

FACULTY OF ELECTRICAL
ENGINEERING**SUBJECT CARD**

Name in Polish: **Normalizacja techniczna**
 Name in English: **Technical Standardization**
 Main field of study (if applicable): **Industrial Control Engineering**
 Specialization (if applicable): **Automation and Control in Electrical Power Systems**
 Level and form of studies: **2nd level, full-time**
 Kind of subject: **optional / university-wide**
 Subject code: **PRR051218**
 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):	25				
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 LEARNING OUTCOMES*relating to knowledge:*

- PEU_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.
 PEU_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.
 PEU_W03 He understands the importance of standardization processes in the management of quality and safety.

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

- PEU_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 LEARNING OUTCOMES 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)	PEU_W01 PEU_W02 PEU_W03 PEU_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