

14IZS431 - Renewable Power Sources

Course specification			
Course title	Renewable Power Sources		
Acronym	14IZS431		
Level	BA		
Study programme	/		
Module	/		
Lecturer (for classes)	prof. dr Branimir Grgur		
Lecturer/Associate (for practice)			
Lecturer/Associate (for OTC)			
ESPB	4.0	Status	
Condition	-	N/A	
The goal	<p>The aim of the course is to acquaint students with the greenhouse effect and gases, and with theoretical and practical knowledge in the field of renewable energy sources and their importance in preserving the human environment. Through the course the student studies renewable energy sources: solar, wind, geothermal, biomass and water energy, their potentials and types of energy at their disposal. Also, through the subject, different conversion methods and technologies, storage of heat and electric energy is studied. Active participation of students in the curriculum through lectures, and seminar work aims to provide students with further study, testing and application of renewable energy.</p>		
The outcome	<p>After the successful course finishing students are: (i) gain the ability to analyze problems, develop and contempt testing, (ii) mastered the knowledge in conversion and storage of alternative energy sources (iii) gain communication and social competencies necessary for the work in the engineering team, (iii) gain communication skills for clear formulation and presentation of the task, ways of solving and presentation of the results.</p>		
Contents			

Course specification				
Contents of lectures	I. Greenhouse effect and gasses, Introduction in the conversion and accumulation of the alternative energy sources. Division and the importance of alternative energy sources in the environment protection. ; II. The Sun and wind and other energy sources,; III. Bio Energy: resources of bio energy sources with special emphasis on the potentials of the Republic of Serbia, biomass energy, production and use of liquid bio fuels (bio alcohols, bio diesel); gaseous bio fuel (bio gas, landfill gas, bio hydrogen). ; IV. Other types of alternative energy sources (geothermal, small hydro and the others). ; V. Energy conversion and accumulation of the alternative energy sources. ;			
Contents of exercises	During the lectures principle of works demonstration of some renewable source			
Literature				
<ol style="list-style-type: none"> 1. Branimir Grgur, Alternativni izvori energije: principi konverzije i skladištenja, monografija, Inženjersko društvo za koroziju, Beograd, 2016. 2. Peter Bode Nielsen, Morten Hørmann, Jakob Nymann Rud and Frederik Møller Laugesen, Renewable energy supply and storage Guide for planners & developers in sparsely populated areas, TemaNord 2016. 3. B.Viswanathan, An Introduction to Energy Sources, National centre for catalysis research, Madras, 2006 4. J.H. Hirschenhofer, D.B. Stauffer, R.R. Engleman, M.G. Klett, FUEL CELL HANDBOOK, Parsons Corporation Reading, DOI, PA, 1998 				
Number of hours per week during the semester/trimester/year				
Lectures	Exercises	OTC	Study and Research	Other classes
2				
Semester	Spring Semester			
Methods of teaching	Theoretical and practical lectures.			
Assessment methods	Seminar and oral exam			
Mode of Teaching	Distant (remote) / On site (physical)			
Language of instruction	Serbian and English			

Course specification			
Prerequisites	Knowledge of English language		
Knowledge score (maximum points 100)			
Pre obligations	Points	Final exam	Points
Activites during lectures		Test paper	
Practical lessons		Oral examination	40
Projects			
Colloquia			
Seminars	60		

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