

General information	
Academic subject	General Pathology and Pathophysiology
Degree course	Animal Science
Academic Year	2021/2022
European Credit Transfer and Accumulation System (ECTS)	6
Language	Italian
Academic calendar (starting and ending date)	II semester
Attendance	Mandatory

Professor/ Lecturer	
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Department and address	Veterinary Medicine Campus – Valenzano (BA)
Virtual headquarters	Microsoft Teams: Code.064028.
Tutoring (time and day)	On site or through Teams: Tuesday: 9.00-10.00; 3.00-4.00 pm; Wednesday: 9.00-11.30; Thursday: 9.00-10.00; 13.00-4.00 pm; Friday: 8.30-10.30

Syllabus	
Learning Objectives	<p>The general pathology and physiopathology course will discuss, using the appropriate medical-scientific terminology, the basic concepts of: the causes of injury to organs, tissues and cells (etiology); the resulting effects (pathological lesions) on tissue structure/function; and the underlying pathophysiological mechanisms by which these lesions develop (pathogenesis). These will be illustrated using a range of different animal diseases.</p> <p>These aims and objectives will be achieved through theoretical teaching, laboratory activities () to provide students with:</p> <ul style="list-style-type: none"> o the ability to understand the methods and mechanisms of damage production caused by several etiological agents; o ability to identify the damage response mechanisms caused by articulated cellular and tissue systems of a living organism together with its multiform molecular complexes; o the basic techniques for discriminating the main alterations from both histological, cytological and macroscopic point of view, in order to make a morphological diagnosis; o the ability to communicate and pass on what has been learned; o the fundamental principles of modern cellular and molecular pathology, as well as degenerative, inflammatory and neoplastic multicellular pathological processes, and cellular pathophysiology and mechanisms of organ pathology and integrated functions.
Course prerequisites	Microbiology and applied immunology
Contents	Course contents (Program) <ul style="list-style-type: none"> o Basic Sciences: General concepts of Pathology. Etiology: extrinsic and extrinsic causes of disease. Pathogenesis, morphological modifications and functional alterations concepts of cellular alteration. Causes of

	<p>cell damage: cellular adaptations of growth and differentiation. Atrophy, hypertrophy, hypoplasia, hyperplasia, metaplasia. Cell death: Necrosis and apoptosis. Nutritional Factors to Physical Causes of Diseases. The inflammatory response; acute inflammation; chronic inflammation. Pathologies related to inflammation. Oncology: control of cell proliferation. Anaplasia. Nomenclature and classification of tumors. Physical, chemical and oncogenic virus carcinogenesis. Differences between benign and malignant tumors. Tumor angiogenesis. The metastatic process. Immunity in the tumor context. Angiogenesis in the physiological and pathological context. Haemostasis: haemorrhagic syndromes, disseminated intravascular coagulation, thrombosis. Atherosclerosis: causes and consequences. Hyperlipidemias, hypertension, vascular damage, clinical manifestations and complications. Pathophysiology of the cardiovascular system: changes in blood pressure, ischemia. Pathophysiology of the respiratory system: dyspnoea and cyanosis, acute and chronic respiratory failure. Renal pathophysiology: acute and chronic renal insufficiency. Pathophysiology of the liver: steatosis and cirrhosis, jaundice, liver failure.</p> <p>Practical activities: in the lab and autopsy room : recognition of degenerative, inflammatory and neoplastic lesions at macroscopic and microscopic level.</p>
Books and bibliography	<p>Marcato P. S., Anatomia e Istologia Patologica, Esculapio, 1997. Rubin R., Strayer D.S., Patologia generale, tomo I, Piccin, 2014 McGavin M. D., Zachary J. F., Patologia generale veterinaria, Elsevier Masson, 2008.</p>
Additional materials	

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours:
Hours			
150	50	25	75
ECTS			
5	4	1	
Teaching strategy	<p>The course will be carried out in an exclusively frontal, blended or remote mode, according to the guidelines approved by the competent bodies. The theoretical lessons will focus on the scheduled topics that will be exposed using the appropriate multimedia tools (personal computer, projector, WEB).</p> <p>A few hours of practical activity will be carried out mainly in the histopathology and oncology, immunohistochemistry laboratories and possibly in the sector room. Self-assessment tests are provided, outside normal teaching hours, to verify the progress of acquisitions and, where necessary, additional learning methodologies are used.</p>		
Expected learning outcomes	<p>By the end of this course, students will be able to demonstrate their:</p> <ul style="list-style-type: none"> ○ knowledge and understanding of the pathogenesis and underlying pathophysiological mechanisms of animal diseases; ○ ability to recognize and describe the pathogenetic and molecular mechanisms of cell and tissue damage in relation to the various etiological causes of disease; 		

	<ul style="list-style-type: none"> ○ ability to communicate and discuss what they have learned so that they are able to continue their study path in full autonomy; ○ ability to describe and interpret photographic images of post-mortem and histopathological findings
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Knowledge of the pathogenetic mechanisms that cause purely functional and morphologically overt alterations. ○ Know the terminology that defines the regressive (atrophy, degeneration, apoptosis and necrosis), inflammatory processes (innate and adaptive immunity) and neoplasia, and the notions related to their pathogenesis.
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> At the end of the course, the student must acquire the ability to: <ul style="list-style-type: none"> ○ Ability to formulate and identify the main etiopathogenetic elements of veterinary diseases and express their opinion and critical judgment on these issues, participating in self-verification and review processes of peer groups to improve professional performance. • <i>Communication knowledge and understanding</i> The student must acquire: <ul style="list-style-type: none"> ○ the skills and scientific terminology to be able to correctly relate to veterinarians and professionals in the sector, also acquiring the ability to adopt adequate research methods and to make use of the contribution of basic and applied research to veterinary science. ○ the possibility of adopting adequate research methods; ○ the ability to make use of the contribution of basic and applied research to veterinary science. • <i>Capacities to continue learning</i> The student must acquire the ability to: <ul style="list-style-type: none"> ○ improve their knowledge independently through further and in-depth studies <ul style="list-style-type: none"> ○ actively participate in advanced courses and training periods at specialized structures.

Assessment and feedback	
Methods of assessment	The skills acquired will be assessed towards the end of the course, through questions and presentations prepared by the students on topics related to the course.
<i>Evaluation criteria</i>	<ul style="list-style-type: none"> • <i>Knowledge and understanding:</i> <ul style="list-style-type: none"> ○ to know the main basic pathogenetic mechanisms that lead to the establishment of alterations. To develop the ability to recognize organs and lesions and to use the correct language for histological description - acquisition of diagnostic and communication skills; • <i>Applied knowledge and understanding:</i> <ul style="list-style-type: none"> ○ to identify the main macro and microscopic aspects of the main pathologies ○ to make the student familiar with the optical microscope - acquisition of professional skills; • <i>Autonomy of judgment:</i>

	<ul style="list-style-type: none"> ○ Being able to express the opinions independently and together; • <i>Communicating knowledge and understanding:</i> <ul style="list-style-type: none"> ○ Good ability to recognize the main pathological changes both from a macroscopic and histological point of view; • <i>Capacity to continue learning</i> <ul style="list-style-type: none"> ○ To improve the knowledge of the topics through advanced courses and training periods
Criteria for assessment and attribution of the final mark	<p>The final grade is awarded out of thirty. The exam is passed when the mark is greater or equal than to 18. The assessment of learning achieved takes place through an oral exam with the aim of verifying the student's ability to apply their knowledge and to perform the necessary logical-deductive connections.</p> <p>It is usually based on four questions, one relating to the general part and the others that include the most important chapters of General Pathology.</p> <p>Intermediate tests are scheduled in the middle of the course and the final evaluation will consist of the average of the intermediate test and the outcome of the oral test.</p>
Additional information	