



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Methodology of constructing working machines

### Course

Field of study

Construction and operation of means of transport

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

4/7

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

9

Laboratory classes

0

Other (e.g. online)

0

Tutorials

18

Projects/seminars

0

### Number of credit points

2

### Lecturers

Responsible for the course/lecturer:

dr inż. Łukasz Gierz

Responsible for the course/lecturer:

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tel. 61-6652225

Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3, 60-965 Poznań

### Prerequisites

Knowledge: Has basic knowledge of the construction and operation of working machines

Skills: Can use office software and basic CAD software

Social competences: Has basic communication skills and teamwork

### Course objective

Systematizing general knowledge about construction and practicing how to use it to solve construction tasks on specific examples from working machines.



### Course-related learning outcomes

#### Knowledge

1. Knows the general organization and course of the machine construction process;
2. Knows methods of structure optimization;
3. Knows the basic methods of mathematical modeling of working machines;
4. Knows computer software used to support the process of machine construction.

#### Skills

1. Can organize the process of designing a working machine.

#### Social competences

1. Develops teamwork skills and the ability to use modern information sources;
2. Can use CAD software in the process of machine design;
3. Can perform basic calculations in the process of designing machines.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written exam consisting of a set of descriptive questions, a credit for classes, a project for laboratory classes

### Programme content

Design strategies. Ways of reaching solutions to structural problems. Cardinal and specific design principles, the structure of a typical design process. The course of the construction process - constructor's tasks. Basic construction evaluation criteria.

### Teaching methods

1. Lecture with multimedia presentation
2. Eternals- solving problems
3. Laboratories - project

### Bibliography

#### Basic

1. Dietrich M. i inni: Podstawy konstrukcji maszyn t. I, PWN Warszawa 1986
2. Dziama A.: Metodyka konstruowania maszyn, PWN, Warszawa, 1985
3. Osinski Z., Wróbel J.: Teoria konstrukcji maszyn, PWN Warszawa 1982.



Additional

1. Tarnowski W. Optymalizacja i polioptymalizacja w technice, Koszalin, 2011
2. Praca Zbiorowa red. Jan Szlagowski. Automatyzacja pracy maszyn roboczych. Metodyka i zastosowani

**Breakdown of average student's workload**

	Hours	ECTS
Total workload	82	5,0
Classes requiring direct contact with the teacher	27	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	55	3,0

<sup>1</sup> delete or add other activities as appropriate