

COURSE SYLLABUS

Academic Year: 2021/2022

Identification and characteristics of the course			
Code	501954-1	ECTS Credits	6
Course title (English)	PHYSIOPATHOLOGY		
Course title (Spanish)	PATOLOGÍA GENERAL		
Degree programs	GRADO EN VETERINARIA		
Faculty/School	FACULTAD DE VETERINARIA		
Semester	4	Course type (compulsory/optional)	COMPULSORY
Module	BASICAS		
Subject matter	PATOLOGÍA GENERAL		
Lecturer/s			
Name	Room	E-mail	Web page
Santiago Andrés Díaz	123	sandres@unex.es	
Subject Area	MEDICINA Y CIRUGÍA ANIMAL		
Department	MEDICINA ANIMAL		
Coordinator (Only if there is more than one lecturer)			

Competencies ^{1*}
https://www.unex.es/organizacion/gobierno/vicerrectorados/vicecal/archivos/ficheros/informacion-titulos/veterinaria/plan1006/memoriaplan.pdf
Contents
Course outline*
Study of the disease in its generic aspect (nosology) and the consequent functional disturbances to the action of the morbid causes constituting syndromes (Pathophysiology). General knowledge of ancillary tests related to the main syndromes. Basic safety procedures in the laboratory.
Course contents
Title of unit 1: Introduction and nosology Contents of unit 1: Concepts of Medicine, Pathology and Clinical Practice. Nosology: Concept and parts. Description of practical activities for unit 1: Basic safety procedures in laboratory.

^{1*} The sections concerning competencies, course outline, teaching activities, teaching methodology, learning outcomes and assessment methods must conform to those included in the ANECA verified document of the degree program.

<p>Title of unit 2: Pathophysiology of homeostasis</p> <p>Contents of unit 2: Thermoregulation. Study of hyperthermia. - Fever: concept, types and interpretation. - Hypothermia. Pathophysiology of water and electrolytes: overhydration and dehydration. Pathophysiology of acid-base balance: study of acidosis and alkalosis.</p> <p>Description of practical activities for unit 2: laboratory test in the diagnosis of dehydration.</p>
<p>Title of unit 3: Pathophysiology of the circulatory system</p> <p>Contents of unit 3: Study of Heart Failure: global, left, right. Pathophysiology of the endocardium: valve diseases. Pathophysiology of the myocardium: dilated and hypertrophic cardiomyopathy. Disturbances of formation and conduction of stimuli: arrhythmias. Pathophysiology of the pericardium. Arterial, venous and lymphatic pathophysiology. Study of shock: concept and pathogenic types.</p> <p>Description of practical activities for unit 3: study of clinical cases related to circulatory system disorders.</p>
<p>Title of unit 4: Pathophysiology of the urinary system.</p> <p>Contents of unit 4: Pathophysiology of the diuresis. - Semiology of urine: qualitative and quantitative disturbances. Disturbances of micturition. Study of renal failure: acute and chronic. Pathophysiological study of nephrotic syndrome, glomerular nephropathy, nephrosis, pyelonephritis and hydronephrosis. Pathophysiology of the urinary tract: urolithiasis.</p> <p>Description of practical activities for unit 4: urinalysis.</p>
<p>Title of unit 5: Pathophysiology of the endocrine system</p> <p>Contents of unit 5: Pathophysiology of the hypothalamic-pituitary axis: adeno and neurohypophysis. Pathophysiology of the adrenal glands. - Disturbances of the secretion of glucocorticoids and mineralocorticoids. Pathophysiology of thyroid gland: high and low secretion syndromes. - Pathophysiology of parathyroid glands. Pathophysiology of the endocrine pancreas. - Diabetes.</p> <p>Description of practical activities for unit 5: study of clinical cases related to endocrine disorders.</p>
<p>Title of unit 6: Pathophysiology of the nervous system and the musculoskeletal system</p> <p>Contents of unit 6: Pathophysiology of the motor and sensitive pathways. - Pathophysiology of the nerve pathways. Pathophysiology of the brain, cerebellum and brainstem. Pathophysiology of the spinal cord: main medullary syndromes. Pathophysiology of the autonomic nervous system. Pathophysiology of bones: Bone dystrophies and other bone diseases. Pathophysiology of the joints: study of arthritis and arthrosis. - Pathophysiology of muscles: Functional and organic myopathies.</p> <p>Description of practical activities for unit 6: study of clinical cases related to neurological and musculoskeletal disorders.</p>
<p>Title of unit 7: Pathophysiology of the digestive system</p> <p>Contents of unit 7: Pathophysiology of the mouth: disturbances of prehension, mastication and salivation. Pathophysiology of swallowing: dysphagia. - Study of the main esophageal syndromes: functional and organic. Study of vomiting: concept, mechanics, pathogenesis and semiology. Gastric pathophysiology in monogastric animals. Secretory syndromes. Motor and topographic disturbances. Pathophysiology of the gastric compartments in the ruminants. - Pathophysiology of the disorders of the anterior gastric sector. Pathophysiology of the disorders of the posterior gastric sector. Intestinal transit disorders: diarrhoea, constipation and ileus. Pathophysiology of equine colic. Disorders of intestinal absorption: maldigestion and malabsorption syndromes. Hepatobiliary pathophysiology. Study of jaundice: classification and diagnostic value. Study of hepatic failure. Pathophysiology of the biliary tract. - Functional and organic disorders. Pathophysiology of the exocrine pancreas. Acute and chronic pancreatitis. -</p>

Study of pancreatic insufficiency. Pathophysiology of the peritoneum. - Peritonitis and ascites.
Description of practical activities for unit 7: study of clinical cases related to the digestive system.

Title of unit 8: Pathophysiology of the respiratory system
Contents of unit 8: Study of the defence mechanisms of the respiratory system. Pathophysiology of respiratory mechanics. - Abnormal respiratory rhythms. - Study of dyspnoea. Respiratory failure: concept and pathogenic types. Consequences of respiratory failure: hypoxia, cyanosis, hypercapnia and hypocapnia. Disturbances of the pulmonary circulation: congestion, edema and hypertension. Study of the main pulmonary syndromes: emphysema, atelectasis and pneumonia. Pathophysiology of the pleura: effusions, pleurisy and pneumothorax. - Mediastinal syndrome.
Description of practical activities for unit 8: study of clinical cases related to respiratory disorders.

Title of unit 9: Pathophysiology of the blood and blood-forming organs
Contents of unit 9: Pathophysiology of erythrocytes: anemia and polycythemia. Pathophysiology of leukocytes: reactive and essential disturbances. Pathophysiology of thrombocytes: disturbances of hemostasis and coagulation. Pathophysiology of plasma proteins: study of dysproteinemias and paraproteinemias. Pathophysiology of the phagocytic mononuclear system. - Pathophysiology of the spleen.
Description of practical activities for unit 9: study of anemias, leukocyte responses and clotting disorders.

Title of unit 10: Pathophysiology of nutrition and metabolism
Contents of unit 10: Pathophysiology of the metabolism of carbohydrates, fats and proteins. - Pathophysiology of the energy metabolism of ruminants. Pathophysiology of the macrominerals. Pathophysiology of the trace elements. Pathophysiology of vitamins.
Description of practical activities for unit 10: study of clinical cases related to nutritional and metabolic disorders.

Educational activities *

Student workload (hours per lesson)		Lectures	Practical sessions				Monitoring activity	Homework
Lesson	Total	L	HI	LAB	COM	SEM	SGT	PS
1	1	1		1,5			0,5	1
2	10	4		1,5			0,5	9
3	12	5		1,5			0,5	9
4	10	3		1,5			0,5	9
5	8	3		1,5			0,5	9
6	13	5		1,5			0,5	9
7	25	9		1,5			0,5	12
8	15	5		1,5			0,5	9
9	14	5		1,5			0,5	9
10	14	5		1,5			0,5	9
Assessment 2**	2							
TOTAL ECTS	6	1,8		0,6			0,2	3,4

L: Lectures (100 students)
HI: Hospital internships (7 students)

2** Insert as many rows as necessary. For instance, you can include one row for a partial exam and another for the final exam.

<p>LAB: Lab sessions or field practice (15 students) COM: Computer room or language laboratory practice (30 students) SEM: Problem-solving classes, seminars or case studies (40 students) SGT: Scheduled group tutorials (educational monitoring, ECTS type tutorials) PS: Personal study, individual or group work and reading of bibliography</p>
Teaching Methodology*
<p>1. Lectures and participatory classes. Classroom training activities for the entire group (flipped classroom). The teacher will present concepts, procedures and applications relating to the topics covered by the subject. The dynamics employed in all the exercises will be explained in these lectures. The concepts and procedures will be presented in the classroom, using video projector presentations.</p> <p>2. Laboratory activities carried out in the laboratories of the unit.</p> <p>3. Directed work. Direction and guidance of the students.</p> <p>4. Non-contact work. Activities of the student without the presence of the teacher.</p>
Learning outcomes *
<p>The student should be able to use properly the specific terminology of Nosology and to identify the main syndromes of Physiopathology.</p>
Assessment methods *
<p>Continuous evaluation</p> <p>The evaluation is continuous. Students are invited to carry out two different activities dealing with the main concepts of Physiopathology, case studies, lab training and information retrieval. These tests are delivered through the tools of the Virtual Campus and they imply co-working and educational monitoring. The general aim of the course is to prepare the student for the future application of the contents in a clinical setting. These tests should be delivered in the first two months of the semester and they are repeatable in both the ordinary and the extraordinary calls. After the first try students will be provided with the proper feedback and a second delivery will be allowed. There is also a <u>final exam</u>. It is paper based and it comprises twenty four multiple choice questions.</p> <p>Evaluation criteria</p> <p>The assessment is global, by the sum of the scores on each of the activities. Each activity is worth one point and the final exam accounts for eight points. In the final exam the score is obtained by the following formula: correct answers minus incorrect answers and then divided into three.</p> <p>Students are allowed to ask for a <u>single final evaluation test</u> instead of the continuous evaluation. This option may be chosen in the first month of the semester.</p>
Bibliography (basic and complementary)
<p>Essential bibliography: SMITH, B.P.: Large animal internal medicine. 5th ed. Mosby, Saint Louis, 2014.</p> <p>Consultation bibliography:</p>

CUNNINGHAM, J.G., KLEIN, B. G.: Veterinary Physiology. 5th ed. Elsevier, Amsterdam, 2007.

ETTINGER, S.J, FELDMAN, E.C.: Textbook of veterinary internal medicine. Diseases of the dog and cat. 9th ed. Saunders, St. Louis, 2017.

FELDMAN, E.C., NELSON, R.W. REUSCH J. C, SCOTT-MONCRIEF, C: Canine and feline endocrinology and reproduction. 4th ed. Saunders, St. Louis, 2014.

CONSTABLE, P.D., HINCHCLIFF, K.W., DONE, S.H., GRUENBERG, W: Veterinary Medicine. 11th ed. Saunders, St. Louis, 2016.

WEISS, J., WARDROP, K.J.: Schalm's Veterinary Hematology. Wiley-Blackwell, London, 2011.

Other resources and complementary materials

List of websites available in the Virtual Campus.