University of Gdańsk

Subject card

Subject name and code	Non-native species in the marine environment - lecture, PG_00117734		
Field of study	Oceanography		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	postgraduate 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	2	Language of instruction	Polish Polish
Semester of study	3	ECTS credits	1.0
Learning profile	academic	Assessment form	
Conducting unit	Pracownia Ekofizjologii i Bioenergetyki -> Katedra Ekologii Morza -> Faculty of Oceanography and Geography		
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	15.0	0.0	0.0	0.0	0.0	15

E-learning hours included: 0.0

Additional information:
Lecture with multimedia presentation.

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	2.0	10.0	27

Subject objectives

Raising knowledge about alien species in marine ecosystems, with particular emphasis on their impact on biodiversity and ecosystem services, both on a local and global scale.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANMU2-W07] knows and understands legal regulations, principles of sustainable development of the marine environment, its protection and management of the marine environment and its resources	Knows and understands the basic legal regulations regarding alien species and methods of dealing with them in order to protect and manage the marine environment and its resources.	[SW4] test/exam - oral or written
[OCEANMU2-W06] knows and identifies potential threats to the marine environment on a local and global scale resulting from strong anthropopressure, predicts their effects on various time and space scales	Knows and identifies potential threats to the marine environment on a local and global scale resulting from the introduction of alien species, and predicts their effects.	[SW4] test/exam - oral or written
[OCEANMU2-W04] knows and understands the latest research trends in the field of oceanography as well as the possibilities of practical application of scientific achievements	Knows and understands in-depth the latest research trends related to the introduction of alien species into the marine environment, as well as the possibilities of practical application of scientific achievements.	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>Lectures will include the following topics:

1. Terminology and legal aspects (national, regional, EU and international regulations).

2. Pathways/ vectors of introduction and methods of preventing the introduction of new species into the marine environment.

3. Marine alien species.

4. The Baltic Sea as a sea of alien species.

5. Factors determining the success of introduction and the establishment of the population in the new region.

6. Ecological and economic effects resulting from the introduction of alien species.

7. Management of alien species.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></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>Test/ 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>Keller R.P., Lodge D.M., Lewis M.A., Shogren J.F., 2009. Bioeconomics of Invasive Species. Oxford University Press.

Leppäkoski E., Gollasch S., Olenin S. (eds), 2002. Invasive Aquatic Species of Europe. Distribution, Impacts and Management. Kluwer Academic Publishers, The Netherlands.

Rilov G., Crooks J.A. (eds), 2009. Biological Invasions in Marine Ecosystems. Ecological, Management, and Geographic Perspectives. Springer-Verlag Berlin Heidelberg , ISBN: 978-3-540-79235-2, 641 pp.</td></tr><tr><td>Supplementary literature</td><td>Lockwood J.L., Hoophes M.F., Marchetti M.P., 2007. Invasion Ecology. 4th Edition. Blackwell Publishing.</td></tr><tr><td>eResources addresses</td><td>Podstawowe
https://doi.org/10.1111/ddi.13167 - This article examines spatial patterns and temporal trends in the detection of aquatic alien species around the world.
https://doi.org/10.1007/s10530-016-1316-x - The article concerns alien species in the Baltic Sea.
https://doi.org/10.1016/j.scitotenv.2021.145238 - This article is about the global economic costs of aquatic invasive alien species.
Adresy na platformie eNauczanie:</td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Alien species and invasive alien species, primary and secondary introduction, model of the invasion process, international conventions and guidelines and EU directives, monitoring and early detection, methods of removing alien species from the environment, control, alien species in aquaculture and their use by humans, one hundred of the most invasive species in the world, impact on biodiversity and human economy.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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