

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Dynamics of gas transportation proceses</b>		Code <b>1010631371010633272</b>
Field of study <b>Transport</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>4 / 7</b>
Elective path/specialty <b>Engineering of Pipeline Transport</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-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		ECTS distribution (number and %)
<b>Responsible for subject / lecturer:</b>  prof. dr hab. inż. Michał Ciałkowski email: <a href="mailto:michal.cialkowski@put.poznan.pl">michal.cialkowski@put.poznan.pl</a> tel. 616652205 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>	The student has a basic knowledge of mathematics, physics and fluid mechanics The student knows and understands the basic phenomena of fluid mechanics.
2	<b>Skills</b>	The student is able to use the concepts and methods in the description of the phenomena associated with the movement of ideal gases. Students can use their knowledge to analyze specific events and processes related to the gas flow. Students are able to solve specific problems related to the ideal gas flow.
3	<b>Social competencies</b>	Students can work together in a group, taking the different roles. The student is able to prioritize important in solving the tasks posed in front of him. The student demonstrates self-reliance in solving problems, acquire and improve their knowledge and skills.
<b>Assumptions and objectives of the course:</b> To familiarize students with basic knowledge of theoretical governing the movement of ideal gases		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
<b>Skills:</b>		
<b>Social competencies:</b>		
<b>Assessment methods of study outcomes</b>		
Exam		
<b>Course description</b>		
Bernoulli's equation. Critical parameters of gas. Classification of the gas flow. Wave phenomena in one-dimensional flow. Oblique shock wave. Polar shock wave. The shock wave in a flat opływie wedge. Some problems of the theory of linear. Linearization equation velocity potential. Transformation Prandtl and Glauerta. Some analytical solutions.		

<b>Basic bibliography:</b>		
<b>Additional bibliography:</b>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Participation in the lecture	15	
2. Consultation	5	
3. consolidation of the lecture	20	
4. Preparing to pass	15	
5. Exam	2	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	100	2
Contact hours	0	0
Practical activities	0	0