University of Gdańsk

Subject card

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|---|---|---|---|
| Subject name and code | Marine Natural Products - lecture, PG_00201680 | | |
| 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<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 | 1 | Language of instruction | English |
| Semester of study | 1 | ECTS credits | 2.0 |
| Learning profile | academic | Assessment form | exam |
| Conducting unit | Laboratory of Marine Biotechnology -> Department of Marine Biology and Biotechnology -> Faculty of Oceanography and Geography -> Rector | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. Hanna Mazur-Marzec | |
| | 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 | 1.0 | 19.0 | 50 |

**Subject objectives**

Acquisition by student knowledge on the main producers of bioactive marine products (MNPs), structure, activity and biotechnological potential of MNPs (KW_01).

**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 Student possesses knowledge about the diversity and biotechnological potential of marine natural products | [SW4] test/exam - oral or written |

**Subject contents**

Historical background and branches of marine biotechnology, main producers of biotechnologically important MNPs, natural and alternative sources of bioproducts, structural diversity of MNP, low value MNPs (food, feed and energy) and high added value MNPs (enzymes, drugs, cosmeceuticals, nutraceuticals, functional food, food supplements, pigments, biomaterials, antifouling agents), from hits to lead, biotechnological application of MNPs - case studies, from biomass to bioproduct.Model organisms of marine ecosystem interactions (ameba-*Legionella*, sociobiology of sponges and corals); potential source of MNPs (e.g fluorescent proteins, enzymes)

**Prerequisites and co-requisites**

**Assessment methods and criteria**

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| exam | 51.0% | 50.0% |
| Optionally - partial tests (open questiona) | 51.0% | 50.0% |

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|---|---|---|
| Recommended reading | Basic literature | Selected articles from scientific journals, e.g.: Marine Drugs, Marine Natural Products, provided by the teacher |
| | Supplementary literature | Marine Natural Products, 2021, Editor Hiromasa Kiyota, Springer |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | Marine natural products of low and high added value; Valorisation and bioprocessing; Marine proteins, peptides and polisaccharides - main producers, biosynthesis, isolation, structure, bioactivity, biotechnological potantial | |
| Work placement | Not applicable | |

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