



CSC 6290: Data Communications and Computer Networks

– Protocol Design and Implementation

Fall 2011

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Class ref./call number: 12245/14650

Class timings: MW 1:20pm-2:50pm

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

Overview

This course is designed for graduate students who are interested in the design, analysis, and implementation of computer network protocols. Our objective is to prepare students for designing network protocols with provable correctness and performance and for implementing network protocols in efficient manners. We focus on the basic principles and techniques for provable, efficient protocol design and implementation, and we will address the design and implementation of both the Internet and emerging networking technologies such as wireless sensor and vehicular networks.

Topics include: 1) how to design and analyze basic network protocols such as those for link reliability control, medium access control, switching, routing, and quality-of-service guarantee; 2) how to address implementation challenges such as high-speed, low-overhead packet processing, timing management, and network traffic measurement; 3) how to design and implement reliable, real-time protocols for wireless networks such as wireless sensor networks.

This course is expected to build up students' capability of designing and implementing computer network protocols for solving real-world networked systems problems and to help students build the foundation for understanding advanced networking topics (such as those that are covered in CSC 7290).

Prerequisites

Undergraduate courses in algorithms, operating systems, and computer networks (e.g., CSC 4420, CSC 4100, CSC 4992, or equivalent); or consent of instructor.

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