



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Electrical components in vehicles [N1Trans1>PEwP]

Course

Field of study

Transport

Year/Semester

2/4

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

part-time

Requirements

elective

Number of hours

Lecture

9

Laboratory classes

18

Other

0

Tutorials

0

Projects/seminars

0

Number of credit points

4,00

Coordinators

dr inż. Ryszard Mańczak

rysard.manczak@put.poznan.pl

Lecturers

Prerequisites

The student has basic knowledge of physics in the field of electricity.

Course objective

Learning about the basics of electrical engineering in general and their detailed application in vehicles.

Course-related learning outcomes

Knowledge:

The student has an ordered, theoretically founded general knowledge of technology, transport systems and various means of transport.

The student knows the basic techniques, methods and tools used in the process of solving tasks in the field of transport, mainly of an engineering nature engineering.

Skills:

Student is able to make a critical analysis of the functioning of transport systems and other technical solutions and to evaluate these solutions, including: is able to effectively participate in the technical inspection and assess the transport task from the point of view of non-functional requirements, has the

ability to systematically conduct functional tests.

Social competences:

The student understands that in technology, knowledge and skills very quickly become obsolete.

The student is aware of the importance of knowledge in solving engineering problems, knows examples and understands the causes of malfunctioning transport systems that have led to serious financial and social losses or to serious loss of health and even life.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:

Test on end of semester and evaluation of reports.

Programme content

Functional properties, parameters, technical solutions, methods of diagnosis and typical faults of circuit elements: power supply and start-up, classic and electronic ignition systems, electronic petrol injection systems as well as lighting and signaling systems.

Converters of non-electrical quantities into electrical quantities used in automotive systems: structure, principle of operation, parameters and methods of diagnosis.

Course topics

none

Teaching methods

Auditorium lecture, laboratory classes.

Bibliography

Basic

1. Herner A., Riehl H.J., Elektrik, elektronik, Vogel Verlag, Würzburg (Deutschland), 2001 (tłum. pol. Elektrotechnika i elektronika w pojazdach samochodowych, WKiŁ, W-wa 2003).
2. Kasedorf J., Benzineinspritzung und Katalysatortechnik, Vogel Verlag, Würzburg (Deutschland), 1995 (tłum. pol. Układy wtryskowe i katalizatory, WKiŁ, Warszawa 1998).
3. Konopiński M., Elektronika w technice motoryzacyjnej, WKiŁ, Warszawa, 1987.

Additional

1. Denton T., Automobile electrical and electronic systems, Arnold, London 1995, 2000.

Breakdown of average student's workload

	Hours	ECTS
Total workload	90	4,00
Classes requiring direct contact with the teacher	27	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	63	3,00