

COURSE INFORMATION					
Course Title	Code	Semester	Lecture+Practice+Labrotory Hour	Credits	ECTS
Radiology (Clinical Clerkship)	MED 515	Phase 5 / 9-10	26+14	3	3*
* ECTS credits are the university credits of the courses in Yeditepe University, Faculty of Medicine, Undergraduate Medical Education Program					
Prerequisites	The student that joins this course, should completed Phase 1, 2, 3 and 4 courses of medical faculty.				

Language of Instruction	English
Course Level	Second Cycle including First Cycle Degree (One Tier Programme)
Course Type	Compulsory
Course Coordinator	Neslihan Taşdelen, MD Prof.
The instructors	Neslihan Taşdelen, MD Prof. Gazanfer Ekinici, MD Prof. O. Melih Topçuoğlu, MD Assoc. Prof. Ayşegül Görmez, MD Assist. Prof
Assistants	
Goals	The course aims to equip the clerkship attendees with necessary knowledge and skills to recognize indications of basic and most commonly used radiological modalities and evaluate the results.
Content	<p>Week 1 (Introduction to Radiology) Radiation Physics X-Ray Safety and Protection Advanced MRI and CT Techniques and Postprocessing Neuroradiology Spinal Imaging Gastrointestinal and Hepatobiliary Imaging Cardiac Imaging Imaging of Musculoskeletal System PA Chest Radiograph Chest Imaging Clinical experience</p> <p>Week 2 Breast Imaging Genitourinary Imaging Vascular Imaging Vascular Interventions Imaging of Head & Neck Case-Based General Review Lecture</p>

Learning Outcomes <i>At the end of this clerkship, the student should be able to:</i>	Program Learning Outcomes	Teaching Methods	Assessment Methods
Knowledge			
1. Define the basic radiological modalities (direct radiography. ultrasonography. computerized tomography. magnetic resonance imaging)	1.1.1. -1.1.2.- 1.1.3. - 1.1.5. - 1.1.6. - 1.1.8.-2.1.1- 2.1.2-2.1.3 - 2.2.2-3.1.1	1.2.3	A. C
2. Outline basic knowledge on physical principles and mechanisms of basic radiological modalities (direct roentgenogram. ultrasound. computed tomography. magnetic resonance imaging)	1.1.1. -1.1.2.- 1.1.3. - 1.1.5. - 1.1.6. - 1.1.8.- 2.1.1- 2.1.2-2.1.3 - 2.2.2-3.1.1	1.2.3	A. C
3. recognize unwanted effects of X-ray radiation	1.1.3- 1.1.6 - 1.1.7 - 1.1.8	1.2.3.12	A. C
4. explain ways of protection	1.1.3- 1.1.6 - 1.1.7 - 1.1.8	1.2.3	A. C
5. choose optimal radiological modality in most commonly encountered pathologies in neurological. abdominal. thoracic. musculoskeletal conditions	1.1.1. -1.1.2.- 1.1.3. - 1.1.5. - 1.1.6. - 1.1.8. - 2.1.1- -2.1.3- 2.2.2	1.2.3.12	A. C
6. choose optimal radiological modality in most commonly encountered breast diseases	1.1.1. -1.1.2.- 1.1.3. - 1.1.5. - 1.1.6. - 1.1.8.-2.1.2 - 2.2.2	1.2.3.12	A. C
7. choose optimal radiological modality in most commonly encountered vascular diseases	1.1.1. -1.1.2.- 1.1.3. - 1.1.5. - 1.1.6. - 1.1.8.-2.2.2	1.2.3	A. C
8. identify basic emergency conditions on extremity. lung. spinal radiographs	1.1.1. -1.1.2.- 1.1.3. - 1.1.5. - 1.1.6. - 1.1.8.-2.2.2	1.2.3	A. C
9. continue to inform responsible clinician about the radiological findings	1.1.1. -1.1.2.- 1.1.3. - 1.1.5. - 1.1.6. - 1.1.8.-2.2.2- 2.4.1-2.4.2.- 2.4.3	1.2.3	A. C

Teaching Methods:	1: Lecture. 2: Question-Answer. 3: Discussion. 9: Simulation. 12: Case Study
Assessment Methods:	A: Testing B: Presentation C: Homework

COURSE CONTENT		
Week	Subject	Study Materials
1 st day	Introductory Session Introduction to Radiology	Materials for the course provided by instructor
1	Lecture Introduction to Radiology	Materials for the course provided by instructor
1	Lecture Radiation Physics	Materials for the course provided by instructor
1	Lecture X-Ray Safety and Protection	Materials for the course provided by instructor
1	Lecture Neuroradiology	Materials for the course provided by instructor
1	Lecture Spinal Imaging	Materials for the course provided by instructor
1	Lecture Gastrointestinal and Hepatobiliary Imaging	Materials for the course provided by instructor
1	Lecture Cardiac Imaging	Materials for the course provided by instructor
1	Lecture Musculoskeletal Imaging	Materials for the course provided by instructor
1	Lecture PA Chest Radiography	Materials for the course provided by instructor
1	Lecture Chest Imaging	Materials for the course provided by instructor
2	Lecture Breast Imaging	Materials for the course provided by instructor
2	Lecture Genitourinary Imaging	Materials for the course provided by instructor
2	Lecture Vascular Imaging	Materials for the course provided by instructor
2	Lecture Vascular Interventions	Materials for the course provided by instructor
2	Lecture Imaging of Head & Neck	Materials for the course provided by instructor
2	Lecture Case-Based General Review	Materials for the course provided by instructor
2	Lecture Discussion/Journal Club	Materials for the course provided by instructor
2	Assessment Session	
2	Program Evaluation Session Review of the Exam Questions. Evaluation of the Program	

NCC 2014 – Essential Medical Procedures (National Core Curriculum)	Performance Level
Reading and assessing direct radiographs (Gastrointestinal and Hepatobiliary Imaging Imaging of Musculoskeletal System PA Chest Radiography Imaging of Head & Neck Genitourinary Imaging Spinal Imaging. Cardiac Imaging)	2
Interpretation of screening and diagnostic imaging results (Neuroradiology Imaging of Musculoskeletal System Chest Imaging Breast Imaging Genitourinary Imaging Spinal Imaging Vascular Interventions Nonvascular Interventions Cardiac Imaging Imaging of Head & Neck Vascular Imaging)	2

RECOMMENDED SOURCES	
Textbook	Grainger and Allison's Diagnostic Radiology
Additional Resources	<ul style="list-style-type: none"> Lecture Notes www.radiopedia.com http://www.learningradiology.com

ASSESSMENT	
Questions Types (Pencil-Paper Tests)	Proportion (in Pass/Fail Decision)
Multiple Choice Questions	50%
Extended Matching Questions	5%
Key Features	20%
Short Response Essay Questions	25%
Total	100%
Other Assessment Methods and Tools	Proportion (in Other Assessments Methods and Tools)
Oral Exam (OE)	90%
Evaluation of Case Presentation (Without Checklist)	5%
Evaluation of Student's Seminar (Without Checklist)	5%

Total	100 %
Pass/Fail Decision	Proportion (in Pass/Fail Decision)
Pencil-Paper Tests	50%
Other Assessments Methods and Tools	50%
Total	100 %

MATERIAL SHARING	
Documents	Via Google classroom
Assignments	Powerpoint presentations
Exams	Not shared

COURSE CATEGORY	Expertise/Field Courses
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COURSES CONTRIBUTION TO PROGRAM					
COMPETENCE AREA-1 / Professional Practices	Contribution				
COMPETENCE 1.1. Health Service Provider	1	2	3	4	5
Competency 1.1.1. Integrates knowledge, skills, and attitudes acquired from basic and clinical medical sciences, behavioral sciences, and social sciences to provide health services.					X
Competency 1.1.2. Demonstrates a biopsychosocial approach that considers the individual's sociodemographic and sociocultural background without discrimination based on language, religion, race, or gender in patient management.					X
Competency 1.1.3. Prioritizes the protection and improvement of individuals' and community's health in the delivery of healthcare services.					X
Competency 1.1.4. Performs the necessary actions in the direction of maintaining and improving the state of health as considering the individual, social, social and environmental factors affecting health.					
Competency 1.1.5. Provides health education to healthy/ill individuals and their families, as well as to other healthcare professionals, by recognizing the characteristics, needs, and expectations of the target audience.					X
Competency 1.1.6. Demonstrates a safe, rational, and effective approach in the processes of protection, diagnosis, treatment, follow-up, and rehabilitation in health service delivery.					X
Competency 1.1.7. Performs interventional and/or non-interventional procedures safely and effectively for the patient in the processes of diagnosis, treatment, follow-up, and rehabilitation.					
Competency 1.1.8. Provides healthcare services considering patient and employee health and safety.					X
Competency 1.1.9. Considers changes related to the physical and socio-economic environment at both regional and global scales that affect health, as well as changes in the individual characteristics and behaviors of those who seek healthcare services.					
COMPETENCE AREA-2 / Professional Values and Approaches	Contribution				

COMPETENCE 2.1. Adopting Professional Ethics and Principles	1	2	3	4	5
Competency 2.1.1. Considers good medical practices while performing the profession.					X
Competency 2.1.2. Fulfills duties and obligations within the framework of ethical principles. rights. and legal responsibilities required by the profession.					X
Competency 2.1.3. Demonstrates determined behavior in providing high-quality healthcare while considering the patient's integrity.					X
Competency 2.1.4. Evaluates own performance in professional practices by considering own emotions and cognitive characteristics.					
COMPETENCE 2.2. Health Advocate					
Competency 2.2.1. Advocates for the improvement of healthcare service delivery by considering the concepts of social accountability and social responsibility in the protection and enhancement of community health.					
Competency 2.2.2. Plans and implements service delivery. education. and counseling processes related to individual and community health. in collaboration with all stakeholders. for the protection and improvement of health.				X	
Competency 2.2.3. Evaluates the impact of health policies and practices on individual and community health indicators and advocates for the improvement of healthcare quality.					
Competency 2.2.4. Gives importance to protecting and improving own physical. mental. and social health and takes necessary actions for it.					
COMPETENCE 2.3. Leader-Manager					
Competency 2.3.1. Demonstrates exemplary behavior and leadership within the healthcare team during service delivery.					
Competency 2.3.2. Utilizes resources in a cost-effective. socially beneficial. and compliant manner with regulations in the planning. implementation. and evaluation processes of healthcare services as the manager in the healthcare institution.					
COMPETENCE 2.4. Team Member					
Competency 2.4.1. Communicates effectively within the healthcare team and takes on different team roles as necessary.				X	
Competency 2.4.2. Displays appropriate behaviors while being aware of the duties and responsibilities of healthcare workers within the healthcare team.				X	
Competency 2.4.3. Works collaboratively and effectively with colleagues and other professional groups in professional practice.				X	
COMPETENCE 2.5. Communicator					
Competency 2.5.1. Communicates effectively with patients. their families. healthcare professionals. and other occupational groups. institutions and organizations.					
Competency 2.5.2. Communicates effectively with individuals and groups who require a special approach and have different sociocultural characteristics.					
Competency 2.5.3. Demonstrates a patient-centered approach that involves the patient in decision-making mechanisms during the diagnosis. treatment. follow-up. and rehabilitation processes.					
COMPETENCE AREA-3 / Professional and Personal Development	Contribution				
COMPETENCE 3.1. Scientific and Analytical Approach	1	2	3	4	5
Competency 3.1.1. Plans and implements scientific research. as necessary. for the population it serves. and utilizes the results obtained. as well as those from other research. for the benefit of the community.		X			
Competency 3.1.2. Accesses and critically evaluates current literature related to their profession.					
Competency 3.1.3. Applies evidence-based medicine principles in the clinical decision-making process.					

Competency 3.1.4. Uses information technologies to enhance the effectiveness of healthcare, research, and education activities.					
COMPETENCE 3.2. Lifelong Learner					
Competency 3.2.1. Manages effectively individual study processes and career development.					
Competency 3.2.2. Demonstrates skills in acquiring, evaluating, integrating new information with existing knowledge, applying to professional situations, and adapting to changing conditions throughout professional career.					
Competency 3.2.3. Selects the right learning resources to improve the quality of health care and organizes the learning process.					

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity / day	Duration (Hour)	Total Workload (Hour)
Course Duration (2 weeks)	10	4	40
Hours for off-the-classroom study (Pre-study, practice, review/week)	10	3	30
Homework	1	2	2
Exam	2	2	4
Total Work Load			76
Total Work Load / 30 (h)			2.53
ECTS Credit of the Course			3