Cpt S / EE 555:

Computer Communication Networks Spring 2013

Times: TU TH 1:25pm - 2:40pm
Location: CLEV 30W
Instructor: Nirmalya Roy
Instructor's Office Location and Hours: EME 127, W & F 2:00pm - 3:00pm, or by appointment
Instructor's Email: nroy at eecs dot wsu dot edu

Course Descriptions: This is a graduate-level course in computer networks for students in electrical engineering or computer science. This course will introduce students to the key concepts of underlying wired, wireless networking and queueing theory. The layered architecture of the network protocol stack and queueing theory will be the focus of discussion. Alongside, a variety of case studies will be drawn from the Internet, combined with practical programming exercises. At the end of the semester, students will well understand several concepts, including the Internet architecture, quantitative models of queueing systems. HTTP, DNS, P2P, Sockets, TCP/IP, BGP, Routing protocols, IEEE 802.11, wireless and sensor networking, mobile computing, cellular and satellite networks, security, etc.

Course Objectives: Mathematical analyses of queueing models in network, protocol design and implementation; proof of protocol properties; network router and switch architectures, routing and switching protocols, wireless and mobile networks.

Course Topics:

- Queueing Theory
- Application Layer
- Transport Layer
- Network Layer
- Link Layer
- Wireless and Mobile Networks
- Multimedia Networking
- Security in Computer Networks

Course Prerequisites: CptS 455 (Computer Networks) or equivalent

Required Textbook:

- *Computer Networking: A Top-Down Approach,* 6th Ed., by James F. Kurose and Keith W. Ross. Addison-Wesley, 2012
- Fundamentals of Queueing Theory, 4th Ed., by Donald Gross & John F. Shortle & James M. Thompson & Carl M. Harris. John Wiley & Sons, Inc, 2008 (Amazon.com)

Course Requirements and Grading:

Participation/Presentation	10%
Homeworks (Paper reviews etc) & Programming Assignments	20%
1 Midterm Exam	20%
Semester-long Research Project	50%

Students with Disabilities: Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Disability Resource Center (DRC). All accommodations MUST be approved through the DRC (Admin Annex Bldg, Room 205). Please stop by or call 509-335-3417 to make an appointment with a disability specialist.

Academic Integrity: Academic integrity will be strongly enforced in this course. Any student caught cheating on any assignment will be given an F for the course and will be referred to the Office of Student Conduct.