



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

Faculty of Mechanical Engineering

GENERAL INFORMATION

Study Program	Engineering management		
Study Module (if applicable)	Energy management		
Course Title	Energy management in buildings		
Level of Study	<input type="checkbox"/> Bachelor	<input checked="" type="checkbox"/> Master's	<input type="checkbox"/> Doctoral
Type of Course	<input type="checkbox"/> Obligatory	<input checked="" type="checkbox"/> Elective	
Semester	<input checked="" type="checkbox"/> Autumn	<input type="checkbox"/> Spring	
Year of Study	I		
Number of ECTS Allocated	7		
Name of Lecturer/Lecturers	Mladen M. Stojilković, Bratislav D. Blagojević, Velimir P. Stefanović, Branislav V. Stojanović		
Teaching Mode	<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Group tutorials	<input type="checkbox"/> Individual tutorials
	<input type="checkbox"/> Laboratory work	<input checked="" type="checkbox"/> Project work	<input type="checkbox"/> Seminar
	<input type="checkbox"/> Distance learning	<input type="checkbox"/> Blended learning	<input type="checkbox"/> Other

Purpose and Overview (max. 5 sentences)

Introduce students to management, technical, environmental and economic aspects of building energy systems and building energy supply.
 The knowledge acquired qualifies student to: identify and evaluate energy efficiency measures in buildings and implementation of renewable energy sources, perform building energy audits, implement building energy management system

Syllabus (brief outline and summary of topics, max. 10 sentences)

1) Introduction. Building energy management concept, 2) Building envelope. Thermal characteristics. Heat losses and gains through envelope, 3) Building energy supply systems. Boilers. District heating. Cogeneration. Heat pumps. Active solar heating. Passive solar heating, 4) Occupant thermal comfort. Heating and domestic hot water preparation. Heat storage 5) Occupant thermal comfort. Air conditioning, 6) Building electricity supply. Electrical devices and appliances. Lighting systems, 7) Mathematical modelling of building energy performance. Final energy consumption. Degree-day method. BIN method. Building simulations, 8) Improving building energy performance. Measuring energy related parameters. Energy performance indicators, 9) Energy efficiency measures and renewable energy sources. Evaluation of energy and environmental impact of proposed measures, 10) Financial and economical aspects. Financial and economical evaluation of proposed measures, 11) Energy audit. Preliminary energy audit. Detailed energy audit, 12) Supervision of building energy performance. Reporting, 13) Operation and maintenance of building energy systems and building envelope, 14) Legal framework, Planning and construction. Building energy certification

Language of Instruction

- Serbian (complete course) English (complete course) Other _____ (complete course)
- Serbian with English mentoring Serbian with other mentoring _____

Assessment Methods and Criteria			
Pre exam Duties	Points	Final Exam	Points
Activity During Lectures	10	Written Examination	20
Practical Teaching	10	Oral Examination	25
Homework	15	Overall Sum	100
Teaching Colloquia	20		
*Final examination mark is formed in accordance with the Institutional documents			