University of Gdańsk

Subject card

| | | | |
|---|---|---|---|
| Subject name and code | Non-native Species in the Marine Environment - laboratory , PG_00204928 | | |
| Field of study | Oceanography | | |
| Date of commencement of studies | October 2027 | Academic year of realisation of subject | 2028/2029 |
| Education level | Master's studies | Subject group | Obligatory subject group in the field of study<br>Optional subject group<br>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 | 2 | Language of instruction | Polish |
| Semester of study | 3 | ECTS credits | 2.0 |
| Learning profile | academic | Assessment form | credit |
| Conducting unit | Laboratory of Ecophysiology and Bioenergetics -> Department of Marine Ecology -> 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 | 15.0 | 0.0 | 0.0 | 15 |

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 | 15 | 1.0 | 34.0 | 50 |

| | |
|---|---|
| Subject objectives | Raising knowledge about alien species in marine ecosystems, with particular emphasis on the Baltic Sea. |

## Learning outcomes

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [OCEANMU2-K05] is ready to follow the rules occupational health and safety, taking care of the entrusted person specialized and recognition equipment emergency situations and take appropriate action activities | Is ready to comply with occupational health and safety rules and take care of the specialized equipment entrusted to him during research in the field of biology and ecology of alien species. | [SK8] observation of student's independent or team work |
| [OCEANMU2-U04] is ready to develop in an analytical and synthetic way research and analysis results and based on them creating conclusions | Is able to analytically and synthetically prepare the results of research and analyzes in the field of biology and ecology of alien species and draw correct conclusions based on them. | [SU2] presentation/project/paper/ report<br>[SU8] observation of student's independent or team work |
| [OCEANMU2-U02] is able to fluently and accurately use scientific terminology when presenting and discussing oceanographic issues, and to propose and justify innovative solutions | Is able to fluently and appropriately use scientific terminology in presenting and discussing problems related to alien species. | [SU1] oral statement/conversation/ discussion |
| [OCEANMU2-U05] is able to use source information in Polish and a chosen foreign language, including archival and electronic databases, within the field of oceanography; critically analyzes and synthesizes information, and is capable of performing critical interpretation and synthesis of data | Is able to use source information in Polish and English, including archival and electronic databases, in the field of issues related to alien species in the marine environment, and is able to critically analyze and synthesize information. | [SU1] oral statement/conversation/ discussion<br>[SU2] presentation/project/paper/ report |
| [OCEANMU2-K01] is ready to plan, implement and supervise, individually or collectively, next stages of the entrusted task, is ready to take responsibility for its results; | Is ready to plan, implement and supervise, individually or in a team, subsequent stages of research in the field of biology and ecology of alien species, feels responsibility for their results, cooperates effectively in a team, performing various functions, including being the leader. | [SK2] presentation/project/paper/ report<br>[SK8] observation of student's independent or team work |

## Subject contents

Analysis of the qualitative and quantitative composition of alien species occurring on submerged surfaces in the coastal zone of the Gulf of Gdańsk, together with the development of information on taxonomic features for identification, origin, pathways and vectors of primary introduction and secondary spread, biology and ecology, with particular emphasis on the impact on local biodiversity and ecosystem services.

Examples of species from the list of 100 most invasive species in the world occurring in the coastal zone of the Gulf of Gdansk and new alien species introduced to the Baltic Sea - origin, taxonomic features for identification, routes and vectors of introduction and secondary spread, biology and ecology, and potential impact on biodiversity and ecosystem services.

## Prerequisites and co-requisites

## Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Practical work and report/ worksheet | 51.0% | 80.0% |
| Presentation of results/discussion | 51.0% | 20.0% |

## Recommended reading

| | |
|---|---|
| Basic literature | Leppäkoski E., Gollasch S., Olenin S. (red.), 2002. Invasive Aquatic Species of Europe. Distribution, Impacts and Management. Kluwer Academic Publishers, The Netherlands.<br><br>Rilov G., Crooks J.A. (red.), 2009. Biological Invasions in Marine Ecosystems. Ecological, Management, and Geographic Perspectives. Springer-Verlag Berlin Heidelberg , ISBN: 978-3-540-79235-2, 641 pp. |
| Supplementary literature | Scientific publications on non-native species in the Baltic Sea. |
| eResources addresses | |

## Example issues/ example questions/ tasks being completed

Alien invertebrates in the Baltic Sea: taxonomic identification, origin, introduction pathways and vectors, biological and ecological features enabling population formation, invasive potential.

## Work placement

Not applicable

Document generated electronically. Does not require a seal or signature.