Medicinski fakultet u Rijeci

IZVEDBENI NASTAVNI PLAN
2026/2027

Za kolegij

Radiology

Studij:	**Medical Studies in English (R)** Sveučilišni integrirani prijediplomski i diplomski studij
Katedra:	**Katedra za radiologiju**
Nositelj kolegija:	**izv. prof. dr. sc. Valković Zujić Petra, dr. med.**
Godina studija:	**4**
ECTS:	**3.5**
Stimulativni ECTS:	**0 (0.00%)**
Strani jezik:	**Mogućnost izvođenja na stranom jeziku**

Podaci o kolegiju:

Course objective is to teach medical students the fundamental principles of diagnostic radiology and image-guided interventions for clinically important and common disorders in different clinical settings. It includes basics of radiation physics, radiation protection, imaging modalities and use of contrast media in different radiological modalities. Course of Radiology aims to explain typical imaging patterns and features and to train students typical radiological features on clinical cases: consolidations, nodules, hyperlucencies, hyperinflation, air bronchogram in thoracic imaging; microcalcifications and masses in breast imaging; filling defects, outpouchings, obstructions, stenoses in gastrointestinal imaging; cystic and solid focal lesions on cross-sectional imaging modalities; osteolysis, sclerosis and periosteal reaction in musculoskeletal imaging; mass effect, haemorrhagic and ischaemic lesions in neuroradiology; occlusions, pathologic vessels, aneurysms, dissections in vascular imaging; patterns of contrast imbibition and others. Common indications, contraindications and limitations of different imaging techniques should be discussed for each organ system. Another objective is to explain the value of radiological examinations in different clinical settings in context of evidence-based medicine. Along with diagnostic radiology procedures, students should observe basic interventional procedures such as catheterization techniques and arteriographies, image-guided biopsy sampling and drainages.

Popis obvezne ispitne literature:

1. Elsayes KM, Oldham SAA. Introduction to Diagnostic Radiology. McGraw-Hill Education, 2014.

2. Mettler FA. Essentials of Radiology, Fourth Edition. Elsevier 2019.

Popis dopunske literature:

Chen MYM, Pope TL, Ott DJ. Basic Radiology, 2nd Edition, McGraw-Hill Companies, 2011.

Nastavni plan:

Vježbe popis (s naslovima i pojašnjenjem):

Practical 1. Thoracic Radiology

Practical sessions are designed to complement the lecture content in the field of diagnostic radiology. They are conducted over two days, with a total duration of five academic hours per day.

The learning outcomes of the practical sessions fully correspond to those of the lectures. The key difference is that learning outcomes expressed in the lectures by verbs such as *describe*, *define*, *justify*, and *compare* are reformulated during the practical sessions using higher-level, practice-oriented verbs such as *recognize*, *analyze*, *justify*, *evaluate*, and *interpret*.

During the practical sessions, students develop clinical reasoning skills for selecting the most appropriate imaging modality, taking into account established diagnostic imaging algorithms and the ALARA principle. They also acquire the practical competencies specified in the prescribed list of skills that students are expected to master.

Students will be able to explain the mechanisms of X-ray generation, including the physical principles underlying their production. This outcome enables an understanding of the fundamental concepts that are crucial for further study of radiological techniques and their applications in medicine. Students will understand the biological effects of ionizing radiation on the human body. This outcome includes recognizing potential risks and impacts of radiation on cells and tissues, which is essential for the safe application of radiological methods. Students will be able to apply the ALARA principle (As Low As Reasonably Achievable) in practice, ensuring that radiation exposure is minimized during diagnostic and therapeutic procedures. This outcome emphasizes the importance of protecting patients and healthcare professionals. Students will be able to describe the basic principles of ultrasound and its applications in radiology. This outcome helps students understand how ultrasound works and what its advantages and limitations are in diagnostic medicine. Students will understand the fundamentals of computed tomography (CT) and the role of contrast media in enhancing diagnostic information. This outcome enables students to recognize when and how to use contrast agents for optimal examination results. Students will be able to explain the fundamental principles of magnetic resonance imaging (MRI) and its application in clinical practice. This outcome allows for a deeper understanding of MRI technology and its significance in modern medicine.

Practical 2. Diseases of the Great Vessels and the Heart (Aorta, Arteries, and Veins)

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Practical 4. Head nad Neck Radioogy

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Practical 5. Musculoskeletal radiology

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Practical 6. Gastrointestinal and Genital Systems

Practical 7. Uroradiology

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Practical 8. Pediatric Radiology

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Practical 9. Breast Imaging

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Practical 10. Interventional Radiology and Polytrauma

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Predavanja popis (s naslovima i pojašnjenjem):

Lecture 1: Generation of X-rays and the Biological Effects of Ionizing Radiation. The ALARA Principle and Radiation Protection

Learning Outcome 1: List the imaging modalities used in diagnostic radiology.

Learning Outcome 2: Describe and compare imaging modalities, including their advantages and limitations.

Learning Outcome 3: Define and explain the process of selecting the appropriate imaging modality based on the patient's clinical presentation and working diagnosis.

Learning Outcome 4: List and differentiate projection imaging techniques and describe the differences between radiography and fluoroscopy.

Lecture 2: Application of Ultrasound in Radiology

Learning Outcome 1: Evaluate the advantages and limitations of ultrasonography.

Learning Outcome 2: Compare ultrasonography with other diagnostic imaging modalities.

Learning Outcome 3: Explain the advantages of ultrasonography according to the patient's body habitus.

Learning Outcome 4: Explain the differences between B-mode ultrasound imaging and Doppler ultrasound imaging.

Lecture 3: Computed Tomography and Contrast Media in Radiology

Learning Outcome 1: Differentiate cross-sectional imaging techniques from projection imaging techniques.

Learning Outcome 2: Explain the physical principles of image formation in computed tomography (CT) and describe its advantages over other imaging modalities.

Learning Outcome 3: List the contrast agents used in diagnostic radiology, compare their characteristics, and identify their contraindications.

Lecture 4: Fundamentals of Magnetic Resonance Imaging (MRI)

Learning Outcome 1: Describe the role of magnetic resonance imaging (MRI) in clinical practice.

Learning Outcome 2: Identify the differences between computed tomography (CT) and magnetic resonance (MR) images.

Learning Outcome 3: Define the basic physical principles underlying MRI.

Lecture 5: Thoracic Radiology: Lung Imaging Techniques

Learning Outcome 1: Analyze the radiological anatomy of the thorax.

Learning Outcome 2: List the typical radiological patterns of inflammatory lung diseases.

Learning Outcome 3: Differentiate between lobar pneumonia, bronchopneumonia, and viral pneumonia.

Learning Outcome 4: Describe the radiological patterns of tuberculosis.

Lecture 6: Thoracic Radiology: Pathological Conditions of the Chest

Learning Outcome 1: Explain the role of radiology in the evaluation of pulmonary edema.

Learning Outcome 2: Describe the radiological appearance of different types of atelectasis and pulmonary emphysema.

Learning Outcome 3: Describe the imaging findings of pulmonary thromboembolism.

Lecture 7:Thoracic Radiology: Morphological Features of Lung and Mediastinal Tumours

Learning Outcome 1: Demonstrate the typical radiological manifestations of lung parenchymal tumours, with particular emphasis on lung carcinoma.

Learning Outcome 2: Describe the imaging characteristics of pulmonary metastases.

Learning Outcome 3: Analyze mediastinal tumours according to their anatomical location.

Lecture 8: Thoracic Radiology: Interstitial Lung Diseases, Pleural Disorders, and Pneumothorax

Learning Outcome 1: Analyze interstitial lung diseases.

Learning Outcome 2: Explain the typical imaging patterns of interstitial lung diseases.

Learning Outcome 3: Describe diseases of the pleura.

Learning Outcome 4: Explain the radiological signs of pleural effusion, pneumothorax, and pleural tumours.

Lecture 9: Cardiac Imaging Techniques and the Radiological Evaluation of Chest Pain

Learning Outcome 1: List the radiological imaging methods used for cardiac imaging.

Learning Outcome 2: Explain ECG synchronization techniques in cardiac imaging.

Learning Outcome 3: Explain the role of radiology in the evaluation of patients presenting with chest pain.

Lecture 10: Diseases of the Great Vessels (Aorta, Arteries, and Veins)

Learning Outcome 1: Describe the Seldinger technique.

Learning Outcome 2: Differentiate the radiological signs of diseases of the aorta and peripheral arteries.

Learning Outcome 3: Describe the application of radiological imaging methods in the diagnosis of venous system disorders.

Lecture 11: Imaging in Heart Failure and Valvular Heart Disease

Learning Outcome 1: Recognize the radiological signs of heart failure.

Learning Outcome 2: Describe the radiological characteristics of valvular heart diseases.

Lecture 12: Vascular Interventional Radiology and Neurointerventional Procedures

Learning Outcome 1: Recognize minimally invasive vascular interventional radiology procedures.

Learning Outcome 2: List their applications in different clinical indications.

Lecture 13: Non-vascular Interventional Radiology

Learning Outcome 1: Recognize different minimally invasive interventional radiology procedures outside the vascular system.

Learning Outcome 2: Explain the clinical significance of minimally invasive non-vascular interventional radiology procedures.

Lecture 14: Neuroradiology: Head and Spine Trauma; Inflammatory and Infectious Diseases of the Central Nervous System

Learning Outcome 1: Describe the imaging characteristics of the neural axis on CT and MRI modalities.

Learning Outcome 2: Describe the radiological patterns of intra-axial and extra-axial pathological changes.

Learning Outcome 3: Differentiate the radiological manifestations of traumatic lesions.

Learning Outcome 4: List inflammatory and infectious lesions of the central nervous system.

Lecture 15: Neuroradiology: Toxic, Metabolic, and Degenerative Diseases of the Central Nervous System; Degenerative Disorders of the Spin

Learning Outcome 1: Identify typical toxic, degenerative, and metabolic diseases of the central nervous system with their characteristic imaging findings.

Learning Outcome 2: Describe degenerative changes of the vertebrae and typical degenerative changes of the intervertebral discs.

Lecture 16: Neuroradiology: Stroke and Intracranial Neoplasms

Learning Outcome 1: Discuss the radiological aspects of stroke.

Learning Outcome 2: Demonstrate CT and MRI findings of cerebral infarction.

Learning Outcome 3: Explain the different types of intracranial haemorrhage.

Lecture 17: Radiology of the Viscerocranium and Neck

Learning Outcome 1: Describe the most common radiological entities in diseases of the orbits, skull base, paranasal sinuses, oral cavity, salivary glands, and neck organs.

Learning Outcome 2: Explain the advantages and limitations of CT and MRI techniques in imaging the head and neck region.

Lecture 18: Paediatric Radiology

Learning Outcome 1: Discuss the specific considerations of radiological diagnostics in children, taking into account their increased sensitivity to ionizing radiation.

Learning Outcome 2: Discuss the most common indications for radiological examinations in neonatology, with emphasis on the musculoskeletal, gastrointestinal, and genitourinary systems.

Lecture 19: Musculoskeletal Radiology: Trauma

Learning Outcome 1: Describe normal bone anatomy on different imaging modalities.

Learning Outcome 2: Discuss the diagnostic capabilities of radiological methods in the evaluation of bones, joints, muscles, and tendons.

Learning Outcome 3: Identify the types of traumatic lesions of the musculoskeletal system.

Lecture 20: Musculoskeletal Radiology: Inflammatory Joint Diseases

Learning Outcome 1: Compare the radiological signs of osteoarthritis.

Learning Outcome 2: Explain the progression of osteomyelitis on radiological imaging modalities.

Lecture 21: Musculoskeletal Radiology: Tumours of the Musculoskeletal System

Learning Outcome 1: Explain the differences between inflammatory and degenerative changes of joint structures.

Learning Outcome 2: Explain the distinguishing characteristics of benign and malignant bone lesions.

Lecture 22: Gastrointestinal Radiology: Dysphagia and Upper Abdominal Pain

Learning Outcome 1: Recognize the radiological characteristics of the gastrointestinal organs.

Learning Outcome 2: Identify radiological imaging methods used for the evaluation of the gastrointestinal tract.

Learning Outcome 3: Summarize the causes of dysphagia and the radiological characteristics of potential underlying conditions.

Learning Outcome 4: Evaluate the causes of upper abdominal pain using radiological imaging methods.

Lecture 23: Gastrointestinal Radiology: Jaundice and Liver Diseases

Learning Outcome 1: Discuss the causes of jaundice that can be diagnosed using radiological methods.

Learning Outcome 2: Describe the radiological diagnosis of choledocholithiasis and cholangiocarcinoma.

Lecture 24: Gastrointestinal Radiology: Imaging of the Pancreas and Spleen; Radiological Features of

Ileus

Learning Outcome 1: Differentiate between cystic and solid pancreatic lesions.

Learning Outcome 2: Evaluate the diagnostic value of individual radiological imaging methods.

Learning Outcome 3: Recognize the radiological signs of ileus and determine the underlying cause.

Lecture 25: Gastrointestinal Radiology: Lower Abdominal Pain; Inflammatory and Malignant Diseases of the Colon

Learning Outcome 1: Summarize the causes of lower abdominal pain and their typical radiological manifestations.

Learning Outcome 2: Justify the role of radiology in the evaluation of inflammatory bowel diseases.

Learning Outcome 3: Recognize the radiological signs of colorectal cancer that directly influence treatment selection.

Lecture 26: Uroradiology: Imaging Evaluation of Renal Colic and Haematuria

Learning Outcome 1: Recognize the causes of urinary tract obstruction.

Learning Outcome 2: Evaluate the causes of macroscopic haematuria.

Learning Outcome 3: Describe the radiological signs of urothelial tumours and urinary tract trauma.

Lecture 27: Uroradiology: Lesions of the Renal Parenchyma and Adrenal Glands

Learning Outcome 1: Differentiate between cystic and solid focal renal lesions.

Learning Outcome 2: Explain the importance of radiological diagnostics.

Learning Outcome 3: Describe adrenal gland lesions and the clinical significance of adrenal adenomas in clinical practice.

Lecture 28: Imaging of the Pelvis

Learning Outcome 1: Explain the role of radiology in assessing the extent of uterine and ovarian tumours.

Learning Outcome 2: Explain the importance of MRI in the management of prostate cancer.

Lecture 29: Breast Imaging

Learning Outcome 1: Discuss the differences in the radiological appearance of benign and malignant breast lesions.

Learning Outcome 2: Compare diagnostic imaging modalities according to breast composition and the type of lesion.

Lecture 30: Optimization of Radiological Examinations

Learning Outcome 1: Explain the ALADA principle in radiology.

Learning Outcome 2: Demonstrate the importance of imaging protocols using clinical examples.

Seminari popis (s naslovima i pojašnjenjem):

Seminar 1. Imaging Techniques in Conventional Radiology, Fluoroscopy, and Ultrasound

Learning Outcomes:

1. Analyze conventional radiological imaging methods.
2. Demonstrate anatomical structures on radiographs.
3. Differentiate conventional radiographic examinations from fluoroscopic examinations.
4. List the applications of fluoroscopy in interventional radiology.
5. Describe patient preparation for ultrasound examination.
6. Explain the advantages and limitations of ultrasound compared with other imaging modalities.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-02, DOI 10.26044/esr-modern-radiology-03

Seminar 2. Computed Tomography and Magnetic Resonance Imaging Techniques and Referral for

Radiological Examinations

Learning Outcomes:

1. Explain indications and contraindications for CT examinations.
2. Explain indications and contraindications for MRI examinations.
3. Explain the differences between CT and MRI and the advantages of each method.
4. Describe the process of scheduling patients for radiological examinations.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-04
DOI 10.26044/esr-modern-radiology-05
DOI 10.26044/esr-modern-radiology-29

Seminar 3. Contrast Media in Radiology and Their Application

Learning Outcomes:

1. List the types of contrast media used in radiology.
2. Identify different types of contrast media within each group and describe their characteristics.
3. Differentiate the phases of contrast enhancement of tissues.
4. Recognize examinations requiring intra-arterial administration of contrast media.
5. Describe contraindications for contrast media administration.
6. Evaluate the appropriate choice of contrast agent depending on the type of radiological examination.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-07

Seminar 4. Principles of Radiation Biology and Radiation Protection

Learning Outcomes:

1. Explain the generation of X-rays.
2. Differentiate the effects of ionizing radiation on cells (deterministic and stochastic effects).
3. Explain the principle of justification when prescribing radiological examinations based on ionizing radiation.
4. Define the ALARA principle.
5. Summarize legal regulations related to professionally exposed medical workers.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-01

Seminar 5. Archiving of Imaging Data

Learning Outcomes:

1. List the advantages of digital imaging systems.
2. Recognize the PACS (Picture Archiving and Communication System).
3. Use the hospital information system.
4. List the main components of the PACS system.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-30

Seminar 6. Radiological Nomenclature

Learning Outcomes:

1. List the standard imaging planes.
2. Define the terminology used in ultrasound, CT, and MRI.
3. Classify and differentiate different types of opacities.

Seminar 7. Thoracic Radiology I

Learning Outcomes:

Demonstrate anatomical structures on chest radiographs.
2. Explain the differences between standard chest radiographs and non-standard projections.
3. Recognize and demonstrate pathological changes on chest radiographs.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-12

Seminar 8. Thoracic Radiology II

Learning Outcomes:
Explain the importance of computed tomography in the evaluation of the lung parenchyma and its advantages over chest radiography.
Discuss the selection of an appropriate imaging modality in suspected specific conditions such as pulmonary embolism, pneumothorax, or pneumonia.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-25

Seminar 9. Radiology of the Mediastinum

Learning Outcomes:

1. Demonstrate mediastinal anatomical structures on chest radiographs and CT images.
2. Explain the differences in the visualization of mediastinal structures between standard chest radiography and CT.
3. Recognize the most common pathological conditions of the mediastinum.
4. List the morphological characteristics of lymphoproliferative disorders.
5. Demonstrate the lymphatic regions of the thorax.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-12

Seminar 10. Radiology of the Pleura

Learning Outcomes:

1. List and recognize the most common pathological conditions of the pleura.
2. Describe the radiological features of mesothelioma.
3. Describe the radiological features of asbestosis.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-12

Seminar 11. Cardiac Radiology

Learning Outcomes:

1. Describe the radiological anatomy of the heart on chest radiographs.
2. Demonstrate the radiological anatomy of the heart on cardiac MRI.
3. Recognize the signs of heart failure on chest radiographs.
4. Recognize the signs of pulmonary edema on chest radiographs.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-13
DOI 10.26044/esr-modern-radiology-25

Seminar 12. Radiology of the Pericardium and Cardiac Blood Vessels

Learning Outcomes:

1. List pathological conditions of the pericardium.
2. Recognize cardiac structures on cardiac MRI.
3. Demonstrate the major blood vessels on cardiac MRI.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-13

Seminar 13. Neuroradiology I

Learning Outcomes:

1. Recognize the anatomical structures of the cerebrum and cerebellum on CT images.
2. Recognize the anatomical structures of the cerebrum and cerebellum on MRI images.
3. Recognize the basic MRI sequences used in brain imaging.
4. List inflammatory and infectious lesions of the brain.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-09

Seminar 14. Neuroradiology II

Learning Outcomes:

1. List the indications for brain CT in emergency conditions.
2. Differentiate between intracerebral and extracerebral haemorrhages.
3. Differentiate between ischemic lesions of the brain parenchyma.
4. Explain the principles of active treatment of stroke.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-09

Seminar 15. Neuroradiology III

Learning Outcomes:

1. Recognize traumatic injuries of the brain parenchyma.
2. Recognize traumatic injuries of the spinal cord.
3. Describe degenerative changes of the intervertebral discs.
4. List tumours of the spinal cord.
5. Demonstrate the anatomical structures of the pituitary gland and recognize pathological conditions.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-09
DOI 10.26044/esr-modern-radiology-25

Seminar 16. Neuroradiology IV

Learning Outcomes:

1. Recognize significant intra-axial and extra-axial tumours.
2. Discuss imaging modalities used in the evaluation of neurodegenerative diseases.
3. Recognize signs of central and cortical atrophy.
4. Select the appropriate imaging method according to the clinical scenario.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-09

Seminar 17. Radiology of the Viscerocranium and Neck

Learning Outcomes:

1. Recognize imaging methods used for evaluation of the head and neck region.
2. Explain indications for CT and MRI according to the clinical indication.
3. List indications for emergency CT examinations of the neck organs.
4. Explain the advantages and limitations of MRI and CT in head and neck imaging.
5. Describe normal and pathological lymph nodes.
6. Demonstrate pathological lymph nodes on imaging studies.
7. List imaging methods used for evaluation of the thyroid gland.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-10
DOI 10.26044/esr-modern-radiology-25
DOI 10.26044/esr-modern-radiology-24

Seminar 18. Pediatric Radiology

Learning Outcomes:

1. Explain the selection of imaging methods in the pediatric population.
2. Discuss radiation sensitivity in children.
3. Describe the characteristics of skeletal radiographs in childhood.
4. Explain the specific features of thoracic organs in the pediatric population.
5. Describe hypertrophic pyloric stenosis on ultrasound.
6. Describe intussusception.
7. Explain the role of MRI in pediatric radiology.
8. Recognize radiographic findings of bowel obstruction and atresia.
9. Recognize developmental dysplasia of the hip on radiographs.
10. Differentiate between benign and malignant bone tumours in childhood.
11. Demonstrate pathological changes of the pulmonary parenchyma.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-22

Seminar 19. Musculoskeletal Radiology I

Learning Outcomes:

1. Explain differences in the imaging appearance of the musculoskeletal system depending on the imaging modality.
2. List indications for musculoskeletal ultrasound.
3. Differentiate types of bone fractures.
4. Describe soft tissue injuries of joints.
5. Recognize specific characteristics of fractures in children.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-21

Seminar 20. Musculoskeletal Radiology II

Learning Outcomes:

1. Explain the differences between inflammatory joint diseases.
2. Recognize typical imaging signs of inflammatory joint diseases.
3. Explain clinically significant spondyloarthropathies.
4. Describe degenerative skeletal changes.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-21

Seminar 21. Musculoskeletal Radiology III

Learning Outcomes:

1. Demonstrate characteristic benign skeletal lesions.
2. Demonstrate characteristic malignant skeletal lesions.
3. Explain the role of MRI in the evaluation of osteoarticular lesions.
4. Explain the role of radiology in the management of polytrauma patients.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-21
DOI 10.26044/esr-modern-radiology-25

Seminar 22. Musculoskeletal Radiology IV

Learning Outcomes:

1. Describe the stages of osteomyelitis.
2. Demonstrate the anatomy of the dentoalveolar system.
3. List interventional procedures of the musculoskeletal system.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-21

Seminar 23. Radiology of the Biliary System

Learning Outcomes:

1. Explain the diagnostic algorithm for patients presenting with right upper quadrant pain.
2. Discuss the multimodality approach in the evaluation of biliary system diseases.
3. Explain the role of ultrasound in the diagnosis of biliary system pathology.
4. Explain the role of MRI and MRCP in the diagnosis of biliary system pathology.
5. Describe the role of the radiologist in interventional procedures of the biliary system.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-18

Seminar 24. Radiology of Parenchymal Abdominal Organs

Learning Outcomes:

1. Select the appropriate imaging modality according to the clinical question.
2. List the advantages of ultrasound compared with CT and MRI in the imaging of the liver, pancreas, and spleen.
3. Explain multiphasic imaging protocols for liver evaluation.
4. Explain the indications for MRI of the liver, pancreas, and spleen.
5. Recognize ultrasound, MRI, and CT characteristics of the most common benign liver lesions.
6. Recognize pathological findings of the liver.
7. Recognize the signs of acute and chronic pancreatitis.
8. Recognize abdominal organ changes associated with lymphoproliferative diseases.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-17
DOI 10.26044/esr-modern-radiology-19

Seminar 25. Radiology of the Small Intestine

Learning Outcomes:

1. List imaging methods used for evaluation of the small intestine.
2. Explain the role of conventional radiography in the assessment of small bowel diseases.
3. Explain pathological findings associated with impaired small bowel passage.
4. Explain the role of CT in suspected small bowel ischemia.
5. Explain the role of radiological examinations in inflammatory bowel disease (Crohn’s disease).

Preparation Literature:
DOI 10.26044/esr-modern-radiology-15
DOI 10.26044/esr-modern-radiology-25

Seminar 26. Radiology of the Large Intestine

Learning Outcomes:

1. List radiological imaging methods used for evaluation of the large intestine.
2. Differentiate endoscopic examinations from radiological examinations.
3. Recognize the radiological appearance of acute abdomen caused by large bowel obstruction.
4. Explain the role of CT in the imaging of the large intestine.
5. Describe patient preparation for large bowel examinations.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-16

Seminar 27. Pelvic Radiology

Learning Outcomes:

1. List the indications for multiparametric MRI of the prostate.
2. List the indications for MRI of the uterus.
3. Explain the role of CT in ovarian cancer evaluation.
4. Demonstrate the anatomical structures of pelvic organs on CT and MRI examinations.

Preparation Literature:

DOI 10.26044/esr-modern-radiology-23
DOI 10.26044/esr-modern-radiology-20

Seminar 28. Uroradiology

Learning Outcomes:
Recognize different imaging modalities used in the evaluation of the urogenital system.
Explain the role of ultrasound in the differentiation of renal parenchymal masses.
Explain the procedure and indications for urinary tract imaging.
Explain the role of conventional radiology and cross-sectional imaging techniques in diseases of the urogenital system.
Differentiate between inflammatory and expansile lesions of the renal parenchyma.
Explain patient preparation for urography examinations.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-23

Seminar 29. Breast Radiology

Learning Outcomes:

1. Explain the importance of mammography in the detection of breast cancer.
2. Discuss the advantages of different imaging modalities (ultrasound, mammography, MRI, and contrast-enhanced mammography).
3. Explain the impact of breast tissue density on mammographic sensitivity.
4. List the indications for breast ultrasound and breast MRI.
5. Summarize the types of breast interventional procedures.
6. Explain the BI-RADS lexicon.
7. Summarize breast imaging guidelines.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-11,
https://doi.org/10.26800/LV-144-1-2-1

Seminar 30. Interventional Radiology

Learning Outcomes:

1. List the methods used in interventional radiology (IR).
2. Explain the advantages of IR compared with surgical procedures.
3. Recognize vascular interventional procedures.
4. Recognize IR techniques used in oncology patients.
5. Recognize gastrointestinal and hepatobiliary interventional procedures.
6. Recognize urogenital interventional procedures.

Preparation Literature:
DOI 10.26044/esr-modern-radiology-25

Obveze studenata:

1. Attending all forms of classes.
2. Preparing and presenting seminars in front of colleagues and teachers with topic discussion.
3. Active participation in practicals with prior theoretical preparation, practical use of theoretical knowledge
4. Taking written and oral exam.

Ispit (način polaganja ispita, opis pisanog/usmenog/praktičnog dijela ispita, način bodovanja, kriterij ocjenjivanja):

Ostale napomene (vezane uz kolegij) važne za studente:

All educational content for students will be available at the Merlin platform.

SATNICA IZVOĐENJA NASTAVE 2026/2027

Radiology

Predavanja (mjesto i vrijeme / grupa)	**Vježbe** (mjesto i vrijeme / grupa)	**Seminari** (mjesto i vrijeme / grupa)
03.05.2027		

Lecture 1: Generation of X-rays and the Biological Effects of Ionizing Radiation. The ALARA Principle and Radiation Protection:

- P12 - KBC SUŠAK (08:00 - 09:30) [281]
  - R_348

Lecture 2: Application of Ultrasound in Radiology:

- P12 - KBC SUŠAK (08:00 - 09:30) [281]
  - R_348

Lecture 3: Computed Tomography and Contrast Media in Radiology:

- P12 - KBC SUŠAK (09:30 - 11:00) [167]
  - R_348

Lecture 4: Fundamentals of Magnetic Resonance Imaging (MRI):

- P12 - KBC SUŠAK (09:30 - 11:00) [167]
  - R_348

Seminar 1. Imaging Techniques in Conventional Radiology, Fluoroscopy, and Ultrasound:

- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [287]
  - Ra-C
  - Ra-D
- KBC Rijeka - Radiologija (12:00 - 14:15) [281]
  - Ra-A
  - Ra-B
- / (12:00 - 14:15) [1311] [286]
  - Ra-SB
  - Ra-SA
  - Ra-G
  - Ra-H
- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
  - Ra-E
  - Ra-F

Seminar 2. Computed Tomography and Magnetic Resonance Imaging Techniques and Referral for Radiological Examinations:

- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [287]
  - Ra-C
  - Ra-D
- KBC Rijeka - Radiologija (12:00 - 14:15) [281]
  - Ra-A
  - Ra-B
- / (12:00 - 14:15) [1311] [286]
  - Ra-SB
  - Ra-SA
  - Ra-SB
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- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
  - Ra-E
  - Ra-F

Seminar 3. Contrast Media in Radiology and Their Application:

- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [287]
  - Ra-C
  - Ra-D
- KBC Rijeka - Radiologija (12:00 - 14:15) [281]
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  - Ra-B
- / (12:00 - 14:15) [1311] [286]
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- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
  - Ra-E

naslovna viša asistentica dr.sc. Bartolović Nina, dr. med., [1918] · nasl. izv. prof. dr. sc. Borić Igor, dr. med. [1747] · Brumini Ivan, dr. med. [2763] · Grubešić Tiana, dr. med., asistentica [287] · doc. dr. sc. Kovačić Slavica, dr. med. [277] · naslovni asistent Madunić Mateo, dr. med. [2306] · prof. dr. sc. Miletić Damir, dr. med., redoviti profesor u trajnom zvanju [167] · naslovna asistentica Miletić Rigo Dina, dr. med. [1311] · naslovni doc. dr.sc. Nadarević Tin, dr. med. [286] · naslovna asistentica Rnjak Jelena, dr. med. [2781] · naslovni prof. dr. sc. Roić Goran, dr. med. [280] · prof. dr. sc. Rumboldt Zoran, dr. med. [1854] · doc.dr.sc. Tkalčić Lovro, dr.med. [1437] · izv. prof. dr. sc. Valković Zujić Petra, dr. med. [281] · doc. dr. sc. Veljković Vujaklija Danijela, dr. med. [279]

06.05.2027

Lecture 5: Thoracic Radiology: Lung Imaging Techniques:
• P12 - KBC SUŠAK (08:00 - 10:45) [286]
  ◦ R_348
 	
Lecture 6: Thoracic Radiology: Pathological Conditions of the Chest:
• P12 - KBC SUŠAK (08:00 - 10:45) [286]
  ◦ R_348
 	
Lecture 7:Thoracic Radiology: Morphological Features of Lung and Mediastinal Tumours:
• P12 - KBC SUŠAK (08:00 - 10:45) [286]
  ◦ R_348
		Seminar 4. Principles of Radiation Biology and Radiation Protection:
		• / (12:00 - 14:15) [2763] [2306]
		  ◦ Ra-D
		  ◦ Ra-C
		  ◦ Ra-SA
		  ◦ Ra-SB
		• KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [286]
		  ◦ Ra-G
		  ◦ Ra-H
		• KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [277]
		  ◦ Ra-E
		  ◦ Ra-F
		• KBC Rijeka - Radiologija (12:00 - 14:15) [279]
		  ◦ Ra-A
		  ◦ Ra-B
		
		Seminar 5. Archiving of Imaging Data:
		• / (12:00 - 14:15) [2763] [2306]
		  ◦ Ra-D
		  ◦ Ra-C
		  ◦ Ra-D
		  ◦ Ra-C
		  ◦ Ra-SA
		  ◦ Ra-SB
		• KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [286]
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		  ◦ Ra-H
		• KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [277]
		  ◦ Ra-E
		  ◦ Ra-F
		• KBC Rijeka - Radiologija (12:00 - 14:15) [279]
		  ◦ Ra-A
		  ◦ Ra-B
		
		Seminar 6. Radiological Nomenclature:
		• / (12:00 - 14:15) [2763] [2306]
		  ◦ Ra-D
		  ◦ Ra-C
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		  ◦ Ra-D
		  ◦ Ra-C
		  ◦ Ra-SA
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		• KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [286]
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		  ◦ Ra-H
		• KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [277]
		  ◦ Ra-E
		  ◦ Ra-F
		• KBC Rijeka - Radiologija (12:00 - 14:15) [279]
		  ◦ Ra-A
		  ◦ Ra-B

Brumini Ivan, dr. med. [2763] · doc. dr. sc. Kovačić Slavica, dr. med. [277] · naslovni asistent Madunić Mateo, dr. med. [2306] · naslovni doc. dr.sc. Nadarević Tin, dr. med. [286] · doc. dr. sc. Veljković Vujaklija Danijela, dr. med. [279]
10.05.2027

Lecture 8: Thoracic Radiology: Interstitial Lung Diseases, Pleural Disorders, and Pneumothorax:

- P12 - KBC SUŠAK (08:00 - 08:45) [286]
  - R_348

Lecture 9: Cardiac Imaging Techniques and the Radiological Evaluation of Chest Pain:

- P12 - KBC SUŠAK (08:45 - 10:15) [277]
  - R_348

Lecture 10: Diseases of the Great Vessels (Aorta, Arteries, and Veins):

- P12 - KBC SUŠAK (08:45 - 10:15) [277]
  - R_348

Practical 1. Thoracic Radiology:

- KBC Rijeka - Radiologija (14:15 - 15:00) [1918]
  - R_348

Seminar 7. Thoracic Radiology I:

- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [2781]
  - Ra-E
  - Ra-F
- / (12:00 - 14:15) [167] [287]
  - Ra-SB
  - Ra-SA
  - Ra-G
  - Ra-H
- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [277]
  - Ra-C
  - Ra-D
- KBC Rijeka - Radiologija (12:00 - 14:15) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
  - Ra-A
  - Ra-B

Seminar 8. Thoracic Radiology II:

- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [2781]
  - Ra-E
  - Ra-F
- / (12:00 - 14:15) [167] [287]
  - Ra-SB
  - Ra-SA
  - Ra-SB
  - Ra-SA
  - Ra-G
  - Ra-H
- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [277]
  - Ra-C
  - Ra-D
- KBC Rijeka - Radiologija (12:00 - 14:15) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
  - Ra-A
  - Ra-B

Seminar 9. Radiology of the Mediastinum:

- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [2781]
  - Ra-E
  - Ra-F
- / (12:00 - 14:15) [167] [287]
  - Ra-SB
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  - Ra-SA
  - Ra-G
  - Ra-H
- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [277]
  - Ra-C
  - Ra-D
- KBC Rijeka - Radiologija (12:00 - 14:15) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
  - Ra-A
  - Ra-B

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13.05.2027

Lecture 11: Imaging in Heart Failure and Valvular Heart Disease:

- P12 - KBC SUŠAK (08:00 - 08:45) [277]
  - R_348

Lecture 12: Vascular Interventional Radiology and Neurointerventional Procedures:

- P12 - KBC SUŠAK (08:45 - 10:45) [1437]
  - R_348

Lecture 13: Non-vascular Interventional Radiology:

- P12 - KBC SUŠAK (08:45 - 10:45) [1437]
  - R_348

Practical 2. Diseases of the Great Vessels and the Heart (Aorta, Arteries, and Veins):

- KBC Rijeka - Radiologija (14:15 - 15:00) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
  - R_348

Seminar 10. Radiology of the Pleura:

- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
  - Ra-A
  - Ra-B
- / (12:00 - 14:15) [167] [277]
  - Ra-H
  - Ra-G
  - Ra-SA
  - Ra-SB
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [287]
  - Ra-E
  - Ra-F
- KBC Rijeka - Radiologija (12:00 - 14:15) [281]
  - Ra-C
  - Ra-D

Seminar 11. Cardiac Radiology:

- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
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- / (12:00 - 14:15) [167] [277]
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  - Ra-SA
  - Ra-SB
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [287]
  - Ra-E
  - Ra-F
- KBC Rijeka - Radiologija (12:00 - 14:15) [281]
  - Ra-C
  - Ra-D

Seminar 12. Radiology of the Pericardium and Cardiac Blood Vessels:

- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
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- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [287]
  - Ra-E
  - Ra-F
- KBC Rijeka - Radiologija (12:00 - 14:15) [281]
  - Ra-C
  - Ra-D

naslovna viša asistentica dr.sc. Bartolović Nina, dr. med., [1918] · nasl. izv. prof. dr. sc. Borić Igor, dr. med. [1747] · Brumini Ivan, dr. med. [2763] · Grubešić Tiana, dr. med., asistentica [287] · doc. dr. sc. Kovačić Slavica, dr. med. [277] · naslovni asistent Madunić Mateo, dr. med. [2306] · prof. dr. sc. Miletić Damir, dr. med., redoviti profesor u trajnom zvanju [167] · naslovna asistentica Miletić Rigo Dina, dr. med. [1311] · naslovni doc. dr.sc. Nadarević Tin, dr. med. [286] · naslovna asistentica Rnjak Jelena, dr. med. [2781] · naslovni prof. dr. sc. Roić Goran, dr. med. [280] · prof. dr. sc. Rumboldt Zoran, dr. med. [1854] · doc.dr.sc. Tkalčić Lovro, dr.med. [1437] · izv. prof. dr. sc. Valković Zujić Petra, dr. med. [281] · doc. dr. sc. Veljković Vujaklija Danijela, dr. med. [279]

17.05.2027

Lecture 14: Neuroradiology: Head and Spine Trauma; Inflammatory and Infectious Diseases of the Central Nervous System:

- P12 - KBC SUŠAK (08:00 - 10:45) [1854]
  - R_348

Lecture 15: Neuroradiology: Toxic, Metabolic, and Degenerative Diseases of the Central Nervous System; Degenerative Disorders of the Spin:

- P12 - KBC SUŠAK (08:00 - 10:45) [1854]
  - R_348

Lecture 16: Neuroradiology: Stroke and Intracranial Neoplasms:

- P12 - KBC SUŠAK (08:00 - 10:45) [1854]
  - R_348

Practical 3. Neuroradiology:

- KBC Rijeka - Radiologija (14:15 - 15:00) [1918]
  - R_348

Seminar 13. Neuroradiology I:

- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918]
  - Ra-A
  - Ra-B
- KBC Rijeka - Radiologija (12:00 - 14:15) [281]
  - Ra-G
  - Ra-H
- / (12:00 - 14:15) [1437] [277]
  - Ra-D
  - Ra-C
  - Ra-E
  - Ra-F
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [279]
  - Ra-SA
  - Ra-SB

Seminar 14. Neuroradiology II:

- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918]
  - Ra-A
  - Ra-B
- KBC Rijeka - Radiologija (12:00 - 14:15) [281]
  - Ra-G
  - Ra-H
- / (12:00 - 14:15) [1437] [277]
  - Ra-D
  - Ra-C
  - Ra-D
  - Ra-C
  - Ra-E
  - Ra-F
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [279]
  - Ra-SA
  - Ra-SB

Seminar 15. Neuroradiology III:

- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918]
  - Ra-A
  - Ra-B
- KBC Rijeka - Radiologija (12:00 - 14:15) [281]
  - Ra-G
  - Ra-H
- / (12:00 - 14:15) [1437] [277]
  - Ra-D
  - Ra-C
  - Ra-D
  - Ra-C
  - Ra-D
  - Ra-C
  - Ra-E
  - Ra-F
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [279]
  - Ra-SA
  - Ra-SB

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20.05.2027

Lecture 17: Radiology of the Viscerocranium and Neck:
• P12 - KBC SUŠAK (08:00 - 08:45) [281]
  ◦ R_348
 	
Lecture 18: Paediatric Radiology:
• P12 - KBC SUŠAK (08:45 - 09:30) [279]
  ◦ R_348
	Practical 4. Head nad Neck Radioogy:
	• KBC Rijeka - Radiologija (14:15 - 15:00) [1918] [167] [277] [279] [280] [281] [286] [287] [1311] [1437] [1747] [1854] [2306] [2763] [2781]
	  ◦ R_348
		Seminar 16. Neuroradiology IV:
		• KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [2781]
		  ◦ Ra-SA
		  ◦ Ra-SB
		• KBC Rijeka - Radiologija (12:00 - 14:15) [281]
		  ◦ Ra-C
		  ◦ Ra-D
		• KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918]
		  ◦ Ra-A
		  ◦ Ra-B
		• / (12:00 - 14:15) [1747] [2763]
		  ◦ Ra-H
		  ◦ Ra-G
		  ◦ Ra-E
		  ◦ Ra-F
		
		Seminar 17. Radiology of the Viscerocranium and Neck:
		• KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [2781]
		  ◦ Ra-SA
		  ◦ Ra-SB
		• KBC Rijeka - Radiologija (12:00 - 14:15) [281]
		  ◦ Ra-C
		  ◦ Ra-D
		• KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918]
		  ◦ Ra-A
		  ◦ Ra-B
		• / (12:00 - 14:15) [1747] [2763]
		  ◦ Ra-H
		  ◦ Ra-G
		  ◦ Ra-H
		  ◦ Ra-G
		  ◦ Ra-E
		  ◦ Ra-F
		
		Seminar 18. Pediatric Radiology:
		• KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [2781]
		  ◦ Ra-SA
		  ◦ Ra-SB
		• KBC Rijeka - Radiologija (12:00 - 14:15) [281]
		  ◦ Ra-C
		  ◦ Ra-D
		• KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918]
		  ◦ Ra-A
		  ◦ Ra-B
		• / (12:00 - 14:15) [1747] [2763]
		  ◦ Ra-H
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		  ◦ Ra-H
		  ◦ Ra-G
		  ◦ Ra-E
		  ◦ Ra-F

naslovna viša asistentica dr.sc. Bartolović Nina, dr. med., [1918] · nasl. izv. prof. dr. sc. Borić Igor, dr. med. [1747] · Brumini Ivan, dr. med. [2763] · Grubešić Tiana, dr. med., asistentica [287] · doc. dr. sc. Kovačić Slavica, dr. med. [277] · naslovni asistent Madunić Mateo, dr. med. [2306] · prof. dr. sc. Miletić Damir, dr. med., redoviti profesor u trajnom zvanju [167] · naslovna asistentica Miletić Rigo Dina, dr. med. [1311] · naslovni doc. dr.sc. Nadarević Tin, dr. med. [286] · naslovna asistentica Rnjak Jelena, dr. med. [2781] · naslovni prof. dr. sc. Roić Goran, dr. med. [280] · prof. dr. sc. Rumboldt Zoran, dr. med. [1854] · doc.dr.sc. Tkalčić Lovro, dr.med. [1437] · izv. prof. dr. sc. Valković Zujić Petra, dr. med. [281] · doc. dr. sc. Veljković Vujaklija Danijela, dr. med. [279]

24.05.2027

Lecture 19: Musculoskeletal Radiology: Trauma:
• P12 - KBC SUŠAK (08:00 - 10:45) [279]
  ◦ R_348
 	
Lecture 20: Musculoskeletal Radiology: Inflammatory Joint Diseases:
• P12 - KBC SUŠAK (08:00 - 10:45) [279]
  ◦ R_348
 	
Lecture 21: Musculoskeletal Radiology: Tumours of the Musculoskeletal System:
• P12 - KBC SUŠAK (08:00 - 10:45) [279]
  ◦ R_348
	Practical 5. Musculoskeletal radiology:
	• KBC Rijeka - Radiologija (14:15 - 15:00) [1918]
	  ◦ R_348
		Seminar 19. Musculoskeletal Radiology I:
		• KBC SUŠAK-RADIOLOGIJA (12:00 - 14:45) [281]
		  ◦ Ra-A
		  ◦ Ra-B
		• KBC Rijeka - Radiologija (12:00 - 14:15) [279]
		  ◦ Ra-C
		  ◦ Ra-D
		• KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [1747]
		  ◦ Ra-E
		  ◦ Ra-F
		• / (12:00 - 14:15) [167] [2763]
		  ◦ Ra-SB
		  ◦ Ra-SA
		  ◦ Ra-G
		  ◦ Ra-H
		
		Seminar 20. Musculoskeletal Radiology II:
		• KBC SUŠAK-RADIOLOGIJA (12:00 - 14:45) [281]
		  ◦ Ra-A
		  ◦ Ra-B
		• KBC Rijeka - Radiologija (12:00 - 14:15) [279]
		  ◦ Ra-C
		  ◦ Ra-D
		• KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [1747]
		  ◦ Ra-E
		  ◦ Ra-F
		• / (12:00 - 14:15) [167] [2763]
		  ◦ Ra-SB
		  ◦ Ra-SA
		  ◦ Ra-SB
		  ◦ Ra-SA
		  ◦ Ra-G
		  ◦ Ra-H
		
		Seminar 21. Musculoskeletal Radiology III:
		• KBC SUŠAK-RADIOLOGIJA (12:00 - 14:45) [281]
		  ◦ Ra-A
		  ◦ Ra-B
		• KBC Rijeka - Radiologija (12:00 - 14:15) [279]
		  ◦ Ra-C
		  ◦ Ra-D
		• KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [1747]
		  ◦ Ra-E
		  ◦ Ra-F
		• / (12:00 - 14:15) [167] [2763]
		  ◦ Ra-SB
		  ◦ Ra-SA
		  ◦ Ra-SB
		  ◦ Ra-SA
		  ◦ Ra-SB
		  ◦ Ra-SA
		  ◦ Ra-G
		  ◦ Ra-H

naslovna viša asistentica dr.sc. Bartolović Nina, dr. med., [1918] · nasl. izv. prof. dr. sc. Borić Igor, dr. med. [1747] · Brumini Ivan, dr. med. [2763] · prof. dr. sc. Miletić Damir, dr. med., redoviti profesor u trajnom zvanju [167] · izv. prof. dr. sc. Valković Zujić Petra, dr. med. [281] · doc. dr. sc. Veljković Vujaklija Danijela, dr. med. [279]	
31.05.2027	

Lecture 22: Gastrointestinal Radiology: Dysphagia and Upper Abdominal Pain:
- P12 - KBC SUŠAK (08:00 - 08:45) [281]
  - R_348

Lecture 23: Gastrointestinal Radiology: Jaundice and Liver Diseases:
- P12 - KBC SUŠAK (08:45 - 11:00) [167]
  - R_348

Lecture 24: Gastrointestinal Radiology: Imaging of the Pancreas and Spleen; Radiological Features of Ileus:
- P12 - KBC SUŠAK (08:45 - 11:00) [167]
  - R_348

Lecture 25: Gastrointestinal Radiology: Lower Abdominal Pain; Inflammatory and Malignant Diseases of the Colon:
- P12 - KBC SUŠAK (08:45 - 11:00) [167]
  - R_348

Seminar 22. Musculoskeletal Radiology IV:
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 15:00) [2306]
  - Ra-C
  - Ra-D
- / (12:00 - 15:00) [2781] [279]
  - Ra-H
  - Ra-G
  - Ra-SA
  - Ra-SB
- Kirurgija Rijeka - Predavaona (12:00 - 15:00) [167]
  - Ra-E
  - Ra-F
- KBC SUŠAK-RADIOLOGIJA (12:00 - 15:00) [287]
  - Ra-A
  - Ra-B

Seminar 23. Radiology of the Biliary System:
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 15:00) [2306]
  - Ra-C
  - Ra-D
- / (12:00 - 15:00) [2781] [279]
  - Ra-H
  - Ra-G
  - Ra-H
  - Ra-G
  - Ra-SA
  - Ra-SB
- Kirurgija Rijeka - Predavaona (12:00 - 15:00) [167]
  - Ra-E
  - Ra-F
- KBC SUŠAK-RADIOLOGIJA (12:00 - 15:00) [287]
  - Ra-A
  - Ra-B

Seminar 24. Radiology of Parenchymal Abdominal Organs:
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 15:00) [2306]
  - Ra-C
  - Ra-D
- / (12:00 - 15:00) [2781] [279]
  - Ra-H
  - Ra-G
  - Ra-H
  - Ra-G
  - Ra-H
  - Ra-G
  - Ra-SA
  - Ra-SB
- Kirurgija Rijeka - Predavaona (12:00 - 15:00) [167]
  - Ra-E
  - Ra-F
- KBC SUŠAK-RADIOLOGIJA (12:00 - 15:00) [287]
  - Ra-A
  - Ra-B

Grubešić Tiana, dr. med., asistentica [287] · naslovni asistent Madunić Mateo, dr. med. [2306] · prof. dr. sc. Miletić Damir, dr. med., redoviti profesor u trajnom zvanju [167] · naslovna asistentica Rnjak Jelena, dr. med. [2781] · izv. prof. dr. sc. Valković Zujić Petra, dr. med. [281] · doc. dr. sc. Veljković Vujaklija Danijela, dr. med. [279]
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Lecture 26: Uroradiology: Imaging Evaluation of Renal Colic and Haematuria:

- P12 - KBC SUŠAK (08:00 - 10:45) [167] [279]
  - R_348

Lecture 27: Uroradiology: Lesions of the Renal Parenchyma and Adrenal Glands:

- P12 - KBC SUŠAK (08:00 - 10:45) [167] [279]
  - R_348

Lecture 28: Imaging of the Pelvis:

- P12 - KBC SUŠAK (08:00 - 10:45) [167] [279]
  - R_348

Practical 6. Gastrointestinal and Genital Systems:

- KBC Rijeka - Radiologija (14:15 - 15:00) [1918]
  - R_348

Seminar 25. Radiology of the Small Intestine:

- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918]
  - Ra-A
  - Ra-B
- KBC Rijeka - Radiologija (12:00 - 14:15) [1854]
  - Ra-G
  - Ra-H
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [2763]
  - Ra-C
  - Ra-D
- / (12:00 - 14:15) [1747] [279]
  - Ra-SB
  - Ra-SA
  - Ra-E
  - Ra-F

Seminar 26. Radiology of the Large Intestine:

- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918]
  - Ra-A
  - Ra-B
- KBC Rijeka - Radiologija (12:00 - 14:15) [1854]
  - Ra-G
  - Ra-H
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [2763]
  - Ra-C
  - Ra-D
- / (12:00 - 14:15) [1747] [279]
  - Ra-SB
  - Ra-SA
  - Ra-SB
  - Ra-SA
  - Ra-E
  - Ra-F

Seminar 27. Pelvic Radiology:

- KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [1918]
  - Ra-A
  - Ra-B
- KBC Rijeka - Radiologija (12:00 - 14:15) [1854]
  - Ra-G
  - Ra-H
- KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [2763]
  - Ra-C
  - Ra-D
- / (12:00 - 14:15) [1747] [279]
  - Ra-SB
  - Ra-SA
  - Ra-SB
  - Ra-SA
  - Ra-SB
  - Ra-SA
  - Ra-E
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07.06.2027

Lecture 29: Breast Imaging: • P12 - KBC SUŠAK (08:00 - 09:30) [281] ◦ R_348 Lecture 30: Optimization of Radiological Examinations: • P12 - KBC SUŠAK (08:00 - 09:30) [281] ◦ R_348	Practical 7. Uroradiology: • KBC Rijeka - Radiologija (14:15 - 15:00) [1918] ◦ R_348	Seminar 28. Uroradiology: • KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [287] ◦ Ra-A ◦ Ra-B • KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [281] ◦ Ra-E ◦ Ra-F • / (12:00 - 14:15) [286] [1437] ◦ Ra-SB ◦ Ra-SA ◦ Ra-G ◦ Ra-H • KBC Rijeka - Radiologija (12:00 - 14:15) [277] ◦ Ra-C ◦ Ra-D Seminar 29. Breast Radiology: • KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [287] ◦ Ra-A ◦ Ra-B • KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [281] ◦ Ra-E ◦ Ra-F • / (12:00 - 14:15) [286] [1437] ◦ Ra-SB ◦ Ra-SA ◦ Ra-SB ◦ Ra-SA ◦ Ra-G ◦ Ra-H • KBC Rijeka - Radiologija (12:00 - 14:15) [277] ◦ Ra-C ◦ Ra-D Seminar 30. Interventional Radiology: • KBC SUŠAK-RADIOLOGIJA 2 (12:00 - 14:15) [287] ◦ Ra-A ◦ Ra-B • KBC SUŠAK-RADIOLOGIJA (12:00 - 14:15) [281] ◦ Ra-E ◦ Ra-F • / (12:00 - 14:15) [286] [1437] ◦ Ra-SB ◦ Ra-SA ◦ Ra-SB ◦ Ra-SA ◦ Ra-SB ◦ Ra-SA ◦ Ra-G ◦ Ra-H • KBC Rijeka - Radiologija (12:00 - 14:15) [277] ◦ Ra-C ◦ Ra-D

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10.06.2027		
	Practical 8. Pediatric Radiology: • KBC Rijeka - Radiologija (08:00 - 10:15) [1918] ◦ R_348 Practical 9. Breast Imaging: • KBC Rijeka - Radiologija (08:00 - 10:15) [1918] ◦ R_348 Practical 10. Interventional Radiology and Polytrauma: • KBC Rijeka - Radiologija (08:00 - 10:15) [1918] ◦ R_348	
naslovna viša asistentica dr.sc. Bartolović Nina, dr. med., [1918]		

Popis predavanja, seminara i vježbi:

PREDAVANJA (TEMA)	Broj sati	Mjesto održavanja
Lecture 1: Generation of X-rays and the Biological Effects of Ionizing Radiation. The ALARA Principle and Radiation Protection	1	P12 - KBC SUŠAK
Lecture 2: Application of Ultrasound in Radiology	1	P12 - KBC SUŠAK
Lecture 3: Computed Tomography and Contrast Media in Radiology	1	P12 - KBC SUŠAK
Lecture 4: Fundamentals of Magnetic Resonance Imaging (MRI)	1	P12 - KBC SUŠAK
Lecture 5: Thoracic Radiology: Lung Imaging Techniques	1	P12 - KBC SUŠAK
Lecture 6: Thoracic Radiology: Pathological Conditions of the Chest	1	P12 - KBC SUŠAK
Lecture 7:Thoracic Radiology: Morphological Features of Lung and Mediastinal Tumours	1	P12 - KBC SUŠAK
Lecture 8: Thoracic Radiology: Interstitial Lung Diseases, Pleural Disorders, and Pneumothorax	1	P12 - KBC SUŠAK
Lecture 9: Cardiac Imaging Techniques and the Radiological Evaluation of Chest Pain	1	P12 - KBC SUŠAK
Lecture 10: Diseases of the Great Vessels (Aorta, Arteries, and Veins)	1	P12 - KBC SUŠAK
Lecture 11: Imaging in Heart Failure and Valvular Heart Disease	1	P12 - KBC SUŠAK
Lecture 12: Vascular Interventional Radiology and Neurointerventional Procedures	1	P12 - KBC SUŠAK
Lecture 13: Non-vascular Interventional Radiology	1	P12 - KBC SUŠAK
Lecture 14: Neuroradiology: Head and Spine Trauma; Inflammatory and Infectious Diseases of the Central Nervous System	1	P12 - KBC SUŠAK
Lecture 15: Neuroradiology: Toxic, Metabolic, and Degenerative Diseases of the Central Nervous System; Degenerative Disorders of the Spin	1	P12 - KBC SUŠAK
Lecture 16: Neuroradiology: Stroke and Intracranial Neoplasms	1	P12 - KBC SUŠAK
Lecture 17: Radiology of the Viscerocranium and Neck	1	P12 - KBC SUŠAK
Lecture 18: Paediatric Radiology	1	P12 - KBC SUŠAK

Lecture 19: Musculoskeletal Radiology: Trauma	1	P12 - KBC SUŠAK
Lecture 20: Musculoskeletal Radiology: Inflammatory Joint Diseases	1	P12 - KBC SUŠAK
Lecture 21: Musculoskeletal Radiology: Tumours of the Musculoskeletal System	1	P12 - KBC SUŠAK
Lecture 22: Gastrointestinal Radiology: Dysphagia and Upper Abdominal Pain	1	P12 - KBC SUŠAK
Lecture 23: Gastrointestinal Radiology: Jaundice and Liver Diseases	1	P12 - KBC SUŠAK
Lecture 24: Gastrointestinal Radiology: Imaging of the Pancreas and Spleen; Radiological Features of Ileus	1	P12 - KBC SUŠAK
Lecture 25: Gastrointestinal Radiology: Lower Abdominal Pain; Inflammatory and Malignant Diseases of the Colon	1	P12 - KBC SUŠAK
Lecture 26: Uroradiology: Imaging Evaluation of Renal Colic and Haematuria	1	P12 - KBC SUŠAK
Lecture 27: Uroradiology: Lesions of the Renal Parenchyma and Adrenal Glands	1	P12 - KBC SUŠAK
Lecture 28: Imaging of the Pelvis	1	P12 - KBC SUŠAK
Lecture 29: Breast Imaging	1	P12 - KBC SUŠAK
Lecture 30: Optimization of Radiological Examinations	1	P12 - KBC SUŠAK

VJEŽBE (TEMA)	Broj sati	Mjesto održavanja
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Practical 2. Diseases of the Great Vessels and the Heart (Aorta, Arteries, and Veins)	1	KBC Rijeka - Radiologija
Practical 3. Neuroradiology	1	KBC Rijeka - Radiologija
Practical 4. Head nad Neck Radioogy	1	KBC Rijeka - Radiologija
Practical 5. Musculoskeletal radiology	1	KBC Rijeka - Radiologija
Practical 6. Gastrointestinal and Genital Systems	3	KBC Rijeka - Radiologija
Practical 7. Uroradiology	1	KBC Rijeka - Radiologija
Practical 8. Pediatric Radiology	3	KBC Rijeka - Radiologija
Practical 9. Breast Imaging	1	KBC Rijeka - Radiologija
Practical 10. Interventional Radiology and Polytrauma	1	KBC Rijeka - Radiologija

SEMINARI (TEMA)	Broj sati	Mjesto održavanja
Seminar 1. Imaging Techniques in Conventional Radiology, Fluoroscopy, and Ultrasound	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 2. Computed Tomography and Magnetic Resonance Imaging Techniques and Referral for Radiological Examinations	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 3. Contrast Media in Radiology and Their Application	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2

Seminar 4. Principles of Radiation Biology and Radiation Protection	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 5. Archiving of Imaging Data	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 6. Radiological Nomenclature	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 7. Thoracic Radiology I	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 8. Thoracic Radiology II	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 9. Radiology of the Mediastinum	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 10. Radiology of the Pleura	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 11. Cardiac Radiology	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 12. Radiology of the Pericardium and Cardiac Blood Vessels	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 13. Neuroradiology I	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 14. Neuroradiology II	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 15. Neuroradiology III	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 16. Neuroradiology IV	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 17. Radiology of the Viscerocranium and Neck	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2

Seminar 18. Pediatric Radiology	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 19. Musculoskeletal Radiology I	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 20. Musculoskeletal Radiology II	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 21. Musculoskeletal Radiology III	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 22. Musculoskeletal Radiology IV	1	/ KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2 Kirurgija Rijeka - Predavaona
Seminar 23. Radiology of the Biliary System	1	/ KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2 Kirurgija Rijeka - Predavaona
Seminar 24. Radiology of Parenchymal Abdominal Organs	1	/ KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2 Kirurgija Rijeka - Predavaona
Seminar 25. Radiology of the Small Intestine	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 26. Radiology of the Large Intestine	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 27. Pelvic Radiology	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 28. Uroradiology	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 29. Breast Radiology	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2
Seminar 30. Interventional Radiology	1	/ KBC Rijeka - Radiologija KBC SUŠAK-RADIOLOGIJA KBC SUŠAK-RADIOLOGIJA 2

ISPITNI TERMINI (završni ispit):