INTERNET MULTIMEDIA AND COMPUTER GRAPHICS

COURSE OUTLINE

Responsible: Athanasios Malamos

1. GENERAL			
SCHOOL	School of Engineering		
ACADEMIC UNIT	Department of Electrical and Computer Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0811.9.021.0	**SEMESTER**	1st
COURSE TITLE	Internet Multimedia and Computer Graphics		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	5	4
Total	**5**	**4**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Specialized general knowledge/Skills development
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Winter Semester
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/ECE186/

2. LEARNING OUTCOMES

Learning outcomes

The course "Multimedia and Graphics on the Internet" aims to give students the cutting edge knowledge on creating web applications enhanced with multimedia (video, audio, text) and graphics. The course covers in theory and practice the modern technology of multimedia in an internet environment. The course studies important topics related to platforms and protocols streaming technologies and web3D technologies. In the course laboratory there is an internship in graphics and multimedia on the internet and in the use of cutting-edge technologies. Upon successful completion of the course the student: 1. Knows the methodologies of design and development of multimedia and graphic applications on the internet. 2. Uses cutting-edge technologies and tools used to develop multimedia and computer graphics applications in a browser environment and the Internet. 3. Integrates knowledge from different areas, such as usability and user-machine interface, internet technologies and computer systems, etc. 4. Designs and develops innovative applications required to serve the specialized needs of companies operating in the field of online games, telecommunications, information, entertainment, etc

General Competences

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. ? Introduction to web programming on the browser side ? Multimedia technology with emphasis on the internet ? Real-time applications using streaming technology ? Three dimensional technology on the internet ? Sound and virtuality. ? Rigid body technology on the internet ? Physics in graphics and multimedia applications ? Coexistence of graphics and multimedia in applications ? Applications in education, entertainment, social networks and telecommunications, etc.

Laboratory Exercise Modules ? Web3D platforms ? Internet data exchange protocols ? Designing models and worlds in an internet environment ? Design and development of multimedia applications in web and browser environments (Browser) ? Individual work of designing and developing multimedia and graphic applications based on state-of-the-art technologies.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Lectures and Lab projects
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	The course is in the area of Informatics and Computer Engineering
TEACHING METHODS The manner and methods of teaching are described in detail.	
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	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 platform.

Activity	**Semester workload**
Lectures	50
Lab Exercises	30
Lab Projects	40
Course total	**120**

5. ATTACHED BIBLIOGRAPHY

“HTML5 and Javascript Projects,” Jeanine Meyer, APRESS ? “Foundation Game Design with HTML5 and Javascript” , Rex Van Der Spuy, APRESS ? www.w3.org SVG, Declarative 3D, WEBRTC ? www.x3dom.org ? www.web3d.org ? www.threejs.org ? Multimedia Tools and Applications, Journal, Editor Springer ? International Journal of Interactive Multimedia and Artificial Intelligence (UNIR), open access