Overview

This course will cover the basic principles of networking with a focus on protocols, implementations, and issues specific to the Internet. We will study how LANs, routing, transport, and various network protocols and applications work using a number of examples. As a departure from the typical CS 640 we will cover in detail technologies related to web application development: HTML, XML, Javascript, AJAX, ASP.Net, C#, ODBC/ADO.Net, web services (SOAP and REST).

General Information

Class Time: Tuesday and Thursday 9:30AM-10:45AM, in 1240 CSS.

Final Exam: Friday May 18, 7:45 AM.

Instructor: Cristian Estan. Email estan@cs.wisc.edu. Office: CSS 7387.
Office Hours: TBD

Teaching Assistant: Mohamed Eldawy Email eldawy@cs.wisc.edu. Office: CSS 5384
Office Hours: Mondays TBD, Wednesdays TBD


Each week I will specify relevant sections of the required text which I will cover in class. Other useful books:


Course Work

Syllabus: The following is the broad set of topics that will be covered in this course (roughly in the specified order):

1. Networking basics and protocol layering.
2. Network services and applications — DNS, SMTP, MIME, etc.
3. Web application development — HTTP, HTML, ASP.NET, Javascript, Web services, etc.
4. Physical and Link layer — Framing, Checksums, Aloha, Ethernet, Token Ring, Wireless LANs, etc.
Grading criteria for the class

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<tr>
<th>Criterion</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Comprehensive final exam</td>
<td>40%</td>
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<tr>
<td>Programming assignments</td>
<td>25%</td>
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<tr>
<td>Quizzes</td>
<td>30%</td>
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<tr>
<td>Class participation</td>
<td>5%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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5. Routing — Distance Vector, Link State, etc., IP service model, Internet addressing.

6. Transport — UDP and TCP.


Grading: The course will have a comprehensive final exam, five programming assignments and biweekly quizzes. The assignments will involve writing web pages, web applications, and socket programming (you will implement a simple client, and a simple server).

The class participation component is to encourage you to voice your opinions, raise questions, and actively involve in discussions in the class and in the mailing list.

Mailing List: The class mailing list is compsci640-1-s07@lists.wisc.edu. It should be used for all course related discussions, e.g. assignments, exams, or any topic related to networking.

Prerequisites: CS 537 or consent of instructor.

Collaboration and Academic Honesty: You may discuss programming assignment problems for general solution strategies with your classmates. But the formulation and exposition of the solutions must entirely be your own.