University of Gdańsk

Subject card

Subject name and code	Diploma Seminarium, PG_00182173						
Field of study	Medical Physics						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2028/2029		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Anna Synak				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	30.0	30
	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	30		0.0		30.0	60
Subject objectives	The aim of the diploma seminar is to summarize and consolidate the knowledge acquired by Medical Physics Students during their studies. The classes include a review and discussion of key issues in mechanics, thermodynamics, electromagnetism, optics and quantum physics, ionizing radiation physics, radiology, nuclear medicine, as well as radiobiology and radiation protection. The seminar also emphasizes the understanding of physical laws and the principles of techniques used in diagnostics and therapy, which helps to appreciate the role of physics in the development of medical physics. It further develops the ability to analyze and present knowledge concisely, to deliver clear oral presentations, and to defend ones own position in scientific discussions, providing direct support in preparation for the diploma examination.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[FIZMEDL3_U08] Can prepare a written paper or presentation in Polish or English using specialised terminology in the field of physics and medical physics.	The student is able to prepare and deliver content in Polish or English, ensuring appropriate selection of material, logical structure, and correct use of specialist terminology in physics and medical physics. They can use software and tools that facilitate the preparation of multimedia presentations and scientific texts. The student is able to present results both in written and oral form, including participation in scientific discussions.	[SU2] presentation/project/paper/ report
	[FIZMEDL3_U09] Can communicate effectively with colleagues and other employees, works in a team, including interdisciplinary teams, and manages his/her own and his/her colleagues' time appropriately.	Student: -is able to communicate effectively with peers and course instructors, both orally and in writing, -is able to work in a team, including an interdisciplinary one, contributing substantively and respecting the opinions of others, -is able to organize group work when preparing presentations and seminar discussions, sharing tasks and responsibilities, -is able to manage time effectively, both their own and that of team members, in order to successfully complete seminar tasks, -is able to foster a collaborative atmosphere that supports knowledge sharing and constructive discussion.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report
	[FIZMEDL3_U11] Can present and evaluate different opinions and positions, discuss them and participate in debates.	Student: -is able to present their own opinions and positions on issues in the field of medical physics, -is able to evaluate and critically respond to viewpoints presented by others, -is able to actively participate in scientific discussions and debates, using appropriate specialist language, -is able to formulate arguments and defend their own position in the context of topics discussed during the seminar.	[SU1] oral statement/conversation/ discussion
	[FIZMEDL3_U06] Can present in an accessible way the latest achievements in the field of medical physics, the principles of operation of diagnostic and therapeutic equipment and the principles of radiation protection.	Student: -is able to present the latest achievements in the field of medical physics in a clear and accessible way, -is able to explain the principles of operation of selected diagnostic and therapeutic devices used in medicine, -is able to discuss the principles of radiation protection in the context of medical equipment operation, -is able to adapt the presentation of content to the knowledge level and needs of the audience.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report

Course outcome	Subject outcome	Method of verification
[FIZMEDL3_K01] He is ready for a critical evaluation of his own knowledge and the information he receives, and understands the need for further education and for improving professional and personal competencies.	Student: -is ready to critically assess their own knowledge as well as the content provided during classes, -understands the need for continuous learning and systematic improvement of professional and personal competences, -recognizes the necessity of updating knowledge in response to the dynamic development of medical physics and medical technologies, -demonstrates openness to new ideas, constructive criticism, and collaboration in academic and professional settings, -acknowledges the importance of ethical responsibility in the work of a medical physicist.	[SK1] oral statement/conversation/ discussion
[FIZMEDL3_U04] He can independently search for information in Polish and English professional and popular science literature, databases, and on the Internet, as well as from other sources. He can integrate and interpret this information, draw conclusions, and formulate opinions.	Student: -is able to independently prepare and use scientific and popular science literature (both in Polish and in English) related to topics in medical physics, -is able to critically analyze and interpret content obtained from various sources, including online resources, -is able to organize and combine knowledge from different areas of physics and indicate their interrelations and applications in medicine, -is able to formulate own conclusions and opinions based on the studied literature and source materials, -presents the results of analyses in the form of a written report or oral presentation, using correct physics terminology and specialist language.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report

Subject contents

The course involves the preparation and delivery of presentations on the current state of knowledge in medical physics, with particular emphasis on the tasks of medical physicists in radiotherapy, radiology, and nuclear medicine. An important component consists of short presentations on selected topics from the entire medical physics curriculum, designed to revise and organize material in a way that enables students to take a comprehensive view of the field and recognize connections between different areas of physics. The practical role of physics in medicine is emphasized, supporting students in preparing for the bachelors examination and in developing the ability to present complex content in a concise and structured manner.

The content covers, among others:

- mechanics,
- thermodynamics,
- electromagnetism,
- optics,
- quantum physics,
- ionizing radiation,
- radiology and quality control in radiology,
- nuclear medicine and quality control in nuclear medicine,
- radiobiology, dosimetry, and radiation protection.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
active participation, discussion	51.0%	15.0%
seminar reports and presentations	51.0%	85.0%

Recommended reading

Basic literature	Specified by the course instructors during the assignment of topics and chosen independently by the student while preparing presentations.
Supplementary literature	not applicable
eResources addresses	

Example issues/ example questions/ tasks being completed	Mechanics Thermodynamics Electromagnetism Optics Quantum Physics Ionizing Radiation Radiology and Quality Control in Radiology Nuclear Medicine and Quality Control in Nuclear Medicine Radiobiology, Dosimetry, and Radiation Protection
Work placement	Not applicable

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