

Program	Level	First cycle					
	Name of the program	Theoretical Computer Science, Mathematics and Informatics Education					
COURSE							
Course title	Software Development						
Course code	Semester	Course status	ECTS	Contact hours (L+AE+LE)			
CS 340	V	Mandatory course	5	3+0+2			
Lecturer							
Course Goals	The aim of the course is to introduce students to modelling, designing, implementing, testing, and debugging large object-oriented software. Also, students will be introduced to effective methods during Java application development, including inheritance, multithreading, networking, database work, and web application development.						
Learning Outcomes	Upon completion of the course, students are expected to be able to: independently design and implement larger programs, write quality Java code for them, test software to find and debug, analyze and improve open source Java programs of other developers.						
COURSE CONTENT							
<p>1) Introductory consideration. Defining a model through UML. Object-oriented analysis and design. Introduction to facilities.</p> <p>2) Creating and destroying objects. Common methods to all objects. Operators. Execution controls. Initialization and cleaning of objects.</p> <p>3) Classes and interfaces. Reuse classes. Polymorphism. Inner classes. Storage of objects. Work with exceptions.</p> <p>4) Strings. Recognition of class instances. Generic data types. Arrays. Containers.</p> <p>5) Input-output operations. Enumerated data types. Annotations.</p> <p>6) General methods and efficient programming. Exceptions. Competitiveness. Serialization.</p> <p>7) Graphical user interface.</p>							
LITERATURE							
<p>[1] Alempije Veljović: Osnove objektnog modeliranja UML, drugo izdanje, (2004), Kompjuter biblioteka.</p> <p>[2] Bruce Eckel: Thinking in Java, 4th edition, (2006), Prentice Hall.</p> <p>[3] Joshua Bloch: Effective Java, 2nd edition, (2008), Addison-Wesley.</p> <p>[4] Paul T. Tyman; G. Michael Schneider: Modern Software Development Using Java: A Text for the Second Course in Computer Science, 2nd edition, (2007), Course Technology.</p> <p>[5] Dejan Živković: Java Programiranje, prvo izdanje, (2013), Beograd.</p>							
STUDENT WORKLOAD (hours in a semester)							
Lectures	45	Exercises	30	Individual work	50	T o t a l	125
GRADING				REMARKS			
Criterion	Maximum points	Minimum points					
Midterm exam	30	15					
Homework	10	5					
Students project	30	15					
Final exam	30	20					
Total	100	55					