COURSE DESCRIPTION CARD - SYLLABUS

Course name
Computer aided design II

Course

Field of study
Aerospace Engineering

Year/Semester
2/4

Area of study (specialization)
Pilotage

Profile of study
general academic

Level of study
First-cycle studies

Course offered in
Polish

Form of study
full-time

Requirements
elective

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars
15

Number of credit points

1

Lecturers

Responsible for the course/lecturer:
dr hab. inż. Piotr Krawiec prof. PP

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Responsible for the course/lecturer:
dr inż. Jarosław Adamiec

email: Jaroslaw.Adamiec@put.poznan.pl

tel. 61 665 2254

Prerequisites

The student starting this subject should be familiar with the principles of classical and computerized construction. Use the 3D CAD system efficiently. He should also be able to obtain information from specified sources and be ready to cooperate as part of a team.

Course objective

Understanding the essential elements and machine configurations using engineering calculation procedures. Acquisition of skills in selection of geometrical and material features as well as analysis of analyzed external units and machine elements.

Course-related learning outcomes

Knowledge

1. Has basic knowledge about standardized rules of structure recording.

2. Has solid knowledge of the basics of 2D and 3D modeling.

Skills

1. Is able to design typical mechanical gearboxes with suggested programs in the field of computer-aided configuration

2. Has the ability to self-study from the available tools of teaching tools.

3. Is able to use popular 3D modeling packages at a level enabling creation of drawing documentation in accordance with applicable drawing standards

Social competences

1. Understands the needs and knows the possibilities of continuous training

2. Has the concept and understanding of aspects of mechanical engineering and its impact on the environment, and responsibility for decisions

3. Is to obtain information in a professional manner, include principles of professional ethics and respect for cultural diversity

4. Has general cooperation and readiness to comply with the principles of cooperation in teams and taking actions for common tasks

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Credit based on the design of the mechanical transmission.

Programme content

Paramatic modeling of solids, modeling of gears (cylindrical, tapered, worm), tension gears (with clinical or toothed belts or chain), shafts, bearings (rolling, sliding), screw, bolt, spline, spline, welded, welded joints, and also springs, cams and frames. Analysis of component durability and machine configuration with FEM indicator.

Teaching methods

Lecture: multimedia presentation, illustrated with examples given with the projector's recommendation.
Laboratory exercises: multimedia presentation illustrated with examples given on the board and performing tasks given by the teacher - practical exercises

Bibliography

Basic

1. Krawiec Piotr (red.), Grafika komputerowa dla mechaników (wyd. VI rozszerzone i zmienione), wyd. Politechniki Poznańskiej, 2020.

2. Foley J., Dam A., Hughes J., Phillips R., Wprowadzenie do grafiki komputerowej, Warszawa, WNT 2001.

3. Kiciak P., Podstawy modelowania krzywych i powierzchni: zastosowania w grafice komputerowej, Warszawa, WNT 2000.

Additional

1. Krawiec Piotr (red.), Grafika komputerowa (wyd. V rozszerzone) wyd. Politechniki Poznańskiej, 2011.

2. Dudziak Marian, Krawiec Piotr, Wspomaganie projektowania i zapisu konstrukcji, Wydawnictwo PWSZ w Kaliszu, 2012.

Breakdown of average student's workload

	Hours	ECTS
Total workload	30	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies, preparation for project implementation) [1]	15	0,5

[1] delete or add other activities as appropriate