

Subject card

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|--|--|--|---------------------|-------------------------------------|--|------------|-----|
| Subject name and code | Marine Physics - auditory classes, PG_00206139 | | | | | | |
| Field of study | Oceanography | | | | | | |
| Date of commencement of studies | October 2026 | Academic year of realisation of subject | | | 2027/2028 | | |
| Education level | Bachelor's 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 | | |
| Semester of study | 4 | ECTS credits | | | 4.0 | | |
| Learning profile | academic | Assessment form | | | credit | | |
| Conducting unit | Laboratory of Physical Oceanography -> Department of Physical Oceanography and Climate Research -> Faculty of Oceanography and Geography -> Rector | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | mgr Marta Misiewicz | | | | |
| | Teachers | | | | | | |
| Lesson types | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 0.0 | 45.0 | 0.0 | 0.0 | 0.0 | 45 |
| | 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 | 45 | | 3.0 | | 52.0 | 100 |
| Subject objectives | Acquire knowledge and understanding of basic laws governing physical processes occurring in the sea | | | | | | |

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| Learning outcomes | Course outcome | Subject outcome | Method of verification |
| | [OCEANL3-U01] is able to use the current scientific terminology in the field of oceanography in various forms of expression | Ability to use correctly science terminology in different forms of expression in the field of marine physics | [SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work |
| | [OCEANL3-U05] is able to use general-purpose and specialized software, as well as mathematical and statistical methods, in data analysis and the presentation of results | Ability to apply mathematical methods in data analysis | [SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written [SU8] observation of student's independent or team work |
| | [OCEANL3-W01] has an advanced knowledge and understanding of the terminology used in oceanography and related exact and natural sciences (in Polish and a selected foreign language) | Knowledge and understanding of the basic concepts and terms used in the field of marine physics and related science (in Polish and English) | [SW1] oral statement/conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task |
| | [OCEANL3-W02] has a broad knowledge and understanding of physical, biological, chemical, and geological processes and phenomena occurring in aquatic environments, with particular emphasis on the marine environment | Knowledge and understanding of processes and phenomena occurring in marine environment | [SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion |
| [OCEANL3-W05] has an advanced knowledge of techniques, research methods, and tools (mathematical, statistical, and computational) used by oceanographers to describe and interpret processes and phenomena occurring in the marine environment | Knowledge about research methods and approaches (mathematical, statistical and IT tools) used in oceanography in order to describe and interpret physical phenomena in the sea | [SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion | |
| Subject contents | Solar radiation as a primary source of energy on the earth, its distribution and consequences, role of radiation in energy exchange between the sea and atmosphere (based on black body radiation laws). Molecular structure and physical properties of the seawater. Elements of thermodynamics - seawater equation of state, specific heat, adiabatic process. Equilibrium and simple models of sea currents. Diffusion and advection of mass, heat and momentum in the sea. Acoustic waves in the sea. Downward irradiance transport in aquatic environment. | | |
| Prerequisites and co-requisites | | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | written tests | 51.0% | 50.0% |
| | activity | 51.0% | 25.0% |
| | short written tests | 51.0% | 25.0% |
| Recommended reading | Basic literature | Dera J.: Marine Physics. Wyd. PWN, Warszawa, 1983, 2003. Druet, Kowalik, 1970, Marine dynamics, Wyd. Morskie Gdańsk | |
| | Supplementary literature | Massel S.R., 2010. Hydrodynamical processes in marine ecosystems. Wyd. Uniwersytetu Gdańskiego. | |
| | eResources addresses | | |
| Example issues/ example questions/ tasks being completed | Prove that Coriolis acceleration is perpendicular to the horizontal water current | | |
| Work placement | Not applicable | | |

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