

FACULTY OF ELECTRICAL
ENGINEERING**SUBJECT CARD**

Name in Polish: **Normalizacja techniczna**
 Name in English: **Technical standardization**
 Main field of study (if applicable): **Electrical Engineering**
 Specialization (if applicable): **Renewable Energy Sources**
 Level and form of studies: **2nd level, full-time**
 Kind of subject: **optional / university-wide**
 Subject code: **PRR041218**
 Group of courses: **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU):	15				
Number of hours of total student workload (CNPS):	30				
Form of crediting:	crediting with grade				
For group of courses mark (X) final course:					
Number of ECTS points:	1				
including number of ECTS points for practical (P) classes :					
including number of ECTS points for direct teacher-student contact (BK) classes:	0.70				

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. He has basic knowledge of application of the law in social relations, legal entities and natural persons, obtained at the level of secondary education programs specified in civics and basics of entrepreneurship.
2. He has awareness of continuous training and professional development.

SUBJECT OBJECTIVES

- C1. Understanding the basic elements technical standardization.
 C2. Understanding the principles of standardization and the use of standards.
 C3. Acquisition of general knowledge of product standards, quality and safety management systems.
 C4. Awareness of the role of standardization in engineering activity.

SUBJECT EDUCATIONAL EFFECTS*relating to knowledge:*

- PEK_W01 He knows the legal basis for standardization and its importance in engineering activity. It is able to describe the standardization activities at international and national levels. He knows the standards development process.
 PEK_W02 He understands the importance of standardization of products. He is able to describe how to carry out assessment of products conformity with the requirements of EU directives.
 PEK_W03 He understands the importance of standardization processes in the management of quality and safety.

*relating to skills:**relating to social competences:*

- PEK_K01 He is aware of the importance of non-technical aspects of engineering activity.

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours:
Lec 1	Legal basis for standardization.	2
Lec 2	Standardization activity at international and national levels.	2
Lec 3	Procedures for the development of standards.	2
Lec 4	Products standardization.	2
Lec 5	Directive of the European Union's new approach and its implementation into the Polish legislation. Low voltage directive.	2
Lec 6	The standardization in the evaluation of product conformity with the requirements of EU directives.	2
Lec 7	Standardization in quality and safety and management.	2
Lec 8	Written test.	1
Total hours:		15

TEACHING TOOLS USED
N1. Lecture with multimedia presentation.
N2. Consultations.

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT		
Evaluation <i>F - forming (during semester)</i> <i>P - concluding (at semester end)</i>	Educational effect number	Way of evaluating educational effect achievement
F1(w)	PEK_W01 PEK_W02 PEK_W03 PEK_K01	Written test.
P(w)	P=F1	

PRIMARY AND SECONDARY LITERATURE
PRIMARY LITERATURE: [1] Schweitz T. (red.) i inni: Normalizacja. Wyd. PKN, Warszawa 2012.
SECONDARY LITERATURE: [1] Norma PN-EN 45020:2009 Normalizacja i dziedziny związane. Terminologia ogólna. [2] Norma PN-EN ISO 9000:2006 Systemy zarządzania jakością. Podstawy i terminologia. [3] Norma PN-EN ISO 9001:2009 Systemy zarządzania jakością. Wymagania. [4] Norma PN-EN ISO 9004:2010 Zarządzanie ukierunkowane na trwały sukces organizacji. Podejście wykorzystujące zarządzanie jakością. [5] Norma PN-EN ISO 14001:2005 Systemy zarządzania środowiskowego. Wymagania i wytyczne stosowania. [6] Norma PN-N-18001:2004 Systemy zarządzania bezpieczeństwem i higieną pracy. Wymagania.

SUBJECT SUPERVISOR
Michał Lisowski, michal.lisowski@pwr.edu.pl

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT PRR041218 - Technical standardization AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Electrical Engineering AND SPECIALIZATION Renewable Energy Sources				
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	K2ETK_W07	C.1 C.2	Lec1 Lec2 Lec3 Lec4	N.1 N.2
PEK_W02	K2ETK_W07	C.3 C.4	Lec5 Lec6	N.1 N.2
PEK_W03	K2ETK_W07	C.3 C.4	Lec7	N.1 N.2
PEK_K01	K2ETK_K03 K2ETK_K05	C.4	Lec1 Lec2 Lec3 Lec4 Lec5 Lec6 Lec7 Lec8	N.1 N.2