Course title:	**Basics of electrical engineering**			
Course code	***Course status***	***Semester***	***Number of ECTS credits***	***Lecture hours***
132001014	**Mandatory**	**I**	**6.5**	**3+1+1**

Study program:
Basic applied studies, ELECTRICAL ENGINEERING, study program: Computer engineering (studies last for 6 semesters, 180 ECTS credits).

Prerequisites:
No prerequisites required.

Course aims:
In this course, students are introduced to basic ideas and methods of general electrical engineering, as well as problem solving methods in this area.

Teacher(s) and assistant(s):
Ph.D. Jadranka Radović – teacher, Ph.D. Gojko Joksimović – teacher
Mr Milanka Žugić - assistant, Mr Veselin Vlahović - assistant

Teaching method:
Lectures, exercises, laboratory exercises, studying and doing home exercises. Consultations.

Course synopsis:

Preliminary weeks	Preparation and semester enrolment.
I week	Introduction. Coulomb's law, electrostatic field, electric potential, voltage.
II week	Definition of the capacitance, capacitors.
III week	Electric current, current density, electrical resistance, Ohm's and Joule's law.
IV week	Kirchoff's laws, mesh current method.
V week	Node potential method, superposition method.
VI week	***First test***
VII week	***Free week***
VIII week	Magnetic field and corresponding quantities. Conductor with electric current in a magnetic field.
IX week	Electromagnetic induction. Inductivity. Magnetic circuit.
X week	AC quantities and its representation. AC circuit with basic elements.
XI week	Series RLC circuit, impedance, electrical resonance.
XII week	Parallel RLC circuit, admittance.
XIII week	Complex circuit solving by complex method.
XIV week	***Second test***
XV week	Magnetically coupled circuits, transformers.
XVI week	***Final exam***
Final week	Administrative procedures.
XVIII-XXI week	Additional lessons, correction of the final exam and administrative procedures.

STUDENT WORKLOAD

per week	per semester
6.5 credits x **40/30** = **8** hours and **40** min. **Working hours structure**: **3** hours for teaching **1** hour for exercises **1** hour for laboratory exercises **3** hours and **40** minutes for individual work, including consultations.	**Teaching and the final exam**: (**8.66** hours) x **16** = **138** hours and **40** minutes. **Necessary preparation** (before semester): **2** x (**8.66** hours) = **17** hours and **20** minutes. **Total work hours for the course**: **6.5** x **30** hours = **195** hours **Additional hours** for preparing correction of the final exam, including the exam taking: up to **39** hours. **Work hours structure**: 138 hours and 40 minutes (lectures) + 17 hours and 20 minutes (preparation) + 39 hours (additional work)

Lessons attendance is mandatory for students, as well as doing laboratory exercises, home exercises and both tests.

Literature: D.Filipović, T.Vučković, Osnove Elektrotehnike
D.Filipović, T.Vučković, Zbirka zadataka iz Osnova Elektrotehnike.

The forms of knowledge testing and grading:
- Home exercises carry **5**x**1** points
- Laboratory exercises carry **5** points
- Each test carries **20** points (**40** points total)
- Final exam carries **50** points.

Student gets the passing grade by collecting **50** points at least.

Special remarks for the course: If needed, the course can also be taught in English.

Teacher(s) who provided the information: ***Ph.D. Jadranka Radović – teacher, Ph.D. Gojko Joksimović – teacher***

Remark: