GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Seminar of applied physics III, PG_00037274		
Field of study	Technical Physics		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
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 Atomic Molecular and Optical Physics -> 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 Mykola Shopa	
	Teachers	dr Mykola Shopa	

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

eNauczanie source address: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=23315

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	2.0	8.0	25

Subject objectives

Teaching of students how to present the short lecture on selected subject, as well as how to discuss

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U08] Can prepare written works and speeches in Polish and English, concerning detailed issues of physics and related fields, and scientific disciplines.	The student gives a presentation in Polish or English, explaining selected physics topics, answering questions and using correct terminology.	[SU1] Assessment of task fulfilment
[K6_U01] Can learn independently, obtain information from literature, databases and other properly selected sources.	The student independently formulates a search plan and identifies reliable and appropriate sources of information.	[SU4] Assessment of ability to use methods and tools
[K6_K05] Can present own work results, transfer information in a commonly understandable manner, communicate and self-evaluate, as well as constructively evaluate the effects of other persons' work.	The student delivers a seminar, answers audience questions, paraphrases a question, provides a factual answer, or admits a lack of knowledge and suggests ways to improve it. The student participates in discussions and evaluates other students' presentations.	[SK4] Assessment of communication skills, including language correctness
[K6_U07] Can present basic facts within the scope of physics and other scientific disciplines in a clear manner.	The student is able to present a selected topic in a way that is understandable and accessible to the audience, at an appropriate scientific level.	[SU1] Assessment of task fulfilment

Subject contents

Course content – seminar
- Collection of material for oral presentation on a given subject;
- Discussion about the scientific problems and comments

Prerequisites and co-requisites

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Oral presentation, abstract, attendance</td><td>50.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Depends on the subject of the presentation - students is free to choose the topic</td></tr>
<tr><td>Supplementary literature</td><td>Depends on the problem</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">1. Young's double-slit experiment applied to the interference of single electrons
2. Galileo's experiment on falling bodies (1600s)
3. Newton's decomposition of sunlight with a prism (1665-1666)
4. Young's light-interference experiment (1801)
5. Cavendish's torsion-bar experiment (1798)
6. Eratosthenes' measurement of the Earth's circumference (3rd century BC)
7. Galileo's experiments with rolling balls down inclined planes (1600s)
8. Rutherford's discovery of the nucleus (1911)
9. Foucault's pendulum (1851)
10. Archimedes' experiment on hydrostatics
11. Roemer's observations of the speed of light
12. Joule's paddle-wheel heat experiments
13. Reynolds's pipe flow experiment
14. Mach & Salcher's acoustic shock wave
15. Michelson-Morley measurement of the null effect of the ether
16. Röntgen's detection of Maxwell's displacement current
17. Oersted's discovery of electromagnetism
18. The Braggs' X-ray diffraction of salt crystals
19. Eddington's measurement of the bending of starlight
20. Stern-Gerlach demonstration of space quantization
21. Schrödinger's cat thought experiment
22. Wu et al.'s measurement of parity violation</td></tr>
<tr><td>Practical activites within the subject</td><td colspan="2">Not applicable</td></tr>
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