STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Functioning of power plant in power system**		Code **1010315341010316098**
Field of study **Electrical Engineering**	Profile of study (general academic, practical) **(brak)**	Year /Semester **2 / 4**
Elective path/specialty **Electric Power Systems**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**
Cycle of study: **Second-cycle studies**	Form of study (full-time,part-time) **part-time**	
No. of hours Lecture: **9** Classes: **-** Laboratory: **9** 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**	It has a basic knowledge of energy technology and equipment used in the power industry, mechanics, fluid mechanics, basic metrology. Knows the basic rules for the operation of power plants.
2	**Skills**	Understand the basic principles of operation of the machines and know the basic construction of conventional energy devices.
3	**Social competencies**	Is aware of the need to broaden their competence, willingness to work together as a team.

Assumptions and objectives of the course:

Getting acquainted with the operation of the plant and their participation in covering variable loads of the power system.

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

Knowledge:

1. It has a general knowledge about optimize the operation of generation sources in the power system. - [K_W01++]
2. Able to present in-depth operating principles of generation sources in the electrical system in various states - [K_W16++]

Skills:

1. Able to apply the basic principles of correct operation generating sources in the power system - [K_U07++]
2. Able to analyze complex power systems using appropriate tools and methods of analysis - [K_U07++]
3. He can obtain information from the literature, databases, integrate information, perform their interpretation and formulate conclusions - [K_U03++]

Social competencies:

1. Able to think and act creatively - [K_K01++]

Assessment methods of study outcomes

Lectures:

- evaluate the knowledge and skills demonstrated on a written test,
- continuous evaluation skills and expertise for each class by conducting discussions on current issues related to the use of power plant in the power system.

Laboratory:

- tests to check the knowledge necessary to solve problems in the area of ??laboratory tasks,
- evaluation of knowledge and skills related to the implementation of the tasks, the assessment report of performed exercise,
- obtaining additional points for the ability to work within a team practice performing the task detailed in the laboratory and developed aesthetic diligence reports.

Course description

The role of different types of power plants in the power system. The energy performances of power plants. Operation of power plants in the power system - economical load distribution, the choice of a set of units. The availability of the power plant. The structures of power reliability. Terms of generating units connecting to the grid.Content of the laboratory exercise is consistent with the theme of the lecture and includes the use of plants in various states of operation of the power system.

Basic bibliography:

1. R.Janiczek ? Eksploatacja elektrowni parowych, WNT W-wa 1990
2. Gładyś H., Matla R.: Praca elektrowni w systemie elektroenergetycznym. WNT. W-wa 1995

Additional bibliography:

1. D.Laudyn, M.Pawlik, F.Strzelczyk ? Elektrownie, WNT W-wa 2000
2. M.Pawlik, J.Skierski ? Układy i urzadzenia potrzeb własnych. WNT W-wa 1986

Result of average student's workload

Activity	Time (working hours)
1. participation in the lectures	9
2. participation in the laboratory exercises	9
3. preparation to the laboratory exercises	12
4. preparation of practical exercises reports	12
5. participation in the consulting on the laboratory exercises	5
6. preparation to the test	10

Student’s workload

Source of workload	hours	ECTS
Total workload	47	2
Contact hours	23	1
Practical activities	38	2