

MED 4005 - Radiology

Course Name	Code	Semester	Type of Course	Theory (hours)	Group Work (hours)	ECTS
Radiology	MED 4005	VII	Mandatory	20	36	4
Faculty, the educational program and education level	Faculty of Medicine, one-cycle Educational Program "Medicine"					
Author (s)	Ismet Dindar – Professor, Doctor of Medicine Mob.tel.: 322 41 42 66; e-mail: ismetdindar@hotmail.com Mustafa Kemal Demir –invited teacher Mob.tel.: 053305531246;e-mail: mustafakemal.demir@bahcesehir.edu.tr Consultation day - individually					
Educational course format	Lecture Group work					
Educational course Loading	Total: 120 hours Contact hours: 60 h, that includes: 1. Lecture – 20 h 2. Group work – 36 h 3. Midterms – 2 h 4. Final exam -2 h Independent work – 60 h					
Prerequisites	MED1002-1008 Cardiovascular, Hematological, Respiratory, Gastrointestinal, Urogenital, Nervous, Endocrinal and Sense Organs' Systems Anatomy					
The purpose (s) of tutorial course/modules	The learning course includes the basic theoretical knowledge of medical radiological research methods and procedures required to evaluate human body organ'disorders and basic practical skills the field of radiology required for the selection algorithm radiology for diagnosis and treatment of of various structural-functional systems diseases.					
Teaching and learning methods	Lecture - Face-to-Face; Demonstration – rentgenograms (X-rays images), tables, schemes, slides; Discussion – questions and answers, answers analysis supported with visual aids; Analyses and synthesis – obtained images visualization, detailed discussion of observed structures, their assessment for diagnosing; Work in work in the diagnostic area of clinic: a) in radiology laboratory (imaginings); b) in X-rays cabinet– human body bones and joints rentgenography; b) in UZI, CT and MRT images of human body's different region.					

	<p>Brief-inquire (3)–short questions and answers; Work with literature: radiologic atlases, manuals and internet information technology sources; Consultation –individual support work with students (weekly)</p>
<p>Assessment criteria</p>	<p>Maximum score- 100:</p> <p>1. Midterm assessment -60:</p> <p>1.1. Attendance -10 score ;</p> <p>1.2. Activity – 30 score:</p> <p>1.2.1. Report preparation and presentation – 10 score</p> <p>1.2.2. Practical skills (on the base of clinical radiologic department X-Ray, UZI, CT, MRI imagines) – max. – 20 score (4 X 5 scores for each):</p> <ul style="list-style-type: none"> -5 score-completely understand images, no mistakes; -4 score-understand imaging components completely, but makes minor errors; -3 score – general understanding, but makes mistakes; -2 score – general understanding, but makes significant mistakes; -1 score – not complete understanding; -0 score – can not explain images of human body system components. <p>Abstract preparation and presentation’s criteria (10 scores - max.):</p> <ol style="list-style-type: none"> 1. Actuality of appointed problem – 2 score; 2. Correspondence between the research methods and research purpose -2 scores; 3. Correctness of conclusion and the connection with the main text - 2 score; 4. The presented matter’s visual and technical aspects - 1 score; 5. Reporting culture - 2 score; 6. Accuracy and reliability of indicated references and literature sources – 1 score; <p>1.3. Midterm Exam – 20 scores</p> <p>Written test -20 question, 0,5 score for each – max. 15; verbal test -10 question 1 score for each – max 5; total: 20)</p> <p>Minimal scores of midterm assessment (for final exam) – is 11.</p> <p>2. Final Exam -40 scores</p> <p>Is held in the written test form (test consists of 80 questions, each question is rated as 0,5 score). The final exam would accounted as passed in case of maximum 70% or more (40X70 / 100 = 28 scores).</p> <p>Credit will be given to the student if he has collected at minimum 51 scores out of 100. Student’s assessment has to be done in the following way:</p> <p>Positive rate:</p> <ul style="list-style-type: none"> • (A) Excellent- 91 or more scores; • (B) Very Good- 81-90 scores; • (C) Good- 71-80 scores; • (D) Satisfactory- 61-70scores; • (E) Enough- 51-60 scores; <p>Negative rate:</p> <ul style="list-style-type: none"> • (FX) Failure - 41-50 scores, which means that a student needs to work more and an independent and considerable further work is required to pass the exam once again to be re-awarded;

	<ul style="list-style-type: none"> (F) Fail – 40 scores or less, which means that the student's diligence is not sufficient and student has to learn the subject all over again. Student can pass the additional exam during the same semester. The time interval between the final and the additional exams should be not less than 10 days.
The basic literature	<ol style="list-style-type: none"> ADLER CARLTON, INTRODUCTION TO RADIOGRAPHY AND PATIENT CARE; SAUNDERS ELSEVIER, 1994. Radiology 101: The Basics and Fundamentals of Imaging - William E. Erkonen, Wilbur L. Smith (Editors). Lippincott Williams & Wilkins; Third edition, November 3, 2009 Learning Radiology: Recognizing the Basics (With Student Consult Online Access), 2e William Herring. Saunders; 2 edition, April 14, 2011
The auxiliary literature	<ol style="list-style-type: none"> DAVID J.DOWSETT, PATRICK A.KENNY & R.EUGENE JOHNSTON. THE PHYSICS OF DIAGNOSTIC IMAGING CRC PRESS TAYLOR&FRANCIS GROUP, 2006

The tutorial/training course content

№	Subjects	Lecture (hour)	Work in group (hour)
1	Introduction to medical radiology. Methods of radiologic diagnostics. Different source of ionization, their influence on biological activity. Contrast agents for different diagnostics methods. Radiation safety.	2	4
2	Respiratory system organ's disorders radiological investigation. Radiology of thorax and mediastinum. Radiographic symptoms and syndromes of lung damages. Radio-diagnostics of pulmonary diseases	2	4
3	Cardiovascular system radiologic investigation . The methods of investigation of vascular system and normal radiographic anatomy. Radiographic symptoms and syndromes of vascular system diseases. Radiological diagnostics of vascular system diseases. Vascular and non-vascular interventional radiology.	2	4
4	Radiological diagnosing of hepatobiliary-gastrointestinal system disorders. Radiological diagnostics of digestive organs diseases (throat, larynx, pharynx, esophagus, stomach and duodenum and other intestines)	2	2
5	Investigation methods for liver, biliary tract, pancreatitis, spleen and normal radiographic anatomy. Radiological diagnostics of liver, biliary tract, pancreatitis and spleen diseases	1	2
6	The methods of investigation of the skull and spine. Brain and spinal cord and normal radiographical anatomy. Radiological diagnostics of the skull and spine, brain and spinal cord	2	4

	diseases. Radiological diagnostics of maxillofacial diseases.		
	Midterm		2
7	Investigation methods for musculoskeletal system and normal radiographical anatomy. Radiological diagnostics of musculoskeletal system.	2	4
8	Radiological diagnosing of urogenital system disorders. Radiological diagnostics of woman reproductive system diseases. Acute abdomen radiologic investigation.	2	2
9	Nuclear medicine in oncology and endocrine diseases, breast radiology. Radiological diagnostics of endocrine system, blood and systemic diseases. Radiological therapy of non-tumor diseases.	2	4
10	Clinical and radiobiological bases of radiological treatment of tumors.	1	2
11	Radiological investigation of pediatric chest and abdomen.	1	2
12	The basis of radiological therapy. The clinical-dozimetry planning of radiological therapy. The complications and reactions of radiological therapy.	1	2
	Final Exam		2

Learning Outcomes

Criteria	Competences
Knowledge and Understanding	Student will have deep and consistent knowledge in the field and nuclear medicine knows the methods of radiologic diagnostics;
Applying knowledge	On the base of theoretical knowledge student will be able to; <ul style="list-style-type: none"> • Provide practical manipulations in the field of radiologic diagnostics; • Choose the proper radiologic methods for different disorders diagnostics
Making Judgment	Student will be able to collect and interpret properly the investigation radiological data of patients and make the valid conclusions. On the base of the theoretical and practical knowledge the scientific thinking and logical reasoning skills has to be formed to allow the student working out the appropriate strategy in the concrete academic and clinical situation.
Communication Skills	Student will be able to manage the different form of academic and scientific information from different sources (classic and electronic library, the Internet) to work fast and look for

the relevant information effectively. These found materials will be planned, processed, analyzed, and to make the best use for the report with the proper conclusions as in in writing, as well as in verbal form.

Student can working in group, has watching, listening, summarizing, asking and answering questions abilities, is able to participate in the discussion. During the education process the professional and friendly relationship has to be formed with the older (professors / teachers) and younger (this and other groups students) colleagues, communication with any person regardless of their social, cultural, religious or ethnic affiliation.