

Course title:	Mathematics III
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Course code	Course status	Semester	Number of ECTS credits	Lecture hours
131003125	Mandatory	III	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:

For enrolling Mathematics III, students have to past Mathematics I and Mathematics II.

Course aims:

Within studies of electrical engineering, this is one of the general education courses, and its studying is necessary for better understanding of the other (professional) disciplines.

Teacher(s) and assistant(s):

PhD Milojica Jaćimović, – teacher,
Rajko Calasan - assistant.

Teaching method:

Lectures (which include exercises), studying and individual solving of the problems, consultations.

Course synopsis:

Preliminary weeks	Preparation and semester enrolment.
I week	Definitions of the double and triple integrals. Examples. Basic features.
II week	Double and triple integrals reduction to iterated integrals. Variable substitution. Home exercise.
III week	Implementation of the integrals. Curve and surface concept. Contour integral.
IV week	Surface orientation. Surface integrals.
V week	Basic concepts of the field theory and theirs physical meaning. Home exercise.
VI week	First test
VII week	Free week
VIII week	Green's theorem, Gauss-Ostrogradski theorem, Stoke's theorem.
IX week	Potential, sourceless fields. Home exercise.
X week	Numerical series. Conditional and absolute convergence. Functional series.
XI week	Exponential series. Fourier's series. Fourier's transform. Home exercise.
XII week	Second test
XIII week	Differential equations. Linear system of the differential equations and arbitrary order linear equation. Home exercise.
XIV week	System of the differential equations with constant coefficient.
XV week	Constant variation method. Bessel's differential equation.
XVI week	Final exam
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>
7.5 credits x 40/30 = 10 hours	Teaching and the final exam: (10 hours) x 16 = 160 hours
Working hours structure:	Necessary preparation (before semester): 2 x (10 hours) = 20 hours
3 hours for teaching	Total work hours for the course: 7.5 x 30 hours = 225 hours
3 hour for exercises	Additional hours: up to 225 – 180 = 45 hours
4 hours for individual work, including consultations.	Work hours structure:
	160 hours (lectures) + 20 hours (preparation) + 45 hours (additional work)

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

Literature: M. Jaćimović: Matematika III, handout, 1999.

N. Lažetić: Matematika II, Beograd, Naučna knjiga, 1994.

D.W. Jordan, P. Smith: Mathematical techniques – an introduction for the engineering, phisical and mathematical sciencenes, Oxford university press, 1997.

The forms of knowledge testing and grading:

- 5 home exercises carry 10 points (2 points each).
- Each test carries 30 points (60 points total).
- Final exam carries 30 points.

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

Special remarks for the course: The course can be taught in foreign language.

Teacher(s) who provided the information: PhD Miloica Jaćimović

Remark: For additional information about course contact the professor.