

FACULTY OF ELECTRICAL
ENGINEERING**SUBJECT CARD**

Name in Polish: **Zarządzanie w energetyce**
 Name in English: **Management in the power industry**
 Main field of study (if applicable): **Control Engineering and Robotics**
 Specialization (if applicable): **Automation of Machines, Vehicles and Apparatus**
 Level and form of studies: **2nd level, full-time**
 Kind of subject: **optional / university-wide**
 Subject code: **ZMR042521**
 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):	60				
Form of crediting:	crediting with grade				
For group of courses mark (X) final course:					
Number of ECTS points:	2				
including number of ECTS points for practical (P) classes :					
including number of ECTS points for direct teacher-student contact (BK) classes:	1.40				

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Student has a basic knowledge of sources of energy, energy conversion.
2. Knows the principles a power system operation and control, is familiar with electricity generation and transmission techniques.
3. Has sufficient range of language means at his/her disposal to flawlessly speak out (orally and written), formulate and justify opinions, explain his/her position, show advantages and disadvantages of different solutions, participate in discussion and present general, scientific and technical subject matter.
4. Understands a need and knows possibilities of continuous education, increasing of professional, personal and social competences.
5. Has awareness of responsibility for own work.

SUBJECT OBJECTIVES

- C1. Possession a knowledge of function of energy sector including renewable energy sources.
 C2. Getting to know market and regulatory mechanisms in energy sector.
 C3. Possession a knowledge of goals of national and European Union energy policy.
 C4. Acquisition of abilities to interpret market and regulatory mechanisms in energy sector including power sector.

SUBJECT EDUCATIONAL EFFECTS*relating to knowledge:*

- PEK_W01 Knows the functioning of the energy supply sector including renewable energy sources.
 PEK_W02 Knows market and regulatory mechanisms in energy sector including power sector.
 PEK_W03 Knows the priorities of the national and the EU energy policy.

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

- PEK_K01 He can think and act in creative and enterprising way. He/she is able to rank appropriately the priorities needed for realizing the respective task.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours:
Lec 1	Presentation of the course, requirements and a method of assessment, description of key definitions - energy system, power system etc.	1
Lec 2	Management - definition, environment of the energy sector and energy company.	2
Lec 3	Deregulation and restructuring of the energy sector, forms of ownership. The development of market mechanisms in the energy trading.	2
Lec 4	Legal regulations relating to energy sector and the functioning of the energy companies.	2
Lec 5	The bodies responsible for energy supplies.	1
Lec 6	Polish energy mix and in the world, energy security.	2
Lec 7	Polish and European Union energy policy, the roadmap, unconventional energy, prosumer.	2
Lec 8	Sustainable development, sustainable energy. Energy efficiency, energy management (DSM, SSM, energy storage, ...)	2
Lec 9	Test	1
Total hours:		15

TEACHING TOOLS USED

N1. Test

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	Test
P(w)	P=F1	

PRIMARY AND SECONDARY LITERATURE**PRIMARY LITERATURE:**

- [1] Chochowski A, Krawiec Fr., Zarządzanie w energetyce. Difin, Warszawa 2008.
 [2] Drucker P., Zarządzanie w XXI wieku. Wydawnictwo Muza, Warszawa 2002.
 [3] Griffin R.W., Podstawy zarządzania organizacjami, PWN, Warszawa 2000.
 [4] Malko J., Wilczyński A., Rynki energii – działania marketingowe. Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 2006.
 [5] Peirce W.S., Economics of the Energy Industries. PRAEGER, Westport, Connecticut, London 1996.

SECONDARY LITERATURE:

- [1] Kowalska A., Wilczyński A., Źródła rozproszone w systemie elektroenergetycznym. Wydawnictwo Kaprint, Lublin, 2007.
 [2] Czasopisma: Rynek Energii, IEEE Power & Energy, Power Engineering, Renewable Energy World.
 [3] Krawiec F., Krawiec S., Zarządzanie marketingiem w firmie energetycznej. Difin, Warszawa 2001.

SUBJECT SUPERVISOR

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
ZMR042521 - Management in the power industry
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Control Engineering and Robotics**
AND SPECIALIZATION **Automation of Machines, Vehicles and Apparatus**

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	K2AiR_W05	C.1	Lec1 Lec2 Lec3	N.1
PEK_W02	K2AiR_W05	C.2 C.4	Lec1 Lec2 Lec3 Lec4	N.1
PEK_W03	K2AiR_W05	C.2 C.3	Lec3 Lec4 Lec5 Lec6 Lec7 Lec8	N.1
PEK_K01	K2AiR_K03 K2AiR_K06	C.2 C.4	Lec1 Lec2 Lec3 Lec4 Lec5 Lec6 Lec7 Lec8 Lec9	N.1