COS 460 / 540
Computer Networks

Fall 2021
University of Southern Maine

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Course Details

- Objectives
- Textbook and Resources
- Schedule
- Projects, exams, and grades

On the paper provided write down one thing you hope to learn by taking this course.

"At the end of the semester it would be great if I knew…"

Hand your paper forward when done.

Objectives

What is a network?

The basics of computer networks and networking

- Computer networks as a *layered architecture*
- *ISO Model* of computer networks
- *TCP/IP Model* of computer networks

Objectives

What is a network?

How networks are connected together to send data from host to host

Connecting Networks

- Layers are fun
- Switching and Bridging
- Routers and Routing
- End to End Data communication

Objectives

What is a network?

Applications that run over the network and what their data looks like

Connecting Networks

- Things that make the network work

Network Applications

- Presentation of data to applications
- Multimedia Data
- Encryption, privacy, and security

Objectives

What is a network?

Writing code for network servers, applications, and services

Connecting Networks

- Client-server applications
- Peer to Peer applications

Network Applications

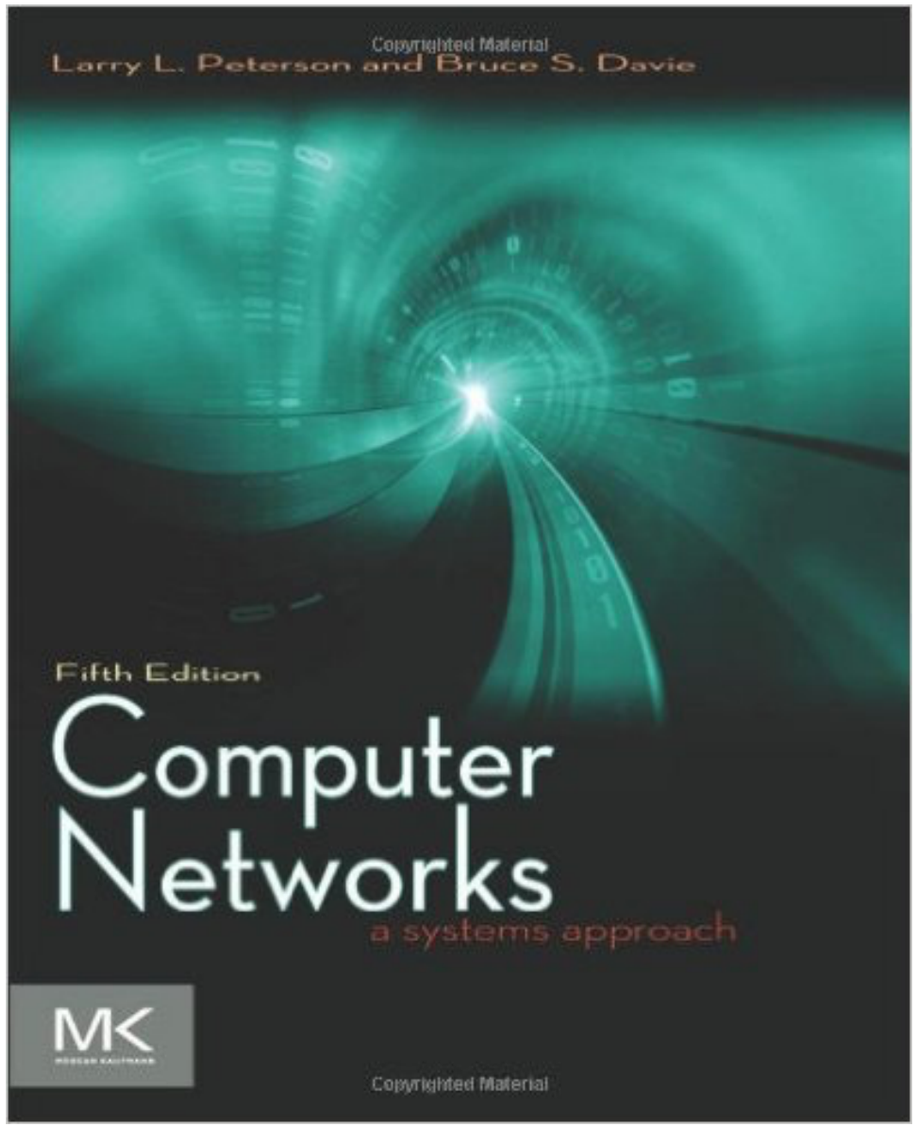
- Distributed services

Writing the code

“Fairy tales are more than true: not because they tell us that dragons exist, but because they tell us that dragons can be eaten.”

–Neil Gaiman

Computer Networks
A Systems Approach



Petersen & Davie
5th+ Edition

The book is ***FREE*** — http://book/systemsapproach.org

Where’s the Stuff?

- Brightspace: project links, exams, grades

  https://courses.maine.edu

- GitHub Course Site: project submission, documents

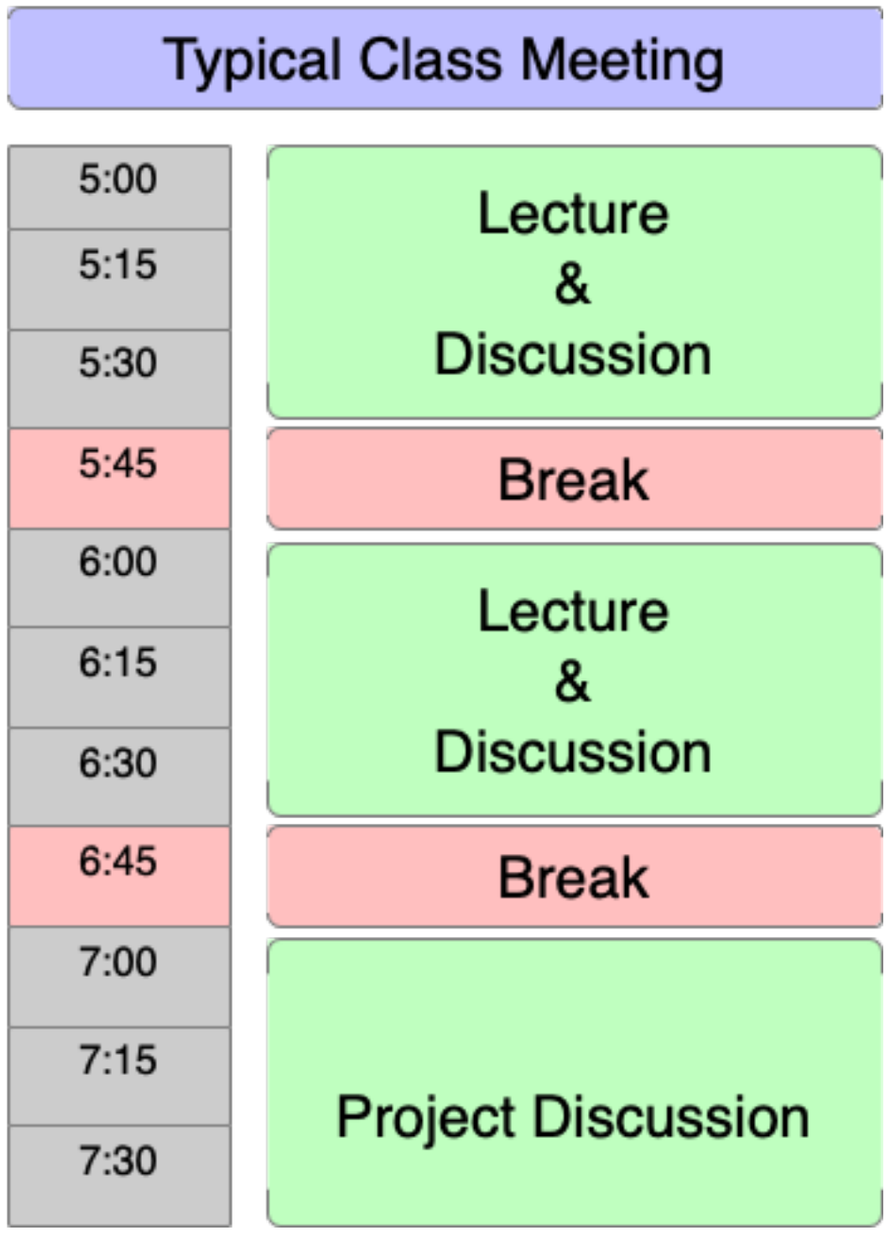
  https://usm-cos460.github.io

Schedule*

- Foundations & Direct Networks
  ~4 weeks

- Inter-networks & End-to-End Data
  ~6 weeks

- Data & Applications
  ~5 weeks



* The course site as a more detailed schedule

Projects and Exams

Projects

50 + 100 + 75 + 100 = 325 points

- 4 programming assignments
  - Choose your own language
- Progressively more difficult
- Project 3 and 4 is a two part project we will design in class

Projects and Exams

Projects
- **GitHub**

You will be using git and GitHub.

- You will *start* from the Projects section in Brightspace
- You will *finish* by `git push` to GitHub

You will need a GitHub account if you don't have one already.

All you work will be in *private* repositories.

Projects and Exams

Projects
- GitHub

- Shown on the course schedule

- Sections from the text book

Reading

- Linked topical readings (articles)

- Be prepared to discuss in class, you will get called on!

Projects and Exams

Projects
- GitHub

100 + 100 + 125 = 325 points

Reading

- 3 Exams in Brightspace

Exams

- Based on three sections of the course
- Final exam is *comprehensive**

* ~25 points from prior course material

Projects and Exams

Projects
- GitHub

50 + 50 = 100 additional points

Reading

- Research Paper (5-10 pages)

Exams

- Research Presentation (10-15 minutes)

Graduate Students

- NOT FOR UNDERGRADUATE STUDENTS

Projects and Exams

Projects
- GitHub

Undergraduate Students (COS 460)

Reading

650 points maximum

Exams

Graduate Students (COS 540)

Graduate Students

750 points maximum

Grade Totals

Questions?

fin

Course Introduction
COS 460 - Computer Networks