

COURSE OUTLINE

(1) GENERAL

SCHOOL	ENGINEERING		
ACADEMIC UNIT	ELECTRICAL AND COMPUTER ENGINEERING DEPT.		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ECE_INF750	SEMESTER	7
COURSE TITLE	WEB TECHNOLOGIES & APPLICATIONS		
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	
Seminars / Practice exercises		1	
Laboratory		1	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (4).</i>		4	5
COURSE TYPE <i>general background, special background, specialised, general knowledge, skills development</i>	Specialized, Skills Development		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	https://www.ece.uop.gr		

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><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>The course content aims to provide students with an understanding of the fundamental components of the Web, the basic principles of website design, and advanced interface development topics. Emphasis is placed on acquiring practical skills for developing integrated web-based applications that combine client & server-side technologies.</p> <p>Upon successful completion of the course, the students will be able to:</p> <ul style="list-style-type: none"> - At the knowledge level: <ul style="list-style-type: none"> • Understand the essential components of the World Wide Web: browsers, servers, and communication between them. • Get familiar with the basic rules for designing websites and web applications. - At the skill level: <ul style="list-style-type: none"> • develop integrated web applications that combine client & server-side technologies. • develop web applications that interact with databases.

- use content management systems.
- At the level of abilities:
 - design and develop web pages with HTML / HTML5 and CSS / CSS3.
 - manage XML / JSON semi-structured data.
 - start developing client-side web applications (JavaScript, JQuery, AJAX).
 - start developing server-side web applications (PHP, ASP.NET).

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?

<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>

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working independently
- Teamwork.
- Production of free, creative and inductive thinking
- Creation of new research ideas

(3) SYLLABUS

This course focuses on introducing technologies and processes for developing systems on the Web. The course is developed in 13 lectures.

- i. Introduction to the Internet, and the World Wide Web: Client-Server Model, Basic Definitions: Web, Website, Webpage, Web Application, Basic Web Browser Functions.
- ii. Website Design: Home Page, Navigation, Display, and Usability.
- iii. HTML / HTML5 web development.
- iv. Content formatting with CSS / CSS3.
- v. XML, JSON data description languages.
- vi. An Introduction to JavaScript: Syntax, Variables, Data Types, and Operators, Branching and Looping, Functions.
- vii. Advanced JavaScript topics.
- viii. JQuery Library, Ajax.
- ix. An Introduction to PHP: Basic Structure – Syntax, Data Types, Variables, Branching and Looping, Functions.
- x. Incorporating a Database in the Web Application (PHP with MySQL).
- xi. An Introduction to ASP.NET and C #.
- xii. Content Management Systems (CMSs): Popular open-source CMSs, Features, Advantages, Comparison, etc.
- xiii. CMSs: Installing, Using, and Configuring a CMS.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face
<i>Face-to-face, Distance learning, etc.</i>	

<p>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</p> <p><i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<ul style="list-style-type: none"> • Learning process support via the electronic e-class platform. • PowerPoint presentations with examples and practice exercises in the classroom. • Laboratory Exercises using a PC. • During the lectures, a computer is used to write and run code. 																		
<p>TEACHING METHODS</p> <p><i>The manner and methods of teaching are described in detail.</i></p> <p><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></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"> <thead> <tr> <th>Activity</th> <th>Semester workload</th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>26</td> </tr> <tr> <td>Seminars</td> <td>13</td> </tr> <tr> <td>Laboratory practice</td> <td>13</td> </tr> <tr> <td>Preparation of laboratory exercises</td> <td>13</td> </tr> <tr> <td>Study of lectures and bibliography</td> <td>60</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td>Course Total</td> <td>125 hours (5 ECTS)</td> </tr> </tbody> </table>	Activity	Semester workload	Lectures	26	Seminars	13	Laboratory practice	13	Preparation of laboratory exercises	13	Study of lectures and bibliography	60					Course Total	125 hours (5 ECTS)
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<p>STUDENT PERFORMANCE EVALUATION</p> <p><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>Written final exam (up to 60% -80% of the final grade) and lab project (20% -40% depending on the degree of difficulty) which includes:</p> <ul style="list-style-type: none"> - Theory evaluation. - Short answer questions. - Multiple choice questions. - Problem-solving related to: <ul style="list-style-type: none"> • Design of usable websites. • Development with programming languages taught to achieve the desired result. • Correction of syntactic and logical errors within programs. • Utilization of client & server-side technologies for the development of integrated World Wide Web applications. • Use of content management systems. 																		

(5) ATTACHED BIBLIOGRAPHY

<p>- Suggested bibliography:</p> <ul style="list-style-type: none"> • <i>Internet and World Wide Web How to Program, ISBN-10: 0132151006 , Deitel & Deitel.</i> • <i>PHP and MySQL Web Development, ISBN-10: 0321833899, Welling Luke, Thomson Laura.</i> <p>- Related academic journals:</p> <ul style="list-style-type: none"> • ACM Transactions on the Web • Springer World Wide Web • Elsevier, Journal of Web Semantics • River Publishing, Journal of web Engineering • IEEE Internet Computing
