GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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|---|---|---|---|
| Subject name and code | Digital Maps Technologies, PG_00063913 | | |
| Field of study | Informatics | | |
| Date of commencement of studies | February 2026 | Academic year of realisation of subject | 2025/2026 |
| Education level | second-cycle studies | Subject group | Optional subject group<br>Specialty subject group<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 | Polish |
| Semester of study | 1 | ECTS credits | 4.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Department Of Geoinformatics -> Faculty Of Electronics Telecommunications And Informatics -> Wydziały Politechniki Gdańskiej | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Andrzej Chybicki | |
| | Teachers | dr inż. Andrzej Chybicki<br>mgr inż. Tomasz Bieliński | |

| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|---|
| | Number of study hours | 15.0 | 0.0 | 15.0 | 15.0 | 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 | 8.0 | 47.0 | 100 |

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| Subject objectives | The purpose of the course is to present basic knowledge in the area of digital charts development and applications. |

## Learning outcomes

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K7_W01] knows and understands, to an increased extent, mathematics to the extent necessary to formulate and solve complex issues related to the field of study | Student has a knowledge of basic mathematical information and concepts regarding selected cartographic transformations. | [SW3] Assessment of knowledge contained in written work and projects<br>[SW1] Assessment of factual knowledge |
| [K7_W03] knows and understands, to an increased extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum | Student knows and understands basics of EDC (Electronic Digital Chart) architecture and its internal dependencies | [SW1] Assessment of factual knowledge |
| [K7_U01] can apply mathematical knowledge to formulate and solve complex and non-typical problems related to the field of study by: - appropriate selection of source information and its critical analysis, synthesis, creative interpretation and presentation, - application of appropriate methods and tools | Student is capable of using mathemtical models to solve untypical cases related to spatial data processing. | [SU4] Assessment of ability to use methods and tools<br>[SU2] Assessment of ability to analyse information<br>[SU1] Assessment of task fulfilment |
| [K7_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, making assessment and critical analysis of the prepared software as well as a synthesis and creative interpretation of information presented with it | Students is capable of using spatial data processing libraries to be used in geographic information systems applications | [SU5] Assessment of ability to present the results of task<br>[SU2] Assessment of ability to analyse information<br>[SU1] Assessment of task fulfilment |

## Subject contents

INSPIRE directive in the context of digital charts

Spatial data exchange

Digital maps systems - examples in polish industry

## Prerequisites and co-requisites

Basics of Java, C++ and C# programming.

Geographics projections knowledge (basics)

## Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Project | 51.0% | 30.0% |
| Laboraory | 51.0% | 30.0% |
| Lecture | 51.0% | 40.0% |

## Recommended reading

Basic literature

OGC -Standards avaialable at http://www.opengeospatial.org/

GeoTools library - deteails available at://www.geotools.org/

OpenStreetMap API available at http://www.openstreetmap.org/

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|---|---|---|
| | Supplementary literature | INSPIRE directive : http://inspire.ec.europa.eu/<br><br>GDAL documentation available at http://www.gdal.org |
| | eResources addresses | Adresy na platformie eNauczanie: |
| Example issues/ example questions/ tasks being completed | Basic digital chart Java application<br><br>Application of GIS Tatuk GIS Edtor<br><br>Open Street Map applications | |
| Work placement | Not applicable | |

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