



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Design project

Course

Field of study

Mechatronics

Area of study (specialization)

-

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

3/6

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

Number of hours

Lecture

0

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

45

Number of credit points

4

Lecturers

Responsible for the course/lecturer:

dr inż. Adam Myszkowski

Responsible for the course/lecturer:

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Wydział Inżynierii Mechanicznej

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60-965 Poznań

Prerequisites

Knowledge of technical drawing, technical mechanics, strength of materials, materials science and basics of machine construction.

Course objective

Expanding knowledge in the field of design and selection of sub-assemblies and elements of machines and devices. Strengthening application skills, skills in performing engineering calculations. Acquiring the ability to independently shape the kinematic structures of machines and devices.



Course-related learning outcomes

Knowledge

Detailed knowledge of machinery and equipment, including typical elements and subassemblies, development trends of machinery and equipment and manufacturing technologies with particular regard to mechanical technology, Knowledge of the principles of operation of various types of drives and their transmission systems.

Skills

Conceptual work, analyzing kinematic structures, mapping and dimensioning of machines; designing and performing strength calculations of mechanical systems using computer aided design of machines.

Social competences

Collaboration and teamwork, taking on different roles and tasks.

Ability to map and dimension machine elements; designing and performing strength calculations of mechanical systems using computer aided design of machines.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Completion of the project.

Programme content

- Designing and selecting elements of machines and devices
- requirements and restrictions for machines and devices,
- basic design principles with particular regard to safety during their operation,
- structural reliability,
- economic and ecological aspects of design,
- indicating the areas of acceptable solutions and effective solutions to the problem.

Teaching methods

Presentation of issues, problem solving, discussion, teamwork, consultation.

Bibliography

Basic

1. Z. Osiński. Podstawy konstrukcji maszyn. Warszawa : WN PWN, 1999.
2. Dobrzański T.: Rysunek Techniczny Maszynowy, WNT, Warszawa, 2004



3. Automatyzacja obrabiarek i obróbki skrawaniem, J. Kosmol, WNT, Warszawa 2000.
4. Mazanek E.: Przykłady Obliczeń z Podstaw Konstrukcji Maszyn Tom I, WNT, Warszawa, 2009
5. Poradnik inżyniera mechanika. WNT, Warszawa 1970.

Additional

1. Catalogs of manufacturers of machine elements.
2. Websites of machine and device manufacturers.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	45	2,0
Student's own work (literature studies, preparation for project preparation) ¹	55	2,0

¹ delete or add other activities as appropriate