

Global Learning Semesters

Course Syllabus

Course: CENG-368 Computer Network Protocols

Department: Engineering

Host Institution: Intercollege, Nicosia, Cyprus



Course Summary		
Course Code	Course Title	Recommended Credit Hours
CENG-368	Computer Network Protocols	3
Semester Offered	Contact Hours	Prerequisites
Please contact us	42-45	CENG-358
Department	Level of Course	Language of Instruction
Engineering	Upper Division	English

Course Description

This course builds upon the introductory material covered in CENG-358 Networks and Data Communications. The course will emphasize on network protocols instead of network architectures and include programming of networked applications. More specifically it will cover in depth the TCP/IP suite of protocols examining IP and related protocols (ICMP, ARP), IP routing (BGP, OSPF), Mobile IP, Transport Layer protocols (TCP, UDP), and related specifications (SMTP, HTTP, DNS).

Prerequisites

CENG-358

Topic Areas

1. Introduction. Network Architectures. Layering and Protocols.
2. Review of Data link Layer. Ethernet and Wireless Medium access
3. Network Layer Protocols. Internet Protocol: Introduction and Service Definition, Addressing, ICMP, ARP, DHCP. Routing principles (distance vector, link state, inter-domain), mobile host routing, IPv6.
4. Transport layer Protocols. User Datagram Protocol (UDP) definition, Transmission Control Protocol (TCP) connection management, TCP congestion control (slow start, fast retransmit and recovery)
5. Client-Server Programming. TCP Client, TCP Server, Application Data management, UDP Client/Server.
6. Networked Applications. E-mail Applications (SMTP), Domain Name System, the Web and HTTP, FTP, TELNET.

Readings and Resources

Required Textbooks

- James F. Kurose and Keith W. Ross, Computer Networking: A Top-Down Approach Featuring the Internet, Addison Wesley, 2nd Edition, ISBN: 0-201-97699-4, 2002.
- W. Richard Stevens, TCP/IP Illustrated, Volume 1 The Protocols, Addison-Wesley, ISBN 0-201-63346-9, 1994.

Recommended Textbooks

- Larry L. Peterson and Bruce S. Davie, Computer Networks: A Systems Approach, Second Edition, Morgan Kaufman, ISBN 1-55860-514-2, 1999.
- Douglas E. Comer, Computer Networks and Internets, Third Edition, Prentice Hall, ISBN 0-13-091449-5, 2001.