

## Subject card

Subject name and code	M.Sc. seminar, PG_00144457						
Field of study	Environmental Protection						
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 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	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		5.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Joanna Makowska				
	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		5.0		90.0	125
Subject objectives	Presentations of issues related to the subject of master's theses, including: literature on the subject of the master's thesis of a given student, as well as the experimental part (if any). Analysis of progress in the implementation of the master's thesis. Searching for solutions to problems arising during the performance and writing of the master's thesis.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[OŚMU2_K10] Has a need for continuous professional development.	<ul style="list-style-type: none"> <li>- Student is critical in expressing opinions and is open to the opinions of co-discussants</li> <li>- Student is active in expanding knowledge and appreciates the need for continuous learning</li> </ul>	[SK5] implementation of a problem task
	[OŚMU2_W05] Describes development directions and the latest discoveries in the field of scientific disciplines related to environmental protection.	<p>Student:</p> <ul style="list-style-type: none"> <li>knows complex phenomena and processes occurring in nature, including those related to the spread of anthropogenic pollution;</li> <li>explains and explains the phenomena observed during the research carried out as part of the master's thesis recognizes and characterizes methods, techniques and research tools used in environmental protection;</li> <li>selects the appropriate research methods to complete the master's thesis characterizes the directions of development and knows the latest discoveries in the field of research carried out as part of the master's thesis</li> <li>knows how to properly prepare and write a master's thesis (including experimental data); observes legal and ethical conditions during its creation</li> </ul>	[SW2] presentation/project/paper/report
	[OŚMU2_U05] Searches, selects and analyses the literature achievements of environmental sciences, including scientific journals and databases, reading and understanding scientific texts in her/his native language and in English.	<ul style="list-style-type: none"> <li>- Student uses tools, research resources and prepares data, interprets research results and comments in presentations on environmental protection.</li> <li>- Student communicates freely in a foreign language, conducts debates and presents issues related to environmental sciences.</li> <li>- Student can convey the content, use scientific information from reliable sources and draw conclusions.</li> </ul>	[SU3] text preparation/written work
	[OŚMU2_U06] Defines her/his interests and develops them within the chosen specialisation and themes of her/his master's thesis while implementing the process of self-education and planning of own future career.	<p>Student:</p> <ul style="list-style-type: none"> <li>demonstrates the ability to conduct experiments related to the master's thesis; uses simple and advanced methods, techniques and tools to achieve the intended goals fluently searches for information in the literature on the subject (Polish and English)</li> <li>demonstrates the ability to write a master's thesis in Polish and a short scientific report in a foreign language based on their own research</li> <li>is able to give a presentation on issues in the field of environmental protection, taking into account the latest scientific achievements and the results of his own research work</li> <li>talks about issues related to the master's thesis in an understandable language; is able to define their interests and develop them within the selected specialization and the subject of the master's thesis; carries out the process of self-education and future career planning</li> </ul>	[SU2] presentation/project/paper/report

	Course outcome	Subject outcome	Method of verification
	[OŚMU2_K05] Critically assesses her/his own knowledge and the knowledge of the teams in which s/he works, can critically assess the content received.	<p>Student:</p> <p>verifies the level of his knowledge and skills; understands the need for continuous professional training and taking care of personal development</p> <p>demonstrates creativity in independent and team work; is characterized by perseverance in taking up personal and professional challenges</p> <p>is able to work in a group, assuming different roles in it</p> <p>is responsible for the safety of his own and others' work; knows how to act in emergency situations, is careful in handling chemical substances, is prudent in handling measuring equipment; understands the need to comply with the rules of professional ethics</p>	[SK1] oral statement/conversation/discussion
	[OŚMU2_W10] Applies the appropriate methodology to prepare and write scientific paper, taking into account empirical data as well as legal and ethical conditions.	<ul style="list-style-type: none"> <li>- Student knows existing scientific publications related to his research topic.</li> <li>- Student is able to define the purpose of his work and formulate research questions.</li> <li>- Student is aware of legal and ethical conditions and knows the principle of confidentiality.</li> <li>- When writing a scientific work, student tries to maintain its logical structure, takes care of linguistic correctness and coherence, pays attention to formatting, citing sources and bibliography.</li> </ul>	[SW2] presentation/project/paper/report
	[OŚMU2_K07] Is willing to undertake individual and team activity; to professionally plan and organise its course and set priorities for their actions.	<ul style="list-style-type: none"> <li>- Student is aware of the need to critically analyze his or her own work</li> <li>- Student appreciates the need to be able to work in a team in accordance with his or her role in it (group leader/group member)</li> </ul>	[SK5] implementation of a problem task
	[OŚMU2_U08] Prepares a master's thesis using the appropriate methodology to prepare and write a scientific thesis containing a description and justification of the purpose of the thesis based on the current state of knowledge in a given topic as well as research methodology, results and their discussion.	- student is able to prepare a written work (paper, report, description) correctly arguing his or her conclusions in the field of chemistry. At work, he knows how to correctly interpret and analyze information related to basic chemical laws. - By reading scientific texts, the student learns to analyze and synthesize information, extract key concepts and understand complex issues.	[SU3] text preparation/written work

	Course outcome	Subject outcome	Method of verification
	[OŚMU2_U07] Has advanced skills in presenting the results of own research, discussions based on literature data and public speaking, including leading a debate.	-Student presents the research results: he begins with an introduction, presentation of the problem, methodology, results and conclusions. - Student uses charts, tables and infographics to illustrate his or her results. - Student speaks clearly and tries to avoid too technical language, discusses based on literature data - Student carefully studies existing research related to the topic and puts its results in the context of what has already been published. - - Student analyzes different points of view and arguments. It highlights the strengths and weaknesses of different approaches. - Student is able to practice his/ her speech, improve it, prepare for questions and possible counter-arguments. - Student respects other opinions and tries to find common points of understanding.	[SU2] presentation/project/paper/ report
Subject contents	Basic and advanced issues related to the content of the master's thesis selected individually for the needs of a given master's thesis.		
Prerequisites and co-requisites	First-cycle studies in chemistry, environmental protection, chemical engineering and related fields.  Knowledge of basic issues in the field of environmental protection and/or related scientific fields		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Preparation and presentation of several speeches related to the topic of own research	100.0%	100.0%
Recommended reading	Basic literature	A. Literature required for the final completion of the course (passing the exam):  A.1. used during classes  Books and scientific articles related to the subject of the master's thesis  A.2. studied by the student alone  Books and scientific articles related to the subject of the master's thesis	
	Supplementary literature	B. Supplementary  Literature Books and scientific articles related to the subject of the master's thesis	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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