CS3040: Computer Networks

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 howend8   cs

Lecture 1

Administrative

⍺   Class webpage

http://www.iith.ac.in/~tbr/teaching/cs3040/

⍺ CS Teaching Lab 3 (Next to Library)

⍺ Lab Hours

    ◦ Tuesdays: 2 to 5 PM

⍺ Teaching Assistants (TAs) for course/lab

    ◦ Nagarjuna

    ◦ Tejaswini

    ◦ Prerana Tiwari

⍺ Office Hours: Wednesdays 2 to 3 PM (Room 36) or by appt

Tentative Syllabus

- Week 1: Basics of CNWs

- Weeks 2-3: Application layer (Web, Email, File Tx)

- Weeks 4-6: Transport layer principles & protocols (TCP/UDP)

- Weeks 7-9: Network layer (IP, BGP, etc)

- Weeks 10-11: Data link layer

- Weeks 12-13: Local Area Networks (802.3, 802.11)

- Week 14-15: Multimedia Networking

- Week 16: Network Security/Network Management

Reference Books

- Computer Networking: A Top-Down Approach **by James F. Kurose and Keith W. Ross**, 5th Edition, 2009, Addison Wesley (Pearson Education)

- Computer Networks: A Systems Approach by **Larry L. Peterson and Bruce Davie**, 5th Editon, 2010, Morgan Kaufmann

- TCP/IP Illustrated Vol. 1 Protocols by W. Richard Stevens and G. Gabrani, 2001, Addison-Wesley (Pearson Education)

Online Resources

- http://www.iith.ac.in/~tbr/teaching/CS3040.html

- Many more will be posted on class webpage

Tools/Testbeds/Simulators

- https://seattle.cs.washington.edu/html/

- http://www.wireshark.org/

- http://yuba.stanford.edu/vns/

- http://yuba.stanford.edu/vns/clack

- QualNet simulator/emulator (available on Intranet for download)

Grading Policy

ꙮ UG: Tutorials 25%, End-sem 40%, Mid 20%, HW and Wireshark Asgts 15%

ꙮ PG: Tutorials 10%, Programming Assignments 30%, End-sem 30%, Mid-term 20%, HW and Wireshark assignments 10%

- o Tutorials are conducted w/o intimation
- o No make-up tutorials for absentees
- o Syllabus for tutorials includes portion covered since 1st class!

Assignments

1. Building a Multi-Threaded Web Server using Sockets in Java/C++

2. Building a HTTP Proxy

3. Implementing a Reliable Transport Layer

4. Implement a Link State Routing Protocol over the Internet

5. Putting all of them together!

6. And a few more ...

Assignments: Grading Policy

   50% marks for Program

   50% marks for Coding Style and Documentation

   Java Coding Style:

- http://www.oracle.com/technetwork/java/codeconventions-150003.pdf

   C++ Coding Style:

- http://google-styleguide.googlecode.com/svn/trunk/cppguide.xml

1ˢᵗ Set of Assignments

- Wireshark Lab: Getting Started
- Building a Multi-Threaded Web Server in Java
- https://seattle.cs.washington.edu/wiki/EducationalAssignments/TakeHome
- Due by Jan 17ᵗʰ.