



General information	
Academic subject	RADIOLOGY (integrated SURGERY 1)
Degree course	Veterinary Medicine
Academic Year	2021/2022
European Credit Transfer and Accumulation System (ECTS)	2
Language	Italian
Academic calendar (starting and ending date)	II bimester
Attendance	Mandatory

Professor/ Lecturer	
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Department and address	Veterinary Medicine Campus – Valenzano (BA)
Virtual headquarters	MS Teams code: o2b9ph6
Tutoring (time and day)	Monday, Wednesday and Friday from 9:30 to 11:30 (at the veterinary hospital) Tuesday and Thursday from 2.30pm to 4.30pm By appointment

Syllabus	
Learning Objectives	Learning the diagnostic imaging techniques most commonly used in the veterinary clinic. Learning of the modes and systems of operation of radiographic and imaging equipment. Learning of the radiographic anatomy of the different anatomical areas and identification of the related pathological changes.
Course prerequisites	The prerequisite for the examination of General Pathology is foreseen. Adequate preparation in Anatomy and Physiology is also required for understand the pathological processes and alterations of surgical interest, as well as knowledge of the principles of Biosecurity in the relationship with animals.
Contents	<p>Clinical Sciences of Companion Animals (including Horses and Exotics)</p> <p>Radiation physics. The X-ray tube and radiographic equipment. The interaction of radiation with matter. The formation of the radiographic image. Secondary radiation and anti-diffusion grids. Digital Radiology. Radiation protection. Radioscopy. Digital radiography. Radiographic projections: terminology and radiographic positioning of the patient. Physics and geometry of the radiographic image. Contrast media. Scintigraphy. Computed tomography. Nuclear magnetic resonance. Ultrasound.</p> <p>Skeletal system: radiological anatomy and semiotics. Chronological appearance of the ossification nuclei. Osteopathies. Fractures, Dislocations, Epiphyseal Detachments. Normal and pathological radiographic aspect of bone repair processes. Osteodysplasias. Osteochondrosis. Osteomyelitis. Neoplasms. Arthrosis. Osteopathies of growing animals. Laminitis. Naviculitis. Bone cysts. Sesamoiditis. Periostitis. Enthesiopathies. Angular deformities.</p> <p>Respiratory system and thorax: radiological anatomy and semeiotics. Changes in lung transparency. Alterations of the trachea. Bronchopneumonia and Pneumonia. Pneumothorax. Pleural effusions. Pulmonary edema. Neoplasms.</p>

	<p>Digestive system and abdomen: radiological anatomy and semeiotics. Direct and contrast examination. Periodontal disease. Megaesophagus. Ernie. Gastric dilation and torsion. Intussusception. Enter yourself. Foreign bodies. Coprostasis. Megacolon. Neoplasms. Peritonitis. Ascites.</p> <p>Urinary and genital system: radiological anatomy and semeiotics. Direct and contrast examination. Hydronephrosis. Nephropathies. Ectopic ureter. Cystitis. Bladder and urethral ruptures. Lithiasis. Neoplasms. Prostatic pathologies. Uterine pathologies.</p> <p>Nervous system: radiological anatomy and semeiotics. Myelography, Epidurography, Discography. Disorders of the spine and spinal cord. Neoplasms. Radiology of wild and unconventional animals.</p>
Books and bibliography	<p>Bertoni G., Brunetti A., Pozzi L.: "Radiologia Veterinaria", Idelson-Gnocchi, 2005.</p> <p>Burk R.L. e Ackermann N.: "Radiologia diagnostica ed ecografia del cane e del gatto", UTET.</p> <p>Morgan J.P.: "Radiologia del cane e del gatto", Masson Edizioni Veterinarie.</p> <p>O'brien "Radiologia per la pratica ippiatrica", Antonio Delfino Editore, I Edizione Italiana, 2008.</p>
Additional materials	<p>The texts are recommended for the purpose of deepening and integration; since attendance is mandatory, the lesson notes and material provided by the teacher during the course will be of fundamental importance</p>

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
50	13	25	12
ECTS			
2	1	1	
Teaching strategy			
<p>The theoretical part of the course takes place in the classroom equipped with multimedia tools such as PC, projector, internet connection, with the help of power point slides accompanied by photos and x-ray examinations of clinical cases. Practical exercises are carried out in the outpatient departments of the educational veterinary hospital and the radiological room of DETO. The students, divided into groups, participate under the guidance of the teacher in the execution of radiographic studies that are performed on clinical cases that come to observation.</p>			
Expected learning outcomes			
Knowledge and understanding on:		<ul style="list-style-type: none"> ○ The student must acquire basic knowledge concerning radiation physics ○ operation of radiological equipment. ○ Learn about normal radiological anatomy and be able to distinguish the most important pathological pictures. 	
Applying knowledge and understanding on:		<ul style="list-style-type: none"> ○ Understand the contribution that imaging and other diagnostic techniques can make in obtaining a diagnosis. Use basic imaging equipment and perform an exam effectively, as appropriate, in accordance with good health and safety practices and applicable regulations. ○ Communicate clearly and collaborate with referral and diagnostic services, also providing appropriate history. 	



<p>Soft skills</p>	<ul style="list-style-type: none"> • Making informed judgments and choices <ul style="list-style-type: none"> ○ Understanding and competence in logical approaches to reasoning either scientific than clinical, the distinction between the two and the strengths and limitations of each ○ Etiology, pathogenesis, clinical signs, diagnosis and treatment of diseases and ailments occurring in common domestic species • Communicating knowledge and understanding <ul style="list-style-type: none"> ○ The ethical framework within which veterinary surgeons should work, including important ethical theories that inform the process decision-making in professional ethics and relative to the welfare of animals • Capacities to continue learning <ul style="list-style-type: none"> ○ ON LINE DATABASE CONSULTING
<p>Assessment and feedback</p>	
<p>Methods of assessment</p>	<p>The knowledge and skills acquired will be assessed through an oral final exam that will verify the acquisition of the required knowledge as detailed in the course objectives. The evaluation acquired in the "Veterinary Radiology" module, together with that acquired in the "Surgical Semeiotics" and "Veterinary Surgical Pathology" modules, will contribute to the determination of the final evaluation of the integrated examination of Veterinary Surgery 1. The student can take the 'examination of the three courses that make up the exam integrated into the same session, or first take a partial test of "Veterinary surgical pathology" and then a final test of "Surgical semeiotics" and "Radiology" together.</p>
<p>Evaluation criteria</p>	<ul style="list-style-type: none"> • Knowledge and understanding <ul style="list-style-type: none"> ○ The student must demonstrate to have acquired in an organic and thorough way the knowledge of the fundamental techniques of diagnostics in images; • Applying knowledge and understanding <ul style="list-style-type: none"> ○ The student must demonstrate that he has acquired an adequate ability to correctly recognize, describe and classify the main pathologies of surgical interest, together with the ability to correctly expose the contents; • Autonomy of judgment <ul style="list-style-type: none"> ○ The student must demonstrate analytical skills and a critical sense with respect to the topics studied; • Communicating knowledge and understanding <ul style="list-style-type: none"> ○ The student must demonstrate good ability to present the topics studied and be able to use the specialized scientific terminology appropriately; • Communication skills <ul style="list-style-type: none"> ○ The student must demonstrate that he is able to rework the concepts learned to adapt them to new situations and be able to draw on the sources available for their management. • Capacities to continue learning <ul style="list-style-type: none"> ○ DATABASE CONSULTING
<p>Criteria for assessment and attribution of the final mark</p>	<p>The assessment of the level of learning achieved takes place through an oral interview, aimed at ascertaining the degree of knowledge of the proposed topics. The final grade is awarded out of thirty. The exam is passed when the grade is greater than or equal to 18. The final grade of the integrated exam is the result of the weighted average of the marks obtained for each of the three courses. In any</p>



	case, the student must acquire a mark greater than or equal to 18/30 for each part of the exam relating to the three courses.
Additional information	