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
CAx in mechatronics

Course

Field of study	Year/Semester
Mechatronics	4/7
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)
0	15	0
Tutorials	Projects/seminars	
0	0	

Number of credit points

1

Lecturers

Responsible for the course/lecturer:

mgr inż. Paweł Zawadzki

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tel. +48 61 665 25 52

Wydział Inżynierii Mechanicznej

ul. Piotrowo 3 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

General IT preparation, basic technical knowledge, rules for creating a technical drawing and selection of construction materials. Logical thinking, the basics of operating any design support system, using information obtained from the library and the Internet. Understanding the need to learn and acquire new knowledge.

Course objective

Introducing with the applications of CAx computer engineering systems, starting from the recording of the geometry of the object and preparation of the technological process in CAD and CAPP systems, and ending with CNC programming in CAD / CAM systems

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Course-related learning outcomes

Knowledge

1. The role of computer technology in preparing a product for production

2. Capabilities of integrated CAD / CAM systems

3. Preparation of the machining program in the CAD / CAM system

Skills

1. Application of CAD and CAE systems in product design

2. Modeling the geometry of a 2D and 3D object

3. Creating a CNC machining program

Social competences

1. The student is able to work in a group

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Positive assessment on the basis of the performance of tasks during laboratory classes and the final test checking all practical knowledge. The final grade consists of partial grades and the final test result. The threshold is passed at 50%.

Programme content

Creating 3D models based on technical documentation. Selection of production methods for prepared elements. Development of machining with the use of programming tools. Tool selection and processing technology.

Teaching methods

Performing exercises in accordance with the instructions presented, creating 3D models based on technical documentation, developing machining in accordance with the instructions of the teacher, solving practical problems.

Bibliography

Basic

1. Techniki komputerowe w przedsiębiorstwie, Z. Weiss, Wydawnictwo Politechniki Poznańskiej, Poznań, 2002 2. Techniki komputerowe CAx w inżynierii produkcji, E. Chlebus, WNT, Warszawa, 2000

2. Rysunek techniczny w mechanice i budowie maszyn, Paweł Romanowicz, PWN 2018

Additional

1. E. Lisowski, Modelowanie geometrii elementów maszyn i urządzeń w systemach CAD 3D, Wydawnictwo Politechniki Krakowskiej, Kraków 2003. 2. Przykłady efektywnego zastosowania systemu w projektowaniu mechanicznym, A. Wełyczko, Helion, Gliwice , 2005

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2. Polish standards for technical drawing.

3. Training materials provided by the authors of CAD software.

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	10	0,5

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[1] delete or add other activities as appropriate