



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Construction of road vehicles

### Course

Field of study

Construction and Exploitation of Means of Transport

Area of study (specialization)

Mass Transport Vehicles

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

3/5

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

30

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

### Number of credit points

3

### Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

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### Prerequisites

**KNOWLEDGE:** The student has a basic knowledge of machine science, mechanics, the basics of machine construction and the laws of physics related to road vehicles.

**SKILLS:** The student is able to acquire knowledge (information), interpret them, draw conclusions, read diagrams and technical drawings.

**SOCIAL COMPETENCES:** The student is aware of the role of means of transport in human economic activity.

The student is able to determine the priorities important in solving the tasks set before him.



## Course objective

The aim of the course is to provide students with information on the construction and operation of systems, assemblies and mechanisms of a motor vehicle.

## Course-related learning outcomes

### Knowledge

He knows the tasks, structure and properties of various types of basic motor vehicle systems.

He knows the range of applications of particular varieties of basic vehicle systems.

He knows the construction and operation of safety systems and traction control in a car.

### Skills

He can describe the tasks, principles of operation, design and functional variants, properties and the scope of applications of various solutions of mechanisms and assemblies of the main vehicle systems.

He knows the basic factors influencing the traction properties and traffic safety of the car.

### Social competences

He understands the need and knows the possibilities of continuous training, knows the need to acquire new knowledge for professional development.

He can independently develop his knowledge of the construction and properties of motor vehicles and their components.

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

For discussion, ongoing preparation and activity in class. Written exam for lectures and written exam for classes.

## Programme content

Varieties and properties of the suspension systems, tasks, structure, varieties, properties and scope of application of leading and spring elements, shock absorbers and stabilizers, varieties and properties of steering systems, conditions of transverse and longitudinal stability of the car, tasks, structure, varieties and properties of steering mechanisms and steering mechanisms, legal requirements for the construction and operation of brake systems, types and properties of brake systems, tasks, construction, types and properties of brakes and brake actuation mechanisms, auxiliary brakes, ABS, ASR, ESP systems: tasks, basics of construction and principles of operation, tasks, varieties, properties and areas of application of load-bearing systems, construction of frame systems and self-supporting bodies, legal requirements, types of lighting, types and properties of various light sources.

## Teaching methods

1. Lecture with multimedia presentation,
2. Laboratory - problem solving.



## Bibliography

### Basic

1. Reimpell J., Betzler J.: Podwozia samochodów, Podstawy konstrukcji. WKŁ, W-wa, 2003.
2. Zieliński A.: Konstrukcja nadwozi samochodów osobowych i pochodnych. WKŁ, W-wa, 2003.
3. Prochowski L., Żuchowski A.: Samochody ciężarowe i autobusy. WKŁ, W-wa, 2004.

### Additional

1. Seria Auto Expert: Budowa i eksploatacja pojazdów. Tom I, Działanie zespołów i podzespołów. Praca Zbiorowa, Vogel, Wrocław, 2004.
2. Czasopisma: Transport, technika motoryzacyjna oraz Auto, technika motoryzacyjna.
3. Orzełowski S.: Budowa podwozi i nadwozi samochodowych. WSiP, W-wa, 1999.

## Breakdown of average student's workload

	Hours	ECTS
Total workload	60	3,0
Classes requiring direct contact with the teacher	45	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	30	1,0

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