

# CSC 6290:

## Data Communications and Computer Networks

— *Building Blocks & Behaviors*

Fall 2008

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**Class ref number:** 13040

**Class timings:** MW 1:20pm-2:40pm

**Class webpage:** <http://www.cs.wayne.edu/~hzhang/courses/6290b/6290b.html>

### Overview

This course is designed for graduate students who are interested in the fundamental design and analytical techniques for computer networking. We will focus on three basic building blocks of networking: multiplexing, switching, and routing. We will systematically develop the viewpoint that computer networking is about efficient resource sharing, and we will examine the basic engineering and scientific questions in network system design, analysis, and implementation. Topics include network architecture, network analysis from deterministic models (e.g., as used in IntServ/RSVP) and stochastic models (e.g., the effective bandwidth approach), blocking systems (e.g., cellular and optical networks), congestion control algorithms (e.g., TCP), queueing in packet switches, switching architectures, packet processing (e.g., IP route lookup and packet classification), virtual path routing (e.g., as in MPLS), and routing for delay-constrained traffic (e.g., as in VoIP).

In short, the objectives of this course is to help students develop deep insight into computer networking and to help students appreciate the basic techniques for designing and analyzing networked systems.

### Prerequisites

Basic knowledge of computer networks (e.g., materials covered in CSC4992 or equivalent), elementary probability theory and statistics. Or consent of instructor.

*For more information, please visit the class webpage or contact Dr. Hongwei Zhang (hzhang@cs.wayne.edu).*

