University of Gdańsk

Subject card

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| Subject name and code | Ecophysiology of marine animals - lecture, PG_00054209 | | |
| Field of study | Oceanography | | |
| Date of commencement of studies | October 2024 | Academic year of realisation of subject | 2024/2025 |
| 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 | 1 | Language of instruction | Polish<br>Polish |
| Semester of study | 1 | ECTS credits | 3.0 |
| 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 | 30.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30 |

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 | 30 | 8.0 | 38.0 | 76 |

**Subject objectives**

Learning about the basic life processes of marine animals, as well as behavioral and physiological adaptations to the environment and various changes occurring in it.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [OCEANMU2-W02] knows and understands complex processes and phenomena occurring in the marine environment, with particular emphasis on the coastal zone, as well as complex relationships between living and non-living elements of the aquatic environment | Knows and understands in-depth the course of complex physiological processes in animals living in the marine environment and the coastal zone, as well as their dependence on changes taking place in the environment. | [SW4] test/exam - oral or written |
| [OCEANMU2-W03] knows and understands research methods used in oceanography and related sciences | Knows and understands in-depth research methods used in ecophysiological studies of marine animals. | [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 in the physiology of marine animals, as well as the possibilities of practical application of scientific achievements. | [SW4] test/exam - oral or written |

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|---|---|---|
| Subject contents | Lecture include the following topics: introduction to ecophysiology; food consumption and assimilation; excretion; osmoregulation and ion regulation; breathing and circulation; energy metabolism; energy value and biochemical composition; energy balance and individual production; sensory organs and hormonal regulation; physiology of reproduction; adaptation of marine animals to life in various environmental conditions. | |
| Prerequisites and co-requisites | | |
| Assessment methods and criteria | | |

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Test/ exam | 51.0% | 100.0% |

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| Recommended reading | Basic literature | Harris, R.R., Aladin, N.V., 1997. The ecophysiology of osmoregulation in Crustacea. W: Hazon, N., Eddy, F.B., Flik, G. (eds.), Ionic Regulation in Animals. Springer, Berlin, 1-25.<br><br>Hochachka P. W., Somero G. N., 1973. Strategies of Biochemical Adaptation. W.B. Saunders Company, Philadelphia.<br><br>Prus T., 1975. Chapter 5: Calorimetry and Body Composition, 5A Measurement of calorific value using Phillipson microbomb calorimeter. In: Grodzinski In., Klekowski R.Z., Duncan A. (eds), Methods for Ecological Bioenergetics. IBP Handbook No. 24, Blackwell Scientific Publications, 149- 160.<br><br>Schmidt-Nielsen K., 1997. Animal Physiology - Adaptation to Environment. 5th Edition, Cambridge University Press.<br><br>Willmer, P., Stone, G., Johnston, I., 2000. Environmental Physiology of Animals. Blackwell Science Ltd. |
| | Supplementary literature | |
| | eResources addresses | Adresy na platformie eNauczanie: |
| Example issues/ example questions/ tasks being completed | Tolerance and physiological stress zones, acclimation, acclimatization and adaptation, physiological phenotypic plasticity, conformity and regulation, physiological processes and body mass, biological rhythms, homeostasis, reception and processing of stimuli from the environment, regulation and coordination of chemical processes in cells and tissues, digestion and food assimilation efficiency, respiration, ventilation, heart rate and oxygen transport, aerobic and anaerobic metabolism, excretion of metabolic products, maintaining water-ion balance, individual production, behavioral and physiological indicators of environmental changes. | |
| Work placement | Not applicable | |

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