Faculty of Medicine in Rijeka

**Curriculum**
**2024/2025**

For course

# Physical and Rehabilitation Medicine

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| Study program: | **Medical Studies in English (R)**<br>University integrated undergraduate and graduate study |
| Department: | **Department of Physical and Rehabilitation Medicine** |
| Course coordinator: | **prof. dr. sc. Schnurrer-Luke-Vrbanić Tea, dr. med.** |
| Year of study: | **5** |
| ECTS: | **2** |
| Incentive ECTS: | **0 (0.00%)** |
| Foreign language: | **Possibility of teaching in a foreign language** |

## Course information:

Physical and Rehabilitation Medicine is compulsory course on 5th year of study. It consists of 22 lectures and 15 practical hours (2ECTS). Lectures will be held online/in vivo. Practicals will be organized in 3 bloks (5 practical teaching ours each) at two locations of Department for Physical and Rehabilitation Medicine, KBC Rijeka for each group of students, according to the schedule: - Location Sušak, T. Strižića 3, Rijeka. - Location Kantrida, Istarska street 43, Kantrida Children¨s hospital, Rijeka. In the case of the unfavorable epidemiological situation educational process will be held online.

Learning outcomes: At the end of the course students should be able to:
• recognize major functional disorders of musculoskeletal system
• understand the impact of chronic illness on functioning
• define impairment, disability and handicap
• differentiate disease and consequences of disease on personal and society level
• indicate goal of the rehabilitation process
• name the members of rehabilitation team and their role in rehabilitation process
• describe mechanism of action and indication of particular physical agent

## List of assigned reading:

Selected chapters from:
1. David X. Cifu, et al., Braddom’s Physical Medicine and Rehabilitation, 5th ed., Philadelphia, PA, 2016.
2. Prof. Walter R. Frontera MD PhD, DeLisas Physical Medicine and Rehabilitation Principles and Practice, Two Volume Set (Rehabilitation Medicine-Delisa)., 5th ed., Philadelphia, PA, 2016.
3. Matthew Shatzer., Physical Medicine and Rehabilitation Pocketpedia. 3rd ed., New York, 2018.
4. Thomas D. Rizzo Jr., Essentials of Physical Medicine and Rehabilitation Musculoskeletal Disorders, Pain, and Rehabilitation., 4th ed., Philadelphia, Pa, 2019.

## List of optional reading:

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## Curriculum:

### Lectures list (with titles and explanation):

**L1. Introduction and history of Physical Medicine and Reahabilitation (PRM)**

Get acquainted with the major goal of PRM. Acquireing knowledge about history of PRM

**L2. Helping the patient with musculo-skeletal diseases (MSD)**

Get acquainted with basics in anamnesis, clinical examination, diagnostics and therapy in MSD

**L3 i L4. Pain- diagnostic and therapeutic challenge**

Describe and explain types of pain in MSD. Knowing basic principles in non-farmacologic and pharmacologicph pain therapy

**L5. Selected clinical cases – Please help me, my whole body hurts- Fibromyalgia syndrom**

Describe and explain acute and chronic pain stimulus as well as red and yellow flags. Get acquainted with nociceptive and neuropathic pain Knowing basics in Fibromialgia sy.

**L6. Selected clinical cases – Complex Regional Pain Syndrom (CRPS)**

Describe and explain CRPS origin. Recognize and determine CRPS diagnostics and therapy

**L7. i L8. Osteoporosis and osteosarcopenia**

Describe and explain origin of osteoporosis and osteosarcopenia.  Recognize and determine diagnostics and therapy in osteoporosis and osteosarcopenia

**L9. i L10. Phenotype diversity in joint and spine osteoarthritis (OA) with proper diagnostics and nonpharmacologic and pharmacologic therapy**

Describe and explain phenotype diversity in OA. Recognize and determine diagnostics and therapy in OA. Determine basics in rehabilitation protocols.

**L11. Neck pain - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies)**

Describe and explain causes of neck pain. Recognize and determine diagnostics and therapy in neck pain. Determine basics in rehabilitation protocols

**L12 i L13. Back pain - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies), recognizing inflammatory back pain as a spetial entity**

Describe and explain causes of back pain. Recognize and determine diagnostics and therapy in back pain. Determine basics in rehabilitation protocols. Recognize and determine differences in inflammatory/mechanical back pain

**L14. Knee pain - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies**

Describe and explain causes of knee pain. Recognize and determine diagnostics and therapy in knee pain. Determine basics in rehabilitation protocols.

**L15. Tendinopathies - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies**

Describe and explain causes of tendinopathies. Recognize and determine diagnostics and therapy in tendinopathies. Determine basics in rehabilitation protocols.

**L16. i L17. Selected rehabilitation issues: Spinal cord Injuries (SCI) – how to make individual rehabilitation plan for impairments, disability and handicap**

Describe how to create individual rehabilitation plan for SCI patient. Recognize and determine levels of SCI injury. Determine basics in isolving impairments, disability and handicap.

**L18. Selected rehabilitation issues: Rehabilitation of people with limb amputation - how to make**

**individual rehabilitation plan for impairments, disability and handicap**

Describe how to create individual rehabilitation plan for limb amputees Recognize and determine prosthetic restoration Determine basics in isolving impairments, disability and handicap

**L19. Selected rehabilitation issues: Rehabilitation in stroke syndroms- how to make individual rehabilitation plan for impairments, disability and handicap**

Learning outcomes Describe how to create individual rehabilitation plan for patients with stroke syndroms Recognize and determine rehabilitation of stroke-related impairment and disability Determine basics in isolving impairments, disability and handicap (levels of rehabilitation care and specilized ecquipment)

**L20. Selected rehabilitation issues: Comprehensiive management of multiple sclerosis.**

Describe how to create individual rehabilitation plan for patients with multiple sclerosis. Recognize and determine rehabilitation basics in isolving impairments, disability and handicap (levels of rehabilitation care and specilized ecquipment).

**L21. i L22. Selected rehabilitation issues: Early diagnosis and habilitation/neurorehabilitation of children with deviation of normal motor development.**

Describe and recognize basics in deviation of normal motor development in children. Describe individual rehabilitation plan for patients with cerebral palsy. Recognize and determine rehabilitation basics in isolving impairments, disability and handicap (levels of rehabilitation care and specilized ecquipment).

**Practicals list (with titles and explanation):**

**Practical 1 - 5**

Assessment of musculo-skeletal system, create individual rehabilitation plan for patients with impairments, disability and handicap; levels of non-pharmacologic and parmacologic opptions; levels of rehabilitation care through inpatient/outpatient department. Practicals will be held at Department for Physical and Rehabilitation Medicine, KBC Rijeka - Location Sušak, T. Strižića 3, Rijeka (2x5 teaching practical ours each group - pathologies and rehabilitation strategies in elderly patients.

**Practical 6 - 10**

Assessment of musculo-skeletal system, create individual rehabilitation plan for patients with impairments, disability and handicap; levels of non-pharmacologic and parmacologic opptions; levels of rehabilitation care through inpatient/outpatient department. Practicals will be held at Department for Physical and Rehabilitation Medicine, KBC Rijeka - Location Sušak, T. Strižića 3, Rijeka (2x5 teaching practical ours each group - pathologies and rehabilitation strategies in elderly patients.

**Practical 11 - 15**

Assessment of musculo-skeletal system, create individual rehabilitation plan for patients with impairments, disability and handicap; levels of non-pharmacologic and parmacologic opptions; levels of rehabilitation care through inpatient/outpatient department. Practicals will be held at Department for Physical and Rehabilitation Medicine, KBC Rijeka - Location Kantrida, Istarska street 43, Kantrida Children¨s hospital, Rijeka (5 teaching practical ours each group-pathologies and rehabilitation strategies in children).

## Student obligations:

Attendance on lectures and practicals is mandatory. Communication between the teaching stuff and students will take place by e-mail addresses (@uniri.hr)

**Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):**

Student assessment is carried out in accordance with the current University of Rijeka Study Regulations and the Student Regulations at the Faculty of Medicine Rijeka (adopted by the Faculty Council of the Faculty of Medicine Rijeka). Students' performance will be evaluated during the course and at the final exam. Out of a total of 100 credits, a student can earn 70 credits (70%) during the course, and 30 credits (30%) at the final exam. Student assessment is performed using ECTS (A-F) and number system (1-5). Student assessments in ECTS system is carried out by is performed by absolute distribution, and according to graduate assessment criteria. Out of a total of 70 credits that can be earn during the course, student must earn 40 credits to take final exam.

The student acquires grade points by completing the tasks as follows I. During the course (maximum 70 credits): Obligatory practical test (maximum 70 credits) During the course students must take obligatory practical test (range 40-70 maximum) in musculoskeletal examination and in providing individual rehabilitation plan. The obligatory practical test will be held on the last block of practicals. During the obligatory practical test teacher grades knowledge and skills of each student as follows:

| grade | credits |
|---|---|
| sufficient | 40 |
| good | 50 |
| very good | 60 |
| excellent | 70 |

II. Final exam (maximum 30 credits): Final exam consists of obligatory written exam on-site in the form of essay. Student who earn 40 or more credits during the course can take final exam. Student who earn less than 40 credits during the course cannot take final exam. Final exam is scored maximal up to 30 credits. Final exam consists of 10 questions and brings 30 credits (range 15-30). To earn the credits student must pass 50% of final test. Correct answers are converted in credits by the following criteria:

| CORRECT ANSWERS (%) | credits |
|---|---|
| 50-54,99% | 15 |
| 55-59,99% | 20 |
| 60-64,99% | 22,5 |
| 65-69,99% | 25 |
| 70-74,99% | 27,5 |
| 75-79,99% | 30 |
| 80-84,99% | 32,5 |
| 85-89,99% | 35 |
| 90-94,99% | 37,5 |
| 95-100% | 30 |

For a passing grade during classes and on the final exam, student has to obtain minimum of 50 credits. The ECTS grading system is defined by the following criteria: A (5) – 95 -100% credits B (4)– 90 - 94,9% credits C (3) – 85 - 89,9% credits D (2) -- 80 - 84,9% credits E- 50-79,9% credits F (1) – 0 - 49,9% credits Grades in ECTS grading system are converted in numerical system by the following criteria: A = excellent (5) B = very good (4) C = good (3) D / E = sufficient (2) F = insufficient (1)

## Other notes (related to the course) important for students:

Course content and all information related to the course as well as exam dates can be found on the MedRi web pages. All student inquiries, regarding the course and possible problems, remarks and inquiries are provided exclusively using the official e-mail addresses (@medri.uniri.hr). It is possible to arrange consultations with the teaching staff during working hours.

## COURSE HOURS 2024/2025

Physical and Rehabilitation Medicine

| **Lectures**<br>(Place and time or group) | **Practicals**<br>(Place and time or group) |
|---|---|
| **24.02.2025** | |
| L1. Introduction and history of Physical Medicine and Reahabilitation (PRM):<br>• P12 - KBC SUŠAK (12:00 - 16:00) [157]<br>  ○ PARM<br><br>L2. Helping the patient with musculo-skeletal diseases (MSD):<br>• P12 - KBC SUŠAK (12:00 - 16:00) [157]<br>  ○ PARM<br><br>L3 i L4. Pain- diagnostic and therapeutic challenge:<br>• P12 - KBC SUŠAK (12:00 - 16:00) [157]<br>  ○ PARM | |
| prof. dr. sc. Schnurrer-Luke-Vrbanić Tea, dr. med. [157] | |
| **25.02.2025** | |
| | Practical 1 - 5:<br>• physical - KBC Sušak (08:00 - 12:00) [480]<br>  ○ PRM C1<br>• physical - ex. KBC Kantrida (08:00 - 12:00) [1946]<br>  ○ PRM C2 |
| naslovna asistentica Šarić Katarina, dr. med. [1946] · naslovni asistent Šegota Adelmo, dr. med. [480] | |
| **26.02.2025** | |
| L5. Selected clinical cases – Please help me, my whole body hurts- Fibromyalgia syndrom:<br>• P12 - KBC SUŠAK (08:00 - 12:00) [157]<br>  ○ PARM<br><br>L6. Selected clinical cases – Complex Regional Pain Syndrom (CRPS):<br>• P12 - KBC SUŠAK (08:00 - 12:00) [157]<br>  ○ PARM<br><br>L9. i L10. Phenotype diversity in joint and spine osteoarthritis (OA) with proper diagnostics and nonpharmacologic and pharmacologic therapy:<br>• P12 - KBC SUŠAK (08:00 - 12:00) [157]<br>  ○ PARM | |
| prof. dr. sc. Schnurrer-Luke-Vrbanić Tea, dr. med. [157] | |
| **27.02.2025** | |
| | Practical 1 - 5:<br>• physical - KBC Sušak (08:00 - 12:00) [480] [1236]<br>  ○ PRM A3<br>  ○ PRM A1<br>• physical - ex. KBC Kantrida (08:00 - 12:00) [1946]<br>  ○ PRM A2 |
| naslovna asistentica Vrbanović Ana, dr. med. [1236] · naslovna asistentica Šarić Katarina, dr. med. [1946] · naslovni asistent Šegota Adelmo, dr. med. [480] | |

**28.02.2025**

L7. i L8. Osteoporosis and osteosarcopenia:
- P12 - KBC SUŠAK (11:00 - 15:00) [157]
  - PARM

L14. Knee pain - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies:
- P12 - KBC SUŠAK (11:00 - 15:00) [157]
  - PARM

L15. Tendinopathies - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies:
- P12 - KBC SUŠAK (11:00 - 15:00) [157]
  - PARM

prof. dr. sc. Schnurrer-Luke-Vrbanić Tea, dr. med. [157]

**03.03.2025**

Practical 1 - 5:
- physical - KBC Sušak (08:00 - 12:00) [2840] [1236]
  - PRM B3
  - PRM B1
- physical - ex. KBC Kantrida (08:00 - 12:00) [1943]
  - PRM B2

asistentica Bodul Marina, dr. med. [1943] · naslovna asistentica Vrbanović Ana, dr. med. [1236] · naslovni asistent Štefanac Davor, dr.med. [2840]

**04.03.2025**

L11. Neck pain - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies):
- P12 - KBC SUŠAK (08:00 - 11:00) [157]
  - PARM

L12 i L13. Back pain - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies), recognizing inflammatory back pain as a spetial entity:
- P12 - KBC SUŠAK (08:00 - 11:00) [157]
  - PARM

prof. dr. sc. Schnurrer-Luke-Vrbanić Tea, dr. med. [157]

**05.03.2025**

Practical 6 - 10:
- physical - KBC Sušak (08:00 - 12:00) [2308]
  - PRM C2
- physical - ex. KBC Kantrida (08:00 - 12:00) [1946]
  - PRM C1

asistentica Prebeg Mia, dr. med. [2308] · naslovna asistentica Šarić Katarina, dr. med. [1946]

**06.03.2025**

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| L16. i L17. Selected rehabilitation issues: Spinal cord Injuries (SCI) – how to make individual rehabilitation plan for impairments, disability and handicap:<br>• P12 - KBC SUŠAK (08:00 - 11:30) [157] [1944]<br>  ◦ PARM<br><br>L18. Selected rehabilitation issues: Rehabilitation of people with limb amputation - how to make individual rehabilitation plan for impairments, disability and handicap:<br>• P12 - KBC SUŠAK (08:00 - 11:30) [157] [1944]<br>  ◦ PARM<br><br>L19. Selected rehabilitation issues: Rehabilitation in stroke syndroms- how to make individual rehabilitation plan for impairments, disability and handicap:<br>• P12 - KBC SUŠAK (08:00 - 11:30) [157] [1944]<br>  ◦ PARM | |
| prof. dr. sc. Schnurrer-Luke-Vrbanić Tea, dr. med. [157] · naslovni asistent Zahirović Nino, dr. med. [1944] | |
| **07.03.2025** | |
| | Practical 6 - 10:<br>• physical - ex. KBC Kantrida (08:00 - 12:00) [1943]<br>  ◦ PRM A1<br>• physical - KBC Sušak (08:00 - 12:00) [1236] [2308]<br>  ◦ PRM A3<br>  ◦ PRM A2 |
| asistentica Bodul Marina, dr. med. [1943] · asistentica Prebeg Mia, dr. med. [2308] · naslovna asistentica Vrbanović Ana, dr. med. [1236] | |
| **10.03.2025** | |
| | Practical 6 - 10:<br>• physical - ex. KBC Kantrida (08:00 - 12:00) [1946]<br>  ◦ PRM B1<br>• physical - KBC Sušak (08:00 - 12:00) [2840] [1236]<br>  ◦ PRM B3<br>  ◦ PRM B2 |
| naslovna asistentica Vrbanović Ana, dr. med. [1236] · naslovna asistentica Šarić Katarina, dr. med. [1946] · naslovni asistent Štefanac Davor, dr.med. [2840] | |
| **11.03.2025** | |
| L20. Selected rehabilitation issues: Comprehensiive management of multiple sclerosis.:<br>• P12 - KBC SUŠAK (08:00 - 11:00) [157]<br>  ◦ PARM<br><br>L21. i L22. Selected rehabilitation issues: Early diagnosis and habilitation/neurorehabilitation of children with deviation of normal motor development.:<br>• P12 - KBC SUŠAK (08:00 - 11:00) [157]<br>  ◦ PARM | |
| prof. dr. sc. Schnurrer-Luke-Vrbanić Tea, dr. med. [157] | |
| **12.03.2025** | |

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|---|---|
| | Practical 11 - 15:<br>• physical - KBC Sušak (08:00 - 12:00) [1944] [1945]<br>◦ PRM C2<br>◦ PRM C1 |
| naslovni asistent Vido Krešimir, dr. med. [1945] · naslovni asistent Zahirović Nino, dr. med. [1944] | |
| **13.03.2025** | |
| | Practical 11 - 15:<br>• physical - KBC Sušak (08:00 - 12:00) [1945] [1944]<br>◦ PRM A2<br>◦ PRM A1<br>• physical - ex. KBC Kantrida (08:00 - 12:00) [1943]<br>◦ PRM A3 |
| asistentica Bodul Marina, dr. med. [1943] · naslovni asistent Vido Krešimir, dr. med. [1945] · naslovni asistent Zahirović Nino, dr. med. [1944] | |
| **14.03.2025** | |
| | Practical 11 - 15:<br>• physical - KBC Sušak (08:00 - 12:00) [1945] [1944]<br>◦ PRM B2<br>◦ PRM B1<br>• physical - ex. KBC Kantrida (08:00 - 12:00) [1946]<br>◦ PRM B3 |
| naslovni asistent Vido Krešimir, dr. med. [1945] · naslovni asistent Zahirović Nino, dr. med. [1944] · naslovna asistentica Šarić Katarina, dr. med. [1946] | |

### List of lectures, seminars and practicals:

| LECTURES (TOPIC) | Number of hours | Location |
|---|---|---|
| L1. Introduction and history of Physical Medicine and Reahabilitation (PRM) | 1 | P12 - KBC SUŠAK |
| L2. Helping the patient with musculo-skeletal diseases (MSD) | 1 | P12 - KBC SUŠAK |
| L3 i L4. Pain- diagnostic and therapeutic challenge | 2 | P12 - KBC SUŠAK |
| L5. Selected clinical cases – Please help me, my whole body hurts- Fibromyalgia syndrom | 1 | P12 - KBC SUŠAK |
| L6. Selected clinical cases – Complex Regional Pain Syndrom (CRPS) | 1 | P12 - KBC SUŠAK |
| L7. i L8. Osteoporosis and osteosarcopenia | 2 | P12 - KBC SUŠAK |
| L9. i L10. Phenotype diversity in joint and spine osteoarthritis (OA) with proper diagnostics and nonpharmacologic and pharmacologic therapy | 2 | P12 - KBC SUŠAK |
| L11. Neck pain - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies) | 1 | P12 - KBC SUŠAK |
| L12 i L13. Back pain - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies), recognizing inflammatory back pain as a spetial entity | 2 | P12 - KBC SUŠAK |
| L14. Knee pain - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies | 1 | P12 - KBC SUŠAK |

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|---|---|---|
| L15. Tendinopathies - diagnostics and therapy (non-pharmacologic and pharmacologic therapy and rehabilitation strategies | 1 | P12 - KBC SUŠAK |
| L16. i L17. Selected rehabilitation issues: Spinal cord Injuries (SCI) – how to make individual rehabilitation plan for impairments, disability and handicap | 2 | P12 - KBC SUŠAK |
| L18. Selected rehabilitation issues: Rehabilitation of people with limb amputation - how to make individual rehabilitation plan for impairments, disability and handicap | 1 | P12 - KBC SUŠAK |
| L19. Selected rehabilitation issues: Rehabilitation in stroke syndroms- how to make individual rehabilitation plan for impairments, disability and handicap | 1 | P12 - KBC SUŠAK |
| L20. Selected rehabilitation issues: Comprehensiive management of multiple sclerosis. | 1 | P12 - KBC SUŠAK |
| L21. i L22. Selected rehabilitation issues: Early diagnosis and habilitation/neurorehabilitation of children with deviation of normal motor development. | 2 | P12 - KBC SUŠAK |

| PRACTICALS (TOPIC) | Number of hours | Location |
|---|---|---|
| Practical 1 - 5 | 5 | physical - KBC Sušak<br>physical - ex. KBC Kantrida |
| Practical 6 - 10 | 5 | physical - KBC Sušak<br>physical - ex. KBC Kantrida |
| Practical 11 - 15 | 5 | physical - KBC Sušak<br>physical - ex. KBC Kantrida |

### EXAM DATES (final exam):

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| 1. | 19.03.2025. |
| 2. | 04.07.2025. |
| 3. | 01.09.2025. |
| 4. | 22.09.2025. |