

Code

Course item:

1. INFORMATION ABOUT THE COURSE**A. Basic information**

Name of course	<i>Renewable Energy Sources</i>
Study level	<i>First degree</i>
Unit running the study programme	<i>Faculty of Telecommunication, Computer Science and Electrical Engineering</i>
Study programme	<i>Electrical Engineering</i>
Speciality	
Name of teacher (s) and his academic degree	<i>Elżbieta Szychta, prof.</i>
Introductory courses	<i>Electrical Engineering</i>
Prerequisites	<i>Basic knowledge of mathematics, physics, electrotechnics, Electrical power engineering</i>

B. Semester/week schedule of classes

Semester	Lectures	Classes	Laboratories	Project	Seminars	Field exercises	ECTS
winter or summer	15						2

2. EFFECTS OF EDUCATION (acc. to National Qualifications Framework)

Knowledge	<i>On successful completion of the course student is supposed to understand issues related to electricity generation systems using renewable resources.</i>
Skills	<i>Result of the learning should be particularly the skill of analysis and synthesis of systems generating electricity using renewable energy sources, including wind, solar, hydro, geothermal and biomass.</i>
Competences	<i>On successful completion of the course student is supposed to be able to design a system generating electricity using a renewable source</i>

3. TEACHING METHODS

multimedia lecture, project.

4. METHODS OF EXAMINATION

Oral exam, passing the project

5. SCOPE

Lectures	<i>General principles of energy conversion. Renewable energy sources. Renewable energy potential. Legal regulations in this field. Wind energy. Its conversion in wind turbine. Wind power station. Biomass energy conversion systems. Solar energy. Solar radiation conversion processes: photovoltaic conversion, solar thermal conversion, photoelectrochemical conversion. Solar thermal electricity generators, solar power stations, solar collectors. Geothermal energy. Energy of water and wave energy conversion. Integration of renewable energy sources to electrical power networks. Economic problems. Choices, problems and opportunities.</i>
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6. LITERATURE

Basic literature	<ol style="list-style-type: none">1. <i>Sorensen B.: Renewable energy conversion, transmission and storage. Elsevier, USA, 2007.</i>2. <i>Spera D.: Wind turbine technology. ASME Press 2009.</i>
Supplementary literature	<ol style="list-style-type: none">1. <i>Burton T.: Wind energy. John Wiley and Sons 2001 (Knowel Library Base).</i>2. <i>Tytko R: Urządzenia i systemy energetyki odnawialnej, Kraków 2019, wydanie dziesiąte uzupełnione</i>