L01: Overview

18CS52 - CN

Dr. Ram P Rustagi
Sem V (2020-Odd)
Dept of CSE, KSIT
rprustagi@ksit.edu.in

Resource Material

- Access URL : CN theory and lab
  - ‣ github.com/rprustagi/VTU-CNLab
  - ‣ github.com/rprustagi/VTU-18CS52-CN
  - ‣ youtube.com/rprustagi
  - ‣ http://acc.digital
- onedrive : To be shared
  - ‣ `Slides:`
  - ‣ `Misc, QP, Results ...`
  - ✦ Will be updated as the course progresses

Resource Material

- Text Book: **Computer Networks 6th ed**
  - ‣ Authors: Kurose, Ross
- Note: Do not depend upon notes
  - ‣ Read the text book
- Support Material
  - ‣ RFCs
  - ‣ References cited in the book
- Access* to resources by authors (6th ed)
  - ‣ **http://wps.pearsoned.com/ecs_kurose_compnetw_6/216/55463/14198700.cw/index.html**

Course Methodology

- Exams
  - ✦ External: as per VTU
  - ✦ Internal: As per freedom under VTU/KSIT
    - – All are openbook exams
    - – Same question to all, but
      - » may have different answers for each

- Assignments (to be worked out)
  - ‣ To be done in team of size 2 or 3
  - ‣ Submissions online
    - ✦ TBD: Upload on github

Course

- Approach
  - Top down
  - Mostly as per modules
    - At times some topics from modules out of order
  - Designed to be learning driven.
- Desiderata:
  - Need to be regular in the class
    - Can have attendance freedom
    - Missing the classes may turn out to be costly.

Syllabus

- Module 1: Application layer
  - ‣ HTTP, DNS - used in day to day life
  - ‣ FTP, SMTP - not used in day to day life
  - ‣ P2P, DHT, Socket Programming
- Module 2: Transport layer
  - ‣ TCP and UDP
  - ‣ Congestion control, ATM network
- Module 3: Network layer
  - ‣ (Review of IP address - not in course)
  - ‣ IPv6 in brief
  - ‣ Routing algorithms

Syllabus

- Module 4: Network security
  - Cryptography
  - Keys and encryption
  - Firewalls
  - Proxy server
- Module 5: Multimedia networking
  - Multimedia network applications
  - Streaming: UDP, HTTP, DASH
  - VoIP
  - Protocols for conversational applications

Concept Consolidation

- Activities
  - ‣ Be comfortable with wireshark
    - ✦ Very helpful for understanding networks
      - –Available for Windows, Linux, Mac etc.
  - ‣ Be comfortable with Linux
    - ✦ The default deployment server
  - ‣ Work out the exercises (at end of chapter)
    - ✦ Helps you consolidate the subject

18CSL57-CNLab

- Some of experiments aren't as per syllabus
- Requires a good understanding of NS2
  ‣ Runs on Linux
  ‣ Understand working of NS2
  ‣ Read the document.
  ‣ Do lot more than what is given in lab
- 6 experiments are java programming based
  ‣ Review java programming
  ‣ Review asynchronization and events
  ‣ Review threaded programming concepts

Practical Exposure

- R&D center has 3 cisco routers, 2 switches
  - ‣ You can play with these
  - ‣ Consolidate your learning
  - ‣ These are cisco specific
  - ‣ To be used during free time
    - ✦ After college hours
- Cisco PacketTracer
  - ‣ A very good network simulator tool
  - ‣ Knowing and practicing empowers you
  - ‣ Helps creating any kind of network

Summary

- Open discussion
  - Questions
  - Inputs
  - Comments