## COURSE OUTLINE

### (1) GENERAL

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>School of Engineering</th>
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<tbody>
<tr>
<td>ACADEMIC UNIT</td>
<td>Department of Computer Engineering &amp; Informatics</td>
</tr>
<tr>
<td>LEVEL OF STUDIES</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>COURSE CODE</td>
<td>CEID_NY4157</td>
</tr>
<tr>
<td>SEMESTER</td>
<td>5th, 7th, 9th</td>
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### INDEPENDENT TEACHING ACTIVITIES

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.

| Lectures and tutorial exercises | 2 (L) 2 (TE) | 3 |

Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).

### COURSE TYPE

- Direction / consolidation in the specialty of the subject

### PREREQUISITE COURSES:

- Recommended prerequisite knowledge on Telecommunications and Networks

### LANGUAGE OF INSTRUCTION and EXAMINATIONS:

- Greek

### IS THE COURSE OFFERED TO ERASMUS STUDENTS:

- Yes

### COURSE WEBSITE (URL)

- [https://eclass.upatras.gr/courses/CEID1064/](https://eclass.upatras.gr/courses/CEID1064/)

### (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
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
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?

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Adapting to new situations
- Decision-making
- Working independently
- Team work
- Working in an international environment
- Working in an interdisciplinary environment
- Production of new research ideas
- Project planning and management
- Respect for difference and multiculturalism
- Respect for the natural environment
- Showing social, professional and ethical responsibility and sensitivity to gender issues
- Criticism and self-criticism
- Production of free, creative and inductive thinking
- Respect for the natural environment
- Showing social, professional and ethical responsibility and sensitivity to gender issues
- Criticism and self-criticism
- Production of free, creative and inductive thinking
- Others...

(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

<table>
<thead>
<tr>
<th>DELIVERY</th>
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<tbody>
<tr>
<td>Face-to-face, Distance learning, etc.</td>
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</table>

| USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY |  
| Use of ICT in teaching, laboratory education, communication with students |  

| TEACHING METHODS |  
| 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, etc. |  

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.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Semester workload</th>
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<tbody>
<tr>
<td>Lectures</td>
<td>13X2=26</td>
</tr>
<tr>
<td>Tutorial exercises</td>
<td>13X2=26</td>
</tr>
<tr>
<td>Repeatable lecture</td>
<td>13X1=13</td>
</tr>
<tr>
<td>Self-study</td>
<td>13X1=13</td>
</tr>
<tr>
<td>Study Weekends</td>
<td>4X1=4</td>
</tr>
<tr>
<td>Exam preparation week + 2 weeks of vacation</td>
<td></td>
</tr>
</tbody>
</table>

Course total 82

| STUDENT PERFORMANCE EVALUATION |  
| Description of the evaluation procedure |  

Language of evaluation: Greek

Final examination (100% of total score).

Written, graduated difficulty, covering all matter.

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.

## (5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:
  - Related academic journals:


Slides that have been posted on the course’s website