Master of Science in “Computer Science”

Computer Networks
Fall Semester 2015-16

Prof. G.D. Stamoulis (gstamoul@aueb.gr)
Teaching Assistant: G. Darzanos (ntarzanos@aueb.gr)
Website: http://pages.cs.aueb.gr/courses/networks/
E-class: «Δίκτυα Υπολογιστών – ΠΜΣ ΕΥ»
Objective

The in-depth understanding of:
- the fundamental issues on computer networks
- of the main networking architectures and protocols,
  of the most important technologies
  with emphasis on the Internet, and
- of issues on the specification and provision of services
Course Outline (I)

- Overview of main concepts on computer networks
- Applications
  - Peer-to-peer, Skype etc.
- TCP – Flow and Congestion control
- Data link layer protocols
- Internet technologies and services
- Routing algorithms and their implementations
- Business roles in the Internet, and interactions among them
Course Outline (II)

- Local Area Networks’ (LAN) technologies – emphasis on Wireless LANs
- Quality of Service and related mechanisms
  - ATM technology and services
- Fair allocation of network resources in the Internet.
- Introduction on network management and control by means of economic mechanisms
- Modern topics: MPLS, SDN (Software Defined Networks), NFV (Network Function Virtualization) etc.
One of the main objectives

- Students will learn all the steps and functions required for the provision of services in the Internet
  - E.g. How is this interaction of messages really implemented? Which protocols are employed and what messages are sent and to whom?
Bibliography

  - Ελληνική μετάφραση από τις εκδόσεις Γκούρδας

• Material from the Internet: scientific articles, recent technologies etc.

Course Requirements

- 2 sets of written exercises
- 1 set of Wireshark exercises
  - ~15% of the grade

- Project report and presentation about scientific and technological topics of current interest
  - Assigned on the 9th week: ~10% of the grade

- Final written examination
  - 75% of the grade