

(Table 5.2) Course unit description

Study program : Urban engineering				
Type and level of studies: Bachelor study				
Course unit: Renewable energy sources				
Teacher in charge : Milan Despotović				
Language of instruction: English				
ECTS: 6				
Prerequisites:				
Semester: Winter semester				
Course unit objective				
The objective of this course is to provide students knowledge and skills in the field of renewable energy sources, such as solar energy, geothermal energy, wind energy, biomass energy and small hydro power energy.				
Learning outcomes of Course unit				
The students will be able to understand technical, economic and political aspects of renewable energy sources utilization, and to apply acquired knowledge and skills in further education, as well as in practice, in order to design, use or maintain systems that utilize renewable energy sources.				
Course unit contents				
<i>Theoretical classes</i>				
Introduction. Wind energy. Wind power potential. Wind speed histograms. Wind speed distributions. Wind turbines – types, aerodynamics, design and economics. Geothermal energy – potential, utilization, heat pumps. Biomass energy – classification, technical description, conversion technologies. Small hydro power – principles, potential, water turbine types and selection. Solar energy – potential, components of solar radiation, estimation of solar radiation. Solar thermal heat utilization. Photovoltaic power generation. Institutional, environmental and economic aspects of renewable energy sources utilization.				
<i>Practical classes</i>				
Preparation, production and defense of the project that is result of the group work of a student.				
Literature				
Twidell, J. and Weir, A.D., Renewable Energy Resources, ISBN 0–419–25320–3 (hardback) — ISBN 0–419–25330–0 (pbk.), Taylor & Francis, 2006				
Number of active teaching hours				Other classes
Lectures: 2	Practice: 0	Other forms of classes: 0	Independent work: 2	1
Teaching methods				
The teaching method is in the form of classroom instruction complemented with discussion. Research work is based on individual or group work of a student.				
Examination methods (maximum 100 points)				
Exam prerequisites	No. of points:	Final exam	No. of points:	
Student's activity during lectures	10	oral examination	<i>30</i>	
practical classes/tests	30	written examination		
Seminars/homework			
Project	30			
Other				
Grading system				
Grade	No. of points	Description		
10	> 95	Excellent		
9	85-94	Exceptionally good		
8	75-84	Very good		
7	65-74	Good		
6	55-64	Passing		
5	< 55	Failing		