Course Title: IT455 Network Protocols (3-0-2-4)  
Semester: Autumn, 2013-14  
Course Type: BTech - Technical Elective (Open to MTech and PhD)  
Prerequisite: IT304 Computer Networks or equivalent  
Instructor: Sanjay Srivastava  

Course Content

This is an advanced undergraduate course that provides an in-depth understanding of a selection of network protocols - algorithms, design, and analysis. The course also provides insight into how network research is done by focusing on problem solving capabilities.

The course will run as a structured seminar course. You will be presented with a selection of open issues in a variety of network problems along with basic research papers for each of these problems. In the first part of the course, I will introduce each of these problems and the underlying context. You will each pick up one of these problems, read and understand the existing works related to the problem, write a survey paper, and give a seminar. In the second part of the course, you will solve the given problem by designing a protocol and verifying your solution using simulation tool. Finally, you will write a research paper and present your work in an open seminar.

Course evaluation will solely be based on your survey and research paper along with your seminar presentations. There will not be any other evaluation components.

Outcomes and Objectives

It is expected that at the end of the course, students will be able to design network protocols to solve specific networking problems. Students will be able to measure the performance of the protocols using suitable metrics by simulating the protocol. Finally, students will be able to gain an insight into how network research problems are conceived, analyzed and solved.

Standard Textbooks for background study

(Course content will primarily be driven by a selection of readings from research literature and RFCs.)

4. Murthy and Manoj, Ad Hoc Wireless Networks

Evaluation Components

1. Two presentations: 40%
2. Term paper and Viva: 60%