UNIVERSITY OF NIŠ

Course Unit Descriptor	Faculty	Faculty of Mechanical Engineering

GENERAL INFORMATION			
Study Program	Mechanical Engineering		
Study Module (if applicable)	-		
Course Title	Operating Characteristics and Regulation of the Turbomachinery		
Level of Study	☒ Bachelor	☐ Master's	☐ Doctoral
Type of Course	☐ Obligatory	☒ Elective	
Semester	☐ Autumn	☒ Spring	
Year of Study	IV		
Number of ECTS Allocated	6		
Name of Lecturer/Lecturers	Živan T. Spasić		
Teaching Mode	☒ Lectures	☐ Group tutorials	☐ Individual tutorials
	☒ Laboratory work	☐ Project work	☐ Seminar
	☐ Distance learning	☐ Blended learning	☐ Other

Purpose and Overview (max. 5 sentences)

Mastering knowledge of engineering applications of turbomachinery as machines for rising of fluid energy. Knowledge of methods of the system working point determination. Knowledge of the energy characteristics of turbomachinery and their significance in establishment of operating regimes of turbomachinery, as well as in their regulation. Knowledge of the pump cavitation characteristics. Obtaining practical experience of exploitation of turbomachines.

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

1) General introduction and classifications to turbomachinery, 2) Classification of pumps by types. Cavitation and cavitation reserve. 3) Selection of pumps. Matching of pump performance curves with installation characteristics and regulation of pumps, 4) Testing of pumps. Test rigs for the determine characteristics of the pumps, 5) Operating characteristic and regulation of the fans. 6) Testing of funs, 7) Stable and unstable operation in a system 8) Operating characteristic and regulation of the compressors, 9) Classification of hydraulics turbines. Main characteristics, 10) Operating principles and regulation of the hydraulics turbines. Turbine governing demands.

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**	**0**
Practical Teaching	**5**	**Oral Examination**	**50**
Laboratory Exercises	**40**	**Overall Sum**	**100**
***Final examination mark is formed in accordance with the Institutional documents**			