

**Faculty of Electrical Engineering / ELECTRONICS, TELECOMMUNICATIONS AND COMPUTERS /
BASICS OF COMPUTER ENGINEERING II**

Course:	BASICS OF COMPUTER ENGINEERING II			
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exercises+Laboratory)
101	Mandatory	2	6	2+1+2
Programs	ELECTRONICS, TELECOMMUNICATIONS AND COMPUTERS			
Prerequisites	none			
Aims				
Learning outcomes	After the student passes this course, he/she will be able to: 1. Illustrates algorithms for solving simple programming problems; 2. Use the Octave/MATLAB software environment for solving engineering tasks numerically; 3. Use the Maxima software environment for symbolic solving of engineering tasks; 4. Presents the obtained results in graphic form; 5. Compose and apply Octave/MATLAB functions and programs to solve simple problems.			
Lecturer / Teaching assistant	Ph.D. Miloš Daković (full professor), Ph.D. Stefan Vujović, Ph.D. Isidora Stanković, B.Sc. Đorđe Borozan			
Methodology	lectures, exercises and exercises in the computer classroom			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Introduction, Development of programming languages and algorithms, data types			
I week exercises	Introduction, Development of programming languages and algorithms, data types			
II week lectures	Algorithmic steps, basic algorithms, algorithm complexity (temporal and spatial)			
II week exercises	Algorithmic steps, basic algorithms, algorithm complexity (temporal and spatial)			
III week lectures	Introduction to mathematical and engineering software tools; Octave and MATLAB, Data Representation;			
III week exercises	Introduction to mathematical and engineering software tools; Octave and MATLAB, Data Representation;			
IV week lectures	Octave/MATLAB: Elementary operations with matrices and arrays; Graphical presentation of data			
IV week exercises	Octave/MATLAB: Elementary operations with matrices and arrays; Graphical presentation of data			
V week lectures	Octave/MATLAB: 3D graphics, data analysis functions			
V week exercises	Octave/MATLAB: 3D graphics, data analysis functions			
VI week lectures	Octave/MATLAB: Program flow commands, script files			
VI week exercises	Octave/MATLAB: Program flow commands, script files			
VII week lectures	Octave/MATLAB: Function files			
VII week exercises	Octave/MATLAB: Function files			
VIII week lectures	Octave/MATLAB: Polynomials, data interpolation, strings			
VIII week exercises	Octave/MATLAB: Polynomials, data interpolation, strings			
IX week lectures	Midterm exam			
IX week exercises	Midterm exam			
X week lectures	Problem solving in symbolic form (Maxima)			
X week exercises	Problem solving in symbolic form (Maxima)			
XI week lectures	Specialized software tools for symbolic calculations			
XI week exercises	Specialized software tools for symbolic calculations			
XII week lectures	Basics of graphical user interface in Octave/MATLAB environment			
XII week exercises	Basics of graphical user interface in Octave/MATLAB environment			
XIII week lectures	Working with files in the Octave/MATLAB environment			
XIII week exercises	Working with files in the Octave/MATLAB environment			

XIV week lectures	Fundamentals of the Python programming language					
XIV week exercises	Fundamentals of the Python programming language					
XV week lectures	Recapitulation and preparation of the final exam					
XV week exercises	Remedial midterm exam					
Student workload						
Per week			Per semester			
6 credits x 40/30=8 hours and 0 minuts 2 sat(a) theoretical classes 2 sat(a) practical classes 1 excercises 3 hour(s) i 0 minuts of independent work, including consultations			Classes and final exam: 8 hour(s) i 0 minuts x 16 =128 hour(s) i 0 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 8 hour(s) i 0 minuts x 2 =16 hour(s) i 0 minuts Total workload for the subject: 6 x 30=180 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 36 hour(s) i 0 minuts Workload structure: 128 hour(s) i 0 minuts (courses), 16 hour(s) i 0 minuts (preparation), 36 hour(s) i 0 minuts (additional work)			
Student obligations			attending classes, participation in midterm and final exams and tests			
Consultations			after the lectures			
Literature			Material from lectures and exercises (available on the faculty website)			
Examination methods			Homework and laboratory exercises (15 points), midterm exam (40 points), final exam (45 points)			
Special remarks						
Comment						
Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points