GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Basic Pharmacognosy, PG_00054750		
Field of study	Biotechnology		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	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	4	Language of instruction	Polish
Semester of study	7	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Pharmaceutical Technology and Biochemistry -> Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Piotr Szweda	
	Teachers		

Lesson types and methods of instruction

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	2.0	18.0	50

Subject objectives

The most important objectives of the course include:
1. Basic knowledge of pharmaceutical botany;
2. Presenting the most important groups of medicinal substances produced by plants;
3. Presenting students the technology of production of most important herbal medicines;
4. Presenting and characteristic of the most important herbal medicines.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_W05	1. The student knows the metabolic pathways in which active substances are formed; 2. The student knows the methods of isolation of active substances from plant materials; 3. The student knows the methods of testing/determining of the pharmacological and biological activity of selected groups of plant metabolites (e.g. substances with antimicrobial, anticancer, antioxidant or sedative activity);	[SW1] Assessment of factual knowledge
K6_U02	The student is able to use knowledge acquired during earlier stages of education to predict and verify the biological activity of natural products and their components.	[SU2] Assessment of ability to analyse information
K6_U08	The student knows the basic technological processes used to produce herbal medicines and is able to critically evaluate the possibilities of their use in both technical and economic terms.	[SU2] Assessment of ability to analyse information
K6_W03	1. The student knows the groups of chemical compounds – primary and secondary metabolites, which determine the biological and pharmacological activity of plant materials; 2. The student knows the chemical structures of active metabolites and molecular mechanisms of their biological activity.	[SW1] Assessment of factual knowledge

Subject contents

1. Pharmacognosy definition, historical outline, contemporary trends.2, Basic plant raw materials with elements of plant physiology.3, Secondary metabolites of plants as active substances of plant drugs - chemical structure, pharmacological action, possibilities of application in medicine, toxic action.4, Metabolic pathways of synthesis of the most important secondary metabolites in plant cells.5. Bee products.6. Methods of isolation of active substances from plant raw materials and forms of plant drugs.7. Selected examples of plant drugs (botanical composition, chemical composition, pharmacological action).8. Modern biotechnological methods in pharmacognosy (genetic engineering, tissue engineering, plant tissue culture in bioreactors, purification of active ingredients).

Prerequisites and co-requisites

Basic knowledge of cell biology, biochemistry, organic chemistry and chemical technology.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Test	60.0%	100.0%

Recommended reading

Basic literature	Zarys botaniki farmaceutycznej; Bolesław Broda; Wydawca: PZWL; ISBN: 9788320041675 Farmakognozja; Stanisław Kohlmunzer; Wydawca: PZWL; ISBN: 9788320046519 Lek pochodzenia naturalnego; Anna Kiss; Wydawca: PZWL; ISBN: 9788320064452
Supplementary literature	Trease and Evans' Pharmacognosy; William Charles Evans; Brand: Saunders; ISBN: 9780702029332
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Please provide a general structural formula for flavonoids.
Please list plants used to obtain sedative drugs
Polyketide pathway in the synthesis of metabolites of pharmacological importance.

Work placement

Not applicable

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