COURSE OUTLINE

(1) GENERAL

SCHOOL	Engineering		
DEPARTMENT	Electrical and Computer Engineering		
LEVEL OF STUDY	Undergraduate		
COURSE UNIT CODE	7.028	**SEMESTER OF STUDY**	7th
COURSE TITLE	Internet Technologies		

COURSEWORK BREAKDOWN	**TEACHING WEEKLY HOURS**	**ECTS Credits**
Theory (Lectures)	4	3
Tutorial/Project		
Laboratory	1	1
TOTAL	**5**	**4**

COURSE UNIT TYPE	Specialized general knowledge/Skills development
PREREQUISITES	Recommended knowledge on programming
LANGUAGE OF INSTRUCTION/EXAMS	Greek/English
COURSE DELIVERED TO ERASMUS STUDENTS	Yes
WEB PAGE (URL)	https://eclass.hmu.gr/courses/ECE195/

(2) LEARNING OUTCOMES

Learning Outcomes

The course "Internet Technologies" aims to give students specialized knowledge in the design and development of Internet applications. The course covers in theory and practice the modern technology of the internet and the possibilities offered by the browsers (Browsers) and the current software architectures that are implemented in the servers but also in the cloud computing. In the laboratory part of the course there is an internship in programming in a browser (Browser) but also examples of deepening in technologies and application development platforms on the server side. We also study the technology of hybrid applications in browsers and mobile devices, in combination with cloud computing.

Upon successful completion of the course the student:

1. Knows the methodologies of designing and developing internet applications.
2. Handles cutting-edge technologies and tools used to develop both user-level and server-level applications.
3. Knows how to study and synthesize different internet technologies, databases and software for creating applications.
4. Develops innovative applications
5. Design complex applications required to serve the specialized needs of companies operating on the Internet.

General Skills

- Search, analysis and synthesis of data and information, using the necessary technologies
- Decision making
- Autonomous work
- Promoting creative and inductive/deductive thinking
- Creation of new research ideas

(3) SYLLABUS

Theory Lecture Units

- Introduction. Internet, protocols and servers.
- Basic internet technologies, examples and usage scenarios.
- Website customization. HTML5 and CSS3 technologies. The MVC (Model View Controller) model.
- Internet databases and files. Ways of offering and retrieving data. Dynamic input, processing and presentation of data from a database or data files. Examples in internet programming platforms. Integration of data in the graphical environment.
- Hybrid Technologies
- Cloud technologies and connection to web applications
- Security and coding on the internet

Laboratory Exercise Modules

- Design and development of applications in HTML5 and Javascript technology
- Server-side programming, PHP, JAVA, RDBMS
- Hybrid Programming Frameworks. Programming in small devices.
- Cloud application development environments. Examples of cooperation with hybrid applications

(4) TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	In-Class Face-to-Face
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	▪ Use of ICTs in lecturing ▪ Use of ICTs for the communication with students via the e-class platform
TEACHING ORGANISATION	

Method description / Activity	Semester Workload
Lectures	52
Exercises	13
Project preparation	20
Non-guided personal study	***35***
Total Contact Hours	**120**

ASSESSMENT METHODS	Assessment Methods: 1. In classroom tests (10%) 2. Individual laboratory exercises that require completion of concepts and combination of techniques taught (30%) 3. Written mid-term with short answer questions and problem solving (20%) 4. Written final exam with short answer questions and problem solving (40 %) Current course assessment details are posted in eclass.

(5) RECOMMENDED BIBLIOGRAPHY

In Greek

- *"Προγραμματισμός για το Web", Randy Connolly, Ricardo Hoar, Χ. ΓΚΙΟΥΡΔΑ & ΣΙΑ ΕΕ, 2015*

In English

- *"HTML5 AND JAVASCRIPT PROJECTS: BUILD ON YOUR BASIC KNOWLEDGE OF HTML5 AND JAVASCRIPT TO CREATE SUBSTANTIAL HTML5 APPLICATIONS," Jeanine Meyer, Second Edition, APRESS, 2018*
- *"Learning PHP, MySQL, JavaScript, and CSS," Robin Nixon, Second Edition, O Reilly, 2012*
- *https://ionicframework.com/*
- *https://facebook.github.io/react-native/*
- *https://flutter.dev/*
- *https://firebase.google.com/*
- *https://azure.microsoft.com/en-us/*
- *https://aws.amazon.com/*
- *Journal of Internet Services and Applications, Springer Editor,*
- *ACM Springer Mobile Networks and Applications (MONET), ACM & Springer Editor*