

INSTITUTION	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS																			
SCHOOL	SCHOOL OF SCIENCE																			
DEPARTMENT	INFORMATICS AND TELECOMMUNICATIONS																			
COURSE LEVEL	UNDERGRADUATE																			
COURSE TITLE	Network Management																			
COURSE CODE	K34	Semester	6	ECTS	6															
TEACHING HOURS per week	THEORY	3	SEMINAR.	1	LABORATORY															
COURSE TYPE	<p>Select one of the following and delete the rest Track Compulsory (EYM)</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>B</td> <td></td> <td></td> <td></td> <td></td> <td>Y</td> <td></td> </tr> </tbody> </table> <p><i>Fill the table as in the curriculum: Track (A-Computer Science, B- Computer Engineering) / Specialization Compulsory (Y) / Core Specialization (B)/ Elective Specialization (E)</i></p>						K	E1	E2	E3	E4	E5	E6	B					Y	
K	E1	E2	E3	E4	E5	E6														
B					Y															
URL	https://eclass.uoa.gr/courses/D73/																			
EXPECTED PRIOR KNOWLEDGE/ PREREQUISITES AND PREPARATION:	K16 Communication Networks																			
TEACHING AND EXAMINATIONS LANGUAGE:	GREEK																			
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO																			

COURSE CONTENT
<p>The course covers the following topics:</p> <ul style="list-style-type: none"> Introduction to the concepts of Network Management Models for Network Management in fixed and mobile networks Tools, Mechanisms and Platforms for Network Management Systems Network Management Protocols (e.g., SNMP) Management Information Base Cognitive Network Management Self-Management concepts

Network Security Management

Data analytics and Machine Learning for Network Management decision making

STUDENT LEARNING OBJECTIVES

Expected Learning Outcomes

Upon successful completion of the course the student will be able to:

- Explain the foundations of Network Management principles
- Identify the necessary mechanisms and tools for building a Network Management System
- Design tools exploiting network data for cognitive network management and knowledge based decision making
- Identify and develop mechanisms and tools for network monitoring, operational optimization and self-management (prediction mechanisms for fault identification etc.)

TEACHING AND LEARNING METHODS - ASSESSMENT

TEACHING METHOD	In Class (Face to Face)															
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process supported by the e-class platform (e.g., Discussions, Announcements, Task assignments, Student groups, Project/exercise delivery) Email communication Live transmission of lectures															
TEACHING ORGANIZATION <i>Describe in detail the way and methods of teaching: 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>	<table border="1"> <thead> <tr> <th>Activity</th> <th>Student Workload (hours)</th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>39</td> </tr> <tr> <td>Tutorial</td> <td>13</td> </tr> <tr> <td>Teamwork in a case study</td> <td>33</td> </tr> <tr> <td>Independent Study</td> <td>45</td> </tr> <tr> <td>Study of NMS related tools</td> <td>20</td> </tr> <tr> <td>Total Course (25 hours of workload per unit of credit)</td> <td>150</td> </tr> </tbody> </table>		Activity	Student Workload (hours)	Lectures	39	Tutorial	13	Teamwork in a case study	33	Independent Study	45	Study of NMS related tools	20	Total Course (25 hours of workload per unit of credit)	150
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<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>																

ASSESSMENT OF STUDENTS

Description of the assessment process

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

Fully defined evaluation criteria are mentioned and if and where they are accessible to students.

Describe explicitly methods, evaluation tools and provided feedback.

The table below is supplemented accordingly
Students are evaluated based on team projects/exercises and oral exams. In oral exams both the theoretical as well as the technical skills are evaluated. The team project is evaluated based on several criteria, which are explained to the students in the beginning of the semester.

Assessment methods	Number	Percentage
Oral examination	1	50%
Final work	1	50%

LITERATURE AND STUDY MATERIALS / READING LIST

1. Computer Network Management, Miliou Amalia N., Nikopolitidis Petros, Pomportsis Andreas S.. ISBN: 978-960-418-133-9
2. Wireless Communication Networks and Systems, Stallings W. - Beard C. ISBN: 978-960-418-549-8