

FACULTY OF ELECTRICAL
ENGINEERING**SUBJECT CARD**

Name in Polish: **Technika wysokich napięć 1**
 Name in English: **High voltage technology 1**
 Main field of study (if applicable): **Electrical Engineering**
 Specialization (if applicable):
 Level and form of studies: **1st level, part-time**
 Kind of subject: **obligatory**
 Subject code: **ELR041161**
 Group of courses: **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU):	20				
Number of hours of total student workload (CNPS):	108				
Form of crediting:	examination				
For group of courses mark (X) final course:					
Number of ECTS points:	4				
including number of ECTS points for practical (P) classes:					
including number of ECTS points for direct teacher-student contact (BK) classes:	2.80				

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Has knowledge of the basics of materials engineering.

SUBJECT OBJECTIVES

- C1. Possession of basic knowledge needed for high-voltage insulation design and operation of high voltage power equipment.
 C2. Acquisition of knowledge in the field of safe performance of high voltage test and measurement

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

- PEK_W01 Is able to explain phenomena determining electrical strength of dielectrics
 PEK_W02 Is able to explain phenomena appearing in high voltage systems, estimate them and carry out the proper measurements

relating to skills:

relating to social competences:

- PEK_K01 The ability to think independently, search and analyze information

PROGRAMME CONTENT

Form of classes - lecture		Number of hours:
Lec 1	Introduction to the lecture. Basic definitions and notions.	2
Lec 2	Voltage exposures of insulation.	2
Lec 3	The electric field in the insulating systems	2
Lec 4	Mechanisms of electrical discharges in gases.	2
Lec 5	Surface discharges	2
Lec 6	Electric strength of insulating liquids	2
Lec 7	Electric strength of solid dielectrics	2
Lec 8	High voltage equipment insulation systems.	2
Lec 9	High voltage test circuits	2
Lec 10	Measurement of high voltages	2
Total hours:		20

TEACHING TOOLS USED

- N1. Conventional lecture
N2. Individual work

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation <i>F - forming (during semester) P - concluding (at semester end)</i>	Educational effect number	Way of evaluating educational effect achievement
F1(w)	PEK_W01 PEK_W02 PEK_K01	F1 - written exam
P(w)	P=F1	

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Z. Flisowski, Technika Wysokich Napięć, WNT, Warszawa, 1998 i wydania następne
[2] Praca zbiorowa pod red. J. Fleszyńskiego, Laboratorium wysokonapięciowe w dydaktyce i elektroenergetyce, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław, 1999.
[3] Juchniewicz J., Lisiecki J., Wysokonapięciowe układy izolacyjne, skrypt PWr, 1980

SECONDARY LITERATURE:

- [1] Praca zbiorowa po redakcją Z. Pohla, Napowietrzna izolacja wysokonapięciowa, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław, 2003.
[2] Praca zbiorowa po redakcją H. Mościckiej-Grzesiak, Inżynieria wysokich napięć w elektroenergetyce, Wydawnictwo Politechniki Poznańskiej, t.1 - 1996, t.2 - 1999.
[3] Praca zbiorowa po redakcją R. Kosztaluka, Technika badań wysokonapięciowych, t. 1, WNT, Warszawa, 1985.

SUBJECT SUPERVISOR

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT **ELR041161 - High voltage technology 1** AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Electrical Engineering**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)	Subject objectives	Programme content	Teaching tool number
PEK_W01	K1ETK_W10 K1ETK_W23	C.1 C.2	Lec1 Lec2 Lec3 Lec4 Lec5 Lec6 Lec7	N.1 N.2
PEK_W02	K1ETK_W23	C.1 C.2	Lec8 Lec9 Lec10	N.1 N.2
PEK_K01	K1ETK_K09	C.1 C.2	Lec1 Lec2 Lec3 Lec4 Lec5 Lec6 Lec7 Lec8 Lec9 Lec10	N.1 N.2