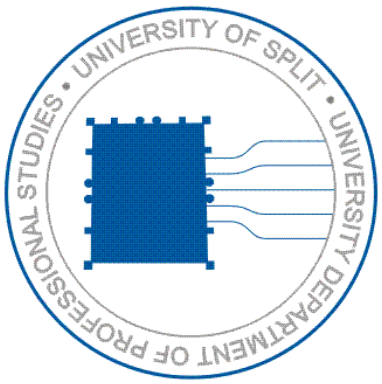
Course syllabus

Programming Methods and Abstractions



COURSE DETAILS		
Type of study programme	Undergraduate professional study programme- 180 ECTS	
Study programme	Computing	
Course title	Programming Methods and Abstractions	
Course code	SRC109	
ECTS (Number of credits allocated)	7	
Course status	Core	
Year of study	First	
Course Web site	http://moodle.oss.unist.hr/	
Total lesson hours per semester	Lectures	45
	Practicals	0
	Laboratory exercises & practical demonstration	30
Prerequisite(s)	None	
Lecturer(s)	Ljiljana Despalatović, senior lecturer	

COURSE DESCRIPTION	
Course Objectives:	• Understanding fundamental programming concepts (variables, iteration, recursion, conditional execution, functions, pointers, and memory management). • Learning the C programming language: syntax, standard library, idioms, and patterns. • Acquiring procedural and modular programming techniques. • Adopting an algorithmic approach to problem definition. • Theoretical and practical preparation of students for further advancement of programming skills.
Learning outcomes *On successful completion of this course, student should be able to:*	1. Define and explain basic programming concepts: variables, data types, functions, iteration and recursion, pointers, and structures. 2. Describe the relationships, similarities, and differences between basic concepts; describe program execution and the program memory layout during runtime. 3. Design algorithms for basic programming problems and implement them in the C programming language; use a compiler and linker or an Integrated Development Environment (IDE). 4. Recognize patterns for solving simple problems; identify syntax and semantic errors in programs. 5. Implement assigned problems. 6. Test one's own solutions, test edge cases, and evaluate complexity.
Course content	Algorithms. Variables and Types. Operators. Functions (and recursive functions). Pointers, Arrays, and Strings. Dynamic Allocation. Function Pointers. File Operations. Structures. Preprocessor. Variable Lifetime and Scope.

CONSTRUCTIVE ALIGNMENT – Learning outcomes, teaching and assessment methods

Alignment of students activities with learning outcomes		
Activity	**Student workload ECTS credits**	**Learning outcomes**
Lectures	42 hours / 1,4 ECTS	1,2,4,5,6
Laboratory work	30 hours / 1 ECTS	2,3,5,6
Two mid-term exams (preparation and delivery)	30 hours / 1 ECTS	2,3,5,6
Self-study	93 hours / 3.1 ECTS	1,2,3,4,5,6
Office hours and final exam	15 hours / 0.5 ECTS	1,2,3,4,5,6
TOTAL:	**210 hours / 7 ECTS**	**1,2,3,4,5,6**

CONTINUOUS ASSESSMENT		
Continuous testing indicators	**Performance A_i (%)**	**Grade ratio k_i (%)**
Class attendance and participation	50 – 100	10
Laboratory work	100	20
First mid-term exam	50-100	**35**
Second mid-term exam	50-100	**35**

FINAL ASSESSMENT		
Testing indicators – final exam (first and second exam term)	**Performance A_i (%)**	**Grade ratio k_i (%)**
Practical exam (written)	50 – 100	70
Previous activities (include all continuous testing indicators)	100	30
Testing indicators – makeup exam (third and fourth exam term)	**Performance A_i (%)**	**Grade ratio k_i (%)**
Practical exam (written)	50 - 100	70
Theoretical exam (written and/or oral)	100	30

PERFORMANCE AND GRADE		
Percentage	**Criteria**	**Grade**
50% - 61%	*basic criteria met*	sufficient (2)
62% - 74%	*average performance with some errors*	good (3)
75% - 87%	*above average performance with minor errors*	very good (4)
88% - 100%	*outstanding performance*	outstanding (5)

ADDITIONAL INFORMATION

Teaching materials for students (scripts, exercise collections, examples of solved exercises), teaching record, detailed course syllabus, application of e-learning, current information and all other data are available by MOODLE system to all students.