

Course title:	Basics of electronics
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Course code	Course status	Semester	Number of ECTS credits	Lecture hours
131004193	Mandatory	IV	7	3+2+1

Study program:

Basic academic studies, ELECTRICAL ENGINEERING, study program: Power systems and Control (studies last for 6 semesters, 180 ECTS credits).

Prerequisites:

Passed final exam in courses **Basics of electrical engineering I and II.**

Course aims:

Introduction to basic electronic components and circuits.

Teacher(s) and assistant(s) first and last names:

Ph.D. Srđan Stanković – teacher
Ph.D. Nedjeljko Lekić - assistant

Studying method:

Lectures, exercises and laboratory exercises, consultations.

Course synopsis:

Preliminary weeks	Preparation and semester enrolment.
I week	Basics of semiconductor physics. p-n junction.
II week	Diodes.
III week	Bipolar transistors. Basic amplifier circuits.
IV week	Field effect transistors. Current sources.
V week	Differential amplifiers. Power amplifier (push-pull).
VI week	First test
VII week	Free week
VIII week	Negative feedback. Operational amplifier and its applications.
IX week	Rectifiers, filters and stabilizers.
X week	Oscillators. Basic impulse circuits (CR, RC) and impulse forms. Schmidt trigger.
XI week	Second test
XII week	TTL and CMOS circuits.
XIII week	Minimization of a logical function (Karnaugh maps). Error correcting codes.
XIV week	Astable multivibrator. Monostable multivibrator.
XV week	D/A and A/D conversion.
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
<p>Working hours: 7 credits x 40/30 = 9 hours and 20 min.</p> <p>Working hours structure:</p> <ul style="list-style-type: none"> 3 hours for teaching 2 hour for exercises 1 hour for laboratory exercises 3 hours and 20 minutes for individual work, including consultations. 	<p>Teaching and the final exam: (9.33 hours) x 16 = 149 hours and 20 minutes.</p> <p>Necessary preparation (before semester): 2 x (9.33 hours) = 18 hours and 40 minutes.</p> <p>Total work hours for the course: 7 x 30 hours = 210 hours</p> <p>Additional hours for preparing correction of the final exam, including the exam taking: up to 42 hours.</p> <p>Work hours structure:</p> <p>149 hours and 20 minutes (lectures) + 18 hours and 40 minutes (preparation) + 42 hours (additional work)</p>

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

Literature:

S. Stanković, R. Laković: Elektronika, ETF, Podgorica 1999.
N. Tadić, S. Stanković, N. Lekić, R. Laković, Zbirka riješenih zadataka iz elektronike, ETF Podgorica, 2003.

The forms of knowledge testing and grading:

- Home exercises carry 5 points.
- Each test carries 20 points (40 points total).
- Final exam carries 50 points.

Student gets the passing grade by collecting 51 points at least.

Special remarks for the course:

Teacher(s) who provided the information: Ph.D. Srđan Stanković

Remark: