

Syllabus

Overview

F1I063 - INF/01 is designed to teach students fundamentals of analysis and design of computer networks. Introduction to the basic concepts of computer and communication networks, like flow control, congestion control, end-to-end reliability, routing, framing, error-recovery, multiple access and statistical multiplexing. In-depth presentation of the different networking layers, with emphasis on the Internet reference model. Protocols and architectures such as the TCP, IP, Ethernet, wireless networks etc. are described in order to illustrate important networking concepts.

Outline

F1I063 - INF/01 consists of the following eight units:

- Unit 1 : Computer Networks, the Internet and the World Wide Web
- Unit 2 : Application Layer and network applications
- Unit 3 : Transport Layer: TCP and UDP
- Unit 4 : Network Layer and Routing
- Unit 5 : Data Link Layer and Local Area Networks
- Unit 6 : Wireless Networking
- Unit 7 : Security
- Unit 8 : Network management

Grading

To receive credit for F1I063, students must pass the written test (MANDATORY). Extra credits are available either developing a personal, individual project (1 to 5 additional points) or an oral test (weighted 33% with the written test).

Course Materials

Textbooks

The units use material mainly from Kurose and Ross's text, "Computer Networking, a top down approach featuring the Internet". The teacher provides some online materials to cover the contents that are not covered in the top-down networking book.

1. Kurose, J.F. and K.W. Ross (2007) Computer Networking, 3rd or 4th edition. Addison-Wesley <http://www.aw.com/kurose-ross/>
2. Andrew S. Tanenbaum, Computer Networks, 4/e, Prentice Hall PTR. <http://www.cs.vu.nl/~ast/>
3. Behrouz A. Forouzan: Computer Networks and Internet

Other material

The lectures notes are distributed in electronic format (PDF and PPT) available from the Course Web Site: <http://www.hiperlab.org/univaq>

The materials include:

- Exercises and Instructions
- Self-Testing Quizzes
- All the old exams text
- A Course Evaluation Form
- Links to Other Web-based Course Resources
- Program examples about Network Programming

Additional supporting materials of interest to students may occasionally be made available electronically.

Special Course Features

- Ethereal/Wireshark Labs
- Cisco IOS Routing Labs

Teacher

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