of the Trachea and Bronchi. Unit 24. Surgical pathology in the lungs. Unit 25. Cardiovascular and pericardial Surgical Pathology.

UNIT 4.- SURGERY OF THE THORAX, ABDOMEN AND ENDOCRINE SYSTEM.	Unit 27. Surgery of the Adrenal Glands Unit 28. Spleen Surgery. Unit 29. Surgery of the abdominal wall and hernias. Unit 30. Surgery of the wall and thoracic cavity. Unit 31. Thyroid and parathyroid surgery.
UD 5.- SURGERY OF THE GENITOURINARY SYSTEM	Unit 32. Surgical procedures of the upper urinary system: kidney and ureter. Unit 33. Surgical procedure of the lower urinary system: bladder and urethra. Unit 34. Surgery of the male genital system. Unit 35. Surgery of the female genital system
UD-6 ANESTHETIC AND ANALGESIC MANAGEMENT	Topic 36. Anesthetic management in patients with acute abdomen Topic 37. Anesthetic management in caesarean section Topic 38. Anesthetic management in patients with cardiorespiratory problems Topic 39. Anesthetic management in patients with endocrine and neurological problems Topic 40. Anesthetic management in pediatric and geriatric patients

Organization of the practical activities:

	Content	Place	Hours
PR1.	Clinical Practice I: Real clinical cases (Surgery Consultation)	Hospital	6,00
PR2.	Clinical Practice II: Real clinical cases (Surgery Consultation)	Hospital	6,00
PR3.	Clinical Practice III: Real clinical cases (Surgery Consultation)	Hospital	6,00
PR4.	Clinical Practice IV: Real clinical cases (Surgery Consultation)	Hospital	6,00
PR5.	Clinical Practice V: Clinical evaluation	Hospital	1,00
PR6.	Practical Bandages Workshop	Hospital	2,00
PR7.	Practical Sutures Workshop	Hospital	2,00
PR8.	Practical Loco-Regional Workshop	Hospital	2,00

Temporary organization of learning:

Block of content	Number of sessions	Hours
UD-1 DIGESTIVE SYSTEM SURGERY	10,00	20,00
UD-2 SURGERY OF THE MUSCLE-SKELETAL SYSTEM	11,00	22,00
UD 3.- SURGERY OF THE CARDIORESPIRATORY SYSTEM	4,50	9,00
UNIT 4.- SURGERY OF THE THORAX, ABDOMEN AND ENDOCRINE SYSTEM.	8,00	16,00
UD 5.- SURGERY OF THE GENITOURINARY SYSTEM	9,00	18,00
UD-6 ANESTHETIC AND ANALGESIC MANAGEMENT	4,00	8,00

References

* Tobias KM, Johnston SA. Veterinary Surgery. Small Animal. 2nd Ed. Elsevier & Saunders. Missouri (USA). 2018.
* Fossum TW. Small Animal Surgery. 5th Ed. Mosby Elsevier. Missouri (USA). 2018
* Slatter D. Tratado de Cirugía en Pequeños Animales (4 vol). 3rd Ed. Elsevier. USA. 2003.
* Sharp N & Wheeler S. Small animal spinal disorders: Diagnosis and Surgery. 2nd ed. Elsevier-Mosby. 2005.
* DeCamp C. Brinker, Piermatei and Flo's Handbook of small animal orthopedics and Fracture Repair. 5thEd. Saunders 2015.
* Dugdale V. Veterinary Anaesthesia: Principles to Practice. Willey-Blackwell. Oxford 2011.
* Thurmon JG, Tranquili WJ, Benson GJ. Veterinary Anaesthesia. 3rd Ed. Williams & Wilkins. Baltimore 2001
* Ettinger SJ, Feldman EC. Textbook of Veterinary Internal Medicine. 8ª Ed. Elsevier. Madrid. 2017.
* Montavon PM, Voss K, Longley-Hobbs SJ. Feline orthopedic surgery and musculoskeletal disease. 1stEd. Saunders-Elsevier, USA, 2009.
* Monnet E. Small animal soft tissue surgery. Hardcover, USA 2013.
* Johnson KA. Piermate's Atlas of surgical Approaches to the Bones and Joints of the dog and cat. 5thEd. Hardcoover; USA 2013.