University of Gdańsk

Subject card

Subject name and code	MA workshop, PG_00158062		
Field of study	Quantum Information Technology		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2026/2027
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	3	ECTS credits	6.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor		
	Teachers	dr hab. Anna Supernat dr Akshata Shenoy dr hab. inż. Marek Krośnicki dr hab. John Selby dr Antonio Mandarino dr Felix Huber	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	0.0	0.0	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	60.0	90

Subject objectives	The aim of the subject is to prepare a student to complete an independent master's thesis project. The student is introduced to the use of methods, research tools and procedures used in the creation and presentation of scientific results.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[QITL3_U03] is able to critically analyze observations or theoretical calculations and assess the accuracy of the results	Student can calculate statistical errors and perform overall critical assesment of observations related to the master project.	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
[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	Student can relate the models used in the master project to other fields of science and technology, and can suggest ways the master project can benefit in taking inspiration from them, or how the results can be using in advancing other fields	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
[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_W08] has basic knowledge of legal and ethical conditions related to scientific and teaching activities	Student is aware about ethical way of conduct in reserach, in parcticular in the master 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 master project is conducted	[SW1] oral statement/ conversation/discussion
[QITL3_U02] has the skills to plan and conduct basic and advanced research and calculations in the area of quantum information theory or its applications	Student can plan plan research and writing of master thesis and scientific publications related to the master project	[SU1] oral statement/conversation/ discussion
[QITL3_K03] can work individually and in a team; is aware of responsibility for jointly performed tasks	The student can perform literature search, calculations and writing, as well as participates in discussions about the master project with the supervisor and their peers, is aware aware about responsibility for timely and accurately addressing tasks within the master 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_K05] understands the need to popularize knowledge in the field of physics, including the latest scientific and technological achievements	Student is aware about about the importance of popularization of the results in Quantum Information Technology, and can present their master project to the general audience in a non-technical language	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report
[QITL3_U11] is able to determine directions for further improvement of knowledge and skills (including self-education) in the selected specialty and beyond it	Student understands the importance of their master project in the wider context of Quantum Information Theory, and can pinpoint to possible applications and connections with other fields	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
[QITL3_U04] can find necessary information in professional literature, both in databases and other sources; is able to reproduce the line of reasoning or the course of an experiment described in the literature, taking into account the assumptions and approximations made	Student can perform accurate literature search related to the master project, and undersands papers closely related to the project	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
[QITL3_K01] knows the limitations of his/hers knowledge and skills; can formulate questions precisely; understands the need for further education of oneself and other people	Student understands the role of frank and honest discussions in pushing the master project forward, and see benefits from cooperation with others	[SK1] oral statement/conversation/ discussion
[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 condicting literature search and is aware about mechanisms related to misinformation, manipulation and fraud in science	[SK1] oral statement/conversation/ discussion

Course outcome	Subject outcome	Method of verification
[QITL3_K02] is aware of the decisive role of experiment in the verification of physical theories; is aware of the existence of the scientific method in acquiring knowledge	Student understand methods for practical or experimental verification or application of the results of their master project	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work
[QITL3_W06] has knowledge of current directions in the development of physics, in particular in the field of quantum information theory	Student can relate their master project in the landscape of ongoing reserach in Quantum Information Technology	[SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[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 master project to international specialists in the field	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
[QITL3_W05] knows the theoretical foundations of computational methods and IT techniques used to model and simulate physical systems considered in quantum information theory	Student is aware about theoretical background and numerical techniques used in their master project	[SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[QITL3_U09] can work independently and in a team	The student can perform literature search, calculations and writing, as well as participates in discussions about the master project with the supervisor and their peers	[SU3] text preparation/written work [SU5] implementation of a problem task [SU8] observation of student's independent or team work
[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_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 their master project to research in similar fields	[SU1] oral statement/conversation/ discussion
[QITL3_W03] knows advanced experimental, observational and numerical techniques allowing to plan and perform a complex physical experiment or computer simulation	Student is aware about experimental and numerical techniques used to execute or simmulate scenarios considered in the master project	[SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
[QITL3_K08] is able to formulate competent opinions on professional issues and opinions on certain issues that concern general audience	Student can present their master project to the general audience in a non-technical language, can explain challanges and opportunities offered by Quantum Information Technology, and can put their research in the wider context of scientific progress	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work
[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 and copyright laws relevant from the perspective of the master project	[SW1] oral statement/ conversation/discussion
[QITL3_K07] is aware of responsibility for research tasks executed as team	Student is aware aware about responsibility for timely and accurately addressing team tasks within the master project	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK3] text preparation/written work

Subject contents	Conducting the master project: literature search, planning research, discussions with supervisor, peers and specialists in the field, writing the master thesis.
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
assesment of the student performance in conducting the research and writting tasks	51.0%	100.0%

Recommended reading	Basic literature	Appropriate for the topic of the master's thesis

	Supplementary literature	None.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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