

<b>Course title: Electrical Engineering</b>
Course code: 40051
ECTS credits: 6
Requirements: None
<b>Basic information</b>
Level of studies: Undergraduate applied studies
Year of study: 1.
Trimester: 2.
Goal: Enabling students to understand basic physical laws and processes that appear in electrical and magnetic field, to gain knowledge of working principles of linear electrical circuits components, as well as to solve simple electrical circuits.
Outcome: Students will be able to identify and explain basic electromagnetic field processes and solve simple electrical circuits.
<b>Contents of the course</b>
Theoretical instruction
1. Electrostatic field lines and units;
2. Electrical potential and voltage
3. Conductors and dielectrics in electric field; capacitors
4. Simple DC circuits,
5. Kirchof's laws, Joule's law
6. Magnetic field lines and units, magnetic force
7. Electromagnetic induction and flux
8. Materials in magnetic field
9. Components of AC circuits
10. Resonance and power in AC circuits,
Practical instruction (Problem solving sessions/Lab work/Practical training)
1. Coulomb's law
2. Principle of superposition
3. Capacitors and capacity
4. Ohm's law
5. Solving the DC circuits

6. Biot-Savart's law
7. Faraday's law
8. Paramagnetics, diamagnetics and feromagnetics
9. Capacitors and inductors
10. Solving the AC circuits
<b>Textbooks and References</b>
1. A. Đorđević: Osnovi elektrotehnike 1 – Elektrostatika, Akademska misao, Beograd, 2016.
2. A. Đorđević: Osnovi elektrotehnike 2 – Stalne struje, Akademska misao, Beograd, 2016
3. A. Đorđević: Osnovi elektrotehnike 1 – Elektromagnetizam, Akademska misao, Beograd, 2016.
4. A. Đorđević: Osnovi elektrotehnike 2 – Kola promenljivih struja, Akademska misao, Beograd, 2016
<b>Number of active classes (weekly)</b>
Lectures: 4
Practical classes: 2
Other types of classes:
<b>Grading (maximum number of points: 100)</b>
<b>Pre-exam obligations: Points</b>
Activities during lectures:
Activities on practical exercises:
Seminary work:
Colloquium: 40
<b>Final exam: Points</b>
Written exam: 60
Oral exam:
<b>Lecturer</b>
Tatjana Keča, PhD
<b>Associate</b>