


KAPITAŁ LUDZKI
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
 Unię Europejską w ramach
 Europejskiego Funduszu
 Społecznego

UNIA EUROPEJSKA
 EUROPEJSKI
 FUNDUSZ SPOŁECZNY


Course title		ECTS code	
Renewable energy		7.1.0518	
Name of unit administrating study			
Faculty of Oceanography and Geography			
Studies			
faculty	field of study	type	all
Faculty of Oceanography and Geography	BRAK TŁUMACZENIA, Water Management and Protection of Water Resources, Geology, Socio-economic geography with elements of GIS	form	all
		specialty	all
		specialization	all
			all
Faculty of Oceanography and Geography	Geography	type	first tier studies (BA)
		form	full-time
		specialty	all
		specialization	all
Faculty of Oceanography and Geography	Oceanography	type	first tier studies (BA), second tier studies (MA)
		form	full-time
		specialty	all
		specialization	all
Teaching staff			
dr Mirosława Malinowska; prof. dr hab. Mirosław Miętus			
Forms of classes, the realization and number of hours		ECTS credits	
Forms of classes		2	
Lecture		Lectures requiring the direct participation of the professor, ETCS credits – 1	
The realization of activities		-participation in the lecture – 15h	
classroom instruction		-participation in the exam – 1h	
Number of hours		-consultation – 3h	
Lecture: 15 hours		Total number of hours - 19, ETCS credits – 1	
		-reading advised literature to follow the lecture's stream – 10	
		-preparatory to exam – 21	
		Total number of hours - 31, ETCS credits – 1	
The academic cycle			
2022/2023 summer semester			
Type of course		Language of instruction	
an elective course		english	
Teaching methods		Form and method of assessment and basic criteria for evaluation or examination requirements	
problem-focused lecture		Final evaluation	
		Examination	
		Assessment methods	
		written exam with open questions	
		The basic criteria for evaluation	

Gaining over 50% of points during the final test
The basic criteria for evaluation
According to the score of exam
0–50% – ndst
> 50–60% – dst
> 60–70% – dst+
> 70–80% – db
> 80–90% – db+
> 90–100 – bdb

Method of verifying required learning outcomes**Required courses and introductory requirements****A. Formal requirements**

Background knowledge on meteorology and climatology

B. Prerequisites

Practical skill in physics and mathematic

Aims of education

Gaining knowledge on natural sources which might be used for energy production. Also, learning what kind of limitations and well as benefits are connected with using energy from renewable sources. Learning what the perspectives for renewable energy sources in Poland are. Gaining knowledge about the role of renewables in sustainable development and in protection of ecosystems.

Course contents

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A1. Introduction – Why renewable energy sources are so important in contemporary world

A2. Solar energy

A3. Wind energy

A4. Hydropower and ocean energy

A5. Geothermal energy

A6. Bioenergy

A7. Renewable energy in the context of sustainable development (with special regard in Poland)

Bibliography of literature

Bibliography of literature

Climate Change 2001 – The Physical Science Basis: Working Group I Contribution to the Third Assessment Report of the Intergovernmental Panel on Climate Change.

Trenberth K., Physics of the climate.

Riso Research Center, European Wind Atlas.

World Wind Energy Association Bulletin.

US Dept. of Energy., History of hydropower

Renewable energy sources and climate change mitigation. Summary for policymakers and technical summary. Special report of the IPCC, 2011.

Renewables 2013. Global Status Report. REN21 Renewable Energy Policy Network for the 21st Century.

Energy [r]evolution. A sustainable Poland energy outlook. Report 2013. Poland energy scenario

(http://www.greenpeace.org/poland/PageFiles/559373/GPI_Energy_Revolution_for_Poland.pdf).

The learning outcomes (for the field of study and specialization)

Gospodarka przestrzenna II st. /Spatial management, MSc
, K_W02, P7U_W, P7S_WG

Gospodarka przestrzenna I st./ Spatial
management, BA, K_W03, P6U_W, P6S_WG

Geografia I st., /Geography BA, K_W06, P6U_W, P6S_WG
, P6S_WK

Geografia fizyczna z geoinformacją, II st./ Physical
geography and geoinformation Msc, K_W08, P7U_W,
P7S_WK -

Geografia społeczno-ekonomiczna z elementami GIS, II st.,
/Socio-economic geography with elements of GIS,
MSc, K_W06, P7S_WK

Oceanografia II st., /Oceanography

MSc, K_W05, P7S_WK,

Oceanografia I st., /Oceanography BA, K_W05, P6S_WK,

Knowledge

Knowledge:

W_01 - Knows and understands the natural and anthropogenic conditions of the development of renewable energy sources and their importance for sustainable development and biodiversity protection in various spatial scales, the content of study: A1-A7.

Skills

Skills

K_K1 Students have knowledge of terminology referring to renewable energy resources at the level sufficient for using specialized literature in English language.

K_K11 Students can formulate and analyse basic problems related to changes in biophysical, social, economic and environmental aspects of renewable energy resources development at local, regional and global scale.

Students can distinguish the sources of renewable energy.

Students can estimate the amount of renewable energy resources.

Social competence

<p>Gospodarka wodna i ochrona zasobów wód, I st., /Water management and water resource protection, BA, K_W05, P6U_W, P6S_WG</p> <p>Geologia, I st., /Geology, BA, K_W04, P6U_W, P6S_WG</p> <p>Akwakultura biznes i technologia, I st., /Aquaculture business and technology, BA, K_W01, P6U_W, P6S_WG</p>	<p>Social competence</p> <p>K_K03 Students show their readiness for individual and social activities, including actions aimed at protecting ecological balance and Earth's natural resources.</p> <p>Students can understand needs for using energy from renewable resources.</p> <p>Students can understand needs for global cooperation in the field of climate observing and climate monitoring.</p>
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