Study program: Information Technology	
Course title: OBJECT-ORIENTED PROGRAMMING	
Teachers: Olga M. Ristić, Željko Lj. Jovanović	
Course status: mandatory	
Number of ECTS credits: 6	
Prerequisite courses: none	

Course objectives

Students will learn object-oriented programming concepts (classification, encapsulation, abstraction, polymorphism and inheritance). Within the subject, the student independently works on a project that contains the practical realization of a task and requires the application of the acquired knowledge within the subject.

Learning outcomes

The student learned the basic concepts of object-oriented programming and know how to use the Java programming language as an object-oriented language. The student understands how the references work and successfully use command over the creation of various classes, interfaces and graphical user interfaces, as well as their elements. They applies the logic of object-oriented programming in tasks programming.

Content of the course

Theoretical teaching

Java console applications. Class, object, attribute, method, access modifiers and data types. Reading input methods. Abstraction, encapsulation, inheritance and polymorphism. Methods for accessing private fields, constructors and method for printing objects. Static class members. Strings. Abstract classes and methods, interfaces. Keyword final. Exception handling. Java File Class. Threads. Class diagrams.

2. Development of a Graphical User Interface (GUI). Defining basic and advanced form components (buttons, labels, text fields, drop-down lists, tables...). Events. Defining table models. A multi-form application.

Practical teaching

Development the console applications examples and GUI examples in the Java programming language using the Eclipse IDE.

Literature

[1] Laslo Kraus: Programski jezik Java sa rešenim zadacima 3. izdanje - JSE 13, Akademska misao, 2022, 508 s.

[2] Laslo Kraus: Rešeni zadaci iz programskog jezika Java sa rešenim zadacima JSE 14 - 5. izdanje, Akademska misao, 2022, 371 s.

[3] Rogers Cadenhead, Java za 24 časa: naučite sami, Pekograf, CET: Računarski fakultet, Beograd, 2018.

[4] Kathy Sierra, Bert Bates, Trisha Gee, Head First Java, 3rd Edition, O'Reilly Media, Inc. 2022.

[5] Benjamin J. Evans, Jason Clark, Martijn Verburg: The Well-Grounded Java Developer, Manning Publications, 2022, 670 p.

[6] https://docs.oracle.com/javase/specs/jls/se18/jls18.pdf

Number of active teaching classes: 4	Theoretical teaching: 2	Practical teaching: 2

Teaching methods

Lectures and exercises will be realized according to the model of interactive teaching (teaching methods: popular lecture, discussion, methods of practical work, workshops, playing); activated forms of learning: verbal receptive learning, discovery learning, cooperative learning, practical learning.

Evaluation of knowledge (maximum number of points 100)

Pre-exam obligations	Points	Final exam	Points
Activities during teaching process	10	Final exam (written):	30
Practical teaching	/	Final exam (oral):	/
Colloquium	40		
Practical teaching	20		