



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Computer aided design [S1Lot2>KWP]

Course

Field of study

Aviation

Year/Semester

1/2

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

30

Other

0

Tutorials

0

Projects/seminars

0

Number of credit points

2,00

Coordinators

prof. dr hab. inż. Piotr Krawiec
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Lecturers

Prerequisites

A student starting this subject should know the rules of classical construction notation. Efficiently use the Windows operating system. He should also have the ability to acquire information from the indicated sources and be ready to cooperate within the team.

Course objective

Students will learn the methodology of designing parts and assemblies in three-dimensional 3D space, acquiring the skills to create 2D technical documentation and designed visualizations products. Using knowledge of classical construction notation.

Course-related learning outcomes

Knowledge:

1. has 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 CAD (Computer Aided Design) graphic programs in the construction of machines

Skills:

1. is able to communicate using various techniques in the professional environment and other environments field of study studied

Social competence

1. is aware of the social role of a graduate of a technical university, in particular understands the need to formulate and convey to the society, in an appropriate form, information and opinions on engineering activities, technological achievements, as well as the achievements and traditions of the engineer profession

2. correctly identifies and resolves dilemmas related to the profession of an aerospace engineer

Social competences:

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Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Completion of the lecture in writing at the last meeting. Passing the laboratory based on the task from 2D and 3D modeling.

Programme content

History of CAD, Raster graphics, vector graphics, 3D graphics. Areas of application of CAD systems, CAM, CAE. The place of computer graphics in Computer Integrated Manufacturing CIM.

Practical knowledge of the possibilities of parameterization, adaptability and variants in professional settings

CAD systems. During laboratory classes, implementation of the product design process in the 3D system through preliminary design, 3D model, 2D documentation, assembly of the assembly, animation of the product operation.

PART - 66 (PRACTICE - 22.5 hours)

MODULE 7A. TECHNICAL SERVICE ACTIVITIES

7.14 Handling of materials

7.14.1 Thin sheet

Marking and calculating bending clearance;

Working of thin sheet metal, including bending and forming;

Thin sheet performance test [2]

Course topics

Adaptive design

The principle of operation of screen editors

Construction of a task in the CAD system language

CAD system architecture

Methods of internal computer description of construction objects

Computer representation of an object in a 3D system

Exchange of graphic information between CAX packages

Applications of Reverse Engineering techniques

Rapid Inspection

Teaching methods

Lecture: multimedia presentation, illustrated with examples given using a projector.

Laboratory exercises: multimedia presentation, presentation illustrated with examples on the board and completing the tasks given by the teacher - practical exercises

Bibliography

Basic:

1. Krawiec Piotr (ed.), Computer graphics for mechanics (6th edition, extended and changed), ed. Poznań University of Technology, 2020.

2. Foley J., Dam A., Hughes J., Phillips R., Introduction to computer graphics, Warsaw, WNT 2001.

3. Kiciak P., Basics of modeling curves and surfaces: applications in computer graphics,

Warsaw, WNT 2000.

Additional:

1. Krawiec Piotr (ed.), Computer graphics (5th extended edition) ed. Poznań University of Technology, 2011.
2. Dudziak Marian, Krawiec Piotr, Supporting the design and recording of structures, PWSZ Publishing House in Kalisz, 2012.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	45	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	5	0,50