Programming Languages Course

Name of the subject: **Programming languages - BSc**	SUBJECT code:	Weekly hours: 2 lectures + 2 exercises	Credit: 8
Subject leader: Vladimir Despotović	Academic Degree: Assistant Professor	**Prerequisites:** Acquired knowledge in Informatics I and Informatics II	

Purpose: Students acquire theoretical and practical knowledge about fundamental concepts of programming languages and compilers.

Course description: Students should understand the principles and paradigms of programming languages, and should be trained for its application in software development.

Schedule	
Weeks	**Topics**
1.	Introduction of basic notions.
2.	Syntax, semantics and implementation of programming languages.
3.	Lexical and syntax analysis. Lexer and parser generators.
4.	Compilers.
5.	Imperative and procedural programming.
6.	Alphabet, identifiers, types, literals, expressions, operators, commands.
7.	Functions and subroutines.
8.	Structures, unions and arrays.
9.	Abstractions. Structural abstractions. Procedural abstractions. Data abstractions.
10.	Object-oriented programming. Objects and classes.
11.	Encapsulation. Inheritance and polymorphism.
12.	Exceptions and exception handling.
13.	Functional programming and logic programming.
14.	Other programming paradigms (script languages, markup languages, modeling language).

Final grade:
Activity during the lecture: 10
Practical classes: 10
Colloquium: 20
Written exam: 30
Oral exam: 30

Compulsory literature:
1. M. Vučković, Fundamentalni koncepti programskih jezika - Predavanja, Faculty of Organizational Sciences, University of Belgrade, 2015.
2. L. Kraus, Programski jezik C sa rešenim zadacima, 9th ed., Akademska misao, Belgrade, 2014.

Supplemental literature:
1. R.W. Sebesta, Concepts of Programming Languages, 10th ed., Addison - Wesley Publishing Company, 2012.