

(faculty stamp)

COURSE DESCRIPTION

Z1-PU7

WYDANIE N1

Strona 1 z 2

1. Course title: TRANSFER OF ELECTRICAL ENERGY		2. Course code		
3. Validity of course description: 2012/2013				
4. Level of studies: 1st CYCLE OF HIGHER EDUCATION				
5. Mode of studies: INTRAMURAL STUDIES				
6. Field of study: POWER ENGINEERING				(FACULTY SYMBOL)
7. Profile of studies: GENERAL ACADEMIC				
8. Programme: SUSTAINABLE ENERGY ENGINEERING				
9. Semester: 5				
10. Faculty teaching the course: ELECTRICAL FACULTY				
11. Course instructor: PROF. PAWEŁ SOWA				
12. Course classification: COMMON OBJECTS				
13. Course status: COMPULSORY				
14. Language of instruction: ENGLISH				
15. Pre-requisite qualifications: AFTER COMPLETING OF LECTURE AND CLASSES IN 4 SEMESTER STUDENT SHOULD KNOW THE FUNDAMENTALS OF ELECTRICITY, THE THEORY OF ELECTRICAL POWER SYSTEM AND ELECTRIC DEVICES OPERATION, UNDERSTANDS THE NEED FOR SAFE DELIVERY OF ELECTRICAL ENERGY.				
16. Course objectives: THE COURSE OBJECTIVE IS TO FAMILIARIZE THE STUDENTS WITH THE SELECTED PRACTICAL ASPECTS OF THE POWER SYSTEM OPERATION, THE STUDENTS SHOULD ACHIEVE THE ABILITIES IN SIMPLE ELECTRIC POWER SYSTEM CALCULATIONS AS WELL AS THE TESTING METHODS OF PROTECTION DEVICES, SELECTED ELECTRICAL MATERIALS AND THE SAFETY OPERATION OF ELECTRICAL DEVICES				
17. Description of learning outcomes:				
Nr	Learning outcomes description	Method of assessment	Teaching methods	Learning outcomes reference code
1.	STUDENT KNOWS AND UNDERSTANDS THE FAULTS TYPES THAT OCCUR IN ELECTRIC POWER SYSTEM, HE ALSO KNOWS THE SOURCES AND EFFECTS OF FAULTS (E.G. SHORT-CIRCUITS), STUDENT UNDERSTANDS THE ROLE AND THE OPERATING PRINCIPLES OF THE BASIC PROTECTIVE DEVICES.	QUESTIONS	LABORATORY	K_W08 K_W11 K_W12
2.	STUDENT KNOWS THE INSULATING MATERIALS USED IN POWER ENGINEERING AND THE SELECTED MATERIALS PROPERTIES AS WELL AS TECHNIQUES OF TESTING; STUDENT KNOWS: THE ELECTRIC SHOCK HAZARD, THE RULES OF WORK WITH ELECTRIC DEVICES AS WELL AS THE TYPES AND MEANS OF THE ELECTRIC SHOCK PROTECTION.	QUESTIONS	LABORATORY	K_W12 K_W17 K_W21
3.	STUDENT IS ABLE TO USE EFFECTIVELY THE LABORATORY INSTRUCTIONS AND IS ADEQUATELY PREPARED TO THE LABORATORY TESTS.	REPORT, QUESTIONS	LABORATORY	K_W03 K_U01 K_U13 K_U16
4.	STUDENT IS ABLE TO PERFORM THE TEST, ELABORATE THE RESULTS, SOLVE THE SIMPLE PROBLEMS OF ELECTRIC POWER ENGINEERING, PREPARE THE REPORT AND FORMULATE THE CONCLUSIONS.	REPORT, QUESTIONS	LABORATORY	K_U11 K_U16 K_U25

5.	STUDENT IS CAPABLE FOR WORKING IN THE GROUP, ADEQUATELY COMPOSES THE TESTED SYSTEM, READS THE MEASURING DEVICES INDICATIONS, NOTES THE RESULTS ETC.	LABORATORY TESTS EVALUATION – QUESTIONS	LABORATORY	K_K01 K_K02 K_K03 K_K04
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18. Teaching modes and hours

Laboratory 15

19. Syllabus description:

THE LABORATORY IS A PRACTICAL SUPPLEMENT OF THE LECTURE AND CLASSES. THE FOLLOWING LABORATORY TESTS WILL BE PERFORMED: SIMULATION INVESTIGATIONS OF THE SHORT-CIRCUIT TRANSIENTS, INVESTIGATIONS OF SELECTED POWER SYSTEM PROTECTION RELAYS, AIR STRENGTH INVESTIGATION BY ALTERNATE VOLTAGE, INVESTIGATION OF THE ELECTRIC THROUGH STRENGTH OF SELECTED INSULATING SOLID MATERIALS, ANALYSIS OF THREE-PHASE ELECTRIC POWER SYSTEMS, INVESTIGATIONS OF RESIDUAL CURRENT DEVICE (RCD) AND OTHER ELECTRICAL SAFETY DEVICES.

20. Examination: NO

21. Primary sources:

1. DEDICATED LABORATORY INSTRUCTIONS PREPARED BY THE TEACHERS (UNPUBLISHED MATERIALS).
2. GLOVER D.J., SARMA M.S., OVERBAYE T.J.: POWER SYSTEM ANALYSIS AND DESIGN (SI EDITION). CENGAGE LEARNING, STAMFORD 2010.
3. IEC REPORT 479-1(1984): „EFFECT OF CURRENT PASSING THROUGH THE HUMAN BODY. PART 1. GENERAL ASPECTS.

22. Secondary sources:

1. PRACA ZBIOROWA POD REDAKCJĄ W. WINKLERA: EAZ W PRZYKŁADACH I ZADANIACH. TOM 1: ZAKŁÓCENIA W PRACY SYSTEMU ELEKTROENERGETYCZNEGO I JEGO ELEMENTÓW, WYDAWNICTWO POLITECHNIKI ŚLĄSKIEJ, GLIWICE 2006.
2. DAWID Z., HALINKA A., MIKRUT M., PILCH Z., SZEWCZYK M., WITEK B., WINKLER W.: LABORATORIUM ELEKTROENERGETYCZNEJ AUTOMATYKI ZABEZPIECZENIOWEJ. SKRYPTY UCZELNIANE NR 2184, GLIWICE 1999.
3. MARKIEWICZ H.: BEZPIECZEŃSTWO W ELEKTROENERGETYCE. WNT, WARSZAWA, 2009.
4. PRACA ZBIOROWA POD REDAKCJĄ ŻMUDY K.: LABORATORIUM SIECI ELEKTROENERGETYCZNYCH. WYDAWNICTWO POLITECHNIKI ŚLĄSKIEJ, GLIWICE.
5. SAUCZEK M., WOLSKI K.: LABORATORIUM ELEKTROENERGETYKI PRZEMYSŁOWEJ. WYDAWNICTWO POLITECHNIKI ŚLĄSKIEJ, GLIWICE.
6. GACEK Z., KIŚ W.: TECHNIKA WYSOKICH NAPIĘĆ. ĆWICZENIA LABORATORYJNE. WYDAWNICTWO POLITECHNIKI ŚLĄSKIEJ, GLIWICE.

23. Total workload required to achieve learning outcomes

Lp.	Teaching mode :	Contact hours / Student workload hours
1	Lecture	/
2	Classes	/
3	Laboratory	15 / 15 – INCLUDING PREPARING ONESELF TO THE LABORATORY WITH USE OF THE PROPOSED BIBLIOGRAPHY (8 H), ELABORATION AND ACCEPTANCE OF THE REPORTS (7 H)
4	Project	/
5	BA/ MA Seminar	/
6	Other	/
	Total number of hours	15/15

24. Total hours: 30

25. Number of ECTS credits: 1

26. Number of ECTS credits allocated for contact hours: 1

27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects): 1

26. Comments:

Approved:

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(date, Instructor's signature)

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(date, the Director of the Faculty Unit signature)