STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
Mathematical modelling of power engineering installations	**1010315421010325648**

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

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

No. of hours	No. of credits
Lecture: **15** Classes: **-** Laboratory: **15** Project/seminars: **-**	**3**

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	**4 100%**
Technical sciences	**4 100%**

Responsible for subject / lecturer:

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Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of electrical engineering, power engineering.
2	**Skills**	Ability to use a spreadsheet. Ability to effectively self-education in a field related to the chosen field of study.
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:

Knowledge of the principles of construction, modeling, calculation, design and operation of electrical systems and networks.

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

Knowledge:

1. It has a basic and systematic knowledge of construction, design and operation of electrical systems and networks - [K_W04+++, K_W14+]
2. He knows the method that calculates the demand for electric power and energy, and versed in the means of providing electricity use bespieczeństwo - [K_W15+]

Skills:

1. It can analyze the work of the electrical components in steady states - [KU_07+++, KU_10+]
2. He can use the known methods for calculating the load forecasting installation or network.ieci elektroenergetycznej z wykorzystaniem istniejącego oprogramowania komputerowego - [KU_07+++, KU_08++]

Social competencies:

1. Is aware of the responsibility of an power engineer in particular the need for a proper analysis of the operating status of the power system components on the reliability of electricity supply. - [K_K02+]

Assessment methods of study outcomes

Lecture:

? assess the knowledge and skills listed on the written exam,

? continuous evaluation for each course (rewarding activity and quality perception).

Laboratory:

? rewarding the knowledge necessary for the accomplishment of problems in the area of laboratory tasks,

? continuous evaluation for each course - rewarding gain skills they met the principles and methods

? assessment of knowledge and skills related to the implementation of the tasks your practice, including an assessment report on the performed exercise.

Get extra points for the activity in the classroom, and in particular for:

? propose to discuss further aspects of the subject;

? the effectiveness of the application of the knowledge gained during solving the given problem.

Course description

Classification and construction of electrical systems and networks, the study of their components, the analysis of the phenomena occurring in them and their mathematical models. Protection that provides security, protection against electric power installations.

Basic bibliography:

1. Musiał E. "Instalacje i urządzenia elektroenergetyczne", WSiP, Warszawa 1998.

2. Markiewicz H."Instalacje elektryczne", WNT, Warszawa,2000.

3. Lejdy B. "nstalacje elektryczne w obiektach budowlanych", WNT, Warszawa 2003.

4. Marzecki J. "Miejskie sieci elektroenergetyczne", Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1996.

5. Strojny J., Strzałka J. "Zbiór zadań z sieci elektrycznych", Uczelniane Wydawnictwa Naukowo-Dydaktyczne AGH, Kraków 2000.

Additional bibliography:

1. Handke A., Mitkowski E. Stiler J. "Sieci elektroenergetyczne", Wydawnictwo Politechniki Poznańskiej, Poznań 1978.

Result of average student's workload

Activity	Time (working hours)
1. participation in lectures	15
2. participation in laboratory classes	15
3. participate into consultations concerning the lecture	2
4. participate into consultations concerning the laboratory classes	4
5. Preparation of laboratory reports	10
6. prepare for the exam	37
7. participation in the exam	2
8. preparatin for laboratory classes	10

Student’s workload

Source of workload	hours	ECTS
Total workload	95	4
Contact hours	38	1
Practical activities	39	1