[Medicinski fakultet u Rijeci]

Curriculum
2024/2025

[Za kolegij]

All about Knee

Study program:	**Medical Studies in English (R)** (elective) [Sveučilišni integrirani prijediplomski i diplomski studij]
Department:	**[Katedra za ortopediju i fizikalnu medicinu]**
Course coordinator:	**prof. dr. sc. Gulan Gordan, dr. med.**
Year of study:	**5**
ECTS:	**1.5**
Incentive ECTS:	**0 (0.00%)**
Foreign language:	**Possibility of teaching in a foreign language**

Course information:

The course EVERYTHING ABOUT THE KNEE is an elective subject in the fifth year of the Integrated Undergraduate and Graduate University Study of Medicine, held in the X semester. It consists of 15 hours of lectures and 10 hours of seminars, totaling 25 hours (1.5 ECTS credits).

The aim of the course is to enable students to apply previously acquired knowledge from preclinical disciplines (Anatomy, Histology, and Physiology with Pathophysiology), as well as clinical subjects (Radiology and Surgery), in order to deepen and acquire knowledge about the pathophysiological mechanisms behind knee joint injuries and diseases, as well as modern approaches to diagnosis and treatment. The content of the course "Everything About the Knee" includes: Historical overview of the study of knee injuries and diseases, and the development of treatment approaches up to the present day. Anatomy and biomechanics of the knee joint. Menisci: anatomy, injury mechanisms, clinical examination, other diagnostic methods, differential diagnosis, treatment. Anterior cruciate ligament: anatomy, injury mechanisms, clinical examination, other diagnostic methods, differential diagnosis, treatment. Posterior cruciate ligament: anatomy, injury mechanisms, clinical examination, other diagnostic methods, differential diagnosis, treatment. Collateral ligaments: anatomy, injury mechanisms, clinical examination, other diagnostic methods, differential diagnosis, treatment. Combined ligament injuries: injury mechanisms, clinical examination, other diagnostic methods, differential diagnosis, treatment. Cartilage of the knee joint: anatomy, injury mechanisms, clinical examination, other diagnostic methods, differential diagnosis, treatment. Patellofemoral joint: anatomy, injury mechanisms, common diseases, clinical examination, other diagnostic methods, differential diagnosis, treatment. Overuse syndromes in the knee region: definition, etiology, epidemiology, pathophysiology, diagnostics, and treatment of the most common overuse syndromes.

Course Implementation:

The course is organized in the form of lectures and seminars, encouraging students to actively participate and engage in discussions on given topics. Some seminars and lectures are conducted using computer programs simulating specific pathological conditions. During seminars, students present seminar papers and actively discuss topics with the lecturer. The lecturer evaluates student participation (demonstrated knowledge, understanding, ability to pose questions, reasoning, etc.).

[Ishodi učenja]:

LEARNING OUTCOMES FOR THE COURSE:

I. COGNITIVE DOMAIN – KNOWLEDGE

1. Recognize and differentiate the basics of diagnostics for injuries and diseases of the knee joint.
2. Describe and classify the most important etiological factors causing knee joint disorders.
3. Describe and analyze the pathogenetic mechanisms of specific knee joint conditions and relate them to etiological factors and basic clinical signs.
4. Describe the specific symptomatology of particular knee joint diseases.
5. Identify and distinguish the clinical presentation of various knee joint disorders.
6. Indicate and describe conservative treatment methods.
7. Indicate and describe surgical treatment methods.
8. Recognize and describe complications of surgical procedures.
9. Recognize and describe procedures for injury prevention in sports.

II. PSYCHOMOTOR DOMAIN – SKILLS

1. Take medical history and perform a clinical examination of a patient with knee joint injuries or diseases.
2. Indicate the most important diagnostic tests required to make a diagnosis.
3. Interpret X-ray images of the knee joint.
4. Critically assess individual conditions and establish a working diagnosis.

List of assigned reading:

Required Literature:

1. Overuse Syndromes. M. Pećina, Globus 1992.
2. Web lecture published on the website of the Faculty of Medicine, University of Rijeka: "The Importance and Role of the Meniscus in Knee Function."

All contents not covered in the required literature will be published on the course website.

List of optional reading:

Supplementary Literature:

1. Orthopedics. M. Pećina et al., Naprijed, 1996. Zagreb.

Curriculum:

[Predavanja] list (with titles and explanation):

L1. Specifics of the anatomy and biomechanics of the knee joint

Identify and name the basic anatomical structures of the knee joint

- Students will be able to identify and name the key elements of the knee joint, including bones, ligaments, and cartilage, in order to gain a foundational understanding of its structure.

Explain the function of each part of the knee joint

- Students will detail how each structure within the knee contributes to overall movement and stability, enabling them to understand the importance of each component to the joint's overall function.

Analyze connections between different structures of the knee joint

- Students will explore how various structures interact and cooperate during movement, allowing deeper insight into the complexity and interconnectivity within the knee's anatomy.

Compare a healthy knee joint with one affected by common disorders or injuries

- Students will investigate and compare the anatomical and functional differences between a healthy knee and one with common issues such as arthritis or meniscus injuries. This comparison will aid them in recognizing the signs and symptoms of these conditions.

Perform the basics of a clinical examination of the knee joint

- Students will learn and demonstrate the basic steps necessary for conducting a clinical examination of the knee joint, thus acquiring practical skills in assessing its functionality.

L2. Radiological diagnostics of the knee

L3. Menisci: Functional anatomy, injury mechanisms, diagnosis, treatment

L4. Anterior cruciate ligament: Functional anatomy, injury mechanisms, diagnosis, treatment

L5. Patellofemoral joint: Functional anatomy, common diseases, diagnosis, treatment

[Seminari] list (with titles and explanation):

S1. Posterior cruciate ligament and collateral ligament: functional anatomy, injury mechanisms, diagnosis, treatment

S2. Injuries of articular cartilage in the knee area

S3. Orthobiologics in the treatment of knee osteoarthritis

S4. Knee joint endoprosthetics

Student obligations:

Student Responsibilities:

Regular class attendance and systematic preparation of course material for all forms of teaching and knowledge assessment during the course and the final exam.

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

Exam Requirements:

ECTS Grading System:

Student assessment is conducted in accordance with the valid Regulations on Studies of the University of Rijeka and the Regulations on Student Assessment at the Faculty of Medicine in Rijeka.

Student performance will be evaluated both during the course and on the final exam. Out of a total of 100 points, students can earn up to 50 points during the course and 50 points on the final exam.

I. During the course (maximum of 50 points):

a. Seminar paper (presentation) preparation and class participation (up to 46 points)
b. Class attendance (up to 4 points)

a) Seminar paper preparation and class participation (up to 46 points):

During the course, students will prepare a presentation on an assigned topic and present it to their peers. The content and quality of the seminar paper, the manner of presentation, understanding of the presented topic, and participation in the discussion will be evaluated (from 23 to 46 points).

Presentation Grade	Number of Points (Range)
Excellent	41-46
Very Good	35-40
Good	29-34
Sufficient	23-28
Insufficient	0

b) Class attendance (up to 4 points)

Attendance at all forms of teaching (lectures and seminars) is graded as follows:

Attendance Level	Points
100%	4 points
90%-99,9%	3 points
80%-89,9%	2 points
70%-79,9%	1 point

II. Final Exam (up to 50 points)

The final exam assesses the learning outcomes described in the course outline and is conducted in the form of an essay-based written test. The test consists of 5 questions. Each question can earn between 0 and 10 points, making the total possible score on the test between a minimum of 25 and a maximum of 50 points.

Eligibility for the Final Exam: • Students who have achieved between 25 and 50 points during the course are required to take the final exam, where they can earn up to 50 additional points.

Ineligibility for the Final Exam: • Students who have achieved between 0 and 24.9 points during the course or have 30% or more absences from classes are considered unsuccessful (grade 1 - F) and are not permitted to take the final exam. They must re-enroll in the course in the next academic year.

III. Final Grade is the sum of ECTS grades earned during the course and on the final exam:

Final Exam Grade	
A (90-100%)	excellent (5)
B (75-89,9%)	very good (4)
C (60-74,9%)	good (3)
D (50-59,9%)	sufficient (2)
F (students who earned fewer than 25 points during the course or did not pass the final exam)	insufficient (1)

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

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COURSE HOURS 2024/2025

All about Knee

[Predavanja] (Place and time or group)	**[Seminari]** (Place and time or group)
02.04.2025	
L1. Specifics of the anatomy and biomechanics of the knee joint: • [ONLINE] (16:00 - 18:15) [303] ○ All about Knee MainGroup	
prof. dr. sc. Gulan Gordan, dr. med. [303]	
09.04.2025	
L2. Radiological diagnostics of the knee: • [ONLINE] (16:00 - 18:15) [303] ○ All about Knee MainGroup	
prof. dr. sc. Gulan Gordan, dr. med. [303]	
10.04.2025	
L3. Menisci: Functional anatomy, injury mechanisms, diagnosis, treatment: • [ONLINE] (16:00 - 18:15) [303] ○ All about Knee MainGroup	
prof. dr. sc. Gulan Gordan, dr. med. [303]	
16.04.2025	
L4. Anterior cruciate ligament: Functional anatomy, injury mechanisms, diagnosis, treatment: • [ONLINE] (16:00 - 18:15) [303] ○ All about Knee MainGroup	
prof. dr. sc. Gulan Gordan, dr. med. [303]	
17.04.2025	
L5. Patellofemoral joint: Functional anatomy, common diseases, diagnosis, treatment: • [ONLINE] (16:00 - 18:15) [303] ○ All about Knee MainGroup	
prof. dr. sc. Gulan Gordan, dr. med. [303]	
23.04.2025	
	S1. Posterior cruciate ligament and collateral ligament: functional anatomy, injury mechanisms, diagnosis, treatment: • [ONLINE] (16:00 - 18:00) [303] ○ All about Knee MainGroup
prof. dr. sc. Gulan Gordan, dr. med. [303]	
24.04.2025	
	S2. Injuries of articular cartilage in the knee area: • [ONLINE] (16:00 - 18:00) [303] ○ All about Knee MainGroup

prof. dr. sc. Gulan Gordan, dr. med. [303]	
30.04.2025	
	S3. Orthobiologics in the treatment of knee osteoarthritis: • [ONLINE] (16:00 - 18:00) [303] ○ All about Knee MainGroup
prof. dr. sc. Gulan Gordan, dr. med. [303]	
05.05.2025	
	S4. Knee joint endoprosthetics: • [ONLINE] (16:00 - 18:00) [303] ○ All about Knee MainGroup
prof. dr. sc. Gulan Gordan, dr. med. [303]	

List of lectures, seminars and practicals:

[PREDAVANJA] (TOPIC)	Number of hours	Location
L1. Specifics of the anatomy and biomechanics of the knee joint	3	[ONLINE]
L2. Radiological diagnostics of the knee	3	[ONLINE]
L3. Menisci: Functional anatomy, injury mechanisms, diagnosis, treatment	3	[ONLINE]
L4. Anterior cruciate ligament: Functional anatomy, injury mechanisms, diagnosis, treatment	3	[ONLINE]
L5. Patellofemoral joint: Functional anatomy, common diseases, diagnosis, treatment	3	[ONLINE]

[SEMINARI] (TOPIC)	Number of hours	Location
S1. Posterior cruciate ligament and collateral ligament: functional anatomy, injury mechanisms, diagnosis, treatment	2.5	[ONLINE]
S2. Injuries of articular cartilage in the knee area	2.5	[ONLINE]
S3. Orthobiologics in the treatment of knee osteoarthritis	2.5	[ONLINE]
S4. Knee joint endoprosthetics	2.5	[ONLINE]

EXAM DATES (final exam):