COSC 4377 – Computer Networks
Chapter 0

Course Introduction

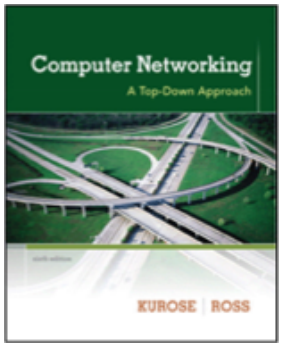
Kevin Long
kblong@uh.edu, +1 (713) 444-8706

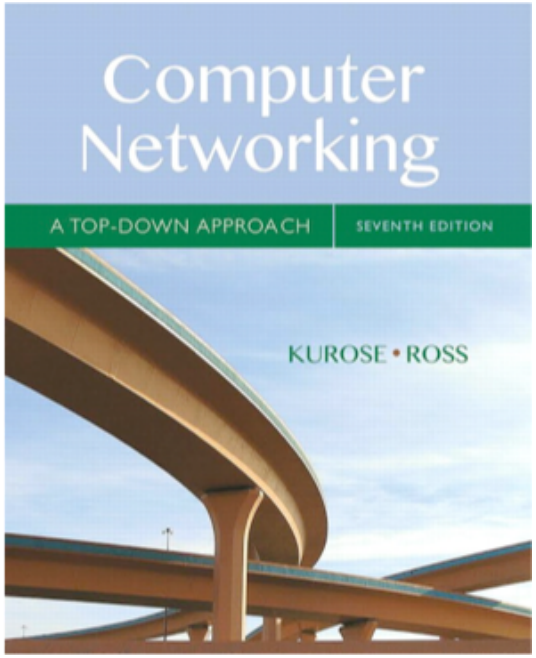
Structure of the Class

- One section: Mon-Wed 5:30-7:00pm
- What you'll find on blackboard:
  - Homework assignments / solutions
  - General announcements
- Lectures streamed on WebEx & stored on Vimeo
- Two exams: Midterm and Final
  - Exams in class
- Approx. 10 homeworks of textbook exercises, plus labs and programming assignments

Overview of Text

- Intro chapter
- Five"meat" chapters
- Additional chapters
  - Wireless and mobile networks
  - Multimedia networks
  - Security
- 6th edition available as a PDF

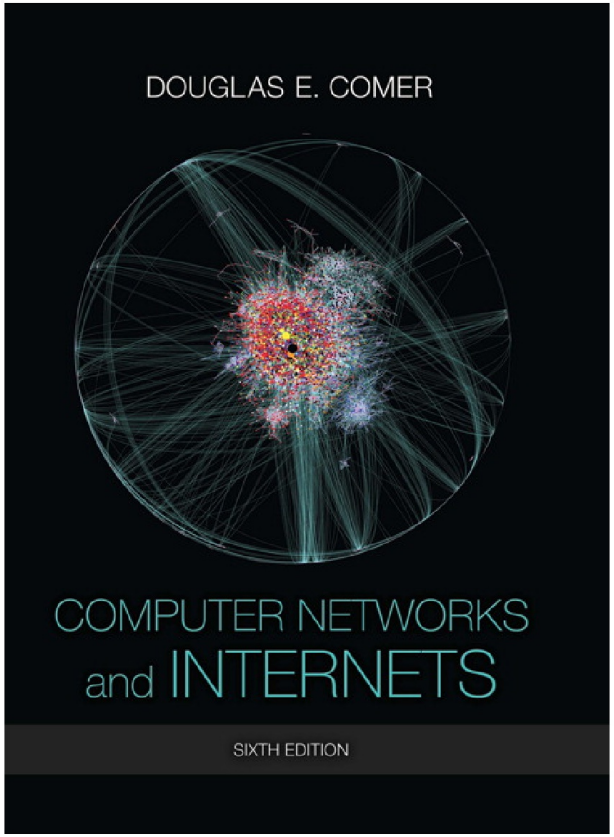




Computer Networking: A Top-Down Approach, 7th Edition
Kurose & Ross
©2017
ISBN-13: 9780133594140
Suggested retail price: $173.40

Supplemental Text

- A good second text that is Douglas Comer's Computer Networks and Internets, 5th Ed. Prentice Hall, 2008. ISBN 9780136061274.
  http://www.netbook.cs.purdue.edu
- It's a good resource for background information on TCP and windowing, among other topics.
- I found a PDF version



The Tools We Use

1. **Google Drive** is used for slides, notes, copies of homeworks and solutions once posted. Always look here first for everything except announcements and homework uploads.
2. **WebEx** to record and broadcast what goes on
   - Download WebEx from your favorite app store
3. **Vimeo** to archive all of our lecture recordings.
4. **BlackBoard** for formal assignments of homeworks with uploads required, and all grades. Also used for labs.
   - If you didn't receive an email from me before the first lecture, you need to verify which email the university is using for you.

WebEx

- All classes are streamed live and recorded
- Same link for entire semester
- WebEx is free and works on any device
- Audio is a separate step
- Meeting # 208 822 881
- Password is gocoogs (4626647 from phones)
- https://cisco.webex.com/ciscosales/j.php?MTID=md24345db6606b747556f3cbddb231fa0

Vimeo

- Recordings uploaded to Vimeo
- Our class has a channel

https://vimeo.com/album/4860032

Google Drive

- Check Google Drive for class material
  - General Info
  - Slides
  - WebEx and Vimeo reminder
  - Projects
  - Homeworks & Solutions
  - Textbook Chapters
  - Related Articles

https://drive.google.com/open?id=1yDCYPq6wfggk-JgM-BWSMxrWL-0_fU7H

Webex QR Code

https://cisco.webex.com/ciscosales/j.php?MTID=m0ffa967a1b48a75db34b9c64f01a6be8

- Same link all semester
- Meeting number: 208 521 290
- Meeting password: gocoogs (4626647 on phone)
- To add to your calendar: https://cisco.webex.com/ciscosales/j.php?MTID=m1fa6d6397b335ed91990ba39e1a6b5c8

Add to Calendar

Homeworks

- Homeworks always emailed
- Posted as assignments on blackboard
- Upload solutions to blackboard
- Solutions posted after grading begins
- Late homeworks subject to 25%/day penalty. Before exams, deadlines are strict.
- The TA's have full discretion whether to count homeworks as late.

Grading

- Four buckets for grading
- No formal lab section, so labs are parts of homeworks
- We need to stay close on workload
- TA's grade all homeworks and labs

Midterm Exam	25%
Homeworks from textbook	25%
Labs and Programming	25%
Final Exam	25%

How to Pass the Course

- Participate fully in class
  - Attend the lectures and/or review the recordings
  - Turn in all the homeworks and work all the problems
  - Turn in all the labs
  - Stay out of trouble
  - Work all the problems on the exams
  - Participate in TopHat
- Such a student with the low score on the mid-term and final will be curved up to a passing grade

Prior Experience

- Written in C? Python? Java?
- Have an environment to write and compile C code?
- Have written code to implement a socket?
- Have built a network?
- Have programmed a router?
- Have "sniffed" packets on a network?

Labs, Programming & Project

- Labs – using Wireshark
  - Basic packet analysis, traffic isolation
  - You will need Wireshark on a portable computer
  - Install it now
- Programming Assignments
  - Socket programming assignments
  - Seattle lab distributed Ping and NAT exploration
- Optional Project

Socket Programming Assignments

- 7 programming assignments, all in Python
- The supporting code is written for you. Your task is to finish writing the routines to demonstrate how the topic works.
- One assignment every two weeks

1. Web Server
2. UDP Pinger
3. SMTP
4. Proxy Server
5. ICMP Pinger
6. Video Streaming
7. Traceroute

Wireshark Labs

- Network surveillance tool and packet analyzer
- See protocols in action
- 11 different labs
- Examine packets "in the wild"
- We'll do some in class and assign the rest

1. HTTP
2. DNS
3. TCP
4. UCP
5. IP
6. ICMP
7. Ethernet
8. ARP
9. WiFi
10. SSL
11. Web Request

Seattle Project – if available

- Sandboxed Python program shell running remotely
- Project demonstrates distributed Ping and NAT exploration from your system to others running Seattle
- You push Python code to remote systems and run them, and retrieve the logs
- Usually fewer remote systems available than advertised

Teaching Assistants

- Seyyed Hessam Aldin Mohammad Moradi, hesamit23@gmail.com
- Raga Shalini Koka, rkoka@uh.edu
- Pavan Kumar Paluri, pvpaluri@uh.edu

About Your Instructor

- Kevin Long
  https://www.linkedin.com/in/kblinhou
- Live in Houston and México
- Adjunct Instructor at the University of Houston
- Professor Visitante at Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)
- Computer Scientist (Rice, '85, '89)
- Sr. Technologist & Regional VP for AT&T ('76-'09)
- Latest projects have been for Cisco Systems