



COURSE DESCRIPTION CARD - SYLLABUS

Course name

The theory of road traffic

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

15

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

Ph.D., D.Sc. Wojciech Sawczuk

email: wojciech.sawczuk@put.poznan.pl

tel. +48 61 224 4510

Faculty of Civil and Transport Engineering

ul. Piotrowo 3, 60-965 Poznan

Responsible for the course/lecturer:

MSc. Mateusz Jüngst

email:

mateusz.m.jungst@doctorate.put.poznan.pl

tel. +48 61 665 2023

Faculty of Civil and Transport Engineering

ul. Piotrowo 3, 60-965 Poznań

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 movement of motor vehicles, its properties and the characteristics of drive units.

Course-related learning outcomes

Knowledge

He knows the tasks, structure and properties of various types of basic drive systems of a motor vehicle. He knows the range of applications of individual varieties of drive systems of motor vehicles and their characteristics. He knows the structure and principles of operation of the safety and traction control systems in the car.

Skills

He can describe the tasks, principles of operation, design and functional variants, properties and the scope of application 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 movement and properties of motor vehicles.

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 credit for lectures and written credit for laboratory classes.

Programme content

Course contents Rolling wheels on the surface, wheel slip, forces acting on the vehicle, resistance during driving a car, characteristics of drive units, engine and vehicle finish, energy balance of the vehicle, gear ratios in the drive system, characteristics of mechanical, hydraulic and electric drives, supply characteristics at constant and variable engine speed, vibrations in the vehicle, equation of vehicle motion.

Teaching methods

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

Bibliography

Basic

1. Siłka W.: Teoria ruchu samochodu. Wydawnictwo Naukowo-Techniczne Warszawa 2002 r.
2. Mitschke M.: Teoria samochodu. Dynamika samochodu. WKŁ Warszawa 1977 r.



3. Prochowski L.: Pojazdy samochodowe. Mechanika ruchu. WKŁ Warszawa 2005 r.

Additional

1. Arczyński S.: Mechanika ruchu samochodu. Wydawnictwo naukowo-Techniczne, Warszawa 1993 r.

2. Gaca S., Suchorzewski W., Tracz M.: Inżynieria ruchu drogowego. Teoria i praktyka. WKŁ Warszawa 2014 r.

3. Wicher J.: Bezpieczeństwo samochodów i ruchu drogowego. WKŁ Warszawa 2012 r.

Breakdown of average student's workload

	Hours	ECTS
Total workload	80	3,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	50	2,0

¹ delete or add other activities as appropriate