CS 540
Advanced Computer Networks
Fall 2016

INSTRUCTOR:  Professor B. Gupta

Office:     Engineering A 405B
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Prerequisites:  CS 440 with a grade of C or better, or consent from the instructor

Course Outline

Peer-to-Peer (P2P) Networks
  DHT-based P2P networks
  Hybrid P2P networks
  Hierarchical P2P networks

Multicast Routing
  DVMRP
  PIM/DM
  PIM/SM

High Speed Data Communication
  Data Compression Techniques
    Huffman encoding
    Run length encoding
    Arithmetic coding
    String matching Algorithms

Routing in Global Internet
  Interior Gateway Protocols
  Exterior Gateway Protocols

Routing Protocols in Mobile Ad-hoc Networks
  AODV

Queuing Theory
  M/M/1 queue;
  State-dependent queues – M/M/N/N queue etc.

Queuing Networks  (if time permits)
  Open Queuing Networks
  Closed Queuing Networks
No text book will be followed. Reading materials will be given to students at appropriate times.

Some recommended reading:

4. Telecommunication Networks, Protocols, Modeling and Analysis By Mischa Schwartz, Addison Wesley

*Grading Policy:*

There will be two exams, each will carry 30% of the total points. One lab will have 20% of the total points. There will be term paper presentation. A term paper will carry 20% points, out of which 10% for submitting the hard copy of the report and 10% for presentation.

*Note: These percentages are tentative; there may be significant changes.

• **TOPIC OF THE TERM PAPER IS P2P NETWORK. NO OTHER TOPIC WILL BE CONSIDERED.**

  Grade A ≥ 90%
  Grade B ≥ 80% and < 90%
  Grade C ≥ 70% and < 80%