GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

| | | | |
|---|---|---|---|
| Subject name and code | , PG_00064168 | | |
| Field of study | Transport | | |
| Date of commencement of studies | October 2026 | Academic year of realisation of subject | 2026/2027 |
| 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 | 1 | Language of instruction | Polish |
| Semester of study | 1 | ECTS credits | 2.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Department of Mechanics of Materials and Structures -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Dawid Bruski | |
| | Teachers | | |

**Lesson types**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 15.0 | 15.0 | 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 | 3.0 | 17.0 | 50 |

**Subject objectives**

The aim of the course is to equip the student in:

- knowledge of projection methods in orthogonal, topographic and axonometric projections;

-skills of solving spatial problems in engineering practice.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K6_U08] able to carry out simple engineering tasks related to the construction and operation of a selected element of the transport system, select the right methods and tools | At the conclusion of the course, students should be able to:• represent polyhedrons and selected surfaces in orthogonal, topographic and axonometric projection;• transform planes and determine natural size of elements,• determine relation between objects in space by construction of piercing points or intersection lines; • solve practical problems in the scope of earth works;• sketch 3-D objects in axonometric or perspective view. | [SU1] Assessment of task fulfilment |
| [K6_W03] has knowledge of informatics, electronics, telecommunications, automation and control, information technologies, computer graphics, geodesy and satellite navigation which is useful for understanding how it can be applied in transport | At the conclusion of the course, students should be able to recognize the correctness of geometrical record in road projects | [SW3] Assessment of knowledge contained in written work and projects |

<table>
<tr><td>Subject contents</td><td>Course content – lecture<br>Orthographic projection, planes of reference. Invariants of parallel projections. Representation of geometric elements in the Monge projection, transformation, auxiliary views. Belonging and parallelism of points, lines and planes. Determination of common elements: piercing points, edges between planes. Operating on polyhedrons: piercing points, intersection lines. Topographic projection. Representation of points, lines and planes. Basic constructions: belonging and parallelism of geometric elements, intersection of elements. Edge and normal view of a plane. Topographic surfaces. Determination of embankment and cut planes along roads and squares. Axonometric projection. Plane of reference and property of axonometric projection. Orthogonal projection. Determination of shortenings of true lengths on orthographic axes. Oblique axonometric projection. Application of presented projection methods: construction of earth work along roads. Basic rules of perspective projection, one-point perspective.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>test</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>drawing exercises</td><td>40.0%</td><td>50.0%</td></tr>
</table>
</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1. KOTARSKA-LEWANDOWSKA B., CHRÓŚCIELEWSKI J. (red. praca zbiorowa): Materiały pomocnicze do wykładu i ćwiczeń z Geometrii Wykreślnej. Wersja elektroniczna do pobrania z portalu pg.edu.pl/enauczanie. 2. KOTARSKA-LEWANDOWSKA B.: Geometria wykreślna. Zadania testowe. Wersja elektroniczna do pobrania z portalu pbc. 3. Otto F., Otto E.: Podręcznik geometrii wykreślnej, PWN Warszawa, 1998 4. Bieliński A.: Geometria wykreślna Oficyna Wydawnicza Politechniki Warszawskiej</td></tr>
<tr><td>Supplementary literature</td><td>5. GROCHOWSKI B.: Elementy geometrii wykreślnej. PWN, Warszawa 2002. 5. OTTO F., OTTO E.: Podręcznik geometrii wykreślnej. PWN, Warszawa 1998. 6. JANKOWSKI W.: Geometria wykreślna. Wydawnictwo Politechniki Poznańskiej, Poznań1999. 6. Kotarska-Lewandowska B.: Geometria wykreślna. Zadania testowe, skrypt elektroniczny http://www.pbc.gda.pl, Gdańsk 2011 7. Jankowski W.: Geometria wykreślna, Wydawnictwo Politechniki Poznańskiej, 1999 8. Błach A.: Inżynierska geometria wykreślna. Podstawy i zastosowania. Wydawnictwo Politechniki Śląskiej, Gliwice 2006</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table>
</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Determination of embankment and cut planes along roads and squares.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
</table>

Document generated electronically. Does not require a seal or signature.