[Medicinski fakultet u Rijeci]

Curriculum
2024/2025

[Za kolegij]

Virtual Dissection of the Topographic Regions of the Thorax and Abdomen

Study programme:	**Medical Studies in English (R)** (elective) [Sveučilišni integrirani prijediplomski i diplomski studij]
Department:	**[Zavod za anatomiju]**
Course coordinator:	**prof. dr. sc. Cvijanović Peloza Olga, dr. med.**
Year of study:	**1**
ECTS:	**1.5**
Incentive ECTS:	**0 (0.00%)**
Foreign language:	**Possibility of teaching in a foreign language**

Course information:

In the mandatory Anatomy course, the topographical regions of the chest and abdomen are studied on already dissected specimens, without the possibility for the student to dissect specific anatomical structures. Understanding the complex relationships between structures in space (superficial, deep, front, back, medial, and lateral) is essential for successfully mastering the material from this part of the anatomy.

This elective course is designed to bring the students closer to the complex relationships of anatomical structures through the theoretical part (lectures) and practical teaching (videos and pictures of specimens). Therefore, it is planned to show the anatomical structures prepared by anatomical dissection from superficial to deep with their borders and content.

Goals:

1. Through theoretical classes, students will be introduced to the basic approaches used in the anatomical section, as well as how to dissect the topographical regions of the chest and abdomen. Also, structures found in the superficial and deep layers of the regions and detailed contents of the regions will be described.

2. In the practical part of the course, prepared videos and pictures of the specimens will be described through interactive work with students. Students will learn to recognize the specific structures on specimens.

List of assigned reading:

1) Author's lectures
2) Patrick W. Tank. Grant's dissector 13th Edition. Lippnicott Williams & Wilkins, Philadelphia, USA, 2005.
3) Dissection practicum (Regiones corporis humani), is in preparation, authored by the leader and collaborators of this course.

List of optional reading:

Curriculum:

Exercises list (with titles and explanation):

Dissection of the thoracic wall

Learning Outcomes

Students will be able to recognize and name structures and describe their functions.
Students will demonstrate knowledge of the anatomical components of the analyzed area and understand the role of each structure in the body's physiology.

Students will analyze the interrelationships of structures within the observed area.
Through critical evaluation, students will assess how anatomical structures interact and support vital functions.

Students will apply the acquired knowledge to identify and solve simple anatomical problems.
By using practical skills, students will develop the ability to solve issues related to identifying anatomical irregularities or variations.

Students will demonstrate the ability to use instruments necessary for studying anatomical structures.
Students will practice the skill of handling and applying instruments to perform precise procedures during the investigation of the anatomical region.

Students will express an understanding of the importance of anatomical analysis for medical practice.
By expressing critical thinking, students will evaluate the importance of anatomical knowledge in diagnosing and treating patients.

Dissection of the lungs

Identify and name the main anatomical structures within the thoracic cavity.

- Participants will be able to identify key anatomical features within the thoracic cavity, including the lungs, pleura, bronchi, and major blood vessels, and correctly name each structure.

Describe the function of each anatomical component within the thoracic cavity.

- Participants will learn how each structure contributes to the overall function of the respiratory system, with an emphasis on the role of the lungs in gas exchange.

Demonstrate proper use of virtual dissection instruments.

- Participants will show the ability to use tools and techniques essential for conducting a virtual dissection, with a focus on safety and precision.

Analyze the interrelationships between different structures within the thoracic cavity.

- Participants will explore how anatomical components work together within the thoracic cavity, and how structural changes can impact the function of the respiratory system.

Critically evaluate information on potential pathological changes in structures.

- Participants will be able to assess and interpret various pathological changes that can occur within the anatomical structures of the thoracic cavity and understand their clinical implications.

Disection of the heart and mediastinum

Learning Outcomes

Identify the key anatomical structures within the thoracic cavity
Participants will be able to recognize and name the main components related to the functions of the thorax and abdomen and distinguish them from other anatomical elements.

Explain the functional relationships among organs in the thoracic cavity
Participants will understand how different organs communicate with each other and support vital processes, including circulation and gas exchange.

Analyze the role and importance of each organ within the analyzed region
Participants will be able to evaluate the importance of organs and their role in maintaining homeostasis and predict the

effects of damage or dysfunction on the organism.

Apply acquired knowledge to assess clinical cases related to thoracic cavity pathology
Participants will learn how to apply theoretical insights in practical situations, recognizing symptoms and diagnosing potential issues.

Differentiate between normal and abnormal anatomical variations
Participants will develop the ability to identify anatomical differences that may impact diagnostic processes and treatment.

Dissection of the abdominal wall

Learning Outcomes:

Identify structures of the abdominal wall

- Students will be able to identify and name the major anatomical structures comprising the abdominal wall.

Understand the functions of anatomical configuration

- Students will develop an understanding of the functional role of various layers and muscles of the abdominal wall and their contribution to the overall function of the abdomen.

Analyze relationships between structures

- Students will be able to analyze and describe how the layers of the abdominal wall relate to each other and to the surrounding anatomical structures.

Apply knowledge to recognize clinical features

- Students will use acquired knowledge to recognize relevant anatomical features in a clinical context, including identifying potential sites for surgical intervention or assessing injuries.

Critically evaluate anatomical variations

- Students will evaluate variations in the anatomy of the abdominal wall and understand how these variations can affect medical practice.

Dissection of the sbdominal organs (part I)

Learning Outcomes:

Identify and name the main abdominal organs and their anatomical structures.

- Students will be able to identify and correctly name the key organs within the abdominal cavity, including their relevant anatomical parts.

Explain the anatomical relationships between organs in the abdomen.

- Students are expected to clearly explain how individual abdominal organs are positioned relative to each other, and the relevant topographic relationships between them.

Analyze the functional roles of different organs in the abdomen.

- Students will be able to connect the structured anatomy of each organ with its specific function within the human body, and understand how each organ contributes to the overall functioning of the digestive and other systems.

Demonstrate the technique of virtual dissection with an emphasis on safety and precision.

- Students will demonstrate the ability to perform virtual dissection with an emphasis on precise anatomical displays and adherence to safety standards.

Evaluate normal and abnormal anatomical variations within the abdominal cavity.

- Students will be able to distinguish between normal anatomical variations and observed abnormalities, and conduct a basic assessment of their clinical significance.

Dissection of the organs (part II)

Learning Outcomes:

Identify the anatomical structure and position of key thoracic and abdominal organs. Students will be able to recognize and locate key organs within the thorax and abdomen, using knowledge of their anatomical structure and function.

Explain the relationships among organs in the thoracic and abdominal topographic regions. Students will be able to describe in detail how different organs are positioned in relation to each other and analyze their relative positions within functional units.

Evaluate the functional and clinical implications of organ positioning. Students will be able to discuss how certain anatomical relationships affect the functionality of organs and what this means for potential clinical applications.

Apply virtual dissection techniques to visualize and explore anatomical structures. Students will use virtual tools to explore and display anatomical structures in detail, developing analytical and problem-solving skills in a virtual environment.

Critically assess information obtained through virtual dissection in the context of real clinical scenarios. Students will develop skills in comparing and evaluating data from virtual dissections and how to apply this knowledge to real medical situations.

Dissection of the peritoneal spaces and retroperitoneum

Learning Outcomes

Identify and describe the structures of the peritoneal spaces and retroperitoneum: Students will be able to identify and list the main structures within the peritoneal space and retroperitoneum, including key organs, blood vessels, nerves, and their interrelations. They will focus on topography and function.

Explain the functional anatomy and significance of the peritoneal spaces: Students will understand the functional aspects of the peritoneal spaces, including their role in supporting and protecting internal organs, and will be able to discuss the clinical significance of these spaces within the context of medical practice.

Analyze clinical implications and associated pathological conditions: Students will be capable of linking anatomical structures of the peritoneal spaces and retroperitoneum with clinical presentations and pathological conditions, analyzing how these areas may influence the development of medical conditions such as peritonitis or retroperitoneal hemorrhages.

Apply acquired knowledge to interpret medical images: Students will apply their understanding of the anatomy of peritoneal and retroperitoneal spaces for effective interpretation of various medical images, including CT and ultrasound findings, to confirm diagnoses and plan further medical treatment.

Dissection of the organs of the of the female and male pelvis

Learning Outcomes:

Students will be able to identify the major organs and structures of the pelvis in males and females and explain their functions.

- Description: Through careful examination and analysis of anatomical models and digital depictions, students will develop the ability to recognize individual anatomical elements and understand their interrelationships and functional importance in the human body.

Students will demonstrate detailed understanding of the spatial relationships between organs within the pelvic cavity.

- Description: Using information gained in lectures, students will analyze the spatial distribution of different anatomical structures and illustrate how they interact within the confined space of the pelvis.

Students will be able to describe the clinical significance of anatomical relationships within the pelvis.

- Description: Through case studies and discussion, students will explore how changes in pelvic anatomy can affect health, and learn to apply this knowledge in a clinical context.

Students will develop the ability for critical analysis and thinking when interpreting anatomical data from digital presentations.

- Description: While using virtual dissection tools, students will compare different approaches to data interpretation and develop the skills necessary to make informed conclusions.

Lectures list (with titles and explanation):

Dissection of the anterior abdominal wall

Identify the structures of the anterior abdominal wall

Students will be able to recognize and name the major anatomical structures involved in the anterior abdominal wall, including muscles, fasciae, and neural structures.

Explain the functional anatomy of the anterior abdominal wall

Students will understand how structures of the anterior abdominal wall function together to provide support to the abdominal cavity and facilitate movement.

Analyze the topographical arrangement of components in the anterior abdominal wall

Students will be able to break down and describe the interrelations between various anatomical layers and structures in the anterior abdominal wall.

Apply knowledge in virtual dissection

Students will use virtual tools to apply their understanding of the anatomy of the anterior abdominal wall and effectively identify anatomical structures during virtual dissection.

Evaluate the differences between actual and virtual dissection of the anterior abdominal wall

Students will be able to assess the challenges and advantages of virtual anatomy learning compared to traditional methods of study and practical application.

Dissection of the thoracic wall

Identify thoracic wall structures: Students will develop the ability to recognize and name the anatomical components of the thoracic wall, including bones, muscles, and nerves, and will be able to identify their interrelationships.

Explain the functions of anatomical structures: Students will be able to explain the functional roles of different structures within the thoracic wall and how they contribute to the respiratory process and protection of internal organs.

Analyze topographic relationships: Students will analyze how different structures are related within the thoracic wall and will be able to describe their spatial arrangement and mutual integration.

Compare normal and pathological conditions: Students will compare normal thoracic wall anatomy with potential pathological conditions, enabling them to recognize potential abnormalities that may affect its function.

Apply knowledge in clinical practice: Students will be capable of applying the acquired anatomical knowledge to clinical situations, facilitating the diagnosis and treatment of conditions related to the thoracic wall.

Historical overview of sections through time, characteristics of cadavers and instruments used

Dissection techniques and structures expected during dissection

Section of the chest wall and lungs

Student obligations:

The teaching is designed in such a way that 10 teaching hours of online lectures and 15 teaching hours of virtual practicals are held. As part of the practical part of the class, there will be a 15-minute knowledge test (written exam).

The ECTS student load factor is 1.5. The total number of hours is 25, L+P (10+15).

Full Professor Olga Cvijanović Peloza, MD, Ph.D., and colleague Ana Terezija Jerbić Radetić, MD, Ph.D., will participate in the teaching.

Assessment and evaluation of students will be carried out by:

1. Continuous written verification of learning outcomes (15 minutes written test).

2. Final oral examination - recognition of structures on images of specimens (oral examination online via MSTeams).

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

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

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COURSE HOURS 2024/2025

Virtual Dissection of the Topographic Regions of the Thorax and Abdomen

Lectures (Place and time or group)	**Exercises** (Place and time or group)
23.04.2025	
	Dissection of the thoracic wall: • [ONLINE] (17:30 - 19:00) [1195] ○ VDTA
dr. sc. biomed. Jerbić Radetić Ana Terezija, dr. med. [1195]	
25.04.2025	
	Dissection of the lungs: • [ONLINE] (17:00 - 18:30) [1195] ○ VDTA
dr. sc. biomed. Jerbić Radetić Ana Terezija, dr. med. [1195]	
28.04.2025	
Historical overview of sections through time, characteristics of cadavers and instruments used: • [ONLINE] (17:00 - 19:15) [1553] ○ VDTA	
prof. dr. sc. Cvijanović Peloza Olga, dr. med. [1553]	
29.04.2025	
	Disection of the heart and mediastinum: • [ONLINE] (17:30 - 19:00) [1195] ○ VDTA
dr. sc. biomed. Jerbić Radetić Ana Terezija, dr. med. [1195]	
02.05.2025	
	Dissection of the abdominal wall: • [ONLINE] (15:30 - 17:00) [1195] ○ VDTA
dr. sc. biomed. Jerbić Radetić Ana Terezija, dr. med. [1195]	
05.05.2025	

Dissection techniques and structures expected during dissection:
• [ONLINE] (17:00 - 19:15) [1553]
  ○ VDTA
 	
Section of the chest wall and lungs:
• [ONLINE] (17:00 - 19:15) [1553]
  ○ VDTA	

prof. dr. sc. Cvijanović Peloza Olga, dr. med. [1553]	
06.05.2025	
	Dissection of the sbdominal organs (part I): • [ONLINE] (17:30 - 19:00) [1195] ○ VDTA
dr. sc. biomed. Jerbić Radetić Ana Terezija, dr. med. [1195]	

09.05.2025	
	Dissection of the organs (part II): • [ONLINE] (15:30 - 17:00) [1195] ◦ VDTA
dr. sc. biomed. Jerbić Radetić Ana Terezija, dr. med. [1195]	
13.05.2025	
	Dissection of the peritoneal spaces and retroperitoneum: • [ONLINE] (17:30 - 19:00) [1195] ◦ VDTA
dr. sc. biomed. Jerbić Radetić Ana Terezija, dr. med. [1195]	
16.05.2025	
	Dissection of the organs of the of the female and male pelvis: • [ONLINE] (15:30 - 16:30) [1195] ◦ VDTA
dr. sc. biomed. Jerbić Radetić Ana Terezija, dr. med. [1195]	
28.05.2025	
Dissection of the thoracic wall: • [ONLINE] (17:00 - 18:30) [1553] ◦ VDTA	
prof. dr. sc. Cvijanović Peloza Olga, dr. med. [1553]	
29.05.2025	
Dissection of the anterior abdominal wall: • [ONLINE] (17:00 - 18:30) [1553] ◦ VDTA	
prof. dr. sc. Cvijanović Peloza Olga, dr. med. [1553]	

List of lectures, seminars and practicals:

LECTURES (TOPIC)	Number of hours	Location
Dissection of the anterior abdominal wall	2	[ONLINE]
Dissection of the thoracic wall	2	[ONLINE]
Historical overview of sections through time, characteristics of cadavers and instruments used	3	[ONLINE]
Dissection techniques and structures expected during dissection	2	[ONLINE]
Section of the chest wall and lungs	1	[ONLINE]

EXERCISES (TOPIC)	Number of hours	Location
Dissection of the thoracic wall	2	[ONLINE]
Dissection of the lungs	2	[ONLINE]
Disection of the heart and mediastinum	2	[ONLINE]
Dissection of the abdominal wall	2	[ONLINE]

Dissection of the sbdominal organs (part I)	2	[ONLINE]
Dissection of the organs (part II)	2	[ONLINE]
Dissection of the peritoneal spaces and retroperitoneum	2	[ONLINE]
Dissection of the organs of the of the female and male pelvis	1	[ONLINE]

EXAM DATES (final exam):
