STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Designing of Transmission Networks		**1010631321010634495**

Field of study	Profile of study (general academic, practical)	Year /Semester
Transport	**(brak)**	**1 / 2**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Engineering of Pipeline Transport	**Polish**	**obligatory**

Cycle of study:	Form of study (full-time,part-time)
Second-cycle studies	**full-time**

No. of hours				No. of credits
Lecture: **1**	Classes: **2**	Laboratory: **-**	Project/seminars: **-**	**3**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
(brak)	**(brak)**

Education areas and fields of science and art	ECTS distribution (number and %)

Responsible for subject / lecturer:

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Responsible for subject / lecturer:

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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
2	**Skills**	Thermodynamic calculations and flow, the construction of computational algorithms, reading and analyzing patterns of technological
3	**Social competencies**	Understanding of the need to quantify the thermodynamic, economic and environmental, social aspects (quality) of the above issues

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 a structured, theoretically founded knowledge in the field of traffic engineering, knows analytical models of traffic flows - [K2A-W05]

2. Has a detailed knowledge of the transport systems modeling, models of transport systems, the distribution of streams in transport networks - [K2A-W10]

Skills:

1. Is able to obtain information from the literature, internet, databases and other sources in Polish and English. Can integrate the information to interpret and learn from them, create and justify opinions. - [K2A_U01]

2. Has the preparation required in industrial environment, knows safety rules for the job, is able to use for technical standards on unification, safety and recycling of machinery and equipment. - [K2A_U08]

3. Is able to estimate the materials and environmental cost and labor input to develop a logistics object of own design. - [K2A_U09]

4. Is able draw by hand machine elements and schematics in accordance with the principles of engineering drawing and European standards. - [K2A_U12]

Social competencies:

1. Is aware of and understands the importance and impact of non-technical aspects of mechanical engineering activities and its impact on the environment and responsibility for own decisions in short and long-term aspect. - [K2A_K02]
2. Has a sense of responsibility for one?s own work and is willing to comply with the principles of teamwork and taking responsibility for collaborative tasks. - [K2A_K04]
3. Is able to identify and resolve the dilemmas associated with the profession, among others. problems at the technology/environment level. - [K2A_K06]
4. Is aware of the transfer of knowledge to society, takes steps to ensure that the information is understandable, presents different solutions and points of view. - [K2A _K08]

Assessment methods of study outcomes
Exam, final test
Course description
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
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	0	0