University of Gdańsk

Subject card

Subject name and code	Basic Techniques of Isolation and Cultivation of Algae - laboratory classes, PG_00201298						
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		
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	practical		Assessment form		credit		
Conducting unit	Department of Marine Ecosystems Functioning -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Iwona Bubak				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	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 familiarise students with the practical aspects of isolation techniques and maintenance of algal and cyanobacterial cultures.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[AKWAL3-U02] can make observations and perform simple physical / biological / chemical measurements that are typical in socio-economic activity based on natural sciences	Student is able to carry out laboratory experiments using cultures of cyanobacteria and algae in order to characterise them and identify possible economic applications topics covered in practical classes)	[SU3] text preparation/written work [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[AKWAL3-K05] student is ready to appreciate the practical application of acquired knowledge	Student is ready to critically evaluate the practical application of the knowledge gained on the isolation, culturing of cyanobacterial and algal strains, and possibilities of biomass processing (topics covered in practical classes)	[SK8] observation of student's independent or team work
[AKWAL3-K01] is ready to assess the risks and threats stemming from working in the laboratory and is responsible for the equipment and teaching materials entrusted to them and for the safety of their own work and that of others	Student is prepared to assess the risks and hazards of working in the algology laboratory and to assess the consequences of mistakes made in the cultivation of cyanobacteria and algae in culture collections; is responsible for the equipment and didactic materials entrusted to him and for the safety of his own work and that of others (topics covered in practical classes).	[SK8] observation of student's independent or team work
[AKWAL3_W06] has an advanced understanding of techniques, research methods and tools used in aquaculture	Student knows and discusses techniques and research tools used in the isolation and culturing of cyanobacteria and algae (topics covered in practical classes)	[SW2] presentation/project/paper/ report

Subject contents

1. Isolation of strains of algae and cyanobacteria from natural assemblages of phytoplankton and microphytobenthos assemblages.
2. Establishing cultures of cyanobacteria and algae and monitoring their growth.
3. Selecting appropriate media and growth conditions depending on the purpose of the cultures.

Prerequisites and co-requisites

none

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test	51.0%	60.0%
raport	51.0%	25.0%
observation of independent student work	51.0%	15.0%

Recommended reading

Basic literature	1. Richmond, A., 2004, Handbook of microalgal culture. Biotechnology and applied phycology. Blackwell Publishing, Oxford, UK. 2. Anderson R.A., 2005, Algal culturing techniques. Elsevier Academic Press, Oxford, UK.
Supplementary literature	1. Richmond, A., 2000, Handbook of microalgal mass culture. CRC Press, Baco Raton, Florida. 2. Khanal, S.K., Surampalli, R.Y., Zhang, T.C., Lamsal, B.P., Tyagi, R.D., Kao, C.M., 2010, Bioenergy and biofuel from biowaste and biomass. ASCE, Reston, Virginia. 3. Johansen, M.N., 2012, Microalgae. Biotechnology, microbiology and energy. NOVA Science Publisher INC., New York. 4. Fogg, G.E., Thake, B., 1987, Algal Cultures and Phytoplankton Ecology. The University of Wisconsin Press, Madison, Wisconsin.
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Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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