



# UNIVERSITY OF NIŠ

**Course Unit Descriptor**

**Faculty**

Faculty of Mechanical Engineering

## GENERAL INFORMATION

Study Program	<b>Engineering Management</b>		
Study Module (if applicable)	<b>Energy Management</b>		
Course Title	Energy Management in Industry		
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. Stojiljković		
Teaching Mode	<input checked="" type="checkbox"/> Lectures	<input checked="" type="checkbox"/> Group tutorials	<input type="checkbox"/> Individual tutorials
	<input type="checkbox"/> Laboratory work	<input 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 managerial, technical, environmental and economic aspects of industrial energy systems, as well as to the concept of energy management in industry. Students are supposed to acquire knowledge for: (1) implementation, improvement and maintenance of industrial energy management systems, (2) identification of energy efficiency and renewable energy measures in industry and evaluation of the effects of their implementation and (3) conducting energy audits in industry.

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

(1) Introduction. Definitions. Objectives. Human aspect. (2) Concept of industrial energy management system. Energy and production interactions. Measurements. Performance indicators. (3) Energy consumption dependence on the volume of production. Interpretations. Statistical methods. Monitoring and targeting. (4) Implementation of industrial energy management system. Phases. (5) Energy management as a moving force of integrated performance management. Strategic aspects. (6) Steam generation and distribution in industry. (7) Electricity supply. (8) Compressed air systems. (9) Refrigeration systems. (10) Cogeneration in industry. (11) Energy performance indicators. Environmental aspect. Benchmarking. Possibilities for improvements. (12) Financial and economic evaluation of energy efficiency and renewable energy measures. (13) Energy audits. (14) Legal aspects. Role of energy manager in industry. Planning and construction of energy plants.

## Language of Instruction

- Serbian (complete course)       English (complete course)       Other \_\_\_\_\_ (complete course)
- Serbian with English mentoring       Serbian with other mentoring \_\_\_\_\_

## Assessment Methods and Criteria

<b>Pre exam Duties</b>	<b>Points</b>	<b>Final Exam</b>	<b>Points</b>
<b>Activity During Lectures</b>	<b>10</b>	<b>Written Examination</b>	<b>20</b>
<b>Practical Teaching</b>	<b>10</b>	<b>Oral Examination</b>	<b>25</b>
<b>Homeworks</b>	<b>15</b>		
<b>Teaching Colloquia</b>	<b>20</b>	<b>Overall Sum</b>	<b>100</b>
<b>*Final examination mark is formed in accordance with the Institutional documents</b>			