POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)
pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name

Exhaust Gas Aftertreatment Systems

Course

Field of study	Year/Semester
Transport	1/2
Area of study (specialization)	Profile of study
Low-emission transport	general academic
Level of study	Course offered in
Second-cycle studies	Polish
Form of study	Requirements
full-time	elective

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
15	0	
Tutorials	Projects/seminars	
15	0	

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

prof. Paweł Fuć

e-mail: pawel.fuc@put.poznan.pl

phone: 61 665 2045

Faculty of Civil and Transport Engineering

3 Piotrowo street, 60-965 Poznan, Poland

phone: 61 665 23 55

Responsible for the course/lecturer:

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.

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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:

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.

Teaching methods

1. Lecture with multimedia presentation

2. Exercises - solving problems

Bibliography

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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	60	2,0
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]	30	1,0

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[1] delete or add other activities as appropriate