BBM451
Computer Networks

HACETTEPE ÜNİVERSİTESİ
Daha İleriye... En İyiye...

Assoc. Prof. Sevil Sen

BSc, Hacettepe University

MSc, Hacettepe University

PhD, University of York

https://web.cs.hacettepe.edu.tr/~ssen/

Wireless Networks and Intelligent Secure Systems

CYBER SECURITY
Malware analysis, anomaly & intrusion detection, trust management

INTELLIGENT SYSTEMS
Nature inspired algorithms, evolutionary computation, their applications on security

IOT WIRELESS NETWORKS
Routing, protocols, security

Contact:
Doç. Dr. Sevil Şen
sevilsen@hacettepe.edu.tr

@huWISElab

https://wise.cs.hacettepe.edu.tr

Course Description

- Internet is the largest engineered system created by mankind.

- This course introduces the underlying concepts and principles of computer networks, and presents the different components of a network.

- The course also covers applications such as electronic mail, electronic file transfer, World Wide Web.

- At the end of this course, you will know how the Internet works.

Topics

Introduction to Computer Networks and the Internet.

Application Layer : The Web and HTTP, SMTP, FTP, DNS, P2P Applications.

Transport Layer : Connection Oriented / Connectionless Transport.

The Network Layer : Routing, The Internet Protocol.

The Link Layer : Links, Access Networks, and LANs.

Wireless & Mobile Networks : WiFi, Mobility.

Network Security : Cryptography, Firewall, Intrusion Detection, etc.

Course Material

Course Time :   *Wednesday, 13:00-15:45*

Requirements

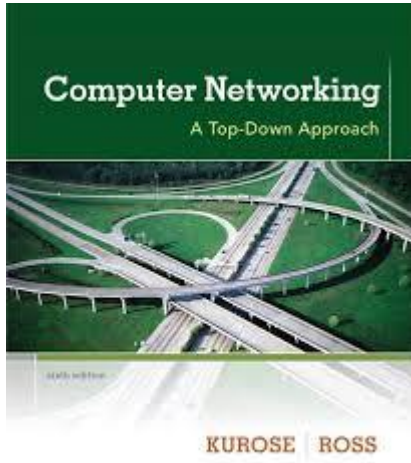*The students must take BBM453 Computer Networks Laboratory at the same time as the course.*

Piazza

https://piazza.com/configure-classes/fall2020/bbm451/

BBM451-Tentative Course Outline

07/10/2020	Introduction: Computer Networks and Internet
14/10/2020	Application Layer : Web and HTTP
21/10/2020	Application Layer : FTP, SMTP, DNS
28/10/2020	*No class (Republic Day)*
04/11/2020	Transport Layer : connectionless transport
11/11/2020	Transport Layer : connection-oriented transport
18/11/2020	Network Layer : Data plane (Routers, IP)
25/11/2020	Network Layer : Data plane (IPv4 addressing, NAT)
02/12/2020	Network Layer & Review
09/12/2020	*Midterm exam*
16/12/2020	Network Layer : Control plane (routing algorithms)
23/12/2020	Network Layer : Control plane (OSPF, BGP)
30/12/2020	Link Layer : error correction & detection
06/01/2021	Link Layer : multiple access links & protocols

References

Computer Networking :
A Top Down Approach

7th edition

James F. Kurose, Keith W. Ross

BBM453 Course Material

Course Time :   *Thursday, 11:45-13:30*

Requirements

The students must take BBM451 Computer Networks at the same time as the course.

Piazza

https://piazza.com/hacettepe.edu.tr/fall2020/bbm453/

BBM453-Tentative Course Outline

08/10/2020	Introduction & Wireshark
15/10/2020	Lab 1: LAN
22/10/2020	Lab 2: VAN
29/10/2020	*No class (Republic Day)*
05/11/2020	Lab 3: HTTP
12/11/2020	Lab 4: DNS
19/11/2020	Lab 5: UDP
26/11/2020	Lab 6: TCP
03/12/2020	Lab 7: IP
10/12/2020	Lab 8: ICMP
18/12/2020	Lab 9: Router
24/12/2020	Lab 10: Static Routing
31/12/2020	*Welcome 2021!*
07/01/2021	Lab 11: Dynamic Routing, Lab 12: NAT

Tentative Grading

Quizzes	15-20%
Midterm exam	40%
Final exam	45-40%