



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Passing Project - Powertrains

### Course

Field of study

Construction and Exploitation of Means of Transport

Area of study (specialization)

Internal Combustion Engines

Level of study

First-cycle studies

Form of study

part-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

0

### Number of credit points

5

### Lecturers

Responsible for the course/lecturer:

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Faculty of Civil and Transport Engineering

Piotrowo 3 street, 60-965 Poznan

Responsible for the course/lecturer:

### Prerequisites

KNOWLEDGE: Has knowledge of the construction, operation and testing of internal combustion engines

SKILLS: Is able to independently use various sources of information, also in foreign languages. Can edit technical texts.

SOCIAL COMPETENCES: Demonstrates independence in solving basic engineering tasks.

### Course objective

Presentation of the purpose, scope and list of topics for transitional works. Preparing the student to write an engineering diploma thesis and its correct editorial preparation



## Course-related learning outcomes

### Knowledge

Has 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

Is aware of the latest trends in machine construction, i.e. automation and mechatronization, automation of machine design and construction processes, increased safety and comfort of operation, the use of modern construction materials

Has extended basic knowledge necessary to understand specialized subjects and specialist knowledge about the construction, construction methods, manufacturing and operation of a selected group of working, transport, thermal and flow machines covered by a specialization profile

### Skills

He can 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

He can search in catalogs and on manufacturers' websites ready-made machine components to be used in his own projects

Can interact with other people as part of teamwork (also of an interdisciplinary nature)

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

### Social competences

He is ready to critically assess his knowledge and received content

Is ready to recognize the importance of knowledge in solving cognitive and practical problems and to consult experts in the event of difficulties in solving the problem on its own

He is ready to fulfill social obligations, inspire and organize activities for the social environment

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Discussion, combined with the assessment of exemplary implementation of the transitional works.

## Programme content

Scientific work - definition and unique features. Types of scientific works. The structure of the transitional work, language, style and editorial issues. The process of writing a transitional thesis (the genesis of the topic, preparatory activities, source materials). Citations and copyrights. The role of the promoter in the process of creating a job. Principles of evaluation of the transitional work. Basics of the theory of the experiment (research planning, building models of the research object, analysis of results)



## Teaching methods

1. Lecture with multimedia presentation
2. Discussion, presentations of students

## Bibliography

### Basic

1. Leszek W., Badania empiryczne, wyd. ITE, Radom 1997.
2. Majchrzak J., Mendel T., Metodyka pisania prac magisterskich i dyplomowych. Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań 2005.
3. Wiśłocki K., Metodologia i redakcja prac naukowych. Wydawnictwo Politechniki Poznańskiej, Poznań 2013.
4. Pułło A., Prace magisterskie i licencjackie. PWN, Warszawa 2000.
5. Korzyński M., Metodyka eksperymentu. Wydawnictwo NT, Warszawa 2006.
6. Szkutnik Z., Metodyka pisania pracy dyplomowej. Wyd. Poznańskie, ISBN 8371773714, 2005

### Additional

1. Leszek W. Nieempiryczne procedury badawcze w naukach przyrodniczych i technicznych. Wydawnictwo ITE, Radom 1999.
2. Polański Z., Planowanie doświadczeń w technice. PWN, Warszawa

## Breakdown of average student's workload

	Hours	ECTS
Total workload	125	5,0
Classes requiring direct contact with the teacher	25	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	100	4,0

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