

DESCRIPTION OF THE COURSE

Name of the course: Object-Oriented Programming	Code: BIE68-2	Semester: 8
Type of teaching: Lectures and laboratory work	Lessons per week: L – 2 hours; LW – 1.5 hours	Number of credits: 4

COURSE STATUS IN THE CURRICULUM: Optional for the students specialty Industrial Engineering BEng programme of the English Language Faculty of Engineering.

AIMS AND OBJECTIVES OF THE COURSE: To develop a student's ability to solve problems using an object oriented programming language.

DESCRIPTION OF THE COURSE: The main topics concern: Object-oriented programming methodology; introduction to Java programming language; data types – objects and primitive data types: integers and floating points, characters, Booleans, expressions, operator precedence, data conversion, string, variables and constants, assignment statements; control flow - conditional statements and loops, break and continue; arrays; classes – declaration, class modifiers, variable declaration, method declaration, constructors, objects, class member invocation, static variables and static methods, abstract classes and abstract methods, applet methods; inheritance - class declaration, constructor declarations, overloading methods, overriding instance methods, hiding class methods, hiding variables, multiple inheritance; abstract classes; nested classes; interfaces – definition, interface declaration, implementing an interface, using an interface as a type; polymorphism - polymorphism via interfaces, polymorphism via inheritance; events and listeners; graphical user interface; exceptions; input/output streams – text files, binary files; multiple threads.

PREREQUISITES: Computing I, Computing II.

TEACHING METHODS: Lectures, using a beamer, case studies, laboratory work in teams, preparation of exercises and laboratory works, solve a problem using an object oriented programming language.

METHOD OF ASSESSMENT: One two-hour exam at the end of semester (70%) plus laboratories (30%).

INSTRUCTIONAL LANGUAGE: English.

BIBLIOGRAPHY:

1. Herbert Schild, Java 2 – ръководство за програмиста, Софт Прес 2001;
2. John Lewis, William Loftus, Java Software Solutions. Foundations of Program Design, Second Edition, Addison Wesley Longman, Inc., 2000;
3. Bruce Eckel, Thinking in Java, Prentice Hall, 1999;
4. Кристофър Стоун, Джо Уебър, Програмиране за Интернет, Книги първа и втора, LIO Book Publishing, 1997;
5. Patrick Naughton, The Java handbook, Osborne;
6. Jamie Jaworski, Java Developer's Guide, Sams.net Publishing, 1996.