

Study program: Information Technology			
Course title: ADVANCED OBJECT-ORIENTED PROGRAMMING			
Teachers: Olga M. Ristić, Željko Lj. Jovanović, Miloš R. Ivanović			
Course status: mandatory			
Number of ECTS credits: 6			
Prerequisite courses: Object-oriented programming			
Course objectives 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 At the end of the course, the student understands the importance of advanced object-oriented programming techniques and successfully applies them in software development.			
Content of the course <i>Theoretical teaching</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 teaching</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] Laslo Kraus: Programski jezik Java sa rešenim zadacima 3. izdanje - JSE 13, Akademska misao, 2022, 508 s, ISBN broj: 9788674668078. [2] Laslo Kraus: Rešeni zadaci iz programskog jezika Java sa rešenim zadacima JSE 14 - 5. izdanje, Akademska misao, 2022, 371 s, ISBN broj: 9788674668450 [3] Rogers Cadenhead, Java za 24 časa: naučite sami, Pekograf, CET: Računarski fakultet, 2018, Beograd, ISBN: 978-86-7991-404-0. [4] Kathy Sierra, Bert Bates, Trisha Gee, Head First Java, 3rd Edition, O'Reilly Media, Inc. 2022, ISBN: 9781491910771. [5] https://www.tutorialspoint.com/spring_boot/spring_boot_tutorial.pdf [6] Rohit Joshi: Java Design Patterns, JOG, 2015, 173 p. https://enos.itcollege.ee/~jpoial/java/naited/Java-Design-Patterns.pdf			
Number of active teaching classes: 4		Theoretical teaching: 2	Practical teaching: 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 of knowledge (maximum number of points 100)			
Pre-exam obligations	Points	Final exam	Points
Activities during teaching process	5	Final exam (written):	30
Practical teaching	10	Final exam (oral):	/
Colloquium	40		
Practical teaching	15		