STUDY MODULE DESCRIPTION FORM

Name of the module/subject	Code
Fundamentals of High Voltage Measurements	**1010311261010316893**

Field of study	Profile of study (general academic, practical)	Year /Semester
Electrical Engineering	**(brak)**	**3 / 6**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
High Voltage Engineering	**polish**	**obligatory**

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

No. of hours	No. of credits
Lecture: **1** Classes: **-** Laboratory: **-** Project/seminars: **-**	**1**

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	**1 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has the knowledge in physics, electrical engineering, material science, high voltage engineering
2	**Skills**	Student has the ability to effective self-learning in the scope of chosen field of study
3	**Social competencies**	Student is aware of expanding his knowledge, ability, competences, can work and cooperate in group

Assumptions and objectives of the course:

Generation and measurements of high voltage and high current AC, DC, impulse. Utilisation of various measuring techniques and modern test techniques in investigation of high voltage power equipment.

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

Knowledge:

1. Student has knowledge in the scope of high voltage measurements methodology, properties and exploitation of high voltage and current test sources - [K_W05+++]
2. Student has knowledge in the scope of equipment used in high voltage engineering - [K_W23++]

Skills:

1. Student is able to choose proper test voltage source and measuring equipment - [K_U14+++]
2. Student is able to properly exploit high voltage equipment - [K_U23++]

Social competencies:

1. Student knows the needs of further education, increase of technical competences, self-development and acting in community - [K_K01++]

Assessment methods of study outcomes

Lecture ? evaluation of knowledge and skills proved with final colloquium

Course description

Type of voltages description with different criteria. Basic terms ? flashover, breakdown, partial discharge, corona. Parameters describing alternating high voltage and current with technical and high frequency, direct voltage, impulse voltage standard and special. AC, DC, Impulse test voltage and current sources. Introduction to high voltage measurement technique

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Basic bibliography:

1. Wodziński J., Wysokonapięciowa technika prób i pomiarów, PWN Warszawa, 1997
2. Kosztaluk R., pod red., Technika badań wysokonapięciowych, WNT Warszawa, tom 1 i 2, 1985
3. Flisowski Z., Technika wysokich napięć, WNT Warszawa, 2007
4. Fleszyński J., Laboratorium wysokonapięciowe w dydaktyce i elektroenergetyce, Wydawnictwo Politechniki Wrocławskiej, 1999
5. Mościcka-Grzesiak H., Inżynieria wysokich napięć w elektroenergetyce, tom I/II, Wydawnictwo Politechniki Poznańskiej 1996/99
6. PN-IEC 60038 Napięcia znormalizowane IEC
7. PN_EN 50160:2008 Parametry napięcia zasilającego w publicznych sieciach rozdzielczych
8. PN-EN 60071:2000 Koordynacja izolacji

Additional bibliography:

1. Szpor St., Dzierżek H., Winiarski W., Technika wysokich napięć, WNT Warszawa, 1978
2. Kuffel E., Zaengl W., Kuffel J., High Voltage Engineering. Fundamentals, Butterworth-Heineman, 2001

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	15
2. Preparation for colloquium	10
3. Consultations	5

Student's workload

Source of workload	hours	ECTS
Total workload	30	1
Contact hours	20	1
Practical activities	0	0

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