

COURSE OUTLINE

(1) GENERAL

SCHOOL	ENGINEERING SCHOOL		
ACADEMIC UNIT	DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE		SEMESTER	B
COURSE TITLE	OBJECT ORIENTED PROGRAMMING		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		WEEKLY TEACHING HOURS	CREDITS
Lectures		2	4
Laboratory		2	
Total		4	
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	General background Course		
PREREQUISITE COURSES:	-		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

1. In-depth knowledge and understanding of the basic concepts and principles of object oriented programming

2. Experimental knowledge and skills to develop programming application using the object oriented programming paradigm

3. Knowledge and synthesis skills for the design and development of computer programs using the Java programming language

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology

Adapting to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional and ethical responsibility and sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

.....

Others...

.....

Search, analysis and synthesis of data and information, using the object oriented programming model.

Creative and inductive thinking to develop new strategic approaches for the problem solving process

(3) SYLLABUS

1: Introduction to the Object Oriented Programming

Basic Concepts of the object oriented programming.

2: Code Development

Development of the first program using the Java programming language. Basic characteristics, basic syntax.

3: Variables

Data types and Variables, Constants, Operators, Assignments statements and Calculations.

4: Methods, Classes and objects

Classes and Objects, Inheritance, Encapsulation, Polymorphism

5: Decision Statements

Comparisons and decisions, operators, Nested comparison statements

6: Loops

Repetition statements

7. Arrays

One-dimensional Arrays, Multi-dimensional Arrays, Array Lists

8: Graphical User Interface

Classes and Interfaces. Graphical User Interface Programming, Applications development

9: Using Platforms

Platforms for applications development

10: Files, Programmer-Defined Types

Direct Access Files and Object Classes

11: Web Applications

Web applications development

12: Object oriented languages

Other languages for the object oriented paradigm such as JavaScript and Visual Basic. Presentation and comparisons

13: Introduction to development environments

Introduction to development environments

--

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Lectures, laboratories	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Laboratory Education using ICT, Communication and Electronic Submission	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i> <i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i>	Activity	Semester workload
	Lectures	26
	Laboratories	26
	Team work	20
	Personal Study	28
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	Course total 100	
	Evaluation Language: Greek English for Erasmus students Theory: Final written exam: 100% Laboratory: Lab Assignment 100% The grade of the course is 60% x Theory +40% x Laboratory grades	

(5) ATTACHED BIBLIOGRAPHY

- **Harvey Deitel,Paul Deitel , «Java Programming, 8th edition», Γκιούρδας, 2010.**
- **Γιώργος Λιακέας, “Εισαγωγή στη Java», Κλειδάριθμος, 2009.**