University of Gdańsk

Subject card

Subject name and code	Biodiversity of marine organisms - lecture, PG_00192210		
Field of study	Marine Biotechnology		
Date of commencement of studies	October 2027	Academic year of realisation of subject	2027/2028
Education level	Master's studies	Subject group	Obligatory subject group in the field of study 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	1	Language of instruction	English
Semester of study	1	ECTS credits	2.0
Learning profile	academic	Assessment form	exam
Conducting unit	Department of Marine Biology and Biotechnology -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Anna Toruńska-Sitarz	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	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

At the end of the course student will be able to:

identify and classify marine organisms based on the current taxonomy and systematics,

discuss the possibilities and limitations of biodiversity studies,

explain mechanisms responsible for diversification of vertebrate species.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[MBMU2-KW01] Has an in-depth knowledge and understanding of the significance, limitations and potential applications of natural marine resources in the context of the complex biological, environmental and technological factors influencing the development of biotechnology.	KW_01 The student possess a broad knowledge and understanding of the range and value of the diversity of marine organisms; knows the classical and modern tools used to study the biodiversity of Archaea, Bacteria, Eukaryotes, and Viruses.	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>1. Structural and functional diversity of marine microbes (bacteria, archaea, microfungi, protists).

2. Culture-independent approaches to studying microbial communities.

3. Diversity of macrophytes; commercially important taxa.

3. Marine viruses.

4. Diversity of pelagic invertebrates.

5. Diversity of benthic invertebrates.

6. Methods of measuring invertebrate diversity.

7. Invertebrate fisheries and aquaculture.

8. Biotechnological potential of marine invertebrates.

9. Fishes large number of species and huge variation of phenotypes.

10. Evolution of the vertebrate genomes and whole genome duplication events.

11. Adaptive radiation and introgression.

12. Genetic variation of the vertebrate stocks.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Formal requirements: none.

Prerequisites: basic knowledge on biology.</td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>written exam</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>1. Munn C.B., Marine Microbiology Ecology & Applications, CRC Press

2. Levinton J. Marine Biology, Oxford University Press

3. Volf J-N. 2005. Genome evolution and biodiversity of teleost fish. Heredity 94; 280-294.

4. Johanson Z. et al. 2019. Evolution and development of Fishes. Cambridge University Press.

5. Helfman G. 2009. The diversity of Fishes. Biology, evolution and Ecology. Wiley-Blackwell.

6. Set of up-to-date scientific papers selected by the teaching staff</td></tr><tr><td>Supplementary literature</td><td>Set of up-to-date scientific papers selected by the teaching staff.</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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