STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Steam and Gas Turbines		**1010632231010630315**
Field of study: **Mechanical Engineering**	Profile of study (general academic, practical): **(brak)**	Year /Semester: **2 / 3**
Elective path/specialty: **Thermal Engineering**	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: Lecture: **2** Classes: **-** Laboratory: **-** Project/seminars: **-**		No. of credits: **2**
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 %): **2 100%** **2 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of circuits, thermal, steam and gas turbines
2	**Skills**	Ability to describe and calculation of the basic processes flow machines. The ability to effectively self-study in a field related to the chosen field of study
3	**Social competencies**	Is aware of the need to broaden their competence, willingness to cooperate within the team

Assumptions and objectives of the course:

Acquisition of knowledge about gas and steam circuits of various types. Introduction to the operation of steam and gas turbines and the basic processes occurring in these machines. Learning the methods described medium flow in this type of machines

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

Knowledge:

1. Cel przedmiotu: Acquisition of knowledge about gas and steam circuits of various types. Introduction to the operation of steam and gas turbines and the basic processes occurring in these machines. Learning the methods described medium flow in this type of machines - [x]

Skills:

1. to apply knowledge of the phenomena of mass flow of the working medium occurring in the flow machines - [x]
2. determine the correctness and efficiency of the production of machines and equipment used heat flow occurring in industrial and municipal - [x]

Social competencies:

1. can think and act in an effective manner in the area of energy conversion processes in machines and thermal devices - [x]

Assessment methods of study outcomes

Lecture

Continuous assessment for each course, rewarding activity and quality perception. Written final exam

Course description

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Theoretical for right and left-hand rotation cycles. Circuits steam power plants. Gyms gas turbine. Circuits combined. The theory of the steam turbine stage. Equation Oiler. The efficiency of peripheral. Profile turbiny.Równanie equilibrium radial vanes. Equation Flugel? Stodola. Strary channels turbine. Methods for regulating steam turbines. Labyrinth seals.

Basic bibliography:

1. Chmielniak T., Obiegi termodynamiczne turbin cieplnych
2. Chmielniak T., Turbiny gazowe
3. Chmielniak T., Technologie energetyczne
4. Perycz S., Turbiny parowe i gazowe

Additional bibliography:

Result of average student's workload

Activity	Time (working hours)
1. Preparing to lecture	7
2. Participation in the lecture	15
3. Lecture	18
4. fixation content Consultation	2
5. Preparing for exam	22
6. Participation in the exam	2

Student's workload

Source of workload	hours	ECTS
Total workload	66	2
Contact hours	29	1
Practical activities	1	1

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