

Code: MFSE 0804	Course title: RADIOLOGY		
Level: clinical	Study year: IV	Semester: VIII	ECTS: 4
Status: obligatory	Total contact hours: 70		
Prerequisites:	According to the Study Regulation		
Lecturers: Professors and associates involved in the implementation of the course in accordance with the plan of the teaching process			
1. Overall aim	This course is designed to provide students with an overview of basic imaging principles and tools required for performing basic and common diagnostic radiology investigations. It will provide students with an insight into diagnostic modalities used in modern day radiology along with pattern recognition approach suitable for recognizing most common conditions and diseases that are diagnosed with different radiology modalities available.		
2. Course contents	<p>The following topics will be covered within the Modules:</p> <p>Module 1: Introduction to radiology Introducing the definition, division of radiology, the base of physics in RTG radiation, RTG apparatus, the principles of radiography, radioscopy and the formation of the RTG image.</p> <p>Module 2: Radiological methods Introduction to the methods of work, application of classical native and contrast radiological methods as well as digital radiological methods: Computerized tomography (CT), Magnetic resonance (MRI), Ultrasound (UZ). Introduction to the radiological information system (RSI) and the information system for digital storage of images (PACs).</p> <p>Module 3: Basis for interventional and therapeutical procedures in radiology Acquiring basic knowledge on diagnostic and therapeutical interventional radiology. Acquiring basic knowledge on vascular and nonvascular interventional procedures. Acquiring knowledge on personal and staff protection from radioactive radiation applied in radiology.</p> <p>Module 4: Radiological methods according to organ systems Acquiring the radiological procedures in diagnostics: the central nervous system, respiratory system, cardiovascular system, digestive system, hepatobiliary system, urogenital system, musculoskeletal system, breast diagnostics and children radiology.</p>		

<p>3. Learning outcomes (Knowledge, skills and competences)</p>	<p>Upon completion of this course, students will have acquired the ability to perform the following:</p> <ol style="list-style-type: none"> 1.Explain the main physical principles of common radiology modalities ; 2.Explain basic imaging features of different imaging modalities; 3.To recognize most common pathology of different organ systems on various imaging modalities; 4.To understand what type of imaging to order and when in different clinical situations; 5.To be familiar with exposure to ionizing radiation risks; 6.To gain necessary knowledge for writing basic radiology reports.
<p>4. Teaching methods</p>	<p>Lectures: 35 hours, Practical work: 35 hours</p> <p>Learning methods: reading, preparation of a Short Oral Seminar Presentation (Group Assignment), participation in discussions, development of detail-oriented data collection, data presentation and data analysis skills</p>
<p>5. Method of knowledge assessment and examination</p>	<p>The course is designed to be a continuous assessment and examination of knowledge throughout the semester.</p> <p>Partial exam 1 Partial exam 1 covers the assessment of knowledge throughout Module 1 and 2. This exam consists of 40 MCQ, and each correct answer is 1 point. The total score is 40. The passing score is 22 points.</p> <p>Partial exam 2 Partial exam 2 covers the assessment of knowledge throughout Module 3 and 4. This exam is a written test consisting of 40 MCQs. Each correct answer is 1 point. The total score is 40. The passing score is 22 points.</p> <p>Practical exam Practical exam is the assessment of the knowledge throughout acquired during the practical classes. During this assessment of knowledge students should show their knowledge based on 5 radiological scans, each carrying 4 points. The total number of points at the practical exam is 20. The minimal passing points are 11.</p> <p>Final exam Students that have not reached the passing grade points at each assessment point during the course will take the Final exam. Final exam will be in written form and it consists of two separate tests that correspond to the materials of Partial tests that student has not passed during the course.</p> <p>Repeated and Remedial exam</p>

	<p>Repeated and Remedial exama are conducted according to previously defined criteria of the final examination.</p> <p>Final grade The total number of points, gathered through the assessment check points will be translated into the final grade as follows:</p> <table><tr><th>Rating</th><th>Number of points</th><th>Description Rating</th></tr><tr><td>10 (A)</td><td>95-100</td><td>remarkable success without mistakes or with minor errors</td></tr><tr><td>9 (B)</td><td>85-94</td><td>above average, with some mistakes</td></tr><tr><td>8 (C)</td><td>75-84</td><td>average, with subtle errors</td></tr><tr><td>7 (D)</td><td>65-74</td><td>generally good, but with significant shortcomings</td></tr><tr><td>6 (E)</td><td>55- 64</td><td>meets the minimum criteria</td></tr><tr><td>5 (F,FX)</td><td>< 55</td><td>does not meet the minimum criteria</td></tr></table>	Rating	Number of points	Description Rating	10 (A)	95-100	remarkable success without mistakes or with minor errors	9 (B)	85-94	above average, with some mistakes	8 (C)	75-84	average, with subtle errors	7 (D)	65-74	generally good, but with significant shortcomings	6 (E)	55- 64	meets the minimum criteria	5 (F,FX)	< 55	does not meet the minimum criteria
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6. Literature	<p>Obligatory:</p> <ul style="list-style-type: none">– William Herring. Learning Radiology – Recognizing the Basics 3rd edition <p>Additional:</p> <ul style="list-style-type: none">– Online content related to the Book: Learning Radiology – Recognizing the Basics– Appendix of the Book: Learning Radiology – Recognizing the Basics																					
7. Remark	<p>Lectures will be conducted according to the Plan and the Curriculum at the Amphitheatres in CCUS. The exercises will be realized at the Clinic for Radiology in the Clinical Center of the University of Sarajevo. Exercises can be attended only by students who have a valid sanitary booklet and a proper uniform. All forms of instruction are compulsory. Fixing absences from classes is in accordance with applicable legal regulations.</p> <p>Consultations for students will be held in the period from 13:00-14:00 each working day, with prior announcement to the lecturer.</p>																					

PLAN OF SUBJECT: RADIOLOGY

Week 10.	The form of teaching	Number of hours
Friday	Lecture: Introduction to Imaging Modalities (X-ray, CT, MRI, US, NM), Recognition of technically adequate X-ray & CT scans	4
	Practicals: Practical approach in recognizing basic densities in radiography (X-ray & CT), Correct positioning of the patient in X-ray investigation & Introduction to basic radiographic imaging parameters	4
Week 11.	The form of teaching	Number of hours
Monday	Lecture: Normal Pulmonary and Cardiac Anatomy, Recognition of most common infective lung diseases, atelectasis and pleural effusion, Recognition of traumatic thoracic lesions and chest diseases	2
	Exercises: Practical examples in common lung diseases. Presentation of ongoing or recent cases with such features, Correlation of X-ray and CT capabilities in detection common chest trauma and diseases	4
Tuesday	Lecture: Adult Heart Disease	4
	Practicals: Presentation of different diagnostic modalities in imaging of Heart and great vessels of thorax	2
Wednesday	Lecture and Practicals Partial Exam 1	3+2
Thursday	Lecture: Normal radiographic anatomy of abdomen and pelvis	4
	Practicals: Correlation of radiographic morphology (X-ray & CT) and scanned anatomic structures of abdomen and pelvis	4
Friday	Lecture: Common abdominal and pelvic diseases	4
	Practicals: Diagnostic algorithms and radiographic presentation of common abdominal diseases	4

Week 12.	The form of teaching	Number of hours
Monday	<p>Lecture: Traumatic lesions & Abnormalities of abdomen and pelvis. Role of Ultrasound</p> <p>Practicals: Imaging findings in settings of abdominal and pelvic trauma or presence of other abnormalities</p>	<p>4</p> <p>2</p>
Tuesday	<p>Lecture: Introduction to Magnetic Resonance Imaging, Pediatric Radiology</p> <p>Practicals: Practical Presentation of Basic Imaging Features in MRI. Position of MRI in diagnostic work-up, Recognizing features of most common pediatric diseases in different radiology modalities</p>	<p>4</p> <p>2</p>
Wednesday	<p>Lecture: Bone Imaging Anatomy, Bone Density, DXA. MSK diagnostics in trauma and other common pathologic MSK conditions</p> <p>Practicals: Clinical examples of basic radiography features of different traumatic injuries of skeleton, joints tendons & muscles. What to order & when</p>	<p>4</p> <p>3</p>
Thursday	<p>Lecture: Common Causes of Neck and Back Pain. Spinal trauma. Brain CT & MRI. Common Intracranial Pathology. Introduction to DSA.</p> <p>Practicals: CR, CT & MRI in approach to diagnostic work-up of patients with neck & back pain or traumatic lesions in spine region, CT, MRI & DSA features of common intracranial pathologies</p>	<p>3</p> <p>2</p>
Friday	Lecture and Practical : Partial Exam 2	3+2
Week 17-18.	Final exam	
Week 19.-20.	Repeated and Remedial exam	