

2023-2024

GENERAL AND CLINICAL RADIOLOGY

UNIVERSITY OF ZAGREB
FACULTY OF VETERINARY MEDICINE
Heinzelova 55, 10000 Zagreb
Tel. 01/ 2390-401
Department of Radiology, Ultrasound Diagnostic and Physical Therapy
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Register no.: **61-15-201-23**

Zagreb, 08. September 2023

COURSE SYLLABUS

Course name: **GENERAL AND CLINICAL RADIOLOGY**

Academic year 2023-2024

Course leader: Assoc. Prof. Hrvoje Capak, PhD

Teachers: Assoc. Prof. Hrvoje Capak, PhD
Assoc. Prof. Zoran Vrbanac, PhD, DACVSMR, DECVSMR

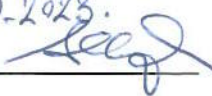
Associate teachers: Ana Javor, DVM
Iva Bacan, DVM

First day of classes: 02. October 2023

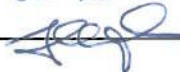
Last day of classes: 19. December 2023




170527	REPUBLIKA HRVATSKA	
Veterinarski fakultet u Zagrebu		
Primljeno:	11.09.2023	
Klasifikacijska oznaka	Org. jed.	
605-03/23-04/28	251-61-32;	
Uredžbeni broj	Prilozi	Vrijednost
251-61-15/428-23-21.	0	-

08.09.2023.


Activities - General and Clinical Radiology (1/3)							
Start Dat	Start Tim	End Time	Subject	Group	Instructor	Room	Length
02/10/2023	10:15	11:45	p1 Introduction, X ray, CT machines	7E-1, 7E-2	Capak H.	P_farmakologija	1:30
03/10/2023	14:15	15:45	p2 Radiology of skeletal system 1	7E-1, 7E-2	Vrbanac Z.	P_klinike	1:30
04/10/2023	8:15	9:45	p3 Radiology of skeletal system 2 joints	7E-1, 7E-2	Vrbanac Z.	P_kemija	1:30
05/10/2023	14:15	15:45	p4 Radiology of respiratory system	7E-1, 7E-2	Vrbanac Z.	P_mikrobiologija	1:30
06/10/2023	10:15	11:45	p5 Radiology of cardiovascular system	7E-1, 7E-2	Capak H.	P_kemija	1:30
20/10/2023	14:15	15:45	p6 Radiology of gastrointestinal system	7E-1, 7E-2	Capak H.	P_klinike	1:30
31/10/2023	11:30	13:00	v1 Introduction, X ray, CT devices	7E-1	Nastavnici na predmetu	V_rendgen	1:30
06/11/2023	11:30	13:00	v1 Introduction, X ray, CT devices	7E-2	Nastavnici na predmetu	V_rendgen	1:30

08.09.2023.


Activities - General and Clinical Radiology (2/3)							
Start Dat	Start Tim	End Time	Subject	Group	Instructor	Room	Length
08/11/2023	11:30	14:30	v2 Introduction 2 - positionioning techniques	7E-1	Nastavnici na predmetu	V_rendgen	3:00
13/11/2023	11:30	14:30	v2 Introduction 2 - positionioning techniques	7E-2	Nastavnici na predmetu	V_rendgen	3:00
14/11/2023	11:30	14:30	v3 R Locomotor system 1	7E-1	Nastavnici na predmetu	V_rendgen	3:00
15/11/2023	11:30	14:30	v3 R Locomotor system 1	7E-2	Nastavnici na predmetu	V_rendgen	3:00
16/11/2023	11:30	14:30	v4 R Locomotor system 2 - joints, spine	7E-1	Nastavnici na predmetu	V_rendgen	3:00
17/11/2023	11:30	14:30	v4 R Locomotor system 2 - joints, spine	7E-2	Nastavnici na predmetu	V_rendgen	3:00
21/11/2023	8:15	11:15	v5 R Respiratory system, Coll 1	7E-1	Nastavnici na predmetu	V_rendgen	3:00
05/12/2023	10:15	11:45	p7 Radiology of urogenital system	7E-1, 7E-2	Capak H.	P_klinike	1:30

08.08.2023.


Activities - General and Clinical Radiology (3/3)							
Start Dat	Start Tim	End Time	Subject	Group	Instructor	Room	Length
06/12/2023	14:15	15:00	p8 Equine and farm animal radiology	7E-1, 7E-2	Capak H.	P_klinike	0:45
11/12/2023	12:00	15:00	v5 R Respiratory system, Coll 1	7E-2	Nastavnici na predmetu	V_rendgen	3:00
12/12/2023	12:00	15:00	v6 R Cardiovacular system	7E-1	Nastavnici na predmetu	V_rendgen	3:00
13/12/2023	12:00	15:00	v6 R Cardiovacular system	7E-2	Nastavnici na predmetu	V_rendgen	3:00
14/12/2023	12:00	15:00	v7 R Gastrointestinal system	7E-1	Nastavnici na predmetu	V_rendgen	3:00
15/12/2023	12:00	15:00	v7 R Gastrointestinal system	7E-2	Nastavnici na predmetu	V_rendgen	3:00
18/12/2023	12:00	15:00	v8 R Urogenital system, Coll 2	7E-1	Nastavnici na predmetu	V_rendgen	3:00
19/12/2023	8:15	11:15	v8 R Urogenital system, Coll 2	7E-2	Nastavnici na predmetu	V_rendgen	3:00
Total: 24							56:15

STUDENT OBLIGATIONS

Lecture attendance	Attending lectures 3 - 6 points (15 lecture hours, 1 lecture hour is worth 0.4 point). A student must attend minimal 8 lecture hours
Seminars attendance	-
Practicals attendance	Attending exercises 8-12 points (8 programmes, 1 programme (double period) is worth 1.6 points). A student must attend minimal 70% of practical hours (21 hours).
Active participation in seminars and practicals	Participation at exercises 5 - 10 points – participation at exercise will be evaluated with short oral tests with 5 points at least two times.
Final exam	ORAL EXAM: 24 - 40 points (5 questions: 1 question is worth 8 points) To take the final exam a student must gain minimal 16 points from attending lectures and exercises and participation at exercises and minimal 20 points from continuous knowledge checking.
Examination requirements	Student requirements are defined in the Regulations on the Integrated Undergraduate and Graduate Study of Veterinary Medicine (2022). Given the above, the student must acquire a minimum number of points from all assessment elements in order to take the final exam. Article 41: a student can justifiably be absent from up to 50 % of the lectures; 30% of the seminars and 30 % of the exercises.

GRADING AND EVALUATING STUDENT WORK

Continuous knowledge-checking (mid-terms)	Continuous knowledge checking 20 - 32 points 1 st preliminary exam (10 questions) 10 points min. – 16 points max. (1 question is worth 1.6 points) 2 nd preliminary exam (10 questions) 10 points min. – 16 points max. (1 question is worth 1.6 points) Preliminary exam in online form.
Preliminary exams (dates)	1. 21/11/2023; 11/12/2023 2. 18/12/2023; 19/12/2023
Final exams (dates)	19/12/2023; 13/2/2024; 21/2/2024
Form of final exam	Oral

LITERATURE

Obligatory literature	<ul style="list-style-type: none"> Kealy J. Kevin, Hester McAllister (2004.): Diagnostic Radiology and Ultrasonography of the Dog and Cat, 4th Edition, Philadelphia Thrall D.E. (2013): Textbook of Veterinary Diagnostic Radiology. 6th ed Saunders. St. Louis, Missouri
Optional literature	

OBJECTIVES AND LEARNING OUTCOMES

Course objectives	In the general part of the course the student is introduced to basics of X-rays physics, X-rays and CT devices and positioning. Both plain and digital radiography procedures will be covered. Interpretation protocols, projection effects and contrast survey will be explained to the student. In the clinical part of the subject, the theoretical and practical education of radiological diagnostic of different body systems (skeletal, digestive, respiratory, cardiovascular, and urogenital) will be covered. During the practical work, student will gain experience in analyses and interpretation of radiographs, composing the findings and determine the diagnosis.
Learning outcomes	<ol style="list-style-type: none"> 1. to understand the physics of x-ray and CT imaging, potential harmful effect of x-ray and protection 2. to perform the x-ray survey and the image processing 3. to analyse and interpret different anatomical structures and opacities with the goal of determining the diagnosis 4 to choose and apply suitable contrast survey and to compare it with plain radiographs

5. to evaluate the diagnostic possibility in different pathological conditions and to determine the possible use of radiological exam.

GRADING SCHEME

<i>Points</i>	<i>Grade</i>
Up to 59	1 (F)
60-68	2 (E)
69-76	2 (D)
77-84	3 (C)
85-92	4 (B)
93-100	5 (A)

Course leader:

Assoc. Prof. Hrvoje Capak, PhD



Head of Department/Clinic:

Assoc. Prof. Zoran Vrbanac, PhD, DACVSMR, DECVSMR



Note: The course leader is required to submit a Course Syllabus to all teachers and associates pertaining to the Course.

**GRADING AND EVALUATION OF STUDENT WORK ON COURSES WITH LECTURES,
SEMINARS and PRACTICALS**

Type of activity	Minimum number of points	Maximum number of points
Lectures attendance	3	6
Seminar attendance	4	6
Practicals attendance	4	6
Active participation in seminars and practicals	5	10
Continuous knowledge checking (mid-terms)	20	32
Final exam	24	40
TOTAL	60	100

**GRADING AND EVALUATION OF STUDENT WORK ON COURSES WITH LECTURES and
SEMINARS**

Type of activity	Minimum number of points	Maximum number of points
Lecture attendance	3	6
Practicals attendance	8	12
Active participation in practicals	5	10
Continuous knowledge checking (mid-terms)	20	32
Final exam	24	40
TOTAL	60	100

**GRADING AND EVALUATION OF STUDENT WORK ON COURSES WITH SEMINARS and
EXERCISES**

Type of activity	Minimum number of points	Maximum number of points
Seminar / practicals attendance	11	18
Active participation in seminars and practicals	5	10
Continuous knowledge checking (mid-terms)	20	32
Final exam	24	40
TOTAL	60	100