UNIVERSITY OF NIŠ

Course Unit Descriptor	Faculty	Faculty of Mechanical Engineering

GENERAL INFORMATION	
Study Program	Engineering Management
Study Module (if applicable)	Energy Management
Course Title	Systems for Measurements Monitoring and Control
Level of Study	☐Bachelor ☒ Master's ☐ Doctoral
Type of Course	☒ Obligatory ☐ Elective
Semester	☐ Autumn ☒Spring
Year of Study	I
Number of ECTS Allocated	6
Name of Lecturer/Lecturers	Gradimir Ilić, Vlastimir Nikolić, Žarko Ćojbašić
Teaching Mode	☒ Lectures ☐Group tutorials ☐ Individual tutorials ☒ Laboratory work ☒Project work ☒ Seminar ☐ Distance learning ☐ Blended learning ☐ Other

Purpose and Overview (max. 5 sentences)

Introduce students to the basics of systems for measurements, monitoring and control in the field of energetics. To provide students with skills needed for basic analysis, development and design of systems for measurements, monitoring and control in the field of energetics.

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

Theoretical lectures * Significance of measurements and control in thermoenergetics and process technique, general terms. * Measuring devices and their general characteristics. Measuring errors, units and standards for basic values. * Sensors and transducers. Static and dynamic characteristics of sensors, resistive-tensometric, capacitive, inductive, photoelectric transducers.* Measurement of temperature, pressure, flow, level of liquids, humidity, composition of gases and other quantities in energetics. * Concept of process control in energetics. Regulating and control systems. Control loop and control objects in energetics. * Control systems components in energetics. Convertingelements. Actuators. Compensators and regulators. Components of digital control systems. Power sources. * Industrial automation in energetics based on PLCs. Distributed control, measurements and monitoring in energetics, SCADA systems in energetics.
Practice *Measurements of values in laboratory conditions. Laboratory analysis and design of control systems in energetics.

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	10	Written Examination	25
Practical Teaching	15	Oral Examination	25
Teaching Colloquia	25	Overall Sum	100
*Final examination mark is formed in accordance with the Institutional documents			