COM-208  Computer networks  Argyraki Katerina

Summary
This course provides an introduction to computer networks. It describes the principles that underly modern network operation and illustrates them using the Internet as an example.

Content
• Overview of Internet operation (main components and protocols).
• Application layer (web, cookies, peer to peer).
• Socket programming (how to write a very simple network application).
• Transport layer (UDP, TCP, congestion control).
• Network layer (IP forwarding and basic routing).
• Data link layer (switching).
• Security (secure email, SSL, IPsec).

Keywords
• Computer networks
• Internet
• HTTP
• Peer-to-peer networks
• Sockets, TCP/IP, congestion control, routing, switching, network security.

Learning Prerequisites
Required courses
• CS 107 - Introduction to programming
• COM 101 - Advanced Information Computation Communication I

Learning Outcomes
By the end of the course, the student must be able to:
• Design simple network applications.
• Choose which functions to implement at each network layer.
• Compare different network protocols.
• Perform simple network troubleshooting.
• Use simple network monitoring tools.
• Implement simple client-server applications.
• Investigate simple network attacks.
• Explain how basic Internet applications work.
• Explain how TCP/IP works.

Transversal skills
• Use both general and domain specific IT resources and tools
• Use a work methodology appropriate to the task.
• Demonstrate the capacity for critical thinking
• Demonstrate a capacity for creativity.

Teaching methods
• Lectures
• Reading assignments
• Homework problems
• Hands-on exercises

Expected student activities
The students are expected to:
• attend the lectures
• complete homework problems
• complete hands-on exercises
• study their notes and -- when needed -- complement by reading relevant book chapters

Assessment methods
• Quizzes
• Midterm exam
• Final exam

Supervision
Office hours Yes
Assistants Yes
Forum Yes

Resources
Bibliography

Ressources en bibliothèque
• Computer Networking / Kurose

Websites

• https://sites.google.com/site/com208computernetworks/