Course Unit Descriptor

Study Programme: Computer Science

Course Unit Title: Object Oriented Programming 1

Course Unit Code: CS201

Name of Lecturer(s): Aleksandra Klašnja Milićević

Type and Level of Studies: Bachelor Academic Degree

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): Winter

Language of instruction: Serbian (primary), English (secondary)

Mode of course unit delivery (face-to-face/distance learning): Face-to-face

Number of ECTS Allocated: 8

Prerequisites: Introduction to Programming

Course Aims:

Introducing students to the principles and techniques of object-oriented programming and enabling them to apply the proven solutions and contemporary tools in the development of a wide spectrum of applications.

Learning Outcomes:

Minimum: At the end of the course, successful students should be able to demonstrate the ability to understand and analyze problems, as well as the design and realization of the solution in a concrete object-oriented programming language.

Desirable: At the end of the course, successful students should be able to understand, analyze and define problems based on logical foundations, as well as creative design and realization of solutions using the object-oriented style of programming.

Syllabus:

Theory

Object-oriented methodology: design and programming. Basic elements of object-oriented programming: classes, inheritance, dynamic bounding. Object-oriented programming language. Structure and parts of the program. Referential data types. Interfaces. Enumerated data types. Packages. Exceptions. Strings. Collections. Developing graphical user interfaces.

Practice

Use of illustrative examples as the means of studying all of the presented theoretical concepts. Structure of a program in a particular object-oriented language. Testing of finished solutions, tools, discussion on the possibilities of application and the like. Individual practical tasks: classes, objects, inheritance, abstract classes, interfaces, arrays, modifiers, initializers, nested classes, working with strings, input and output streams, packages, exceptions, collections, graphical user interfaces.

Required Reading:

Vohra, D., Baesens, B., Backiel, A., & vanden Broucke, S. (2015). *Beginning Java Programming: The Object-oriented Approach*. John Wiley & Sons.

Мирјана Ивановић, Зоран Будимац, Милош Радовановић, Дејан Митровић, *Објектно-оријентисано програмирање и програмски језик Јава*, Сигра стар, Нови Сад, 2016.

Weekly Contact Hours: 6	**Lectures:** 2	**Practical work:** 4

Teaching Methods:

The lectures comprise classical methods of teaching with the projector. In solving problems or analysing illustrative examples when conducting theoretical exercises, students try to model own solutions. During the practical classes students

independently apply the techniques mastered by making a variety of applications, whose complexity increases during the semester. Knowledge of students is tested through colloquiums and practical tasks. In the oral part of the exam, the student demonstrates a comprehensive understanding of the principles of object-oriented programming.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	**Final exam**	points
Active class participation		written exam	
Practical work	40	oral exam	40
Preliminary exam(s)	20		
Seminar(s)			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			