# GDAŃSK UNIVERSITY OF TECHNOLOGY

## Subject card

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| Subject name and code | Computer-aided design, PG_00055059 |
| Field of study | Management and Production Engineering |

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| 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 |
| | | | 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 | 2 | Language of instruction | Polish |
| Semester of study | 4 | ECTS credits | 5.0 |
| Learning profile | general academic profile | Assessment form | exam |

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| Conducting unit | Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology |

| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Tomasz Seramak |
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| | Teachers | dr inż. Tomasz Seramak |

| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|---|
| | Number of study hours | 30.0 | 0.0 | 0.0 | 30.0 | 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 | 60.0 | 125 |

| Subject objectives | Acquainting with the basics of designing with the use of specialized CAD software. |
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| | Preparing for practical use of selected CAD class programs. |
| | Showing dependencies between CAD and CAM softwares. |

| Learning outcomes | Course outcome | Subject outcome | Method of verification |
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| | [K6_U04] is able to develop documentation in the area of preparation, implementation and control of production processes in Polish and in a foreign language considered basic for scientific fields, is able to identify and formulate the basic objectives of quality management in the product life cycle, is able to use information and communication techniques appropriate to the implementation of tasks typical in engineering activities including preparation, production and supervision of the manufacturing process | He knows the rules of creating a technical drawing and knows how to use them when creating a drawing in the CAD system. | [SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject |
| | [K6_W09] knows the general principles of creating and developing forms of individual entrepreneurship and stimulating employee creativity, using knowledge in the field of design, production and operation of machinery and technical devices | Can estimate the cost of manufacturing a part by measuring the mass of a solid file in the CAD system and by analyzing the execution time in the CAM system. | [SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects |
| | [K6_K01] feels the need for self-realization by learning throughout life, is looking for modern and innovative solutions in their actions, is able to think creatively and act in an entrepreneurial way | Can work in several CAD systems and make changes to files created in other CAD software. | [SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice |
| | [K6_W03] has knowledge of the design record (the record structure)for the preparation of the manufacturing process documentation and basic knowledge of the implementation and management of production systems, including the principles of designing machine parts and manufacturing technologies using information techniques | He can draw and apply the industry marking system of fixturing and is able to apply in an appropriate way. | [SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation |
| | [K6_W07] has knowledge of methods, errors and measurement uncertainty, product geometry specifications and assessment of their accuracy | He knows the rules of describing workpieces with the help of markings of shape tolerances, dimensions and work surface quality and knows how to apply them in an appropriate way. | [SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge |
| | [K6_U09] can use analytical techniques as well as computer simulation and numerical analysis methods in solving specific problems in the field of production engineering, is able to carry out simple engineering tasks related to the production of typical machine parts using widely understood techniques and computer tools, is able to select and apply appropriate methods of project planning and control courses with the use of computer aided means | Is able to prepare a 3D solid simulation of the assembly movement in the CAD system and perform a simple simulation of manufacturing in the CAM system | [SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information |
| Subject contents | LECTURE: Introduction to computer aided design. Creating simple drawing objects. Location of points. Basic editing commands. Complex editing commands. Text input. Create 3D solid features of a part and assembly. LABORATORY Introduction. Creating simple drawing objects: lines, circles and arcs, polylines. Location of points. Basic editing commands. Complex editing commands. Text input. Object dimensioning. Reminder of the rules of creating of engineering drawings on the example of a manufactured workpiece. Reminding the principles of machine drawing on the example of an executive drawing. Creating of 3D solids of parts and assemblies in CAD system.. | | |
| Prerequisites and co-requisites | Knowledge of the basics of technical drawing, knowledge of the basics of computer operating systems, the ability to manage the system of files and directories (folders), ability to use office software. | | |

| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
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| | Preparing of presentation | 60.0% | 50.0% |
| | Project | 60.0% | 50.0% |

| Recommended reading | Basic literature | User instructions |
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| | Supplementary literature | Scientific articles discussing the issue of CAD systems. |
| | eResources addresses | Adresy na platformie eNauczanie: |

| Example issues/ example questions/ tasks being completed | Describe the use of CAD systems in various applications. |
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| | Describe the methodology of preparing a production drawing. |
| | Describe the elements used on a machine technical drawing. |
| | Draw the indicated element in the CAD system (e.g. of crankshaft). |

| Work placement | Not applicable |
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