

SWE 545 – Distributed Systems Programming

Instructor: Tuna Tuğcu

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Class Hours: WWW 19:00-22:00

Objective:

To study the basic concepts of distributed systems and develop programming skills in distributed environments.

Textbook:

None

Reference Books:

- Distributed Systems: Principles and Paradigms
Andrew S. Tanenbaum & Maarten van Steen
Prentice-Hall Inc.
- Unix Network Programming
W. Richard Stevens
Prentice-Hall Inc.

Expectations

This course requires a certain familiarity with computer networks.
Projects will be given on a regular basis to assist learning.

Academic Integrity

Treat the learning as an enriching experience, and follow the honor code.

Grading:

Exam	20%
Projects	50%
Final	30%

OUTLINE

- **Overview on Computer Networks**
- **Introduction to Distributed systems**
- **Communication**
 - RPC
 - Messaging
- **Processes**
 - Threads
 - Clients and Servers
 - Migration and Agents
- **Client-Server Programming**
 - Advanced Socket Programming
- **Inter-Process Communication**
- **Daemons and Inetd Server**
- **I/O Multiplexing**
- **Security**
 - Buffer Overflow Exploits