

A decorative graphic on the left side of the slide consists of a vertical grey bar on the far left. To its right are three horizontal bars: an orange bar at the top, a red bar in the middle, and a teal bar at the bottom. All bars have a slight trapezoidal shape, tapering towards the right.

INFORMATICS ENGINEERING

MASTER OF SCIENCE

Department of Electrical and Computer Engineering (ECE)
School of Engineering
Hellenic Mediterranean University (HMU)

ADVANCED TOPICS IN NETWORKING

Dr. Spiros Panagiotakis

Dr. Evangelos Markakis

Advanced Topics in Networking

- Main Objectives
 - Advanced research topics, on Computer Networks
 - to cultivate practical skills related to TCP/IP networking and administration
- Focus
 - Networks & communications
- Members of staff
 - Dr. Spyros Panagiotakis
 - Dr. Evangelos Markakis

Approach

- Three (3) hours lectures
- Assessment: 2 instructors → 2 independent and equal-weighted evaluations
 - Several midterm assessments, oral, written or practical, at the end of course units

Specific details

| <i>Weeks</i> | 1η | 2η | 3η | 4η | 5η | 6η | | |
|-----------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|--------------------------|----------------------------------|------------------|------------------|
| <i>Lectures</i> | UNIT 1 | | | | | | | |
| | Introduction to TCP/IP networks | Introduction to TCP/IP networks | TCP/IP Congestion control - BBR | Multimedia Streaming | Multimedia Streaming | Web evolution to HTTP2 and HTTP3 | | |
| <i>Weeks</i> | 7η | 8η | 9η | 10η | 11η | 12η | 13η | 14η |
| <i>Lectures</i> | UNIT 2 | | | | | | | |
| | Software Defined Networks | Software Defined Networks | Network Function Virtualization | Network Function Virtualization | Edge/Fog/Cloud Computing | Blockchain +Network Coding | Network Security | Network Security |

Specific details

- Lectures' schedule: every Thursday 18:00-21:00 at room 205
- Learning materials
 - James Kurose, Keith Ross, "Computer Networking: A Top-Down Approach", Addison Wesley, 6th Edition, 2013, ISBN: 978-0-13-285620-1
 - Andrew J. Tanenbaum and David J. Wetherall, "Computer Networks, 5th Ed", Prentice Hall, 2010, ISBN: 978-0132126953
 - Olivier Bonaventure, "Computer Networking : Principles, Protocols and Practice", Release 0.25
 - Ying-Dar Lin, Ren-Hung Hwang, Fred Baker, "Computer Networks An Open Source Approach", McGraw-Hill Higher Education, 2012
 - Selected research and tutorial articles

Applicant profile

- Pre-requisites:
 - Students familiar with TCP/IP networking will have the advantage,
- Skills
 - Basic TCP/IP familiarization
 - Basic Linux programming
- Expected weekly workload
 - Varies according to the background
 - Normally no more than 6 hours in average