STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Engines for Compressors and Pumps		**1010631251010622991**
Field of study	Profile of study (general academic, practical)	Year /Semester
Transport	**(brak)**	**3 / 5**
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)	
First-cycle studies	**full-time**	
No. of hours		No. of credits
Lecture: **2** Classes: **-** 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%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	the student has a basic knowledge of mechanics and engineering and thermodynamic processes
2	**Skills**	the student is able to interpret received messages and formulate conclusions on the acquired knowledge
3	**Social competencies**	student is aware of the importance and understands the need for the use of internal combustion engines in the industry and the economy

Assumptions and objectives of the course:

familiar with the construction and operation of internal combustion engines and the necessity and method of use in transport

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

Knowledge:

1. The student knows the structure and operation of the internal combustion engine - [K1A_W14]
2. The student knows the basic parameters of the internal combustion engine - [K1A_W14]
3. The student knows the issues concerning the operation of the engines and the environment - [K1A_W24]
4. The student knows the possible use of the internal combustion engine in pipeline transport - [K1A_W21]

Skills:

1. The student can acquire and analyze parameters of the internal combustion engine - [K1A_U01]
2. The student is able to interpret and utilize the knowledge gained in terms of engine operation - [K1A_U10]
3. The student is able to interpret the parameters of the motor and receiver cooperation - [K1A_U18]

Social competencies:

1. Understands the need and knows the possibilities of lifelong learning - [K1A_K01]
2. He is aware of the importance of the use of engines in the industry and pipeline transport - [K1A_K02]

Assessment methods of study outcomes

Exam

Course description

The basic elements of the internal combustion engine, their structure and function, systems and engine support components, motors division Circuits of internal combustion engines, motor processes-concepts and relations Basic definitions and relationships between the operating parameters of the engine; power, torque, efficiency, medium pressure turkeys and efficient energy balance of the engine, engine characteristics Supplies; fuels and oils, engine operating conditions depending on the application (stationary and traction engines), cooperation with the receiver power

Basic bibliography:

1. K. Niewiarowski: Silniki spalinowe. WKŁ, Warszawa 1983.
2. J. A. Wajand, J. T. Wajand: Tłokowe silniki spalinowe średnio i szybkoobrotowe. WNT, Warszawa 2003
3. A. Kowalewicz: Wybrane zagadnienia silników spalinowych. Wydanie drugie całkowicie zmienione. Wydawnictwo Politechniki Radomskiej, Radom 2002

Additional bibliography:

Result of average student's workload

Activity	Time (working hours)
1. participation in the lecture	30
2. consolidation of the lecture	5
3. consultation	5
4. prepare for the exam	3
5. Exam	3

Student's workload

Source of workload	hours	ECTS
Total workload	46	2
Contact hours	43	2
Practical activities	3	0