GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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| Subject name and code | Cartography, PG_00061746 | | |
| Field of study | Geodesy and Cartography | | |
| Date of commencement of studies | October 2023 | Academic year of realisation of subject | 2024/2025 |
| Education level | first-cycle 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 | 8.0 |
| Learning profile | general academic profile | Assessment form | exam |
| Conducting unit | Department of Geodesy -> Faculty of Civil and Environmental Engineering | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Paweł Wysocki | |
| | Teachers | dr inż. Paweł Wysocki | |

**Lesson types and methods of instruction**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 30.0 | 0.0 | 30.0 | 30.0 | 0.0 | 90 |

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 | 90 | 12.0 | 98.0 | 200 |

**Subject objectives**

To familiarize students with the mathematical structure of the Earth's surface mappings used in the state coordinate systems, principles of the maps edition, cartographic generalization, qualitative and quantitative methods of cartographic representations on the example of the socio-economic issues.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K6_U07] can use reference systems and coordinate frames according to the character of cartographic studies, create a thematic map and apply in practice cartographic generalization | The student knows the principles of cartographic generalization, among others edits a map in the scale of 1: 25,000 on the basis of the source material prepared in the scale of 1: 10,000. The student is able to prepare a thematic map concerning a specific issue. Can calculate the emblem of a map based on the coordinates of a point on a given sheet. | [SU1] Assessment of task fulfilment<br>[SU4] Assessment of ability to use methods and tools |
| [K6_W05] knows and understands the principles in the field of geomatics, mathematical and thematical cartography, including reference systems and coordinate frames associated with cartographic elaborations, and has knowledge about establishing and modernizing geodetic networks, taking into account the current legal status | The student knows the mathematical construction of state coordinate systems, division into sheets depending on the scale. The student knows the mathematical construction of national coordinate systems, division into sheets depending on the scale. He can calculate the map emblem based on the coordinates of a point located on a given sheet. | [SW1] Assessment of factual knowledge |

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| Subject contents | Spherical trigonometry. Rotational ellipsoid and sphere as reference surfaces. Ellipsoids: Krasowski, GRS-80, WGS-84. Radii of curvature Map definition. Concepts, functions and forms of the map. Map scale. Cartographic coordinate systems. Geographic grid. The concept of cartographic projection. Types and division of cartographic projections. Projection distortions. Gauss-Kruger projection. Azimuthal, conical and cylindrical projections. State spatial reference systems. Systems "1942", "1965", "GUGiK-80", "2000", "1992". UTM system. Topographic maps. Map editing rules. Cartographic signs system. Cartographic generalization. Cartographic methods of presentation: cartograms, cartodiagrams, range method, signature, isolines. Thematic cartography. |
| Prerequisites and co-requisites | |

Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Tests | 50.0% | 100.0% |

Recommended reading

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| Basic literature | 1. Saliszczew K., General cartography, PWN Scientific Publishing House, Warsaw 2003.<br>2. Ratajski Lech, Methodology of socio-economic cartography, Warsaw 1989.<br>3. Gajderowicz I., Cartographic Projections. The essentials , UWM Publishing House, Olsztyn, 2009.<br>4. Różycki J., Mathematical cartography. State Publishing House, Warsaw 1978<br>5. Pasławski J., (ed.) Introduction to cartography and topography, Publisher: NOWA ERA 2006. |
| Supplementary literature | 1. Regulation of the Council of Ministers of 15 October 2012 on the national spatial reference system<br>2. Regulation of the Minister of Development, Labour and Technology of 23 July 2021 on the database of topographic objects and the base map<br>3. Regulation of the Minister of Development, Labour and Technology of 27 July 2021 on the database of topographic objects and the database of general geographical objects, as well as standard cartographic studies |
| eResources addresses | Adresy na platformie eNauczanie:<br>Kartografia 2024_25 - Moodle ID: 44804<br>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=44804 |

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| Example issues/ example questions/ tasks being completed | Division and classification of cartographic projectionsCartographic projections used in PolandCalculation of the meridian arc length.Projections distortions.State spatial references systemCoordinate systems 2000 and 1992Topographic map symbol.Editing of the map on a scale of 1: 25,000 based on source material prepared on a scale of 1: 10,000.Thematic maps |
| Work placement | Not applicable |

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