

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	School of Engineering		
<b>ACADEMIC UNIT</b>	Department of Computer Engineering & Informatics		
<b>LEVEL OF STUDIES</b>	Undergraduate		
<b>COURSE CODE</b>	<b>CEID_NE4157</b>	<b>SEMESTER</b>	<b>5<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup></b>
<b>COURSE TITLE</b>	Public Networks and Internetworking		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <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>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
Lectures and tutorial & lab exercises		2(L) 2 (TE) 1(L)	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Direction / consolidation in the specialty of the subject		
<b>PREREQUISITE COURSES:</b>	Recommended prerequisite knowledge on Telecommunications and Networks		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes		
<b>COURSE WEBSITE (URL)</b>	<a href="https://eclass.upatras.gr/courses/CEID1064/">https://eclass.upatras.gr/courses/CEID1064/</a>  <a href="https://bouras.upatras.gr/el/publicusenetworksandnetwork-interconnection/">https://bouras.upatras.gr/el/publicusenetworksandnetwork-interconnection/</a>		

### 2. LEARNING OUTCOMES

#### 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

- 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

#### Upon completion of the course, students will be able to:

- Know About Data Transmission, Digital Data Communications, Network Types Transmission, Media Network Topologies, ISO / OSI Model Protocols, Multiplexing Error Checking, Switching Route Network Devices
- Be aware of protocols X.25, LAPB, ISDN, ATM, MPLS
- Be familiar with transmission media, structured cabling, and Satellite Communications
- Have knowledge of Mobile Communications Networks and the IEEE 802.11 standard

- To acquire basic knowledge on security issues
- Be able to design protocols and understand network management

**Upon completion of the course, students will have developed the following skills:**

1. Be able to choose the right technology for designing a network
2. Have the ability to choose the appropriate networking device
3. Solve security problems.
4. Be able to manage networks and choose the appropriate protocol.

#### 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, analyze and synthesize data and information, using the necessary technologies
- Adjustment to new situations
- Decision making
- Promote free, creative and inductive thinking

### 3. SYLLABUS

- Introduction to data networks
- X.25 / CCITT protocol, Frame relay protocols, ISDN
- ATM, MPLS protocols
- Structured cabling and transmission media
- Satellite communications / internet over satellite
- Mobile communications networks
- IEEE 802.11 (WI-FI)
- Security
- Protocols design and network management
- Virtual Private Networks

### 4. TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>	The slides of the course and additional auxiliary material are available from the website to the enrolled students. Lectures are also available as Open Courses	
<b>TEACHING METHODS</b> <i>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,</i>	<b>Activity</b>	<b>Semester workload</b>
	Lectures	26
	Recitation sections	26
	Laboratory exercises	13
	Independent study	39

<i>etc.</i>  <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>	Study and analysis of bibliography	26
	Course total (25-30 hours per credit)	<b>130</b>
<p align="center"><b>STUDENT PERFORMANCE EVALUATION</b></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>Language of evaluation: Greek</p> <p>Final examination (100% of total score).</p> <p>Written, graduated difficulty, covering all matter</p> <p>There is the possibility of optional bibliographic work as a technical reference. All papers are posted on the course's website. They contribute 10% to the final score.</p>	

## 5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Related academic journals:

Data and Computer Communications, W. Stallings, 7th Edition, Pearson Educational International 2006

Slides that have been posted on the course's website