



TURKISH REPUBLIC
FIRAT UNIVERSITY
COLLEGE OF TECHNOLOGY
DEPARTMENT OF SOFTWARE ENGINEERING

COURSE SYLLABUS
SENG 521 Internet Programing

Location: Lecture and Lab: Software Engineering Building

Class meeting times:	Lab meeting time:	Instructor:	Teaching Assistant
		Assist. Prof. Mustafa ULAS	

Office hours: Please see the notice board outside each faculty member's office.

Course description: Over the course of the last decade and a half, the ever-changing phenomenon of the World Wide Web has transformed our world through the Internet revolution in a variety of ways. The need to meet the technical challenges of the Internet has driven innovation in several areas of computing. It would not be an exaggeration to say that most programming jobs nowadays involve some kind of Internet programming.

This course aims to provide students with the tools required to become and remain competent and successful Internet programmers. To accomplish this objective, this course introduces students to the main Internet programming concepts through significant hands-on experience with specific Internet technologies.

This course includes three programming projects, a research project (exploring in detail an Internet technology or an issue), a term project (prototyping a new Internet product or a company), and two examinations (a midterm and a final). All projects can be accomplished either individually or in groups.

Course objectives: To introduce students to major Internet programming concepts such as:

- The client-server programming model
 - Protocols
 - Server design and construction
 - Performance
 - Fault tolerance
 - Caching
 - Proxying
 - Heterogeneity
 - Interoperability



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- Security
- Internet programming abstractions and frameworks
- Real-time media protocols
- Peer-to-Peer Protocols
- Provide students with a significant hands-on implementation experience of programming the Internet at different levels of abstraction including:
 - Sockets
 - Remote Procedure Calls
 - Web Services
- Provide an opportunity for students to explore in detail an Internet technology of their choice and share their findings with the class
- Provide an opportunity for students to brainstorm and come up with an idea for a new Internet product or a company.

Teaching approach: Programming is one of those skills that can only be learned by practice. Internet programming is no exception; therefore, this course has a significant programming component. However, in learning a computer science discipline, it is essential that one distinguishes between concepts and technologies. While concepts remain the same (or at least evolve very slowly), technologies tend to proliferate, particularly in the case of the Internet. For a handful of Internet programming concepts, one can find multiple technologies that implement them. Having a thorough understanding of concepts is the avenue through which one can gain the abilities to learn new technologies quickly and to distinguish between marketing hype and sound technical arguments. Therefore, the specific Internet technologies that the students will learn in this course are selected primarily on the basis of how well they demonstrate the underlying concepts.

Prerequisite:

- CS 3204: Operating Systems.
- Proficiency in the Java programming language (students with insufficient background in Java but strong programming skills should be able to learn Java by completing web-based self-study courses that will be pointed out by the instructor).
- Ability to write programs that are 10 to 40 pages long.

Textbook: No textbook is required for this course. All the reading assignments will come from web pointers and handouts. The following texts can be of interest:



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- Computer Networking: A Top-Down Approach Featuring the Internet 3rd Edition, Jim Kurose and Keith Ross, Addison Wesley.
- TCP/IP Sockets in Java, Practical Guide for Programmers, Michael Donahoo and Ken Calvert, Morgan Kaufmann.
- Ethan Cerami, Web Services Essentials: Distributed Applications with XMLRPC, SOAP, UDDI & WSDL, 1st Edition February 2002, ISBN: 0-596-00224-6.

Course requirements:

Assignments: Students will be required to complete five programming assignments. Students will be given two weeks to complete each assignment. Four of the assignments will count towards the final grade, giving student the option to drop their lowest graded assignment.

Exams: Three exams, including the final exam, will be given. Students will be given at least one week notice of the exam dates. All examinations are written examinations and students are required to provide their own answer sheets for each exam. There are no make-up examinations available for any student except the regulation rules.

Labs: All students need to join the lab section. Students will have total of 11 labs. The labs should be finished within the dedicated time slot. Each work needs to be checked and graded by the Lab TA. If the student is not able to finish the task within the lab session due to an unexpected event/bug/etc., he/she may ask the lab TA to have an extension of one week at the end of the lab.



TURKISH REPUBLIC
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Grading plan: Assignments	10%
First exam	10%
Second exam	10%
Lab	10%
Final exam	60%

≥ 90	\Rightarrow	A
≥ 80 but < 90	\Rightarrow	B
≥ 70 but < 80	\Rightarrow	C
≥ 60 but < 70	\Rightarrow	D
< 60	\Rightarrow	F

Class participation

In accordance with the university policy, regular attendance is required; however, no points will be awarded or subtracted based on your attendance. You are responsible for all material covered in every class, regardless of whether you attended or not. It is your responsibility to obtain notes, assignments, etc., from fellow class members if you miss the class.

Academic dishonesty

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The university and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials. No cheating on an examination or assignments is allowed; a score of zero will be given to the student if such a case occurred.

Rules of conduct

Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Please turn off or mute your cellular phone and/or pager before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking among each other at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result



TURKISH REPUBLIC
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DEPARTMENT OF SOFTWARE ENGINEERING

in a, minimally, a directive to leave class or being reported to the Dean of Students for disciplinary action in accordance with university policy.

Visitors in the classroom

Occasion visiting of classes by responsible individuals is allowed with prior arrangement with the instructor, as long as it does not interfere with the registered members of the class or the educational process.