

YAŞAR UNIVERSITY
DEPARTMENT OF COMPUTER ENGINEERING
COMP 4318 Distributed Systems, Spring 2020

Instructor : Dr. Mehmet Ufuk Çağlayan, U112, x8226, ufuk.caglayan@yasar.edu.tr
TA's : TBA

Lectures : Friday 14:30-17:20 C120

Reading Material :

- A. Tanenbaum, Computer Networks, Prentice-Hall, 2011, 5th Ed. Chapters 5-8
- A. Silberschatz, P. Galvin & G. Gagne, Operating System Concepts, Addison Wesley, 2010, 8th Ed., Chapters 16-18 (not in 9th Ed)
- Course notes on network programming and other subjects covered in classroom

Grading :	Term papers	150
	Project	100
	Midterm	300
	Final Exam	450 Total exams: 75%
	Total	1000

Subjects to be covered : (Not all subjects below will be lectured, some are for your study)

1. Short review of TCP/IP Network Layer subjects: IP addresses, network and subnet numbers, IP routing, CIDR, NAT. (Tanenbaum ch 5)
2. Network Layer : IP over Ethernet and ARP, RARP, DHCP. IPv6 (Tanenbaum ch 5).
3. Network Layer Advanced: MPLS and Congestion Control (Tanenbaum ch 5)
4. Transport Layer I: Services. Elements of transport protocols. A simple transport protocol. TCP (Tanenbaum ch 6).
5. Transport Layer II: UDP, RTCP. Performance issues. (Tanenbaum ch 6).
6. Network Programming : Socket programming and TLI. Client server model, remote procedure call and RPC programming (notes to be distributed).
7. Application Layer I, Infrastructure Protocols: ICMP, DNS, SNMP (mostly reading, less lecturing, Tanenbaum ch 7)
8. Midterm Week: Review
9. Application Layer II, Application Protocols: FTP, TELNET, electronic mail (SMTP, POP), World Wide Web (HTTP, HTML). Multimedia issues (audio, video, compression, Mbone) (mostly reading, less lecturing, Tanenbaum ch 7)
10. Application Layer III, Network Security: Cryptography, symmetric and public key algorithms, key management (mostly reading, less lecturing, Tanenbaum ch 8).
11. Application Layer IV, Network Security: Authentication, hash codes, digital signatures, SSL/TLS, HTTPS, SSH (mostly reading, less lecturing, Tanenbaum ch 8).
12. Overview of distributed systems: Network structures, distributed system structures, network operating systems and distributed operating systems (mostly reading, Silberschatz 8th ch 16).
13. Distributed file systems. Naming and transparency, caching. file replication, SUN NFS and other distributed file systems (mostly reading, Silberschatz 8th ch 17).
14. Distributed coordination: Event ordering, mutual exclusion, concurrency control, deadlock handling, election algorithms, reaching agreement (Silberschatz 8th ch 18).

Additional Notes:

1. COMP 4318 is the continuation of COMP 3317 Computer Networks and COMP 3323 Operating Systems, therefore drop this course if you did NOT successfully take (grades C or above) COMP 3317 and COMP 3323 or take the course on your own risk.
2. Midterm and Final Exam : Date/Time/Place to be announced later
3. Late Homeworks : 25% less grade for each day late, no acceptance after 4 days late.
4. You get zero if you miss an exam without official excuse.
5. Your attendance is required in all classes.
6. COMP 4318 course related documents will be available at <http://sakai.yasar.edu.tr>.