

COURSE OUTLINE

(1) GENERAL

SCHOOL	ENGINEERING		
ACADEMIC UNIT	INFORMATICS AND COMPUTER ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE		SEMESTER	7 th , 9 th
COURSE TITLE	SOFTWARE QUALITY & RELIABILITY		
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	2		
Tutoring	1		
Laboratory exercises	1		
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).	4	5	
COURSE TYPE general background, special background, specialised general knowledge, skills development	Scientific Area, Skills Development		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

<p>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</p> <ul style="list-style-type: none"> • 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 <p>The aim of the course is to present the necessary concepts of the theories of quality and its assurance in software development and with the help of process management software to enable the design and implementation of quality assurance systems. The course aims to enable students to:</p> <ul style="list-style-type: none"> • recognise the basic principles and fundamental characteristics of quality the development of information systems and the background of quality theories • organise the management of the related design and control activities achieving software quality, • distinguish the level of maturity according to the CMM model and understand the general structure of the ISO 90001 standard and the procedures certification procedures. • finally, plan the general activities of an assurance system the general principles of the general management of a quality management system using the business modelling tool ADONIS - community Edition <p>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?</p> <p>Search for, analysis and synthesis of data Project planning and management</p>

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

- Search, analysis and synthesis of data and information, using the necessary technologies
- Autonomous work
- Project planning and management

(3) SYLLABUS

- Introduction to the basic concepts of software quality and reliability
- Software Quality Management (Process and Product Quality, Quality Design, Quality Control, Quality Control)
- Software quality and reliability attribute models.
- Software Measurements and Metrics
- Quality Assurance of Information Systems.
- Total quality management and other approaches.
- Introduction to the establishment and utilization of quality assurance systems.
- Maturity models of the software development process (CMM, SPICE etc.)
- The ISO 9000 standard and the certification process.
- Process modelling and reengineering tools. Their applications
- Laboratory part: use of process management tools (ADONIS Community Edition), Design & development of a quality assurance system in an ADONONIS Community Edition), Design & development of a quality assurance system in a company or organization.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	<ul style="list-style-type: none"> • Face to face (in-class) 														
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	<ul style="list-style-type: none"> • Use of electronic material for support of the courses (slides and material in electronic format) • Use of business modelling tool & special libraries for management and optimization processes • Support of the learning process through e-learning platform of the department 														
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	<table border="1"> <thead> <tr> <th style="background-color: #d3d3d3;">Activity</th> <th style="background-color: #d3d3d3;">Semester workload</th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>26</td> </tr> <tr> <td>Tutorial and Laboratory exercises</td> <td>26</td> </tr> <tr> <td>Project</td> <td>20</td> </tr> <tr> <td>Preparation of laboratory exercises</td> <td>13</td> </tr> <tr> <td>Autonomous Study</td> <td>40</td> </tr> <tr> <td>Course total (25 hours load per credit hour unit)</td> <td>125</td> </tr> </tbody> </table>	Activity	Semester workload	Lectures	26	Tutorial and Laboratory exercises	26	Project	20	Preparation of laboratory exercises	13	Autonomous Study	40	Course total (25 hours load per credit hour unit)	125
Activity	Semester workload														
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Tutorial and Laboratory exercises	26														
Project	20														
Preparation of laboratory exercises	13														
Autonomous Study	40														
Course total (25 hours load per credit hour unit)	125														
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 to students.	<p>I. Written final examination (60%) including:</p> <ul style="list-style-type: none"> - Short answer questions - Problem solving - Comparative evaluation of theory elements <p>II. Laboratory assignment (40%)</p>														

(5) ATTACHED BIBLIOGRAPHY

<p>- Suggested bibliography:</p> <ol style="list-style-type: none"> 1. Software Technology (Yiakoumakis, Diamantidis) Stamoulis ed. 2. Basic principles of technical. Software basics I. Sommerville ed. (Translation into Greek) 3. process management for experts, Franz Bayer, Harald Kuehn Hrsg. Springer Gabler Verlag, Berlin Heidelberg 2013 4. Course Notes "Software Quality & Assurance" and Lectures, Ioannis Hallaris 2015 5. Watt S.Humphrey, "A discipline for Software Engineering", Carnegie Mellon University, 1995 Addison - Wesley Publishing Company. 6. Electronic Public Administration - Organization, Technology and Applications, I. Apostolakis, E.Loukis, I. Halaris, Papazisis Publications 2008 7. Electronic Workshop Notes for the use of the used business modeling tool ADONIS - community Edition, Ioannis & Emm. John and John Halaris 2015.
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