

COURSE OUTLINE

(1) GENERAL

SCHOOL	Economics, Management and Informatics		
ACADEMIC UNIT	Department of Informatics & Telecommunications		
LEVEL OF STUDIES	MSc		
COURSE CODE		SEMESTER	1 st
COURSE TITLE	Applied Computer Science		
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
Total		3	5
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Mix of general and special background		
PREREQUISITE COURSES:	-		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	English		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	-		
COURSE WEBSITE (URL)	https://eclass.uop.gr/courses/XXXX/index.php		

(2) LEARNING OUTCOMES

<p>Learning outcomes <i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> 																			
<p>On successfully completing this course, students will be able to:</p> <ul style="list-style-type: none"> • Manage complex software design and development programs, including selecting appropriate software tools. • Design and implement effective software systems suitable for fixed arithmetic and / or real time applications. • Manage parallel processing in the design of information processing systems. • Specify and manage security infrastructures in digital systems and design appropriate software components. 																			
<p>General Competences <i>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?</i></p> <table border="0"> <tr> <td><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></td> <td><i>Project planning and management</i></td> </tr> <tr> <td><i>Adapting to new situations</i></td> <td><i>Respect for difference and multiculturalism</i></td> </tr> <tr> <td><i>Decision-making</i></td> <td><i>Respect for the natural environment</i></td> </tr> <tr> <td><i>Working independently</i></td> <td><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></td> </tr> <tr> <td><i>Team work</i></td> <td><i>Criticism and self-criticism</i></td> </tr> <tr> <td><i>Working in an international environment</i></td> <td><i>Production of free, creative and inductive thinking</i></td> </tr> <tr> <td><i>Working in an interdisciplinary environment</i></td> <td><i>.....</i></td> </tr> <tr> <td><i>Production of new research ideas</i></td> <td><i>Others...</i></td> </tr> <tr> <td></td> <td><i>.....</i></td> </tr> </table>		<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>	<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>	<i>Decision-making</i>	<i>Respect for the natural environment</i>	<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>	<i>Team work</i>	<i>Criticism and self-criticism</i>	<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>	<i>Working in an interdisciplinary environment</i>	<i>.....</i>	<i>Production of new research ideas</i>	<i>Others...</i>		<i>.....</i>
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(3) SYLLABUS

<ul style="list-style-type: none"> • Programming language principles, concepts and paradigms • Software Engineering for embedded systems • Binary representations and numerical effects • Advanced data structures • Design and analysis of algorithms • Overview of digital security and privacy issues • Real time principles, parallelism and multithreading
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(4) TEACHING and LEARNING METHODS - EVALUATION

<p style="text-align: center;">DELIVERY <i>Face-to-face, Distance learning, etc.</i></p>	Face to face											
<p style="text-align: center;">USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	PowerPoint presentations Course Management System for Asynchronous eLearning via web browser (e-class)											
<p style="text-align: center;">TEACHING METHODS <i>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.</i></p> <p><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></p>	<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;"><i>Activity</i></th> <th style="text-align: center;"><i>Semester workload</i></th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td style="text-align: center;">39 hours</td> </tr> <tr> <td>Study</td> <td style="text-align: center;">83 hours</td> </tr> <tr> <td>Exams</td> <td style="text-align: center;">3 hours</td> </tr> <tr> <td>Course total</td> <td style="text-align: center;">125</td> </tr> </tbody> </table>		<i>Activity</i>	<i>Semester workload</i>	Lectures	39 hours	Study	83 hours	Exams	3 hours	Course total	125
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<p style="text-align: center;">STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i></p> <p><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></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>The language of evaluation is English.</p> <p>The performance evaluation will be with written exams at the end of the semester. It is possible that home assignments will be given, which will contribute to the final grade with a percentage ranging between 20% and 30%.</p> <p>The written exams will include a mix of problem solving, essay and short-answer questions.</p> <p>The home assignments can include problem solving, public presentation, implementation and report writing.</p>											

(5) ATTACHED BIBLIOGRAPHY

<p><i>- Suggested bibliography:</i></p> <ul style="list-style-type: none"> • Deitel, H. and P. Deitel. C++ How to Program. Prentice Hall • C. Shaffer. Data Structures and Algorithm Analysis. (http://people.cs.vt.edu/shaffer/Book/ - OpenDSA Project) • W. Stallings, Cryptography and Network Security, Pearson Higher Education • T. Christiansen, et al. Programming Perl, O'Reilly Media • A.S. Tanenbaum, Modern Operating Systems, Pearson Higher Education <p><i>- Related academic journals:</i></p> <ul style="list-style-type: none"> • Springer Lecture Notes in Computer Science • IEEE Transactions on Computing • IEEE Transactions on Parallel and Distributed Systems
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