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

Computer Aided Design

Course

Field of study	Year/Semester
Aviation and cosmonautics	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
full-time	compulsory
	Year/Semester
	2/3
	Profile of study
	general academic
	Course offered in
	polish
	Requirements
	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
2	2	-
Tutorials	Projects/seminars	
-	-	

Number of credit points

4

Lecturers

Responsible for the course/lecturer:

dr inż. Krzysztof Kotecki

email: HYPERLINK "mailto:krzysztof.kotecki@put.poznan.pl"krzysztof.kotecki@put.poznan.pl

tel. 61 665 2101

Faculty of Mechanical Engineering

ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

dr hab. inż. Michał Rychlik

email: HYPERLINK "mailto:michal.rychlik@put.poznan.pl"michal.rychlik@put.poznan.pl

tel. 61 665 2167

Faculty of Mechanical Engineering

ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

dr hab. inż. Michał Rychlik

POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

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

email: HYPERLINK
"mailto:michal.rychlik@put.poznan.pl"michal.ry
chlik@put.poznan.pl

tel. 61 665 2167
Faculty of Mechanical Engineering
ul. Piotrowo 3, 60-965 Poznań

Prerequisites

In mathematics, physics, mechanics, strnght of materials and technical drawing in based level
Basic computer skills
Student can precisely formulate questions, understand the need for further education; He knows the limitations of his own knowledge and skills

Course objective

Getting to know the basic numerical tools and methods of mechanical design and numercal simulation tools

Course-related learning outcomes

Knowledge

knowledge in the field of mathematics, including algebra, analysis, theory of differential equations, probability, analytical geometry necessary to: describe the operation of discrete mechanical systems, understand the methods of computer graphics, describe the operation of electrical and mechatronic systems

basic knowledge of the main departments of technical mechanics: statics, kinematics and dynamics of a material point and a rigid body, and the strength of materials, including the basics of the theory of elasticity and plasticity, strain hypotheses, as well as methods of testing the strength of materials and the state of deformation and stress in structures

an ordered, theoretically founded knowledge in the field of engineering graphics and machine construction: technical drawing, object projection, basic principles of engineering graphics, the use of graphic computer programs CAD (Computer Aided Design) in machine construction

Skills

ability to self-educate with the use of modern didactic tools, such as remote lectures, websites and databases, didactic programs, e-books

ability to obtain information from literature, the Internet, databases and other sources. Can integrate the obtained information, interpret and draw conclusions from it, and create and justify opinions

ability to assess the usefulness and use the tools integrated with packages for spatial modeling, and correctly interpret their results

Social competences

understands the need for lifelong learning; can inspire and organize the learning process of other people

aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on the environment, and the related responsibility for decisions

POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

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

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Oral and written tests. Assessment of the results of individual tasks

Programme content

Introduction to computer aided design discussed on the basis of the product life cycle, virtual design, space discretization, 3D scanning, 3D printing, FEM - Finite Element Method, Computer Fluid Dynamisc, aerospace, design optimization

Teaching methods

Lectures, laboratory classes with examples tasks

Bibliography

Basic

1. O.C. Zienkiewicz: Metoda Elementów Skończonych. WNT Warszawa 1977

2. M. Kleiber: Komputerowe Metody Mechaniki Ciał Stałych, PWN 1995, ISBN 83-01-11740-0

Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	110	4
Classes requiring direct contact with the teacher	60	2
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	50	2

---

[1]   delete or add other activities as appropriate