COURSE DESCRIPTION CARD - SYLLABUS

Course name
Exhaust Gas Aftertreatment Systems [N2Trans1-TrN>PMOS]

Course

Field of study
Transport

Year/Semester
1/2

Area of study (specialization)
Low-emission Transport

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
9

Laboratory classes
0

Other
0

Tutorials
9

Projects/seminars
0

Number of credit points

2,00

Coordinators

prof. dr hab. inż. Paweł Fuć
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Lecturers

Prerequisites

Knowledge: the student has knowledge of the purification of exhaust gases, their structure, operation, effectiveness, classification, calculation of parameters. Skills: the student is able to integrate the obtained information, interpret it, draw conclusions, formulate and justify opinions. Social competences: is aware of and understands non-technical aspects and effects of engineering activities and its impact on the environment.

Course objective

Familiarization with the methods of purifying exhaust gases, learning about the construction of exhaust gas cleaning systems, their operation, impact on the cost of vehicle operation, their operation and proper operation.

Course-related learning outcomes

Knowledge:
The student knows advanced methods, techniques and tools used in solving complex engineering tasks and conducting research in a selected area of transport
The student has knowledge of ethical codes related to scientific and research work in the field of

transport engineering

Skills:
The student is able to use information and communication techniques used in the implementation of projects in the field of transport
The student is able to assess the usefulness and the possibility of using new achievements (methods and tools) and new products of transport technology

Social competences:
The student understands that in the field of transport engineering, knowledge and skills very quickly become obsolete
The student understands the importance of using the latest knowledge in the field of transport engineering in solving research and practical problems

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Discussion, combined with the assessment of exemplary implementation of engineering diploma theses.
Credit based on a study containing basic information on the student"s engineering diploma thesis.

Programme content

Lecture: construction, operation, operation of engine and non-engine exhaust gas treatment systems.
Exercises: calculation of functional parameters of components of exhaust gas treatment systems.

Course topics

Lecture: construction, operation, operation of engine and non-engine exhaust gas treatment systems.
Exercises: calculation of functional parameters of components of exhaust gas treatment systems.

Teaching methods

1. Lecture with multimedia presentation
2. Exercises - solving problems

Bibliography

Basic
1. Jerzy Merkisz, Paweł Fuć, Piotr Lijewski, Fizykochemiczne aspekty budowy i eksploatacji filtrów cząstek stałych. Poznań 2016.
2. Uwe Rokosch, Układy oczyszczania spalin i pokładowe systemy diagnostyczne samochodów. ISBN 978-83-206-1657-6.
3. Jerzy Merkisz, Ekologiczne problemy silników spalinowych, Wyd. Politechniki Poznańskiej, Poznań 1998.
4. Diesel and gasoline exhaust aftertreatment technologies. SAE Books and Papers. all editions
Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	48	2,00
Classes requiring direct contact with the teacher	18	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00