University of Gdańsk

Subject card

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|---|---|---|---|
| Subject name and code | Meteorology and Climatology - lecture, PG_00054173 | | |
| Field of study | Water Management and Protection of Water Resources | | |
| Date of commencement of studies | October 2024 | Academic year of realisation of subject | 2024/2025 |
| Education level | undergraduate studies | Subject group | Obligatory subject group in the field of study<br>Subject group related to scientific research in the field of study<br>Subject group related to practical vocational preparation |
| Mode of study | full-time studies | Mode of delivery | at the university |
| Year of study | 1 | Language of instruction | Polish |
| Semester of study | 1 | ECTS credits | 2.0 |
| Learning profile | practical | Assessment form | |
| Conducting unit | Pracownia Badań Klimatu -> Katedra Oceanografii Fizycznej i Badań Klimatu -> Faculty of Oceanography and Geography | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr Janusz Filipiak | |
| | Teachers | dr Janusz Filipiak | |

| 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 | 7.0 | 20.0 | 57 |

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| Subject objectives | To acquire basic knowledge of the atmosphere and the processes taking place in it. To recognize and interpret meteorological phenomena and processes in connection with the state of the natural environment. To determine the impact of weather conditions on the geographical environment, economy and human health. Acquire basic knowledge of the causes and consequences of modern global climate change. |

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [GWOZWL3-U07] use literature and other available sources of information, including information technology, multimedia, Internet, databases, and select and critically evaluate information | Student is able to use literature and other available sources of information, including including information technology, multimedia, Internet resources, databases, and to select and critically evaluate information in the field of meteorology and climatology. | [SU4] test/exam - oral or written |
| [GWOZWL3-W02] the importance of knowledge in the sciences allowing to understand the processes and phenomena occurring in the hydrosphere, as well as knowledge of the social sciences and of the Earth's geographic environment - as a a system of interrelated and interacting components | Student knows and understands the importance of knowledge of meteorology and climatology allowing to understand the processes and phenomena occurring in the atmosphere, as well as as well as knowledge of the social sciences and the geographical environment of the Earth - as a system of interrelated and interacting components. | [SW4] test/exam - oral or written |
| [GWOZWL3-W01] in advanced basic biological, physical and chemical processes and phenomena, as well as analyzes their mutual relations and course in relation to natural environment and socio-ecological systems | Student knows and understands to an advanced degree the basic meteorological and climatological processes and phenomena, as well as analyzes their interrelationships and their course in relation to the natural environment and social-ecological systems. ecological. | [SW4] test/exam - oral or written |

**Subject contents**

1. Subject of study of meteorology and climatology.
2. Atmosphere (structure and properties, vertical structure, anthropogenic changes in air composition).
3. Radiation of the Sun, Earth and atmosphere.
4. Heat balance of the Earth's surface.
5. water in the atmosphere.
6. adiabatic transformations.
7. Circulation of the atmosphere.
8. synoptic meteorology.
9. selected issues in climatology: Climatogenic processes and factors. Features of local climate. Zonality and astro-zonality of climate. Teleconnection systems. Classifications of climates. Features of the climate of Poland. Changes in the climate of the Earth. Contemporary change of the Earth's climate, its causes and consequences.

**Prerequisites and co-requisites**

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**Assessment methods and criteria**

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| obtaining of a passing grade in the written exam in accordance with the UG Academic Regulations. | 51.0% | 100.0% |

**Recommended reading**

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| Basic literature | A.1. used during classes<br>- Kożuchowski K. (ed.), 2005, Meteorology and climatology, PWN, Warsaw<br>- Kożuchowski K., 2011, Klimat Polski, PWN, Warszawa<br>- Woś A., 2001, Meteorology for geographers, PWN, Warsaw.<br>A.2. studied independently by the student:<br>- Popkiewicz M., Kardaś A., Malinowski S., 2018, Science of climate. Post Factum Publishing<br>- Rettalack B.J., 1991, Fundamentals of meteorology, IMGW, Warsaw.<br>- Woś A., 1999, Klimat Polski, PWN, Warsaw. |
| Supplementary literature | - Bednorz E. (red.), 2023, Atlas klimatu Polski (1991-2020). Wyd. Bogucki.<br>- Lorenc H., 2005, Atlas klimatu Polski, IMGW, Warszawa.<br>- Niedźwiedź T. (red.), 2003, Słownik Meteorologiczny, IMGW, Warszawa.<br>- Ustrnul Z., Czekierda D., 2009, Atlas ekstremalnych zjawisk meteorologicznych oraz sytuacji synoptycznych w Polsce, IMGW.<br>- Ustrnul Z. (red.), 2014, Atlas zagrożeń meteorologicznych Polski, IMGW-PIB. |
| eResources addresses | Adresy na platformie eNauczanie: |

**Example issues/ example questions/ tasks being completed**

1. Vertical structure of the atmosphere.
2. Practical interpretation of radiation laws.
3. How to read a synoptic map?

**Work placement**

Not applicable

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