



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

Faculty of Mechanical Engineering

GENERAL INFORMATION

Study Program	Energy and Process Engineering		
Study Module (if applicable)	-		
Course Title	Pumps and Pumping Plants		
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 type="checkbox"/> Autumn	<input checked="" type="checkbox"/> Spring	
Year of Study	I		
Number of ECTS Allocated	2		
Name of Lecturer/Lecturers	Živan T. Spasić		
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)

Introduce students to the operating principles and design of the pumps, proper selection of pump and an optimal pump operation in systems for transporting liquids. Capacity to work in practice on energy installations, as well as design of installations that include a pump as a built-in element with its function. Obtaining practical knowledge in pump plants designing and the content of the technical project documentation.

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

1) General introduction to pumping plants, 2) Principles of operation, design and classification of pumps. Application of pumps in various plants 3) Pump and system characteristic curves. Determination of the head by definition and along the pipeline route. 4) Pump selection. Pump installation arrangements, 5) Suction and inlet conditions for pump. Cavitation and cavitation reserve. 7) Pump performance and methods for flow control, 8) The influence of fluid properties on the characteristics of pumps, 9) Steady and unsteady flow in a pipeline, appearance the water hammer 10) Maintenance and troubleshooting of the pump.

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
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Activity During Lectures	5	Written Examination	0
Practical Teaching	5	Oral Examination	50
Project Design	40	Overall Sum	100
*Final examination mark is formed in accordance with the Institutional documents			