



COURSE DESCRIPTION CARD - SYLLABUS

Course name

System CAD

Course

Field of study

Year/Semester

Mechanical engineering

2/3

Area of study (specialization)

Profile of study

general academic

Level of study

Course offered in

First-cycle studies

Polish

Form of study

Requirements

part-time

compulsory

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

20

Tutorials

Projects/seminars

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

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Prerequisites

Students have a fundamental knowledge in the field of technical drawing and engineering graphics.

Students can interpret design and manufacturing documentation. Students are able to work in a project team. Students understand the need to acquire new knowledge.

Course objective

The aim of the course is to familiarize students with basic computer aided design tools.

Course-related learning outcomes

Knowledge

Students have the knowledge of the main forms of graphical design and geometrical 2D and 3D models of product. Students know the functionality of 2D modelling programs and can describe the methodology of working in CAD systems. Students have knowledge in Computer Aided Design in the degree allowing for modelling of machine elements and machine design.



Skills

Students can prepare documentation for engineering tasks in the field of mechanics and machine design using CAD systems. Students can develop a product model and 2D documentation using models of parts and components. Students can make a 3D geometric part model using solid modeling in the 3D Autodesk Inventor CAD system. They can develop a product model and 2D design documentation using part models, subassemblies and a library of standard elements.

Social competences

Students understand the need for lifelong learning and they can inspire and organize the learning process for others. Students are aware of the role of computerization in engineering. Students are able to develop their own knowledge on the subject.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Forming rating

Laboratories:

On the basis of an assessment of the current progress of tasks.

Summary rating

Laboratories:

Student preparation for laboratory classes and assessment of skills acquired during laboratory exercises will be verified on the basis of individually performed tasks at the computer workstation, oral answers and written tests on the ability to use studied software tools and design methods.

Programme content

Laboratory classes:

1. AutoCAD - work methodology, communication with the program interface, basic drawing operations, methods of accurate drawing.
2. Modification of graphic objects, using circular and rectangular patterns.
3. Content management, prototype drawing, drawings layers.
4. Advanced 2D design, drawing parameters, using blocks.
5. Preparing to print the documentation.
6. 3D Modeling methods. Solid modeling in Autodesk Inventor system.
7. Principles in assemblies modeling. Defining constraints for parts in a assembly. Using libraries and databases of typical components.

Teaching methods

Laboratory exercises: practical exercises, performing tasks at a computer workstation.

Bibliography



Basic

1. Przybylski W., Deja M., Komputerowo wspomagane wytwarzanie maszyn. Podstawy i zastosowanie. WNT Warszawa 2007
2. Pikoń A., AutoCAD 2020 PL. Pierwsze kroki, Helion, Gliwice 2019
3. Jaskulski A., Autodesk Inventor 2020 PL, Podstawy metodyki projektowania, Wydawnictwo Naukowe PWN, Warszawa 2019

Additional

1. Dobrzański T., Rysunek techniczny maszynowy, WNT, Warszawa 2004
2. Noga B., Inventor, Podstawy projektowania, Wydawnictwo Helion 2011

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	3,0
Classes requiring direct contact with the teacher	24	1,5
Student's own work (literature studies, preparation for laboratory classes, preparation for tests) ¹	26	1,5

¹ delete or add other activities as appropriate