University of Gdańsk

Subject card

Subject name and code	Nature as a source of medicines, PG_00179583						
Field of study	Chemistry						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2027/2028			
Education level	Master's studies		Subject group	Optional subject group			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	Polish			
Semester of study	4		ECTS credits	2.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Elżbieta Kamysz				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	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		4.0		16.0	50
Subject objectives	Familiarize students with the issues listed in the content of the lecture.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[CHEMMU2_U04] Applies acquired knowledge of chemistry and related scientific disciplines.	The student uses the issues learned in the lecture to prepare a presentation.	[SU2] presentation/project/paper/ report
[CHEMMU2_U08] Prepares and presents oral presentations in various fields of chemistry in Polish and English, using acquired knowledge and skills as well as basic sources of scientific information.	The student prepares a presentation on natural medicinal substances or related issues.	[SU2] presentation/project/paper/ report
[CHEMMU2_K01] Knows the limitations of her/his own knowledge; understands the need for further education and can inspire other people to do so.	The student is aware of the therapeutic as well as non-medicinal actions of medicinal substances; he understands the need for continuous education and development and the search for new medicines.	[SK2] presentation/project/paper/ report [SK4] test/exam - oral or written
[CHEMMU2_W11] Demonstrates general knowledge about the current trends in the development of chemistry as a science and the latest discoveries in this field.	The student is able to list medicines containing natural drugs and discuss their importance in therapy.	[SW4] test/exam - oral or written
[CHEMMU2_U06] Presents the results of scientific discoveries in chemistry and related disciplines in an understandable way.	The student prepares a presentation on medicinal substances from natural sources and related issues.	[SU2] presentation/project/paper/ report
[CHEMMU2_K05] Understands the need for independent search of information in scientific literature and popular science magazines.	The student understands the need to increase knowledge of medicines already authorised for sale. The student is able to use sources of information about medicines.	[SK4] test/exam - oral or written
[CHEMMU2_K06] Undertakes research tasks consciously and responsibly, understanding the social aspects of the practical application of the acquired knowledge and skills and the responsibility related to it.	The student participates in the formulation of the presentation topic.	[SK2] presentation/project/paper/ report
[CHEMMU2_W05] Has extended knowledge in the field of the specialisation studied.	The student: has knowledge of natural sources of compounds with medicinal effects and methods of obtaining these substances. The student lists and characterizes the main stages of the drug discovery process (from idea to market). In addition, the student gives examples of natural compounds with medicinal effects belonging to different groups: alkaloids (e.g., morphine, quinine), glycosides, antibiotics, terpenoids, flavonoids, essential oils, peptides, proteins, prebiotics, polyphenols, fatty acids, and knows their importance in therapy and in the development of modern drug science. The student knows the advantages and disadvantages of using natural compounds in medicines.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[CHEMMU2_U03] Finds necessary information in specialist literature, databases and other sources, lists basic scientific journals in chemistry.	The student is able to use various sources of knowledge about medicines and therapeutic substances.	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written

Subject contents

- Natural sources of compounds with medicinal effects (plants, animals, microorganisms)
- Methods of obtaining biologically active substances from natural sources.
- Importance of bioactive compounds for health.
- The main steps in the drug discovery process (from idea to market).
- Examples of natural compounds with therapeutic activity: alkaloids (e.g. morphine, quinine), glycosides, antibiotics, terpenoids, flavonoids, essential oils, peptides, prebiotics, polyphenols, fatty acids.
- The importance of natural compounds in therapy and in the development of modern drug science.
- Advantages and disadvantages of using natural compounds in medicines.
- Bioactive compounds and functional foods.

<table>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>test (open and closed questions) covering the lecture material</td><td>51.0%</td><td>65.0%</td></tr>
<tr><td>presentation</td><td>51.0%</td><td>35.0%</td></tr>
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<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>scientific papers indicated by the lecturer;
monographic materials indicated by the lecturer.

A. Kołodziejczyk: Natural organic compounds, Warsaw, 2013, PWN

E. Białecka-Florjańczyk: Natural compounds : structure and properties, Warsaw, 2021,SGGW Publishing House</td></tr>
<tr><td>Supplementary literature</td><td>-</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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