University of Gdańsk

Subject card

Subject name and code	Systematics and Basic Biology of Cultivated Organisms - laboratory classes, PG_00201277		
Field of study	Aquaculture – Business And Technology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	6.0
Learning profile	practical	Assessment form	credit
Conducting unit	Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Monika Normant-Saremba	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	90.0	0.0	0.0	90

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	90	4.0	56.0	150

Subject objectives

The aim of the course is to familiarize students with the systematics and basic concepts of the biology of various groups of aquatic organisms used in aquaculture.

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	Can conduct observations and perform simple biological measurements and analyses of various groups of organisms used in culture, i.e., plants and algae, invertebrates, and fish.	[SU6] demonstration of practical skills [SU8] observation of student's independent or team work
[AKWAL3-K03] is ready to follow the ethical principles in biological research and adhere to the principles of intellectual honesty	Is ready to adhere to ethical principles in research on various groups of organisms used in aquaculture and to uphold intellectual honesty.	[SK3] text preparation/written work [SK8] observation of student's independent or team work
[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	Knows and understands concepts related to the systematics and biology of cultured plants and algae, invertebrates, and fish, with direct reference to the practical applications of this knowledge.	[SW4] test/exam - oral or written

Subject contents	**Plants and Algae:** 1. Understanding the morphological structure of representatives of different taxonomic groups of cyanobacteria and algae. 2. Identification of species in microphytobenthos and phytoplankton samples. 3. Description of the morphological structure and identification of macroalgae. **Invertebrates:** 1. Understanding the morphological and anatomical structure of organisms from different groups. 2. Identification of species based on taxonomic characteristics. 3. Understanding basic aspects of reproductive biology. 4. Observations of inter-individual interactions. **Fish:** 1. Systematic features of fish: body shape, head, fins, types of caudal fins, types of scales, lateral line. 2. Internal anatomy of fish. 3. Practical familiarity with selected fish species: Salmoniformes, Anguilliformes, Cypriniformes, Perciformes, Pleuronectiformes.
Prerequisites and co-requisites	
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
test or assignment from the part: Plants and Algae	51.0%	33.0%
test or assignment from the part: Fish	51.0%	33.0%
test or assignment from the part: Invertebrates	51.0%	34.0%

Recommended reading	Basic literature	**Literature used during classes:** Błaszak C. (red.), 2021. Zoologia Szkarłupnie płazy Tom 3 Część 1. Wydawnictwo Naukowe PWN. Brusca R.C., Moore W., Shuster S.M., 2016. Invertebrates, 3rd Edition, Sinauer Associates. Barnes R.S.K., Calow P., Olive P.J.W., Golding D.W., Spicer J.I., 2007. The Invertebrates, A Synthesis. 3rd Edition, Blackwell Publishing. Moraczewski J., Riedel W., 1976. Ćwiczenia z zoologii bezkręgowców, PWN. Pechenik J.A., 2014. Biology of the Invertebrates, 7th Edition, McGraw-Hill Education. Szweykowska A., Szweykowski J. 1974, 1993. Botanika Systematyka, PWN, Warszawa. Szweykowska A., Szweykowski J., 1974, 1993. Botanika Morfologia, PWN Warszawa. Kadłubowska J. Z., 1975. Zarys algologii, PWN, Warszawa. Brylińska M., 2000. Ryby słodkowodne Polski. Wydawnictwo Naukowe PWN Warszawa. Gerstmeier R., Romig T., 2002. Przewodnik. Słodkowodne ryby Europy. Mulico Warszawa. Bieniarz K., Epler P., 2004. Zoologia Tom V, Ryby. Leksykon popularnonaukowy. Wydawnictwo Albatros, Kraków. Nelson J.S., 2006. Fishes of the Word.Wiley Kottelat M., Freyhof J., 2007. Handbook of European Freshwater Fishes. **Literature used for independent study:** Grabda E., 1986. Zoologia. Bezkręgowce, PWN. Moore J., 2009. Wprowadzenie do zoologii bezkręgowców, Wydawnictwa Uniwersytetu Warszawskiego. Moraczewski J., Riedel W., 1976. Ćwiczenia z zoologii bezkręgowców, PWN. Pliński Marcin - Glony Zatoki Gdańskiej, część I-VII - Uniwersytet Gdański, 1980. Gąsowska M., 1962. Krągłouste i ryby. Państwowe Wydawnictwo Naukowe, Warszawa. Grodziński Z., 1981. Anatomia i embriologia ryb. Państwowe Wydawnictwo Rolnicze i Leśne, Warszawa.

		Opuszyński K., 1979. Podstawy biologii ryb. Państwowe Wydawnictwa Rolnicze i Leśne, Warszawa. Pliszka F., 1964. Biologia ryb. Państwowe Wydawnictwa Rolnicze i Leśne, Warszawa. Suworow E., 1954. Podstawy ichtiologii. Państwowe Wydawnictwo Naukowe, Warszawa.
	Supplementary literature	**Supplementary literature:** Błaszak C. (red.), 2012. Zoologia Tom 2 część 2 Stawonogi, Wydawnictwo Naukowe PWN. Błaszak C. (red.), 2016. Zoologia bezkręgowce Tom 1 część 2, Wtórnojamowce (bez stawonogów). Wydawnictwo Naukowe PWN. Jura Cz., 1997. Bezkręgowce, PWN. Lee R.E. - Phycology - Cambridge Univ. Press, Cambridge, 1998. Hoek C. van den, Mann D.G., Jahns H.M., 1998. Algae, An introduction to phycology, Cambridge Univ. Press, Cambridge. Humm H. J., Wicks S. R., 1990. Introduction and guide to marine bluegreen algae, J. Wiley & Sons, New York. Kumar H.D., 1999. Introductory Phycology, EWP Affiliated East-West Press Private Limited. Bone Q.M.A., Marshall N.B., 1982. Biology of fishes. Blackie. Glasgow and London. Cailliet G.M., Love M.S., Ebeling A.W., 1986. Fishes. Wadsworth Publishing Company, Belmont, California. Lagler K.F., Bardach J.E., Miller R.R., May Passino D.R., 1977. Ichthyology. John Willey & Sons. New York, Chichester, Brisbane, Toronto
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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