

**Subject card**

<b>Subject name and code</b>	Biology of Fishes - lecture, PG_00205294						
<b>Field of study</b>	Oceanography						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2028/2029		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	3	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	6	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			exam		
<b>Conducting unit</b>	Laboratory of Ichthyology -> Department of Marine Ecology -> Faculty of Oceanography and Geography -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr hab. Mariusz Sapota				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		2.0		18.0	50
<b>Subject objectives</b>	Familiarization with the basic issues in the field of general ichthyology						
<b>Learning outcomes</b>	<b>Course outcome</b>		<b>Subject outcome</b>		<b>Method of verification</b>		
	[OCEANL3-W01] has an advanced knowledge and understanding of the terminology used in oceanography and related exact and natural sciences (in Polish and a selected foreign language)		knows and understands the terminology appropriate for ichthyology (in Polish, English and Latin) at an advanced level		[SW4] test/exam - oral or written		

Subject contents	<p>Subject of interest in ichthyology. Occurrence and diversity of fish. The most important groups of modern fish, their origin and development. Fish taxonomy and systematic nomenclature.</p> <p>Fish swimming mechanism. Skeleton and muscles.</p> <p>Buoyancy (floating) of fish.</p> <p>Gas exchange and circulatory system. Blood. Respiration.</p> <p>Osmoregulation and ion exchange. Excretion.</p> <p>Food and nutrition. Digestive.</p> <p>Reproduction. Development and growth.</p> <p>Senses and communication.</p> <p>Endocrine organs. Hormonal regulation.</p> <p>Central nervous system.</p> <p>Genetics and evolution.</p> <p>Ecology and zoogeography.</p> <p>The role of fish in the Baltic Sea ecosystem.</p>		
Prerequisites and co-requisites	Basic knowledge of zoology		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	51.0%	100.0%

Recommended reading	Basic literature	<p>Brylińska M., 2000. Ryby słodkowodne Polski. Państwowe Wydawnictwo Naukowe. Warszawa</p> <p>Jasiński A., 1973. Zootomia kręgowców. Państwowe Wydawnictwo Naukowe</p> <p>Klimaj A., Rutkowicz S., 1970. Atlas ryb Północnego Atlantyku. Wydawnictwo Morskie. Gdańsk</p> <p>Rutkowicz S., 1982. Encyklopedia ryb morskich. Wydawnictwo Morskie. Gdańsk</p> <p>Gąsowska M., 1962. Kręglouste i ryby. Państwowe Wydawnictwo Naukowe. Warszawa</p> <p>Grodziński Z., 1981. Anatomia i embriologia ryb. Państwowe Wydawnictwo Rolnicze i Leśne. Warszawa</p> <p>Opuszyński K., 1979. Podstawy biologii ryb. Państwowe Wydawnictwa Rolnicze i Leśne. Warszawa</p> <p>Pliszka F., 1964. Biologia ryb. Państwowe Wydawnictwa Rolnicze i Leśne. Warszawa</p> <p>Suworow E., 1954. Podstawy ichtiologii. Państwowe Wydawnictwo Naukowe. Warszawa</p>
	Supplementary literature	<p>Bone Q.M.A., Marshall N.B., 1982. Biology of fishes. Blackie. Glasgow and London</p> <p>Cailliet G.M., Love M.S., Ebeling A.W., 1986. Fishes. Wadsworth Publishing Company, Belmont, California</p> <p>Lagler K.F., Bardach J.E., Miller R.R., May Passino D.R., 1977. Ichthyology. John Willey &amp; Sons. New York, Chichester, Brisbane, Toronto</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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