University of Gdańsk

Subject card

Subject name and code	Basic Biochemistry and Genetics of Cultured Organisms - lecture, PG_00201312		
Field of study	Aquaculture – Business And Technology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Subject group related to practical vocational preparation
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	2.0
Learning profile	practical	Assessment form	exam
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Katarzyna Smolarz, prof. UG	
	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	2.0	18.0	50

Subject objectives

The aim of the course is to familiarize students with the basics of biochemistry and genetics used in breeding aquatic organisms

Learning outcomes

Course outcome	Subject outcome	Method of verification
[AKWAL3-U07] can come to the right conclusions on the basis of available data	the student is able to make correct conclusions based on available biochemical and genetic data regarding breeding activities (program content: W1-W6).	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
[AKWAL3-K03] is ready to follow the ethical principles in biological research and adhere to the principles of intellectual honesty	the student is ready to comply with the principles of ethics in biological research and the principles of intellectual honesty (program content: W1-W6).	[SK1] oral statement/conversation/ discussion
[AKWAL3_W03] has an advanced understanding of the conceptual categories and terminology related to the biological basis of aquatic organisms breeding, as well as concepts directly relevant to the practical applications of this knowledge	the student knows and understands the conceptual categories and terminology regarding the biological basis of breeding aquatic organisms in the field of biochemistry and genetics, as well as concepts directly related to the practical applications of this knowledge (program content: W1-W6).	[SW4] test/exam - oral or written
[AKWAL3-U02] can make observations and perform simple physical / biological / chemical measurements that are typical in socio-economic activity based on natural sciences	the student is able to carry out observations and perform simple biochemical and genetic analyses, typical for fields of socio-economic activity based on natural sciences and necessary in breeding farms (program content: W1-W6).	[SU4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>W1. basic biochemical transformations, cell structure and functions

W2. gene replication and expression (including the structure and functions of nucleic acids)

W3. characterization of chromosomes as gene carriers

W4. quantitative and qualitative features, heritability, variability

W5. basics of population genetics

W6. application of genetic methods in aquaculture</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Systematics and basics of biology of breeding organisms (Invertebrates).</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>Final exan with test and open questions</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Brown T., 2001, Genomy. Wydawnictwo Naukowe PWN, Warszawa.

Charon K., Świtoński H., 2006, Genetyka zwierząt. Wydawnictwo Naukowe PWN, Warszawa.

Gajewski W., 1987, Genetyka ogólna i molekularna. Wydawnictwo Naukowe PWN, Warszawa.

Kłyszejko-Stefanowicz Leokadja, Ćwiczenia z biochemii, 2013, Wydawnictwo Naukowe PWN

Węgleński Piotr, Genetyka molekularna, 2012, Wydawnictwo Naukowe PWN</td></tr>
<tr><td>Supplementary literature</td><td>none</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>none</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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