GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	BSc Diploma Seminar I, PG_00068102						
Field of study	Biomedical Engineering						
Date of commencement of studies	October 2025		Academic year of realisation of subject	2027/2028			
Education level	first-cycle studies		Subject group	Optional subject group 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	3		Language of instruction	Polish			
Semester of study	6		ECTS credits	1.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Division of Complex Systems Spectroscopy -> Institute of Physics and Applied Computer Science -> Faculty of Applied Physics and Mathematics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Brygida Mielewska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	15.0	15
	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	15		1.0		9.0	25
Subject objectives	The aim of the course is to coordinate work related to the completion of an engineering diploma and preparation for the diploma exam.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K01] is ready to cultivate and disseminate models of proper behaviour in and outside the work environment; make independent decisions; critically evaluate actions of their own, teams they lead and organisations they are part of; take responsibility for results of these actions; responsibly perform professional roles, including:n - observing rules of professional ethics and require it from others,n - care for the achievements and traditions of the professionn	The student understands the ethical aspects of professional standards – including intellectual property; performs tasks in accordance with recognized principles.	[SK3] Assessment of ability to organize work
[K6_W11] knows and understands, to an advanced extent, the general principles of setting up and development of business entities, forms of individual entrepreneurship and running ventures and the fundamental dilemmas of modern civilization and basic economic, legal and other conditions of various types of activities related to the field of study, including the basic concepts and principles in the field of industrial property and copyright protection	The student understands the possibilities of career development and the basic legal and economic conditions in the field of medical physics	[SW3] Assessment of knowledge contained in written work and projects
[K6_K02] is ready to critically assess possessed knowledge and acknowledge the importance of knowledge in solving cognitive and practical problems	The student is able to critically analyze the results obtained using specific methods and tools specific to a given task	[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice
[K6_U10] can individually plan their own lifelong education, also by means of advanced information and communication technologies (ICT), and communicate with people from their environment, firmly justify their point of view, participate in debates, present, assess and discuss different opinions and points of view, as well as use specialist terminology related to the field of study in communication	The student is able to plan and present a method of realizing an engineering task and undertake a discussion and defense of the presented concepts	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools

Subject contents

Course content – seminar

1. Presentation of the procedure for completing a diploma thesis from defining tasks, theoretical analysis, literature research to the review process and the diploma exam.

2. Discussion of issues related to the ethical and critical use of sources and artificial intelligence, the issue of plagiarism and academic honesty.

3. A series of seminars, prepared individually by graduates, devoted to preparing for the diploma exam.

4. A series of individual presentations and reports on the schedule and implementation of the diploma thesis

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Presentation 3	50.0%	30.0%
Presentation 2	50.0%	30.0%
Presentation 3	50.0%	30.0%
Presentation 1 (aprenticeship)	50.0%	10.0%

Recommended reading

Basic literature	Indicated by the diploma student's supervisor
Supplementary literature	Indicated by the diploma student's supervisor
eResources addresses	

Example issues/ example questions/ tasks being completed	Exam questions: 1. Bohr's single-electron atom model, Schroedinger's equation. 2. Imaging techniques in nuclear medicine 3. Radiobiological bases of radiotherapy 4. Biological effects of ionizing radiation on the body 5. Radiological protection - objectives, principles, typical physical quantities. 6. Radioactive decays and their use in medicine. 7. Detection of nuclear radiation. 8. Interaction of high-energy radiation with matter. 9. Generation and detection of acoustic waves in ultrasonography. 10. Accelerators used in obtaining high-energy proton and electron beams. 11. Molecular modeling methods. 12. Methods of producing radioisotopes 13. Quality assurance and control in radiodiagnostics and radiotherapy.
Practical activites within the subject	Not applicable

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