



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

Faculty of Mechanical Engineering

GENERAL INFORMATION

Study program

Mechanical Engineering

Study Module (if applicable)

Course title

MEASUREMENT TECHNIQUES IN MECHATRONICS

Level of study

Bachelor Master's Doctoral

Type of course

Obligatory Elective

Semester

Autumn Spring

Year of study

II

Number of ECTS allocated

10

Name of lecturer/lecturers

Petrović B. Tomislav

Teaching mode

Lectures Group tutorials Individual tutorials
 Laboratory work Project work Seminar
 Distance learning Blended learning Other

PURPOSE AND OVERVIEW (max. 5 sentences)

Introducing students to the measuring systems, measuring instruments, and methods of measurement parameters in Mechatronics. Acquiring knowledge of the theory of experimental research parameters in Mechatronic systems. Acquiring skills in the methodology for measuring and testing the characteristics of power and process systems. Gaining the ability to independently design measurement systems in Mechatronics with the purpose of performing measurements for a doctoral thesis.

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

Measurement techniques in Mechatronic systems;
Structure measuring procedures;
Accuracy and measurement uncertainty, the impact of errors on the measurement results;
Statistical and systematic errors;
Types of transducers (resistive, capacitive, inductive ...);
Processing of measurement signals (analog and digital processing);
Measurement of mechanical parameters;
Measurement of thermal parameters;
Measurement of hydraulic and pneumatic parameters

LANGUAGE OF INSTRUCTION

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

ASSESSMENT METHODS AND CRITERIA

Pre exam duties	Points	Final exam	points
Activity during lectures	0	Written examination	0
Practical teaching	25	Oral examination	50
Teaching colloquia	25	OVERALL SUM	100

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