University of Gdańsk

Subject card

Subject name and code	Biology of Fishes - laboratory, PG_00206173		
Field of study	Oceanography		
Date of commencement of studies	October 2027	Academic year of realisation of subject	2029/2030
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group 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	3	Language of instruction	Polish
Semester of study	6	ECTS credits	3.0
Learning profile	academic	Assessment form	credit
Conducting unit	Laboratory of Ichthyology -> Department of Marine Ecology -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Mariusz Sapota, prof. UG	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	45.0	0.0	0.0	45

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	45	3.0	27.0	75

Subject objectives

Familiarization with the basic issues in the field of general ichthyology. Getting to know the principles of conducting basic ichthyological analyses

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANL3-K05] is willing to take responsibility for the safety of his/her own and others' work, is aware of the risks and threats resulting from the work performed	is ready to comply with the rules of occupational health and safety in force in the ichthyological laboratory, to take care of the specialist equipment entrusted to him/her, is aware of the risks and hazards resulting from the work performed	[SK4] test/exam - oral or written
[OCEANL3-U11] is able to work individually and collaborate in a team, assuming various roles and performing different tasks	can work individually and in a group performing ichthyological analyses	[SU4] test/exam - oral or written
[OCEANL3-U03] is able to process, describe, and present results, and draw conclusions	is able to analytically and synthetically develop the results of ichthyological research and analyses and on their basis make correct conclusions	[SU4] test/exam - oral or written

Subject contents	A review of selected representatives of the Baltic ichthyofauna. The external structure of the fish. General body division. Fins, fin rays, visible elements of sensory organs. Internal structure of the fish: digestive system, endocrine organs associated with the digestive system. Internal structure of the fish: circulatory system, blood circulation, other body fluids. Internal structure of the fish: respiratory system, gills, gas exchange through the skin. Internal structure of the fish: nervous system, brain, spinal cord, eyes. Internal structure of the fish: skeleton, axial skeleton, limb skeleton, bones. Detailed ichthyological analysis. Components, method of execution. Determining the age of fish. Scales, otoliths, fin rays, vertebrae, flat bones. Analysis of fish food. The method of collecting material and performing analyses. Morphometric measurements of fish. Basic methods of statistical analysis of the results obtained.
Prerequisites and co-requisites	Basic knowledge of zoology

Assessment methods and criteria

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

Recommended reading

Basic literature

Brylińska M., 2000. Ryby słodkowodne Polski. Państwowe Wydawnictwo Naukowe. Warszawa

Jasiński A., 1973. Zootomia kręgowców. Państwowe Wydawnictwo Naukowe

Klimaj A., Rutkowicz S., 1970. Atlas ryb Północnego Atlantyku. Wydawnictwo Morskie. Gdańsk

Rutkowicz S., 1982. Encyklopedia ryb morskich. Wydawnictwo Morskie. Gdańsk

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	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,
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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