

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Designing of Transmission Networks		Code 1010631321010634495
Field of study Transport	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 2
Elective path/specialty Engineering of Pipeline Transport	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 1 Classes: 2 Laboratory: - Project/seminars: -		No. of credits 3
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 3 100% 3 100%
Responsible for subject / lecturer: PhD Łukasz Semkło email: lukasz.semklo@put.poznan.pl tel. 616652213 Transport Engineering ul. Piotrowo 3 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	For the calculation of the flow and parameters of pressure, temperature and mass flow and volume in pipelines, construction of the base fluid grid [PRK6]
2	Skills	Thermodynamic calculations and flow, the construction of computational algorithms, reading and analyzing patterns of technological [PRK6]
3	Social competencies	Understanding of the need to quantify the thermodynamic, economic and environmental, social aspects (quality) of the above issues [PRK6]
Assumptions and objectives of the course: Knowing the necessary collection of data and assumptions for the design of fluid grids		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. has advanced and in-depth knowledge in the field of transport engineering, theoretical foundations, tools and means used to solve simple engineering problems - [T2A_W01 [P7S_WG]]		
2. has a structured and theoretically founded general knowledge related to key issues in the field of transport engineering - [T2A_W02 [P7S_WG]]		
Skills:		
1. can acquire information from literature, databases and other sources (in Polish and English), integrate them, make their interpretation and critical evaluation, draw conclusions and formulate and fully justify opinions - [T2A_U01 [P7S_UW]]		
2. can communicate in Polish and English using different techniques in a professional environment and in other environments, also using transport engineering issues - [T2A_U12 [P7S_UK]]		
Social competencies:		
1. understands that in the field of transport engineering, knowledge and skills quickly become obsolete - [T2A_K01 [P7S_KK]]		
2. understands the importance of using the latest knowledge in the field of transport engineering in solving research and practical problems - [T2A_K02 [P7S_KK]]		
Assessment methods of study outcomes		
Exam, final test		

Course description		
<p>Compilations of data and assumptions for the design of fluid grids. Differences in the design of gas networks, water supply and heating. Description of physical and mathematical models of flows in transmission networks. Characteristics of software usability. The efficiency of calculation in comparison to the subsequent monitoring of the network. Uploads of established and the impact of non-stationarity</p>		
Basic bibliography:		
Additional bibliography:		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in the lecture	15	
2. Consultation	3	
3. Preparing to pass	4	
4. Exam	3	
5. Participation in exercises	30	
6. Consolidation of the exercises content	10	
7. Consultations	3	
8. Preparing to pass	6	
9. Final test	2	
Student's workload		
Source of workload	hours	ECTS
Total workload	76	3
Contact hours	56	2
Practical activities	20	1