COURSE DESCRIPTION CARD - SYLLABUS

Course name
Methods of Inferences in Vehicle Diagnostics

Course

Field of study
Construction and Operation of Means of Transport

Year/Semester
1/1

Area of study (specialization)
Rail vehicles

Profile of study
general academic

Level of study
Second-cycle studies

Course offered in
polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
15

Number of credit points

2

Lecturers

Responsible for the course/lecturer:
prof. dr hab. inż. Franciszek Tomaszewskiy

Responsible for the course/lecturer:

Prerequisites

KNOWLEDGE: Basic knowledge of physics, mechanics and vehicle construction.

SKILLS: Solve problems appearing in technical systems.

SOCIAL COMPETENCES: Collaboration in a group and setting priorities in solving the tasks set before him.

Course objective

Getting to know theoretical and practical issues related to the methods and diagnostic inference in vehicles.

Course-related learning outcomes

Knowledge

Has a general knowledge of the types of tests and methods of testing working machines with the use of modern measurement techniques and data acquisition.

Skills

He can carry out basic measurements of mechanical quantities on the tested working machine with the use of modern measuring systems.

Social competences

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.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written exam, final test

Programme content

Introduction to problems of the theory of diagnostics. Diagnostic models of technical objects: symptomatic, analytical, holistic and simulation. Forecasting future vehicle conditions with known and unknown symptom trend model. Vehicle diagnosis methods and algorithms.

Diagnostic inference. Generation of diagnostic signals, acquisition and processing of diagnostic information. Limit values and admissible diagnostic symptoms. Methodology of building diagnostic procedures. Diagnostic experiments.

Teaching methods

Lecture with multimedia presentation.

Bibliography

Basic

1. Niziński S.: Diagnostyka samochodów osobowych i ciężarowych. Dom Wydawniczy Bellona, Warszawa 1999.

2. Niziński S., Michalski R.: Diagnostyka obiektów technicznych. Wydawnictwo i Zakład Poligrafii Instytutu Eksploatacji w Radomiu, Radom 2002.

3. Żółtowski B.: Podstawy diagnostyki Maszyn. Wydawnictwo Uczelniane Akademii Techniczno-Rolniczej w Bydgoszczy, Bydgoszcz 1996.

Additional

1. Korbisz J., Kościelny J., Kowalczuk Z., Cholewa W., redakcja. Diagnostyka procesów. Modele, metody sztucznej inteligencji, zastosowania. Wydawnictwa Nukowo-Techniczne, Warszawa 2004

Breakdown of average student's workload

	Hours	ECTS
Total workload	53	2,0
Classes requiring direct contact with the teacher	36	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	6	1,0

[1] delete or add other activities as appropriate