University of Gdańsk

Subject card

Subject name and code	Chemical methods of pharmaceutical identification, PG_00082046						
Field of study	Chemistry						
Date of commencement of studies	October 2024		Academic year of realisation of subject	2026/2027			
Education level	Bachelor's studies		Subject group	Obligatory subject group 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	5		ECTS credits	3.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Laboratory of Medical Chemistry -> Department of Biomedical Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Marta Spodzieja				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	45.0	0.0	0.0	45
	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	45		8.0		22.0	75
Subject objectives	familiarizing students with the topics mentioned in the curriculum; acquainting students with the micromolar scale laboratory technique used in organic qualitative analysis; developing students' skills of independent experimental work planning, performing chemical analyzes and solving problems encountered during their implementation						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEML3_W05] Has basic knowledge of the chemical specialisation studied.	• explains the principles of the separation of simple mixtures of organic compounds by chemical extraction considering the acid-base properties and solubility; explains the principles of designing simple diagnostic tests (analysis schemes); aimed at identifying a series of organic compounds from the same structural group.	[SW5] implementation of a problem task
	[CHEML3_K03] Establishes priorities in the right way for the implementation of tasks specified by herself/himself and/or by others.	works both independently and in a small team, while showing creativity; is aware of the responsibility for jointly implemented tasks related to teamwork.	[SK6] demonstration of practical skills
	[CHEML3_U04] Plans and performs simple chemical experiments and analyses the results obtained.	conducts chemical experiments on a micromolar scale; identifies prescription mixtures using thin-layer chromatography; separates simple mixtures of organic compounds by means of chemical extractions.	[SU6] demonstration of practical skills
	[CHEML3_U09] Is able to learn independently.	detects and identifies individual chemical compounds, having the appropriate set of literature experimental procedures and choosing the right equipment and chemical apparatus.	[SU6] demonstration of practical skills
	[CHEML3_W04] Characterises the basic methods of chemical compound analysis.	describes the general properties of chemical compounds from the groups subjected to individual analyzes; characterizes the basic methods of detecting and identifying individual pharmacological compounds from the groups specified in the curriculum.	[SW5] implementation of a problem task
	[CHEML3_K08] Formulates opinions in the field of science with caution and criticism in their expression.	understands the need to broaden the knowledge in the field of analysis of organic compounds; is cautious in formulating conclusions.	[SK6] demonstration of practical skills
	[CHEML3_U02] Performs analyses using experimental methods and draws conclusions based on them.	based on collected experimental results arguments judgments, draws conclusions through logical reasoning, and prepares a report.	[SU6] demonstration of practical skills
	[CHEML3_U03] Selects the appropriate equipment and laboratory apparatus for conducting uncomplicated chemical experiments.	designs the order of performed experiments (analysis scheme) to solve problems posed in individual tasks.	[SU6] demonstration of practical skills
	[CHEML3_K05] Observes established procedures in laboratory work and is responsible for the safety of her/his and others' work.	appreciates the importance of work diligence on the quality of the results and the accuracy of the conclusions drawn.	[SK6] demonstration of practical skills
Subject contents	basics of chemical qualitative analysis of organic compounds; characteristic reactions used to identify compounds with pharmacological activity, belonging to derivatives of the following groups: steroids,tetracyclines, alkaloids, sulfonamides, peptides; designing and conducting diagnostic staining tests for a series of several substances from the same structural group; using thin-layer chromatography to identify complex (multi-component) drugs; methods of separation of complex drugs into components by means of subsequent chemical extractions		

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="2">Organic chemistry and medicinal chemistry course completed

knowledge of the most important reactions, properties, and structure of basic groups of organic compounds;
knowledge of basic OHS rules in a chemical laboratory;
ability to work with the equipment, dishes, and basic laboratory apparatus used in chemical preparation and analysis</td></tr>
<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>passing of three tests</td><td>51.0%</td><td>95.0%</td></tr>
<tr><td>preparation and analysis of the results of each exercises</td><td>51.0%</td><td>5.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>R. Kasprzykowska, A.S. Kołodziejczyk, Chemiczna analiza środków leczniczych. Leki proste, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2009.

R. Kasprzykowska, Instrukcje do ćwiczeń - procedury doświadczeń i zagadnienia wprowadzające, materiały niepublikowane.

R. Walczyna, J. Sokołowski, G. Kupryszewski, Analiza związków organicznych, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 1996.</td></tr>
<tr><td>Supplementary literature</td><td>A. Zejc, M. Gorczyca (red.), Chemia leków, Wydawnictwo Lekarskie PZWL, Warszawa 2004.
Z. Jerzmanowska, Analiza jakościowa związków organicznych, PZWL, Warszawa 1967.
A. Kołodziejczyk, Naturalne związki organiczne, PWN, Warszawa 2005</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2"></td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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