POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name

CAD/CAM

Course

Field of study	Year/Semester
Material Engineering	1/2
Area of study (specialization)	Profile of study
	general academic
Level of study	Course offered in
First-cycle studies	polish
Form of study	Requirements
full-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
15	30	
Tutorials	Projects/seminars	

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

PhD., Eng. Anna Karwasz

anna.karwasz@put.poznan.pl

Faculty of Mechanical Engineering

Piotrowo Street 3, 60-965 Poznan, room 122

Responsible for the course/lecturer:

Prerequisites

The student has knowledge of technical drawing, engineering graphics. He can think logically, uses information obtained from engineering graphics, is able to operate computer equipment. Is aware of the need to learn and acquire new knowledge.

Course objective

The aim of the course is to acquaint the student with the issues of computer-aided design, computer-aided manufacturing, application of CAD/CAM systems

Course-related learning outcomes

Knowledge

The student knows the main forms of graphic recording of construction, methods of graphic mapping,

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projection, drawing cross-sections, dimensioning, graphic recording of structural connections, recording of elements of complex technical systems - [K_W05,K_W06].

The student knows the functions of 2D and 3D modeling programs, can replace the geometric elements used in the software, knows the editing functions used in CAD systems - [KW_15].

The student knows the tools of precise drafting and simulation of machining in computer systems - [KW_15].

Skills

The student knows how to use the techniques of precise drafting, editing of geometric elements in 2D and 3D CAD software - [K_U07,K_U08].

The student knows how to make 2D and 3D design documentation of parts and products using computer tools - [K_U17].

Social competences

The student is able to independently develop knowledge of the subject - [K_K01].

The student is aware of the importance of modern information technologies in design [K_K01,K_K02].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Knowledge acquired as part of the lecture is verified at the colloquium. The test consists of 5 open questions and one drawing task. Passing threshold: 50%.

The knowledge and skills acquired during the laboratories will be verified on the basis of a mid-term colloquium and the last class during the semester at the computer station. Tests consist of 2 practical tasks. Passing threshold 50%.

Programme content

Lecture:

CAD, CAM, CAx definitions. Comparison of raster and vector graphics. Presentation of construction, architecture, CAD system libraries. Representation of drawings. Geometric elements used in 2D and 3D computer systems. Presentation and discussion of graphic computer programs, input and output devices. Types and methods of machining and simulation of these processes in the CAM environment. Discussion of the advantages and disadvantages of using CAD and CAM systems.

Lab:

Understanding the 2D and 3D computer-aided design systems. Getting to know 2D and 3D geometric elements used in computer systems. Modeling in computer graphics, issuing and executing commands for precise drawing, modification and dimensioning. Creating 3D models, assembly simulation, creating technical documentation from spatial models.

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Teaching methods

Lecture: multimedia presentation illustrated with examples given on the board.

Laboratory: practical exercises, task solving, discussion.

Bibliography

Basic

Dobrzański T., Engineering drawing, WNT, Warsaw, 2020

Weiss Z., Computer techniques in an enterprise, Poznan University of Technology, Poznań, 2002

Chlebus E., CAx computer techniques in production engineering, WNT, Warsaw, 2000

Additional

Pikoń A., AutoCAD 2020 PL. First Steps, Helion Publishing House, Gliwice, 2019

Jaskulski A., Autodesk Inventor 2020 PL / 2020+, PWN, Warsaw 2020

Breakdown of average student's workload

	Hours	ECTS
Total workload	87	3,0
Classes requiring direct contact with the teacher	47	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	40	1,0

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[1] delete or add other activities as appropriate