CS4254: Network Architecture and Programming

Srinidhi Varadarajan

Spring 2004

Class Details

- **Instructor:**
  - **Dr. Srinidhi Varadarajan**
  - **Office Hours: 10 am – 11:30 am Mon-Wed**
- **GTAs:**
  - **Muthukumar Thirunavukkarasu
    Email: mthiruna@vt.edu**
  - **Office Hours Location: McB 133**
  - **Office Hours: Muthukumar: Tu, Th: 10am – 12pm**
- **Class:**
  - **Meeting: 2:30 pm – 3:45 pm, Mon-Wed, Derring 1090**
- **Electronic Discussion:**
  - **forum.cs.vt.edu**
  - **Register at this site and use the CS4254 section for public postings.**
  - **Class listserv will be used for announcements. You will be automatically added to the listserv.**

Goals

- **Explain basics of computer communication over various physical media**
- **Introduce concepts of network protocols and identify key issues**
- **Explain the seven-layer OSI communication protocol model**
- **Explain the architecture and protocols comprising the Internet**
- **Implement network services that communicate through the Internet**
- **Identify and explore network programming abstractions in use today**

Topics

- **Introduction to computer network architectures**
- **OSI Protocol Model**
- **Internet Protocols**
- **Network Programming Abstractions**
- **Client/Server Programming**
- **Network Security**

Prerequisites

- **CS3204 (Operating Systems)**
- **<u>Strong programming ability in C</u>**
- **User-level understanding of the UNIX operating system**
- **Ability to undertake substantial independent design projects**

Resources

- **Required text:**
  - **Douglas E. Comer and David L. Stevens, *Internetworking with TCP/IP Volume III: Client-Server Programming and Applications*, Linux/POSIX sockets version, Prentice Hall, 2001**

- **Recommended text:**
  - **Douglas E. Comer, *Internetworking with TCP/IP Volume I: Principles, Protocols, and Architecture*, 3rd edition, Prentice Hall, 1995.**
  - **Andrew Tannenbaum, *Computer Networks*, Third Edition, Prentice Hall, 1996**

Grading

Homework + Quizzes	**10%**
Projects (3)	**45%**
Midterm (1)	**15%**
Final Project	**30%**