ETY104 - Computers I

COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF ENGINEERING		
ACADEMIC UNIT	DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ETY104	**SEMESTER**	1
COURSE TITLE	Computers I		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures/Labs	4	4
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at (d).		
COURSE TYPE *general background, special background, specialized general knowledge, skills development*	General background	

PREREQUISITE COURSES:	NO
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO
COURSE WEBSITE (URL)	http://pc164.materials.uoi.gr/dpapageo/courses/comp1/

(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*

Upon completion of the course the student

Knowledge: Understands the basic principles and concepts of computers, the Fortran programming language as well as basic data processing algorithms.

Skills: Combines Fortran language commands for developing programs in the Linux environment through laboratory exercises, recognizes and corrects syntactic and logical code errors, performs exercises and records responses in an online environment.

Ability: Recognizes the basic mathematical elements of a problem, designs detailed algorithms and freely develops Fortran language applications for simple mathematical problems.

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	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

- Search, analyze and synthesize data and information, using the necessary technologies.
- Independent work
- Team work

(3) SYLLABUS

Computer architecture. Hardware and software. Programming languages and compilers. Introduction to Fortran programming. Basic programming principles. Variables and numeric expressions. Decisions. Loops. Input and output. One-dimensional and two-dimensional matrices. Character handling. Functions and subprograms.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	In class, lectures
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	By nature of the course, computers are used in laboratories. In addition, specialized software is used to conduct and evaluate laboratory exercises. Communication with the students is through the course website.
TEACHING METHODS *The manner and methods of teaching are described in detail.* *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.* *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*	

Activity	*Semester workload*
Lectures	52
Laboratory	16
Self-study (for the next lab session)	8
Self-study (preparation for the final exam)	24
Course total	100

STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *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* *Specifically-defined evaluation criteria are given, and if and where they are accessible*	LANGUAGE OF EVALUATION: Greek METHOD OF EVALUATION: Laboratory exercises: (i) Online examination at the end of each laboratory: Developing a problem-solving code, totaling 40% of the final grade (ii) Online final exam: Developing code for problem solving, totaling 60% of the final grade

to students.	

(5) ATTACHED BIBLIOGRAPHY

-Suggested bibliography:

- FORTRAN 77/90/95 and FORTRAN 2003, A. Karakos, ISBN: 978-960-461-072-3
- From Fortran77 to Fortan90, St. Klimipoulos, Ath. Tsouroplis, ISBN: 960-8105-34-X
- Teachers' notes on laboratory exercises are also distributed.