



## Subject card

Subject name and code	Radiology, PG_00065011						
Field of study	Mechanical and Medical Engineering						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2025/2026		
Education level	second-cycle studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology -> Wydział Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		Anna Glińska				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	15.0	45
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	45		8.0		22.0	75
Subject objectives	Introduction to imaging methods used in the diagnosis of various human anatomical areas. Presentation of the diagnostic possibilities of individual imaging methods - indications and contraindications, advantages and disadvantages of examinations, protection against radiation, safety of examinations and the physical basis of the imaging techniques discussed.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U03] uses knowledge related to diagnostic techniques, medical and rehabilitation procedures, anatomy and physiology to formulate assumptions referring to design and research procedures		She/he uses the acquired knowledge to create new solutions to improve the work of medical units, can talk about the applications of the apparatus in question.		[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
	[K7_W01] describes constructions of medical devices and their functioning on the base of knowledge related to the medical engineering		She/he has in-depth knowledge of the structure and principles of operation of medical equipment.		[SW1] Assessment of factual knowledge		
Subject contents	The following imaging techniques will be discussed during the course:1. Classic X-ray examinations - basics of physics, types of apparatus, indications and contraindications for examinations,2. Ultrasonography - physical basics, types of apparatus and transducers, methods of examination, projections, indications and contraindications for examinations,3. Forms of recording and archiving imaging tests,4. Computed tomography - basics of physics, types of apparatus, image formation, Hounsfield scale, reconstructions, indications and contraindications for research,5. Nuclear magnetic resonance tomography - basics of physics, apparatus construction, image formation, artifacts, reconstructions, indications and contraindications for research, imaging sequences6. Elements of radiological protection and safety of individual tests7. Contrasting agents used in radiology						
Prerequisites and co-requisites	Basic knowledge of physics						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	colloquium	60.0%	70.0%
	presentation	50.0%	30.0%
Recommended reading	Basic literature	Anatomia radiologiczna - RTG, TK, MR, USG, SC - Bohdan Daniel, Bogdan Pruszyński, PZWL Wydawnictwo Lekarskie	
		From Picture to Proton - Donald W. McRobbie, Elizabeth A. Moore, Martin R Prince, Martin J. Graves, wyd. 3, Cambridge University Press	
	Supplementary literature	Anatomia radiologiczna - RTG, TK, MR, USG, SC - Bohdan Daniel, Bogdan Pruszyński, PZWL Wydawnictwo Lekarskie	
		From Picture to Proton - Donald W. McRobbie, Elizabeth A. Moore, Martin R Prince, Martin J. Graves, wyd. 3, Cambridge University Press	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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