

UNIVERSITY OF ZAGREB
FACULTY OF VETERINARY MEDICINE

Heinzlova 55

Tel. 01/ 2390 401

Division: Clinical

Organizational unit: Radiology, Ultrasound Diagnostic and Physical Therapy

E-mail of the course leader: zoran.vrbanac@vef.unizg.hr

Register No of the organisational unit: 61-15-22-26

Zagreb, 1/28/2026



| | | |
|---------------------------------|--------------------|------------|
| 214629 | REPUBLIKA HRVATSKA | |
| Veterinarski fakultet u Zagrebu | | |
| Primljeno: | 28.01.2026 | |
| Klasifikacijska oznaka | Org. jed. | |
| 602-04/25-22/34 | 251-61-41; | |
| Uredžbeni broj | Prilozi | Vrijednost |
| 251-61-015/419-26-136 | 0 | - |

COURSE SYLLABUS

METHODS OF PHYSICAL THERAPY AND DIAGNOSTICS

Academic year 2025/2026

Course leader: Assoc. Prof. Zoran Vrbanac, PhD, DACVSMR, DECVSMR

Deputy course leader: Assoc. Prof. Hrvoje Capak, PhD

Teachers:

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

Assoc. Prof. Hrvoje Capak, PhD

Ana Javor, DVM, Assistant

First day of classes: 2/25/2026

Last day of classes: 4/17/2026

Activities - Methods of Physical Therapy and Diagnostics (1/2)

| Start Date | Start T | End Ti | Course | Group | Note | Length | Instructor | Room |
|------------|---------|--------|--|-----------------------------|------|--------|------------------------|---------------|
| 25/02/2026 | 8:15 | 9:45 | p01 Introduction | 8E-1, 8E-2, 8E-3 | | 1:30 | Vrbanac Z. | P_fizika |
| 02/03/2026 | 14:45 | 16:15 | p03 Therapeutic exercises and manual therapy | 8E-1, 8E-2, 8E-3 | | 1:30 | Vrbanac Z. | P_fizika |
| 03/03/2026 | 8:00 | 9:30 | p04 Therapeutic ultrasound; Laser therapy | 8E-1, 8E-2, 8E-3, P_rendgen | | 1:30 | Vrbanac Z. | P_fizika |
| 04/03/2026 | 14:45 | 16:15 | p02 Physiological effect - warmth and cold application | 8E-1, 8E-2, 8E-3 | | 1:30 | Capak H. | P_klinike |
| 05/03/2026 | 13:30 | 15:45 | v01 Thermotherapy, clinical cases | 8E-1, 8E-2 | | 2:15 | Nastavnici na predmetu | V_rendgen |
| 06/03/2026 | 8:00 | 10:15 | v01 Thermotherapy, clinical cases | 8E-3 | | 2:15 | Nastavnici na predmetu | V_rendgen |
| 09/03/2026 | 15:15 | 16:00 | p05 Phototherapy | 8E-1, 8E-2, 8E-3 | | 0:45 | Capak H. | P_klinike |
| 16/03/2026 | 12:00 | 13:30 | p06 Diagnostic ultrasound | 8E-1, 8E-2, 8E-3 | | 1:30 | Capak H. | P_fiziologija |
| 17/03/2026 | 9:45 | 11:15 | p07 Electrotherapy | 8E-1, 8E-2, 8E-3 | | 1:30 | Vrbanac Z. | P_klinike |
| 18/03/2026 | 10:00 | 11:30 | p08 Hydrotherapy | 8E-1, 8E-2, 8E-3, P_rendgen | | 1:30 | Vrbanac Z. | P_klinike |
| 19/03/2026 | 8:00 | 10:15 | v02 Electrotherapy, clinical cases | 8E-1, 8E-3 | | 2:15 | Nastavnici na predmetu | V_rendgen |
| 20/03/2026 | 13:30 | 15:45 | v02 Electrotherapy, clinical cases | 8E-3 | | 2:15 | Nastavnici na predmetu | V_rendgen |
| 24/03/2026 | 11:30 | 13:45 | v03 Therapeutic Ultrasound, clinical cases | 8E-1, 8E-3 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| 25/03/2026 | 9:45 | 12:00 | v03 Therapeutic Ultrasound, clinical cases | 8E-2 | | 2:15 | Nastavnici na predmetu | P_rendgen |

Activities - Methods of Physical Therapy and Diagnostics (2/2)

| Start Date | Start T | End Ti | Course | Group | Note | Length | Instructor | Room |
|------------|---------|--------|---|------------|------|--------|------------------------|-----------|
| 10/04/2026 | 10:00 | 12:15 | v04 Hydrotherapy, clinical cases | 8E-3 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| 14/04/2026 | 13:00 | 15:15 | v04 Hydrotherapy, clinical cases | 8E-1, 8E-2 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| 15/04/2026 | 13:30 | 15:45 | v05 Diagnostic ultrasound, clinical cases | 8E-1, 8E-2 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| 17/04/2026 | 13:15 | 15:30 | v05 Diagnostic ultrasound, clinical cases | 8E-3 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| Total: 18 | | | | | | 33:45 | | |

Timetable for LECTURES academic year 2023/2024

STUDENT OBLIGATIONS

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|---|--|
| 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 5 programmes. |
| 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. Regulations On Intergraduate And Graduate Studies, 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

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|---|--|
| Continuous knowledge-checking (mid-terms) | 4/15/2026; 4/17/2026 |
| Final exams (dates) | 22/4/2026; 19/5/2026; 18/6/2026; 6/7/2026; 7/9/2026; 16/9/2026 |
| Form of final exam | Oral exam |

LITERATURE

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|-----------------------|---|
| Obligatory literature | Millis, D.L., D. Levine, R.A. Taylor: Canine Rehabilitation and Physical Therapy. Second edition. Elsevier, Philadelphia, 2014 |
| Optional literature | Bockstahler, B. et al: Essential Facts of Physical Medicine, Rehabilitation and Sports Medicine in Companion Animals. First edition. VBS VetVerlag, Buchhandel und Seminar GmbH, 2019 |

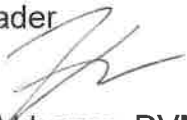
OBJECTIVES AND LEARNING OUTCOMES

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|--------------------------|---|
| Course objectives | The course objective is to explain the different forms of artificial and natural energy and its use in treatment and prophylaxis. Student will get acquainted with most frequently used physical therapy modalities as well as ultrasound diagnostic. The 4 th year student will gain the insight in methods and modalities of physical therapy and diagnostic used in rehabilitation protocols. |
| Learning outcomes | 1- to understand different methods of physical therapy and their effect on body systems 2- to apply and to determine the duration of the methods depending on clinical condition 3- to evaluate the outcome of physical therapy treatment 4- to interpret ultrasound image of different body system |

GRADING SCHEME

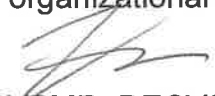
| <i>Points</i> | <i>Grade</i> |
|---------------|--------------|
| Up to 59 | 1 (F) |
| 60-76 | 2 (D,E) |
| 77-84 | 3 (C) |
| 85-92 | 4 (B) |
| 93-100 | 5 (A) |

Course leader



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

Head of organizational unit:



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

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

Activities - Methods of Physical Therapy and Diagnostics (1/2)

| Start Date | Start T | End Ti | Course | Group | Note | Length | Instructor | Room |
|------------|---------|--------|--|-----------------------------|------|--------|------------------------|---------------|
| 25/02/2026 | 8:15 | 9:45 | p01 Introduction | 8E-1, 8E-2, 8E-3 | | 1:30 | Vrbanac Z. | P_fizika |
| 27/02/2026 | 15:05 | 16:35 | p02 Physiological effect - warmth and cold application | 8E-1, 8E-2, 8E-3 | | 1:30 | Capak H. | P_fizika |
| 02/03/2026 | 14:45 | 16:15 | p03 Therapeutic exercises and manual therapy | 8E-1, 8E-2, 8E-3 | | 1:30 | Vrbanac Z. | P_fizika |
| 03/03/2026 | 8:00 | 9:30 | p04 Therapeutic ultrasound; Laser therapy | 8E-1, 8E-2, 8E-3, P_rendgen | | 1:30 | Vrbanac Z. | P_fizika |
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| 16/03/2026 | 12:00 | 13:30 | p06 Diagnostic ultrasound | 8E-1, 8E-2, 8E-3 | | 1:30 | Capak H. | P_fiziologija |
| 17/03/2026 | 9:45 | 11:15 | p07 Electrotherapy | 8E-1, 8E-2, 8E-3 | | 1:30 | Vrbanac Z. | P_klinike |
| 18/03/2026 | 10:30 | 12:00 | p08 Hydrotherapy | 8E-1, 8E-2, 8E-3, P_rendgen | | 1:30 | Vrbanac Z. | P_klinike |
| 19/03/2026 | 8:00 | 10:15 | v02 Electrotherapy, clinical cases | 8E-1, 8E-2 | | 2:15 | Nastavnici na predmetu | V_rendgen |
| 20/03/2026 | 13:30 | 15:45 | v02 Electrotherapy, clinical cases | 8E-3 | | 2:15 | Nastavnici na predmetu | V_rendgen |
| 24/03/2026 | 11:30 | 13:45 | v03 Therapeutic Ultrasound, clinical cases | 8E-1, 8E-3 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| 25/03/2026 | 9:45 | 12:00 | v03 Therapeutic Ultrasound, clinical cases | 8E-2 | | 2:15 | Nastavnici na predmetu | P_rendgen |

Activities - Methods of Physical Therapy and Diagnostics (2/2)

| Start Date | Start T | End Ti | Course | Group | Note | Length | Instructor | Room |
|------------------|---------|--------|---|------------|------|--------------|------------------------|-----------|
| 10/04/2026 | 10:00 | 12:15 | v04 Hydrotherapy, clinical cases | 8E-3 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| 14/04/2026 | 13:00 | 15:15 | v04 Hydrotherapy, clinical cases | 8E-1, 8E-2 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| 15/04/2026 | 13:30 | 15:45 | v05 Diagnostic ultrasound, clinical cases | 8E-1, 8E-2 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| 17/04/2026 | 13:15 | 15:30 | v05 Diagnostic ultrasound, clinical cases | 8E-3 | | 2:15 | Nastavnici na predmetu | P_rendgen |
| Total: 18 | | | | | | 33:45 | | |