Program	Level	First cycle
	Name of the program	All study programs

COURSE

Course title	**Programming I**			
Course code	Semester	Course status	ECTS	Contact hours (L+AE+LE)
CS 110	I	Mandatory course	7	2+2+2
Lecturer				
Course Goals	The course considers the process of computer program development using "high-level" programming language. It is assumed that students have no previous programming experience. Topics to be covered include basic data types and their operators, input-output processing, control structures (decision and repetition structures), functions, arrays/lists, basics of object-oriented programming, as well as basics of data structures. Special focus is placed on improving computer problem-solving skills, program design and testing, and program implementation using the Integrated Development Environment (IDE).			
Learning Outcomes	Upon completion of this course, students will be able to: 1. design, compile and execute programs that solve basic computer problems; 2. describe the concept of a variable; 3. describe and use control structures; 4. use strings and lists; 5. describe and use functions, parameters and return values; 6. write to a file and read the data from a file; 7. understand and use recursion; 8. understand the basic concepts of object-oriented programming; 9. implement basic data structures.			

COURSE CONTENT

- Programming basics
- Data types
- Control structures
- Arrays/lists
- Functions
- Working with files
- Recursion
- OOP basics
- Data structures basics

LITERATURE

R. Sedgewick, K. Wayne, R. Dondero: *„Introduction to Programming in Python: An Interdisciplinary Approach"*, 2015.
C. Dierbach: *„Introduction to Computer Science Using Python"*, 2012.
E. Matthes: *„Python Crash Course"*, No Starch Press, 2015.
W. Savitch: *„Problem Solving with C++"*, 9th Edition, Pearson, 2014.
B. Stroustrup: *„Programming: Principles and Practice Using C++"*, 2nd Edition, 2014
A. Spraul: *„Think Like a Programmer"*, No Starch Press, 2012.

STUDENT WORKLOAD (hours in a semester)

Lectures	30	Tutorial	60	Individual work	85	T o t a l	175

GRADING			**REMARKS**
Criterion	Maximum points	Minimum points	
Midterm exams	30		
Laboratory assignments	30		
Final exam	40		
T o t a l	100	55	