COURSE OUTLINE

(1) GENERAL

SCHOOL	Engineering			
DEPARTMENT	Electrical and Computer Engineering			
LEVEL OF STUDY	Undergraduate			
COURSE UNIT CODE	7.019	**SEMESTER**	7th	
COURSE TITLE	Computer Networks II			
COURSEWORK BREAKDOWN			**TEACHING WEEKLY HOURS**	**ECTS Credits**
	Theory (Lectures)		4	5
	Tutorial/Exercises		1	
	TOTAL		**5**	**5**
COURSE UNIT TYPE	Specialized background			
PREREQUISITES	Computer Networks I			
LANGUAGE OF INSTRUCTION/EXAMS	Greek (Teaching, Examination) English (Examination)			
COURSE DELIVERED TO ERASMUS STUDENTS	Yes			
WEB PAGE (URL)	https://eclass.hmu.gr/courses/ECE197/			

(2) LEARNING OUTCOMES

Learning Outcomes

The aim of the course is to provide the necessary theoretical knowledge to understand the specifics of communication and networking between computer systems.
Upon successful completion of the course the student will acquire:
• Familiarity with the basic principles that govern the operation of computer networks such as the TCP / IP reference model and the protocols that accompany it.
• Understand the concepts and issues related to Internet stratification and protocols, with particular emphasis on the three highest levels (application, transport and network).
• Understand the characteristics of technologies and mechanisms that enable the exchange of information via the Internet.

General Skills

The course aims to provide to the graduate, the following general skills:

- Search, analysis and synthesis of data and information, using the necessary technologies
- Adaptation to new situations
- Autonomous work
- Work in an interdisciplinary environment
- Production of new research ideas
- Promoting free, creative and inductive thinking

(3) SYLLABUS

The topics covered in the course:

• Network Level: Services provided by the network layer. Organization. Congestion, shorter route routing, multiple route routing, distributed routing, flow control, packet rejection, standalone systems, hierarchical routing, IPv6.

• Transfer Level: Services provided by the Transfer Level. Quality of service. Transfer Protocols

(Principles, UDP, TCP). Addressing. Multiplexing. Connection management,.

• Application Level: Transfer - Access - File Exchange. Email, DNS, Web and HTTP.

(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 in lab ▪ Use of ICTs for the communication with students via the e-class platform
TEACHING ORGANIZATION	

Method description/Activity	Semester Workload
Lectures	52
Project (journal/paper reading and theoretical study)	13
Tutorials	40
Non-guided personal study	45
Total Contact Hours	**150**

ASSESSMENT METHODS	Language of Examinations: Greek, English Written examination lasting 180 minutes (60%) Oral examination of laboratory exercises (40%) Evaluation methods: 1. Written Examination with Extended Answer Questions 2. Written Examination with Problem Solving 3. Oral examination of laboratory activity

(5) RECOMMENDED BIBLIOGRAPHY

Recommended Bibliography:

1. *James F. Kurose Keith W. Ross, Computer Networks: A Top-Down Approach with emphasis on the Internet. Pearson Education, ISBN-10: 0-13-285620-4.*
2. *A.S.Tanenbaum, Computer Networks, Pearson Education, ISBN: 0133072622.*
3. *Bruce S. Davie, Larry L. Peterson, David Clark, Computer Networks: A Systems Approach, 2nd Edition, Morgan Kaufmann Publishers, (October 14, 1999), ISBN: 1558605142.*