

Program	Level		Schort cycle				
	Name of the program		Infomation Technologies				
COURSE							
Course title	Programming II						
Course code	Semester	Course status	ECTS	Contact hours (L+AE+LE)			
IT 160	II	Mandatory course	9	3+2+2			
Lecturer							
Course Goals	This course represents an advanced course in computer programming. The objectives of the module are to familiarize students with the modern approach to software development - designing and writing programs using object-oriented and generic techniques. The focus is on understanding the basic principles of modularity and abstraction in different contexts.						
Learning Outcomes	<p>By the end of the course, the students will be able to:</p> <ul style="list-style-type: none"> • Understand the basic concepts of object-oriented programming such as data abstraction, encapsulation, inheritance, and polymorphism; • Implement abstract data types (ADT) by using classes; • Understand the concepts of generic data types; • Designing a modular software system by using object-oriented methods; • Systematically to perform the testing of programs as well as systems. 						
COURSE CONTENT							
<ul style="list-style-type: none"> - Structures and classes. - Constructors. - Overloading operators. - Dynamic memory allocation. - Separate compilation. - Inheritance. - Polymorphism. - Generic data types. - Exceptions. - STL standard library. - Advanced techniques. 							
LITERATURE							
<p>[1] W. Sawitch, Absolute C++, 5th Ed., 2013. [2] M. Weisfeld, The Object-Oriented Thought Process, 4th Ed., 2013. [3] R. Lafore, Object-Oriented Programming in C++, 4th Ed., 2001. [4] B. Stroustrup, The C++ programming language, 2013.</p>							
STUDENT WORKLOAD (hours in a semester)							
Lectures	45	Exercises	60	Individual work	120	T o t a l	225
GRADING				REMARKS			
Criterion	Maximum points	Minimum points					
Laboratory assignments	25						
Exams during semester	30						
Project	10						
Final exam	35						
T o t a l	100	55					