

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Engine oftreatment systems</b>		Code <b>1010622221010622312</b>
Field of study <b>Transport</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>1 / 2</b>
Elective path/specialty <b>Ecology of Transport</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>Second-cycle studies</b>	Form of study (full-time, part-time) <b>full-time</b>	
No. of hours Lecture: <b>1</b> Classes: <b>1</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>2</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b>		ECTS distribution (number and %) <b>2 100%</b>
<b>Responsible for subject / lecturer:</b>  dr hab. inż. Paweł Fuć email: pawel.fuc@put.poznan.pl tel. 61-6652045 Faculty of Working Machines and Transportation ul. Piotrowo 3 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	student has knowledge of cleaning exhaust gas, the construction, operation, performance, classification, calculation of exhaust systems parameters
2	<b>Skills</b>	student is able to integrate the information, make their interpretation, draw conclusions, formulate and justify opinions
3	<b>Social competencies</b>	student is aware of and understands the consequences of negative technical aspects and engineering activities and their impact on the environment
<b>Assumptions and objectives of the course:</b> familiarize yourself with the methods of cleaning exhaust gas, refer to the construction of an exhaust aftertreatment and their operation, the impact on the cost of the vehicle, its maintenance and correct operation		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. He knows the terminology in English related to the engines and exhaust aftertreatment systems - [-] 2. He knows the methodology of control and diagnosis the aftertreatment systems - [-] 3. He knows the methodology of measuring exhaust emissions from vehicles with exhaust aftertreatment systems - [-] 4. He knows the applicability of particular components in vehicles of different categories - [-] 5. He knows the mechanisms of operation of an exhaust aftertreatment system - [-] 6. He has a general knowledge of the development trends of the means of transport - [-]		
<b>Skills:</b>		
1. He can classify categories of vehicles in terms of their level of ecological performance - [-] 2. He can integrate the information - [-] 3. He can draw conclusions and formulate and justify opinions - [-] 4. He can take the information from the literature - [-]		
<b>Social competencies:</b>		
1. He understands the need to learn - [-] 2. He is aware of the importance of engineering activities in terms of ecology - [-] 3. He can inspire his colleagues for learning about ecology - [-] 4. Able to independently develop their knowledge of the exhaust gas regulations - [-]		

<b>Assessment methods of study outcomes</b>		
Test of knowledge of exhaust aftertreatment systems. Two tests during the semester		
<b>Course description</b>		
Lecture ? construction, operation of engine exhaust treatment and exhaust aftertreatment systems. Exercise ? calculation of functional parameters of the components of exhaust aftertreatment systems		
<b>Basic bibliography:</b>		
1. Uwe Rokosch, Układy oczyszczania spalin i pokładowe systemy diagnostyczne samochodów. ISBN 978-83-206-1657-6 2. Jerzy Merkisz, Ekologiczne problemy silników spalinowych, Wyd. Politechniki Poznańskiej, Poznań 1998 3. Diesel exhaust aftertreatment technologies. SAE Books and Papers ? all editions		
<b>Additional bibliography:</b>		
1. Wojciech Serdecki, Badania silników spalinowych. Wyd. Politechniki Poznańskiej, Poznań 2012		
<b>Result of average student's workload</b>		
<b>Activity</b>		<b>Time (working hours)</b>
1. -		75
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	58	2
Contact hours	32	1
Practical activities	26	1