

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Computing and Informatics		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Programming Languages		
Lecturer (for lectures)		Stojković R. Suzana, Nejković M. Valentina		
Lecturer/associate (for exercises)		Jovanović D. Martin, Marković M. Ivica, Đorđević Z. Dušan		
Lecturer/associate (for OFE)		Jovanović D. Martin, Marković M. Ivica, Đorđević Z. Dušan		
Number of ECTS	6	Course status (obligatory/elective)	Obligatory	
Prerequisites				
Introduce students with basic concepts of modern programming languages and programming paradigms. Enable to program in imperative, object-oriented, functional and logical programming languages. Increase the ability to learn new programming languages. Improve background for choosing appropriate programming languages for certain classes of programming problems.				
Course objectives				
After completion of the course, students should be able to: Describe, compare, and contrast various language features. Understud the fundamental concepts of object-oriented, functional, logical, concurrent and web programming. Develop applications in Java and C# programming languages.				
Course outcomes				
Course outline				
Theoretical teaching				
Evolution of programming languages. Compilers and interpreters. Formal description of programming languages. Data types. Static and dynamic typing. Strong and weak typed languages. Imperative programming languages and control structures. Subprograms, parameter passing methods. Object-oriented programming languages. Exception handling. Concurrent programming. Functional programming languages. Logical programming languages. Languages for web programming: markup languages and script languages.				
Practical teaching (exercises, OFE, study and research work)				
Lexical elements of the programming language Java. Data types in Java: value and reference types. Expressions and control structures in Java. Class definition: attributes, methods and constructors. Inheritance in Java. Abstract classes and interfaces. Packages. Exception handling in Java. Data streams. Threads in Java. Lexical elements of the programming language C#. Data types in C#: value and reference types. Expressions and control structures in C#. Class definition: attributes, methods, properties and constructors. Inheritance in C#. Abstract classes and interfaces. Exception handling in C#. Data streams in C#. Delegates and events. Windows applications development in C#.				
Textbooks/references				
1	M. Stankovic, Programming languages, Faculty of Electronic Engineering, Nis, 2000. (in Serbian)			
2	M. Stankovic, S. Stojkovic, M. Radmanovic and I. Petkovic. Object-oriented programming languages C++ and Java by Examples, Faculty of Electronic Engineering Nis, 2005.(in Serbian)			
3	ppt presentations from lectures			
4				
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	2	1	0	0
Teaching methods				
Lectures, auditive excercises, lab practicing				
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	Points
Activity during lectures			Written exam	
Exercises		10	Oral exam	40
Colloquia		50		
Projects				