COURSE DESCRIPTION CARD - SYLLABUS

Course name
Media transport [S1Trans1>TM]

Course

Field of study
Transport

Year/Semester
1/2

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other (e.g. online)
0

Tutorials
15

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

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Prerequisites

Basic knowledge of thermodynamics and fluid mechanics, general mechanics, Fundamentals of mechanical engineering (science of mechanics). The calculation of transmissions various types of media in pipeline installations. Working in an interdisciplinary team. Ability to lead a team and increased knowledge of team.

Course objective

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

Course-related learning outcomes

Knowledge:
The student has extended and in-depth knowledge of physics useful for formulating and solving selected technical tasks, in particular for correct modeling of real problems
The student has ordered and theoretically founded general knowledge in the field of key issues of technology and detailed knowledge in the field of selected issues in this discipline of transport

engineering
The student knows the basic techniques, methods and tools used in the process of solving tasks in the field of transport, mainly of an engineering nature engineering

Skills:
The student has the preparation necessary to work in a business environment, including an industrial environment, and knows the safety rules related to the profession of a transport engineer

Social competences:
The student understands that in technology, knowledge and skills very quickly become obsolete
The student is aware of the importance of knowledge in solving engineering problems, knows examples and understands the causes of malfunctioning transport systems that have led to serious financial and social losses or to serious loss of health and even life

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Lecture and exercises - written exam. Obtaining credit from a minimum of 51% of the points possible to get. There is a possibility of an oral question to raise the grade.

Programme content

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

Teaching methods

Informative lecture (conventional) (information transfer in a systematic way)
Conversational lecture ("external dialogue" of the lecturer with the student; students participate in solving the problem) - the continuation of the lecture may be a seminar
Exercise method (subject exercises, exercises) - in the form of auditorium exercises (the application of acquired knowledge in practice - it can take a different nature: solving cognitive tasks or training psychomotor skills; transforming conscious activity into a habit through repetition)

Bibliography

Basic
Gaz ziemny i biometan używany w transporcie oraz biometan zatłaczany do sieci gazu ziemnego / Polski Komitet Normalizacyjny, 2019.
Energetyka - aspekty badań interdyscyplinarnych : prawo i polityka, zrównoważony rozwój i OZE, ekonomia, technika, bezpieczeństwo / Piotr Kwiatkiewicz, Radosław Szczerbowski (redakcja naukowa) Wydawca Fundacja na rzecz Czystej Energii, 2018.
Metody wydobywania ropy naftowej z odwiertów / Ludwik Szostak, Wacław Chrząszcz, Rafał Wiśniowski, Uczelniane Wydawnictwa Naukowo-Dydaktyczne AGH, 2000.
Additional
Rynek energii elektrycznej : bezpieczeństwo energetyczne Polski w strukturze Unii Europejskiej : materiały XI konferencji naukowo-technicznej REE"2005, Kazimierz Dolny, 25-27 kwietnia 2005 r.
Wodociągi i kanalizacja : materiały pomocnicze do ćwiczeń projektowych, Klepacka Biruta [i in.]. Wydaw.PB, 1986.

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00