



## Subject card

|   |  |  |   |                                     |  |            |     |
|---|--|--|---|-------------------------------------|--|------------|-----|
| Subject name and code                       | Engineering Graphics I, PG_00039800  |  |   |                                     |  |            |     |
| Field of study                              | Materials Engineering, Materials Engineering, Materials Engineering  |  |   |                                     |  |            |     |
| Date of commencement of studies             | October 2021   |  | Academic year of realisation of subject |                                     | 2022/2023                                      |            |     |
| 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                            |                                     | 4.0  |            |     |
| Learning profile                            | general academic profile   |  | Assessment form                         |                                     | assessment                                     |            |     |
| Conducting unit                             | Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology   |  |   |                                     |  |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor   |  | dr inż. Katarzyna Zasińska              |                                     |  |            |     |
|   | Teachers   |  | dr inż. Katarzyna Zasińska              |                                     |  |            |     |
|   |  |  | mgr inż. Marek Łubniewski               |                                     |  |            |     |
| Lesson types and methods of instruction     | Lesson type  | Lecture  | Tutorial                                | Laboratory                          | Project  | Seminar    | SUM |
|   | Number of study hours  | 30.0   | 0.0                                     | 30.0                                | 0.0  | 0.0        | 60  |
|   | 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  | 60   |   | 5.0                                 |  | 35.0       | 100 |
| Subject objectives                          | The aim of the subject is to shape the 3D imagination, to learn the principles of projection and defining drawings in accordance with the applicable standards and rules of technical drawing, to learn the principles of presenting connections and components of drive systems in a technical drawing. |  |   |                                     |  |            |     |

| Learning outcomes               | Course outcome  | Subject outcome   | Method of verification  |
|---------------------------------|---|---|---|
|                                 | K6_W05  | A student draws space elements based on orthographic projection. He presents the rules of presentation elements in engineering drawing. He draws and reads structural forms of three-dimensional mechanical elements. He describes surface attributes of elements. He draws of machine elements dimensions and creates working drawings of machine elements according to machine technical drawing standards. He creates working and assembly drawings of machine elements. He reads information about machine elements based on presented elements and units drawings. He draws and reads structural forms of three-dimensional mechanical elements and mechanical units. He reads diagrams of complex mechanical systems. | [SW1] Assessment of factual knowledge   |
|                                 | K6_U01  | The student understands the importance of Engineering Graphics in the process of implementing design tasks. The student applies the rules set out in the standards for the presentation of technical objects on the drawings.   | [SU1] Assessment of task fulfilment<br>[SU4] Assessment of ability to use methods and tools |
|                                 | K6_U03  | A student draws space elements based on orthographic projection. He presents the rules of presentation elements in engineering drawing. He draws and reads structural forms of three-dimensional mechanical elements. He describes surface attributes of elements. He draws of machine elements dimensions and creates working drawings of machine elements according to machine technical drawing standards. He creates working and assembly drawings of machine elements. He reads information about machine elements based on presented elements and units drawings. He draws and reads structural forms of three-dimensional mechanical elements and mechanical units. He reads diagrams of complex mechanical systems. | [SU1] Assessment of task fulfilment<br>[SU2] Assessment of ability to analyse information   |
|                                 | K6_K01  | The student understands the importance of Engineering Graphics in the process of implementing design tasks. The student applies the rules set out in the standards for the presentation of technical objects on the drawings.   | [SK2] Assessment of progress of work  |
| Subject contents                | <p>LECTURE</p> <p>Ways of describing the geometric elements and objects. Reference system. Main and additional projecting plane. Axonometric and perpendicular projections. The methods of the machine systems drawing presentation, assembly and working drawings. Standardization of machine parts - selection and specification of standard elements.</p> <p>LABORATORY</p> <p>Perpendicular projections of the geometric figures and three-dimensional objects. Section of figures and 3d objects. Presentation of the objects in typical projections. Working out the assembly and working drawings. Drawing the connections and elements of drives.</p> |   |   |
| Prerequisites and co-requisites | Knowledge of the subjects: "Mathematics" and "Machine constructions".   |   |   |

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| Assessment methods and criteria                                | Subject passing criteria  | Passing threshold   | Percentage of the final grade |
|  | Midterm colloquium  | 56.0%   | 40.0%                         |
|  | Laboratory exercise reports   | 56.0%   | 60.0%                         |
| Recommended reading  | Basic literature  | 1. Dobrzański T.: Rysunek techniczny maszynowy. Wydawnictwo Naukowo-Techniczne, W-wa 2006.<br><br>2. Zapis konstrukcji, część I, Geometria Wykreślna, A. Rigall, J. Sadaj |                               |
|  | Supplementary literature  | Zapis konstrukcji, część I, Geometria Wykreślna, A. Rigall, J. Sadaj  |                               |
|  | eResources addresses  | Adresy na platformie eNauczanie:  |                               |
| Example issues/<br>example questions/<br>tasks being completed | 1. Sectional views.<br>2. Add missing projected views.<br>3. Make a workshop drawing for a detail.<br>4. Make an assembly drawing of screen connection. |   |                               |
| Work placement   | Not applicable  |   |                               |