STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Transport of materials		**1010601321010633831**

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

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

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

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 %)
technical sciences	**2 100%**
Technical sciences	**2 100%**

Responsible for subject / lecturer:

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Transport Engineering
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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of thermodynamics and fluid mechanics, general mechanics, Fundamentals of mechanical engineering (science of mechanics) [PRK4]
2	**Skills**	The calculation of transmissions various types of media in pipeline installations. [PRK4]
3	**Social competencies**	Working in an interdisciplinary team. Ability to lead a team and increased knowledge of team. [PRK4]

Assumptions and objectives of the course:

Knowing some of the theoretical and practical aspects of flow and transport of the media exploitation problems pumps, fans, blowers and compressors. Knowing simpler algorithms based on the learned knowledge and known measured links

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 operations research, including: discrete issues - problems of storage and sharing of resources, issues of transportation, graphs and networks ? suboptimal coloring, network flows, assignments, issues of mass service - priorities, group service - [K1A-W08]

2. Has a detailed knowledge of the transport systems modeling, models of transport systems, the distribution of streams in transport networks - [K1A-W10]

3. Has a structured, theoretically founded knowledge in the area of transport infrastructure, including: transport networks, the overall characterization and classification of transport infrastructure - [K1A-W12]

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. has the preparation necessary to work in a business environment, including in an industrial environment, and knows the safety rules associated with the performance of a transport - [T1A_U07 [P6S_uw]

3. can communicate in Polish and English using specialized terminology, using various techniques, both in a professional environment and in other environments, also using tools in the field of transport engineering - [T1A_U15 [P6S_UK]]

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 - [T1A_K01 [P6S_KK]]
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 - [T1A_K04 [P6S_KR]]
3. Is able to identify and resolve the dilemmas associated with the profession, among others. problems at the technology/environment level - [T1A_K05 [P6S_KR]]

Assessment methods of study outcomes
Exam, final test
Course description
Media: water, gas, hot water (steam) and electricity and media technology. Today's energy issues. Bill of technical and economic legal regulations. Physico-chemical properties of the so-called. media. Basic engineering for the transport of media. Losses in piping systems and turbomachinery channels. Loss of internal and external leaks. Description of the degree of movement of the machine and the entire machine. The description in pipes and machinery transport of media. The concept of efficiency measures the degree of perfection of the media transport and machinery. Selected aspects of thermodynamic and flow. Basic equations of fluid flow machines. Indicators specific machines. Variable conditions. The aging of piping components and machinery. Monitoring of the plant and machinery. The specificity of the media pipeline transport problems. Examples of failure. Selected aspects of repair and renovation of turbomachinery
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. Participation in exercises	15
6. consultations	2
7. Preparing to pass	4
8. Final test	2

Student’s workload

Source of workload	hours	ECTS
Total workload	46	2
Contact hours	38	2
Practical activities	0	0