

Study program: Information technology			
Type and level of studies: Undergraduate Academic Studies			
Course unit: Advanced Object-Oriented Programming			
Teachers in charge: Olga M. Ristić, Željko Lj. Jovanović, Miloš R. Ivanović			
Language of instruction: English			
ECTS: 6			
Prerequisites: -			
Semester: Summer			
Course unit objective: The goal of the course is to enable students to understand and apply advanced techniques of object-oriented programming. Students should be able to identify and apply the possibilities of object-oriented programming in the implementation of complex software projects.			
Learning outcomes of Course unit: At the end of the course, the student understands the importance of advanced object-oriented programming techniques and successfully applies them in software development.			
Course unit contents: <i>Theoretical classes</i> Packages and interfaces. Event processing. Exception handling. Threads, Thread Creation and Synchronization. Multi-threaded programming. Semaphore. Java Collections Framework. Software Design Patterns. Structural design patterns. Behavior design patterns. Generic data types. Lambda expressions. Java Stream API. Method references. Network programming. Tools for building projects. <i>Practical classes</i> During the exercises, practical examples from all areas covered in the lectures are solved. Software projects will be developed independently or in a team.			
Literature: [1] Herbert Schildt: Java JDK 7: kompletan priručnik, Mikro knjiga, Beograd, 2012, ISBN 978-86-7555-378-6. [2] Kathy Sierra, Bert Bates, Trisha Gee, Head First Java, 3rd Edition, O'Reilly Media, Inc., 2022, ISBN: 9781491910771 [3] Laslo Kraus: Programski jezik Java sa rešenim zadacima, Akademska misao, Beograd, 2013, ISBN 978-86-7466-455-1.			
Number of active teaching hours: 4		Lectures: 2	Practice: 2
Teaching methods: Combination of classical teaching and e-learning with the specified literature. Interactive teaching with multimedia content in a computer classroom equipped with a video beam and online access to the Internet.			
Evaluation (maximum number of points 100)			
Exam prerequisites:		No. of points:	Final exam:
Activities during teaching process		5	Final exam (written):
Practical teaching		10	Final exam (oral):
Colloquium		40	
Practical teaching		15	