



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Managing the automotive product development process

### Course

Field of study

Year/Semester

Construction and Exploitation of Means of Transport

1/1

Area of study (specialization)

Profile of study

Motor vehicles

general academic

Level of study

Course offered in

Second-cycle studies

polish

Form of study

Requirements

full-time

compulsory

### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

15

0

0

Tutorials

Projects/seminars

0

0

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

D.Sc.Ph.D. (Eng) . Grzegorz Ślaski

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### Prerequisites

Knowledge: The student knows the basics of motor vehicles design and structure. He knows the basics of machine design. He knows the basics of materials science. He knows the basics of machine building technology.

Skills: The student can use native and international languages and is able to understand technical texts. He can acquire information from literature, the Internet, databases and other sources. The student can integrate the obtained information and interpret it, make conclusions, he can formulate and justify opinions.

Social competencies: The student understands the need and knows the possibilities of lifelong learning.



## Course objective

To familiarize students with the development process of automotive products, the phase of product development and the methods and tools of its serial production development. Familiarizing with the design approach to the process of creating a new car and areas and tools for project management.

## Course-related learning outcomes

### Knowledge

1. The student has knowledge about the phases and areas of the car development process
2. The student has basic knowledge of project specificity, areas and methods of project management

### Skills

The student is able to define the necessary stages of the product development process

2. The student can define the necessary areas of project management for the development of a new car structure and propose management tools

### Social competences

1. The student is aware of the importance of a design approach to the process of product creation and the use of methods and tools for managing this project

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written test, which is based on answers related to the selection of given answers and open questions. Credits will be given after achieving at least 50% of points. Answers are scores from 0 to 1 point.

## Programme content

Introductory information, scale and diversification of automotive production, division of car into subassemblies (modules), components and parts, structure of sub-suppliers. An example of the car production process.

Product development process (car), the main stages of car development process, product design and design of serial production methods/tools, main professional departments, chronology of individual stages, milestones. Examples of general structure of automotive product development processes.

A detailed discussion of the individual phases: initial phase and product definition, concept development and product verification, preparation of a serial product, preparation of serial production launch.

Detailed analysis of an exemplary product development process

Project management: definition, basic concepts, basic parameters of the project, context and shareholders of the project, project life cycle, decision levels in the project, organizational structure of the project, issues of creating a project team.

Discussing the individual phases of the project: initiating, planning, implementing and closing the project. Project planning and control techniques. Schedule planning and control (Gantt charts, network methods and PERT), resource planning and budgeting. Project monitoring techniques.



Management of the project team. Methods for assessing the profitability of projects, methods of risk management and quality of projects.

### Teaching methods

1. Lecture with a multimedia presentation - a combination of an information and problem lecture;

### Bibliography

#### Basic

1. Vivek D. Bhise, Automotive Product Development: A Systems Engineering Implementation 1st Edition, Publisher: CRC Press; 1 edition (March 22, 2017)
2. Jędrych P., Pietras P., Szczepańczyk M. (2012), Zarządzanie projektami, Wydanie I, Politechnika Łódzka, Łódź

#### Additional

1. Weber, Julian: Automotive Development Processes, Processes for Successful Customer Oriented Vehicle Development, Springer 2009,
2. Julian Happian-Smith: Introduction to Modern Vehicle Design, Butterworth-Heinemann, 2001
3. uczak M., Małys, Ł. K.: Współczesne koncepcje i trendy w branży motoryzacyjnej, Advertiva, Poznań 2016

### 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 laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	15	0,5

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