

INSTITUTION	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS																				
SCHOOL	SCHOOL OF SCIENCE																				
DEPARTMENT	INFORMATICS AND TELECOMMUNICATIONS																				
COURSE LEVEL	UNDERGRADUATE																				
COURSE TITLE	Communications Network I Lab																				
COURSE CODE	K16ε		Semester	4 - 5	ECTS	2															
TEACHING HOURS per week	THEORY		SEMINAR.		LABORATORY	2															
COURSE TYPE	<p>Select one of the following and delete the rest Optional Lab (EP)</p> <table border="1"> <thead> <tr> <th>K</th> <th>E1</th> <th>E2</th> <th>E3</th> <th>E4</th> <th>E5</th> <th>E6</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>							K	E1	E2	E3	E4	E5	E6							
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URL	https://eclass.uoa.gr/courses/DI349/																				
EXPECTED PRIOR KNOWLEDGE/ PREREQUISITES AND PREPARATION:	None																				
TEACHING AND EXAMINATIONS LANGUAGE:	GREEK																				
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO																				

COURSE CONTENT
<p>TCP/IP layer protocols are examined as:</p> <p>Ethernet cable construction – Organization, setup and connectivity check of local area networks – Use of Wireshark (packet sniffer) to capture traffic – Remote access to PC – ARP protocol – IP, MAC addresses – Using ping, netstat commands – Static routing – Setting up a router – Routing tables – RIP, OSPF routing protocols – TCP, UDP, DHCP, NAT.</p>

STUDENT LEARNING OBJECTIVES
<p>Expected Learning Outcomes</p> <p>Upon successful completion of the course the student will be able to:</p>

- Discover and examine the operation and the efficiency of the protocols of Link layer, Network layer and Transport layer
- Calculate and specify the required parameters to set up a local area network or efficiently use the examined protocols
- Construct Ethernet cables
- Design and calculate subnets within an IP address range
- Use packet sniffing tools in order to understand the functionality of the examined protocols

TEACHING AND LEARNING METHODS - ASSESSMENT									
TEACHING METHOD	In the Lab (face to face, using the real hardware/software of infrastructure)								
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Support through e-class. Specifically: Description, Material, Announcements, Callendar, Links, Conversation Communication through email								
TEACHING ORGANIZATION <i>Describe in detail the way and methods of teaching:</i> Enhanced Lectures, Online Lectures, Seminars, Tutorial, Laboratory, Laboratory Exercise, Study & analysis of literature, Practice (Positioning), Interactive teaching, Developing a project, Individual / group work Telework (reference to tools) etc. <i>Details of the student's study hours for each learning activity and hours of non-guided study are shown to ensure that the total workload at the semester corresponds to the ECTS</i>	Labs in real networking environment (no simulation). Support through e-class.								
	<table border="1"> <thead> <tr> <th>Activity</th> <th>Student Workload (hours)</th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>30</td> </tr> <tr> <td>Independent Study</td> <td>20</td> </tr> <tr> <td>Total Course (25 hours of workload per unit of credit)</td> <td>50</td> </tr> </tbody> </table>	Activity	Student Workload (hours)	Lectures	30	Independent Study	20	Total Course (25 hours of workload per unit of credit)	50
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ASSESSMENT OF STUDENTS <i>Description of the assessment process</i> <i>Assessment Methods, Formative or Concluding, Multiple Choice Test, Quick Response Questions, Test Development Questions, Problem Solving, Written Work, Report / Report, Oral Examination, Public Presentation, Laboratory Work, Other / Other</i> <i>Fully defined evaluation criteria are mentioned and if and where they are accessible to students.</i>	Students go through written examinations that describe lab configurations. Assessment is discussed with students if asked.								
	<table border="1"> <thead> <tr> <th>Assessment methods</th> <th>Number</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Written examination</td> <td>1</td> <td>100%</td> </tr> </tbody> </table>	Assessment methods	Number	Percentage	Written examination	1	100%		
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Written examination	1	100%							

LITERATURE AND STUDY MATERIALS / READING LIST

Communication Networks I Lab – Notes (written/edited by Athanasios Vaios, printed by University of Athens).
Support material uploaded in e-class.