STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Pipeline network risks**		Code **1010631351010636003**
Field of study **Transport**	Profile of study (general academic, practical) **(brak)**	Year /Semester **3 / 5**
Elective path/specialty **Engineering of Pipeline Transport**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**	
No. of hours Lecture: **1** Classes: **1** 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:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic economics, machine power and ground construction machinery, construction equipment and pipelines and electricity networks
2	**Skills**	Construction of algorithms. The calculations in Excel.
3	**Social competencies**	Knowledge and understanding of the general technical energy processes

Assumptions and objectives of the course:

Introduction to pipe network risk as applied to the transmission system of liquids in pipelines and electricity. Master the specialized vocabulary

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. has extended and in-depth knowledge of physics useful for formulating and solving selected technical tasks, in particular for correct modeling of real problems - [T1A_W02 [P6S_WG]]
2. has a structured, theoretically founded general knowledge in the field of technology, transport systems and various means of transport - [T1A_W03 [P6S_WG]]
3. knows the basic concepts in the field of economics, referring in particular to transport investments - [T1A_W09 [P6S_WG]]

Skills:

1. is able to obtain information from various sources, including literature and databases, both in Polish and in English, appropriate to integrate them, make their interpretation and critical evaluation, draw conclusions, and fully justify the opinions they - [T1A_U01 [P6S_UW]]
2. can organize, interact and work in a group, assuming different roles in it and is able to properly define the priorities for the implementation of tasks set by himself or others - [T1A_U18 [P6S_UO]]

Social competencies:

1. understands that in technology, knowledge and skills quickly become obsolete - [T1A_K01 [P6S_KK]]
2. is aware of the importance of knowledge in solving engineering problems and knows examples and understands the reasons for malfunctioning transport systems that led to serious financial and social losses or to serious health and even life - [T1A _K02 [P6S_KK]]

Assessment methods of study outcomes
Exam, laboratory report

Course description
Construction and components of pipelines and electricity networks. Analysis of the risk areas of management seminars operated transmission networks. Discussion of elements of different systems: enterprise manufacturers of transmission and distribution. Markets for electricity, natural gas and oil, heat and water. Management objectives such as energy security, security of supply for people and businesses, transport safety for people and equipment, to minimize the effects of aging network equipment and fittings. Management Tools. Economics and management of the effects of other criteria transmission systems. Forecasting the expansion of transmission networks

Basic bibliography:

Additional bibliography:

Result of average student's workload

Activity	**Time (working hours)**
1. Participation in the lecture	15
2. Consultation	2
3. Preparing to pass	4
4. Exam	2
5. Preparing to laboratory exercises	4
6. Participation in laboratory exercises	15
7. Consolidation of content and laboratory report	4

Student's workload

Source of workload	**hours**	**ECTS**
Total workload	46	3
Contact hours	34	2
Practical activities	12	1