University of Gdańsk

Subject card

Subject name and code	Physiology of Algae and Cyanobacteria - lecture, PG_00201272		
Field of study	Aquaculture – Business And Technology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
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	3	Language of instruction	Polish
Semester of study	5	ECTS credits	1.0
Learning profile	practical	Assessment form	exam
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	15.0	0.0	0.0	0.0	0.0	15

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	15	1.0	10.0	26

Subject objectives

The aim of the course is to familiarise the student with the basic physiology of cyanobacteria and algae and the factors determining their growth and metabolic processes.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[AKWAL3_W05] has an advanced understanding of the methods of aquatic plants and algae culture, can develop and constructively apply this knowledge in this areay	Student knows and understands the methods of culturing cyanobacteria and algae and understands the changes in physiological processes occurring during their growth; student is able to develop and constructively apply the received knowledge depending on the purpose of the culturing process (curriculum content: 1-4)	[SW4] test/exam - oral or written

Subject contents

1. Effects of light, temperature, salinity and macro- and micronutrients on the rate of production processes and growth of photosynthetic organisms.
2. Photosynthesis, respiration, photoacclimation processes, photoprotection, photoinhibition, photorespiration, carbon assimilation, nitrogen assimilation.
3. Metabolic pathways for the synthesis of selected compounds (pigments, lipids, polysaccharides, etc.) produced by algae and cyanobacteria.
4. Practical aspects of cyanobacterial and algal physiology.

Prerequisites and co-requisites

none

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	51.0%	100.0%

Recommended reading	Basic literature	1. Zurzycki Jan, Michniewicz Marian (eds.) - Fizjologia roślin, PWRiL, Warszawa, 1985 2. Gumiński Stefan - Fizjologia glonów i sinic - Wyd. Uniw. Wrocławskiego, Wrocław, 1990 3. Dera Jerzy - Fizyka Morza/Marine physics, PWN/Elsevier, Warszawa/ Amsterdam, 1983/1992 4. Stryer Lubert - Biochemia, PWN, Warszawa, 1997 5. Larkum Anthony, Douglas Susan, Raven John (eds.) Photosynthesis in Algae, Springer Science+Business Media, LLC, 2003 6. Szewykowska Alicja Fizjologia roślin, 1997
	Supplementary literature	1. Renk Henryk - Fotosynteza w Fitoplanktonie Bałtyku, WSP, Słupsk, 1989 2. Renk Henryk Produkcja pierwotna południowego Bałtyku MIR, Studia i Materiały, Seria A, Numer 35, Gdynia 2000. 3. Salisbury Franck B., Ross Cleon - Fizjologia roślin, PWRiL, Warszawa, 1975 4. Schulze E-D. Caldwell M.M. (eds.) - Ecophysiology of Photosynthesis, Springer-Verlag, Berlin, 1994 5. Kirk J.T.O. - Light and photosynthesis in aquatic ecosystems, Cambridge Univ. Press, Cambridge, 1983, 1994 6. Dring - The biology of marine plants - Cambridge Univ. Press, Cambridge, 1992
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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