Technical Infrastructures
Course Syllabus
Winter 2012-Spring 2012
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Course Statement and Major Topics: This course will prepare students to better understand computer networks and the Internet. This course requires the following:

- Nightly reading and work on assigned projects
- A willingness to devote the time required for mastery of detailed content material

Major Topics:
The course will include the range of topics outlined below

I. Internet services

II. Layers of Internet

III. Web Applications

IV. Algorithms for transmission of information

V. Internet Protocol (IP) and IP addresses

VI. Multi-computer client/server programs

Course Structure:

- Class meets 8 times in a two week cycle
- Students are expected to keep up with reading assignments (text, homework problems, programming assignments, additional handouts)
- HW Assignments will be given in class (it is the students responsibility to contact teacher to determine missed assignments in the event of absence)
- Periodic quizzes

Keys to being Successful in this Class:

- Participate in class: pay attention and **always** ask questions if you are confused
- Keep up with deadlines: the course content is cumulative, so it is imperative that you keep current with the material covered
- Take good notes: your notes will be helpful to you now and in your future educational career
- Start assignments early: with programming, it is difficult to estimate how long an assignment will take to complete. Starting assignments early ensures that you will have time to get questions answered long before deadlines approach.

Grading: Grades will be determined by assessments on quizzes, homework problems, and computing projects

Schedule of Class: Following is a rough schedule of the trimesters and the chapters we will cover (*Exercises* subject to change):

Third Trimester:

Introduction to course

Exercise: About Me, Java Introduction

Internet, services, protocols

Exercise: Introduction to Processing, HTML introduction

Web and HTTP

Exercise: Write a simple static web page with minimal user input

Server, Client side vs. Server Side

Exercise: Gee-whiz question form and answer web application

Network Layer, forwarding and routing

Exercise: Using traceroute (tracert) determine visually using Google Maps the hops required to go from your computer to any user chosen site (ex. google.com)

Introduction to the Transport Layer

Exercise: Create a stop-and-wait algorithm simulation using Processing

Application Layer, Transport Layer, Network Layer, Link Layer and Local Area Networks Discussion

Exercise: Guest speaker to discuss layers

Final Client/Server Project

Exercise: Create a program that utilizes two people interacting on separate computers with a client and server. Two computers in the lab are to be used if possible. Ex.) A chat program, Two player Pong, etc.