STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Principles of the electrical power devices construction**		Code **1010311371010303353**
Field of study **Electrical Engineering**	Profile of study (general academic, practical) **(brak)**	Year /Semester **4 / 7**
Elective path/specialty **Distribution Devices and Electrical**	Subject offered in: **Polish**	Course (compulsory, elective) **elective**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**	
No. of hours Lecture: **-** Classes: **-** Laboratory: **-** Project/seminars: **1**		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		ECTS distribution (number and %)

Responsible for subject / lecturer:

dr inż. Jerzy Janiszewski
email: jerzy.janiszewski@put.poznan.pl
tel. 61 665 20 28
Elektryczny
ul. Piotrowo 3A, 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basics of mathematics, physics, electrical engineering.
2	**Skills**	Ability to acquire information from the literature in the field and other sources and to analyze it in evaluative way. Ability to deal with the analytical, simulation and experimental tools.
3	**Social competencies**	Has understanding of the need for creative and responsible activity.

Assumptions and objectives of the course:

Getting familiar with the construction, operation principles and technical requirements for typical electric power devices.

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

Knowledge:

1. Student has basic knowledge of the construction and operation of electric power devices regarding ergonomic, technical and non-technical aspects of their using as well as risks related to the operation and maintenance. - [K_W19++,]

Skills:

1. Student is able to analyze applied effectiveness of solutions of the typical electric power devices construction as well as to read and develop related documentation. - [K_U07+, K_U09++]
2. Student is able to apply basic rules related to the construction of the application-safe devices. - [K_U21+]

Social competencies:

1. Student is able to apply basic rules related to the construction of the application-safe devices. - [K_K01 +]

Assessment methods of study outcomes

Design work:

? Evaluation of the steps of progress and completion of an exemplary final design work or the evaluation of the effectiveness?s analysis of an existing solution of chosen construction of an electric power

? On-line bonus for activity during each sections.

Adding extra points for activity in discussions, especially for:

? effectiveness of implementation of the knowledge acquired when solving a given problem.

? ability to cooperate in the team accomplishing in practice a specific task within the team-accomplished design.

? remarks related to the educational materials? enhancement,

? care and esthetic form of the works carried out individually.

Course description

1. Functions of the basic electric power devices and apparatus, application requirements as well as the operational and environmental risks..
2. Current paths construction in switches and electric power devices..
3. Constructions of the high-current paths and insulators in electric power switchgears.
4. Mechanics of switches.
5. Switch pairs and switch connections.
6. Elements of Electric power devices? design and tests.

Basic bibliography:

1. Markiewicz H.: Urządzenia elektroenergetyczne, WNT, Warszawa, 2001.
2. Maksymiuk J.: Aparaty elektryczne, PWN, Warszawa, 1995.
3. Maksymiuk J., Pochanke Z.: Obliczenia i badania diagnostyczne aparatury rozdzielczej, wyd.1, WNT, 2001.
4. Bełdowski T., Markiewicz H.: Stacje i urządzenia elektroenergetyczne, WNT, Warszawa, 1998.
5. Maksymiuk J.: Aparaty elektryczne pytaniach i odpowiedziach, WNT, Warszawa, 1997.
6. Przepisy Budowy Urządzeń Elektroenergetycznych, Wydawnictwa Przemysłowe WEMA, Warszawa, 1997.

Additional bibliography:

1. Periodyki: Elektroinstalator, Elektroinfo.
2. Poradnik inżyniera elektryka, WNT, 1997.
3. Publikacje internetowe.
4. Normy przedmiotowe.

Result of average student's workload

Activity	Time (working hours)
1. Design exercises in class	15
2. Consultations	3
3. Examination work presentation	3
4. Elaboration of individual designs	15
5. Preparation to the classes	4

Student's workload

Source of workload	hours	ECTS
Total workload	40	2
Contact hours	21	1
Practical activities	30	1