



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

Faculty of Mechanical Engineering

GENERAL INFORMATION

Study Program	Mechanical Engineering
Study Module (if applicable)	-
Course Title	SELECTED TOPICS IN THERMAL ENERGY PLANTS
Level of Study	<input type="checkbox"/> Bachelor <input type="checkbox"/> Master's <input checked="" type="checkbox"/> Doctoral
Type of Course	<input type="checkbox"/> Obligatory <input checked="" type="checkbox"/> Elective
Semester	<input type="checkbox"/> Autumn <input checked="" type="checkbox"/> Spring
Year of Study	II
Number of ECTS Allocated	10
Name of Lecturer/Lecturers	Živković S. Dragoljub, Mitrović M. Dejan, Laković-Paunović S. Mirjana
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 checked="" type="checkbox"/> Seminar <input type="checkbox"/> Distance learning <input type="checkbox"/> Blended learning <input type="checkbox"/> Other

Purpose and Overview (max. 5 sentences)

- To introduce students with various phenomena occurring during variable and unsteady operating regimes of thermal energy plants and methods which should provide their safe and reliable operation.
- To enable students to independently consider and solve problems of various phenomena based on scientific principles, define relevant physical and mathematical models and perform optimization of processes, equipment and operating regimes of thermal energy plants.

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

1) Variable operating regimes and energy efficiency of Thermal Energy (TE) plants; 2) Unsteady operating regimes of TE plants; 3) Problems of interaction of work medium and structure of TE plants; 4) Safety of TE plants; 5) Reliability of parts of TE plants; 6) Combined production of heat and power; 7) Problems of automated regulation of TE plants; 8) Mathematical modelling and numerical simulation of operation of TE plants; 9) Impact of TE plants on the environment - Problems of earth, water and air pollution; 10) Design methods of modern thermal energy plants; 11) Experimental, operation and reception testing of TE plants; 12) Techno-economic optimization of processes, equipment and operating regimes of TE 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

Pre exam Duties	Points	Final Exam	Points
Activity During Lectures	5	Written Examination	50
Practical Teaching	10	Oral Examination	Max. 35 (depending on Teaching Colloquia)
Teaching Colloquia	35	Overall Sum	100

***Final examination mark is formed in accordance with the Institutional documents**