Course title: Measurements and Sensors
Course code: 40052
ECTS credits: 7
Requirements: None
Basic information
Level of studies: Undergraduate applied studies
Year of study: 3.
Trimester: 7.
Goal: Acquiring basic knowledge of measurement principles and uncertainty, working principles and types of electrical instruments and physical principles of sensing.
Outcome: Students will be able to understand, perform and analyze simple electrical measurement, as well as understand how sensors work.
Contents of the course
Theoretical instruction
1. Measurement methods and systems
2. Analog electical instruments
3. Digital electical instruments
4. Physical principles of sensing
5. Occupancy and motion detectors
6. Position, displacement, and level sensors
7. Velocity and acceleration sensors
8. Force, strain, and tactile sensors
9. Pressure sensors
10. Temperature sensors
Practical instruction (Problem solving sessions/Lab work/Practical training)
1. Uncertainty in measurement, type A
2. Uncertainty in measurement, type B
3. Extended uncertainty in measurements
4. Osciloscope
5. Voltage measurements

6. Counter timer
Textbooks and References
1. T. Keča, Uvod u električna merenja, Beograd, 2012.
2. Jacob Fraden, Handbook Of Modern Sensors: Physics, Designs, and Applications, Springer-Verlag, 2004.
3. N. Miljković, Metode i instrumentacija za električna merenja, elektronski udžbenik, Beograd, 2016.
Number of active classes (weekly)
Lectures: 4
Practical classes: 3
Other types of classes: 1
Grading (maximum number of points: 100)
Pre-exam obligations: Points
Activities during lectures:
Activities on practical exercises: 20
Seminary work:
Colloquium: 40
Final exam: Points
Written exam: 40
Oral exam:
Lecturer
Tatjana Keča, PhD
Associate