

<b>Course title:</b>	<b>Mathematics II</b>
----------------------	-----------------------

Course code	Course status	Semester	Number of ECTS credits	Lecture hours
131002069	Mandatory	II	7.5	3+3

**Study program:**

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

**Prerequisites:**

Mathematics I

**Course aims:**

By studying this subject, students are introduced to some of the basic mathematical ideas, axioms and methods which are necessary for successful studying of the other courses and for their creativity development. The course includes elements of the integral calculus, series and differential calculus of the functions with more than one variable.

**Teacher(s) and assistant(s):**

PhD Milenko Mosurović, assistant professor – teacher  
Two assistants.

**Teaching method:**

Lectures (which include exercises). Studying and individual solving of the preparation and exam problems. Consultations.

**Course synopsis:**

Preliminary weeks	Preparation and semester enrolment.
I week	Primitive function and indefinite integral.
II week	Polynomial features. Integration of the rational functions.
III week	Integration of the some irrational and transcendental functions.
IV week	Definite integral definition. Integrability. Relation between definite and indefinite integrals.
V week	Improper integrals. Definite integral applications.
VI week	<b>First test</b>
VII week	<b>Free week</b>
VIII week	Number series. Functional sequences and series (uniform convergence).
IX week	Features of functional series.
X week	The exponential series. Fourier's series.
XI week	Limit and continuity of the functions with more than one variable.
XII week	<b>Second test</b>
XIII week	Partial derivative and differential of the functions with more than one variable.
XIV week	Extreme values of the functions with more than one variable.
XV week	Second-order surfaces. Rotating, cylinder and cone surfaces.
XVI week	<b>Final exam</b>
Final week	Administrative procedures.
XVIII-XXI week	Additional lessons, correction of the final exam and administrative procedures.

**STUDENT WORKLOAD**

<u>per week</u>	<u>per semester</u>
<b>7.5 credits x 40/30 = 10 hours</b>	<b>Teaching and the final exam:</b> (10 hours) x 16 = 160 hours
<b>Working hours structure:</b>	<b>Necessary preparation</b> (before semester): 2 x (10 hours) = 20 hours
3 hours for teaching	<b>Total work hours for the course:</b> 7.5 x 30 hours = 225 hours
1 hour for exercises	<b>Additional hours</b> for preparing correction of the final exam, including the exam taking: up to 35 hours.
4 hours for individual work, including consultations.	<b>Work hours structure:</b>
	160 hours (lectures) + 20 hours (preparation) + 35 hours (additional work)

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

**Literature:** Teaching lessons: Vučić Dašić, Diferencijalni i integralni račun. Univerzitet Crne Gore. Podgorica 1998  
Exercises: P. Miličić, M. Uščumlić, Zbirka zadataka iz više matematike I. Naučna knjiga, Beograd; S. Duborija, M. Mosurović, G. Šuković, S. Jančić, Diferencijalni i integralni račun – zbirka ispitnih zadataka. Univerzitet Crne Gore. Podgorica 1999

**The forms of knowledge testing and grading:**

- 2 home exercises carry 4 points (2 points each).
- Each test carries 23 points (46 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:** Milenko Mosurović, Assistant Prof.

**Remark:**