University of Gdańsk

Subject card

Subject name and code	Research/Professional Project, PG_00165984		
Field of study	Quantum Information Technology		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	Master's studies	Subject group	Obligatory subject group in the field of study Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	English
Semester of study	4	ECTS credits	10.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Paweł Mazurek	
	Teachers	dr hab. inż. Marek Krośnicki dr hab. Thomas Zlosnik dr Felix Huber dr Antonio Mandarino dr Akshata Shenoy	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	195.0	0.0	0.0	195
	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	195	0.0	0.0	195

Subject objectives	The aim of the subject is to make the student part of the ongoing active research in the area of Quantum Information Technologies, to foster connections with other scientists, and to prepare the student to work as an independent reseracher in academia or industry.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[QITL3_U10] can popularize science within quantum information theory or related areas of physics	Student can present their reserach project using a non-technical language	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report
[QITL3_K09] can think and act in an entrepreneurial way	Student can pinpoint to possible application of their results in technology and industry, is aware about patent procedures and copyright laws	[SK1] oral statement/conversation/ discussion
[QITL3_U07] can present research results (experimental, theoretical or numerical) in written, oral, multimedia presentation or poster form	Student can present results of the reserach project though a talk or a poster	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report
[QITL3_K08] is able to formulate competent opinions on professional issues and opinions on certain issues that concern general audience	Student can present their research project to the general audience in a non-technical language, can explain challanges and opportunities offered by Quantum Information Technology, and can put the research in the wider context of scientific progress	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work
[QITL3_K06] is aware of the risks of obtaining information from unverified sources, including those from the Internet	Student knows effective and reliable ways of conducting literature search and is aware about mechanisms related to misinformation, manipulation and fraud in science	[SK1] oral statement/conversation/ discussion
[QITL3_K04] understands and appreciates the importance of intellectual honesty in one's own and other people's actions; is aware of ethical problems in the context of research integrity	Student understands and appreciates ethical way of conduct in reserach, publishing, patent and copyright laws	[SK1] oral statement/conversation/ discussion
[QITL3_K03] can work individually and in a team; is aware of responsibility for jointly performed tasks	Student can perform literature search, calculations and writing, as well as participates in discussions about the master project with his collaborators, is aware about responsibility for timely and accurately addressing tasks within the research project	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work [SK5] implementation of a problem task [SK8] observation of student's independent or team work
[QITL3_U12] can use a selected foreign language to the extent that allows for independent supplementation of education and communication with specialists in the same or related specialization	Student can present their reserach project to international specialists in the field	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU3] text preparation/written work
[QITL3_U06] is able to adapt to related scientific disciplines the knowledge and theoretical methods and methodology of physics	Student can relate the methodology used in the research project to research in similar fields	[SU1] oral statement/conversation/ discussion
[QITL3_W10] knows the general principles of creating and developing forms of individual entrepreneurship, using knowledge in the field of physics and other exact and natural sciences	Student knows regulations regarding copyright related to the results obtained within the research project	[SW1] oral statement/ conversation/discussion
[QITL3_W09] knows and understands the basic concepts and principles of industrial property and copyright protection and the need to manage intellectual property resources; knows the rules for using patent information resources	Student is aware about patent laws relevant from the perspective of the research project	[SW1] oral statement/ conversation/discussion
[QITL3_W07] knows the principles safety rules to the extent that allows for independent work in the area corresponding to the chosen specialization	Student knows the rules of safety in the research environment where the research project is conducted	[SW1] oral statement/ conversation/discussion
[QITL3_U09] can work independently and in a team	Student can perform literature search, calculations and writing, as well as participates in discussions about the reserach project with the collaborators	[SU3] text preparation/written work [SU5] implementation of a problem task [SU8] observation of student's independent or team work

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<tr><th>Course outcome</th><th>Subject outcome</th><th>Method of verification</th></tr>
<tr><td>[QITL3_U05] has the ability to synthesize methods and ideas from various areas of physics and other branches of science; is able to notice that distant phenomena are sometimes described by similar models</td><td>Student can relate the models used in the research project to other
fields of science and technology, and can suggest ways the research
project can benefit from taking inspiration from them, or how the results can be used in advancing other fields</td><td>[SU1] oral statement/conversation/ discussion
[SU3] text preparation/written work</td></tr>
<tr><td>[QITL3_U08] is able to communicate effectively with both specialists and non-specialists regarding issues relevant to the studied area</td><td>Student is aware about ethical way of conduct in reserach, in parcticular in the research project</td><td>[SU1] oral statement/conversation/ discussion</td></tr>
<tr><td>[QITL3_K07] is aware of responsibility for research tasks executed as team</td><td>The student can perform literature search related to the research project, calculations and writing, as well as participates in discussions about the research project with his collaborators, is aware about responsibility for timely and
accurately addressing his/her tasks</td><td>[SK1] oral statement/conversation/ discussion
[SK3] text preparation/written work
[SK5] implementation of a problem task
[SK8] observation of student's independent or team work</td></tr>
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<tr><td>Subject contents</td><td>Participation in research project: discussions, literature search, research planning, calculations, simmulations, writing scientific paper, preparing poster/oral presentations of the results</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
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<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>evaluation of the project report or presentation of the results</td><td>51.0%</td><td>100.0%</td></tr>
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<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Depending on the research project.</td></tr>
<tr><td>Supplementary literature</td><td>None.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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