University of Gdańsk

Subject card

Subject name and code	Laboratory course, PG_00144201		
Field of study	Chemical Business		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	postgraduate 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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	10.0
Learning profile	academic	Assessment form	
Conducting unit	Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Joanna Makowska	
	Teachers	dr hab. Monika Paszkiewicz dr hab. Magda Caban dr inż. Krzysztof Żamojć dr hab. Artur Sikorski	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	180.0	0.0	0.0	180
	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	180	30.0	40.0	250

Subject objectives	Planning and performance of experimental research project by each student working under the control / guidance of supervisor. Presentation of obtained research results in the form of written master thesis

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BCHMU2_U02] Is able to define her/his interests, develop them within the chosen direction and in connection with the subject of her/his master's thesis by implementing the process of self-education and planning her/his professional career.	Student: • performs planned experiments, makes observations • analyzes the obtained results and compares them with the available literature data • draws conclusions from the conducted research and proves their correctness based on available literature data • presents the same content in a different language convention • systematically collects and prepares documentation of his research work	[SU1] oral statement/conversation/discussion
	[BCHMU2_U01] Is able to, on the basis of her/his knowledge, propose a solution to problems in chemistry, taking into account the economic aspect by using advanced measurement techniques.	- Student is able to define a clear goal or task that he wants to achieve. Identifies the stages, operations and equipment involved in production. The student uses his knowledge in practice - Student takes into account the duration of the project and the time value of money. Is able to determine whether the investment in the project is profitable in the long run.	[SU2] presentation/project/paper/report
	[BCHMU2_K03] Is willing to critically assess the level of her/his knowledge in the light of the achievements of the scientific discipline studied.	- Student verifies the level of his knowledge and skills; understands the need for continuous professional education and personal development, demonstrates creativity in independent and team work; - Student understands the need to comply with the principles of professional ethics; - Student is critical in expressing opinions and remains open to the opinions of co-discussants	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report
	[BCHMU2_U04] Is able to independently plan and perform specific research tasks in the field or in the laboratory, interpret their results working individually or in a team, assuming various roles and functions including managerial.	- Student uses his knowledge in practice. He works on projects, experiments and is creative. Understands exactly how the technological process works. Identifies the stages, operations and equipment involved in production. - Student is able to plan research in logistic terms	[SU5] implementation of a problem task
	[BCHMU2_U06] Is able to critically analyse experimental data by numerical and statistical methods using IT techniques and tools.	- Student is able to use numerical and statistical methods in his research. - Student understands basic statistical concepts such as mean, variance, hypothesis tests and regression. - Student knows statistical analysis tools, such as Excel. - Student understands the importance of accurate data processing and avoids false conclusions.	[SU2] presentation/project/paper/report [SU3] text preparation/written work

Course outcome	Subject outcome	Method of verification
[BCHMU2_W01] Knows and understands complex physicochemical processes and is able to analyse their course in connection with other fields of science.	Student: • names and describes the methods of synthesis, analysis and/or computer theoretical calculations used in the project • distinguishes and characterizes individual experimental/IT techniques used during the research project • identifies the research equipment he came across during the project and explains the principles of its operation	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[BCHMU2_K09] Is willing to conduct research and develop scientific and creative achievements in the field of the specialisation studied.	Student: • works independently • appropriately defines priorities for the implementation of the task assumed by him/her • cares about safety while performing chemical experiments on their own • adheres to the arrangements made regarding the experiments carried out	[SK5] implementation of a problem task

Subject contents	The program content is varied and depends on the scope of the topic of the master thesis
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Preparation and presentation of several speeches on research topics	100.0%	100.0%

Recommended reading

Basic literature	A. Literature required to pass the course A.1. Literature used during classes: Specialist literature in the scope of realized master thesis. The scope of literature is corrected and still adopted to conducted master research topics A.2. Literature for individual studies: Specialist literature in the scope of realized master thesis. The scope of literature is corrected and still adopted to conducted master research topics
Supplementary literature	B. Extracurricular readings Specialist literature in the scope of realized master thesis. The scope of literature is corrected and still adopted to conducted master research topics
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable

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