STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
Logistics of liquids and gases transmission by pipeline	**1010631331010634832**

Field of study	Profile of study (general academic, practical)	Year /Semester
Transport	**(brak)**	**2 / 3**
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	No. of credits
Lecture: **1** Classes: **-** Laboratory: **-** Project/seminars: **-**	**1**

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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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Mechanical flows. Construction of pipeline systems and networks. Management of pipeline transport.
2	**Skills**	The ability to rationally assess transmission and storage. Graphical and mathematical interpretation of transmissions and sources of pipeline transport costs
3	**Social competencies**	Strategic understanding of the country's energy needs and gas. Industrial and commercial aspect of energy and gas. The psychological lack of energy and gas.

Assumptions and objectives of the course:

To familiarize students with basic knowledge about all aspects of transport logistics / transport of liquids and gases. Preparing to manage this type of transport on the basis of qualitative and quantitative methods

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 logistics, including: the essence of logistics, the reasons for the development of logistics concepts, structure of logistic systems, logistics management - [K2A-W09]
2. Has a basic knowledge of the organization, control and management of transportation systems, including: management, monitoring and control of transport systems, control functions and methods of control problems solving - [K2A_W20]

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
Final test
Course description
An introduction to the subject definition of logistics, transportation, including piping, liquid and gas as cargo. Features and distinct transport logistics / transport of fluids in the background logistics / transport in general. The organization and design of the transmission network and the liquid and gas networks and their distribution: types, components and their functions. Network Management. Forecasting transmission demand. Legal aspects. Pipeline transport infrastructure in Poland. Means of transport fluids. Highlights operation of transmission systems and their monitoring
Basic bibliography:
1. Coyle J., Bardi E., Langley J.: Zarządzanie logistyczne. PWE, Warszawa, 2002
2. Rutkowski K. (red.): Logistyka dystrybucji. Wydawnictwo Difin, Warszawa, 2002
3. Rurociągi - Polish Pipeline Jurnal
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	6
4. Final test	3

Student's workload

Source of workload	**hours**	**ECTS**
Total workload	27	1
Contact hours	27	1
Practical activities	0	0