GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	OPEN DATABASES , PG_00069990		
Field of study	InfoBioChem		
Date of commencement of studies	February 2026	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	Obligatory subject group in the field of study 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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Biotechnology and Microbiology -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Anna Brillowska-Dąbrowska	
	Teachers	dr hab. inż. Anna Brillowska-Dąbrowska dr hab. inż. Agnieszka Pladzyk	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	0.0	0.0	30

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 3172 OTWARTE BAZY DANYCH
https://enauczanie.pg.edu.pl/2025/course/view.php?id=3172

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 aim of the Open Databases InfoBioChem course is to prepare students for independent and informed use of scientific information resources in the fields of biology, biochemistry and chemistry. The course is designed to enable students to acquire skills in searching, selecting, critically evaluating and integrating data from various open databases, such as sequence, structure, omics and chemical information databases. Within the course, students develop competences that allow them to use data resources in experimental design, analysis of research results and solving research problems typical of the areas of bioinformatics and chemoinformatics.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W06] knows open biological and chemical databases and the principles of their proper use - appropriate to the curriculum InfoBioChem	The student has the knowledge necessary to correctly interpret the data contained in the specified databases.	[SW1] Assessment of factual knowledge
[K7_U01] is able to use databases in the field of exact and natural sciences - appropriate to the educational program InfoBioChem	The student is able to search for information in databases in the field of exact and natural sciences relevant to the InfoBioChem programme and is able to deposit information in at least one of them.	[SU4] Assessment of ability to use methods and tools
[K7_K04] is ready to effectively organize their work time, including reliably meeting deadlines for completing specific tasks.	The student is able to prepare and submit a project report to the teacher within the specified deadline and in the required form.	[SK3] Assessment of ability to organize work

<table>
<tr><td>Subject contents</td><td>Course content – lecture
The course content includes an introduction to the concept of open science and the importance of open databases in research in the life sciences and chemical sciences. The basic types of biological and chemical databases are discussed, including nucleotide and protein sequence databases, macromolecular structure databases, omics data repositories, as well as resources containing information on chemical compounds and their properties. Students become familiar with simple and advanced search methods, the use of filtering tools, and strategies for combining information from different sources.

Course content – laboratory
In the practical part, students carry out tasks involving the acquisition and integration of data for specific research problems, the analysis of sequences and structures, work with omics data and chemical information. The content also includes the use of application programming interfaces and tools supporting the automation of data retrieval. Students learn how to prepare reports on the analyses performed and how to correctly interpret the results in the context of bioinformatics and chemoinformatics.</td></tr>
<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>Written test (lecture)</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>Project task - bio (project)</td><td>60.0%</td><td>25.0%</td></tr>
<tr><td>Project task - chem (project)</td><td>60.0%</td><td>25.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>Scientic articles recommended by the teacher</td></tr>
<tr><td>Supplementary literature</td><td>Scientic articles recommended by the teacher</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Identification of a gene sequence in the NCBI database and preparation of a dataset for further phylogenetic analysis

2.Search and characterisation of a selected compound in a chemical database and preparation of data for subsequent stages of analysis.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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