Syllabus
Networking (CS 442) -- Spring 2015

This page contains the syllabus for Networking for Spring 2015. "The course syllabus contains important information regarding course requirements and the grading system utilized. It is the responsibility of the students to read the syllabus and consult the instructor if they have questions."(from UNC 2013-2014 Undergraduate Catalog)

CS 442 002 - Networking - 3 credits
Spring 2015
Class meeting time and location: Tuesday and Thursday, 9:30am - 10:45am in Ross Hall 2230G (Linux Lab)
All class material is accessible through Blackboard.

Instructor: Mehrgan Mostowfi, Ph.D.
School: Mathematical Sciences
Office location: Ross Hall 2240B
Office hours: Tuesday and Thursday, 11:00am - 12:30pm, or email to schedule an appointment.
Email: mehrgan.mostowfi@unco.edu
Homepage: http://www.mathsci.unco.edu/facstaff/mostowfi/

Required textbook: The required textbook is Computer Networking: A Top-Down Approach, 6th Edition, by James F. Kurose, and Keith W. Ross. There will be assigned readings to complement the lectures. These readings will come from handouts and/or material in the textbook.

Catalog course description: Study data communications; network structure, design and architectures; network services and standardization; and respective networks all in the framework of the OSI model.

Course objectives: As a result of successfully completing this course, students will:

1. Become familiar with layered communication architectures (OSI and TCP/IP).
2. Understand the client/server model and key application layer protocols.
3. Learn sockets programming and how to implement client/server programs.
4. Understand the concepts of reliable data transfer and how TCP implements these concepts.
5. Know the principles of congestion control and trade-offs in fairness and efficiency.
6. Learn the principles of routing and the semantics and syntax of IP.
7. Understand the basics of error detection including parity, checksums, and CRC.

Prerequisite:
- CS 440 -- Operating Systems
- Knowledge of general programming concepts, and a high-level programming language.

Course topics: This course will cover the following topics:

- Week 1 (Jan 12 – 18, 2015): Protocol layers and service models. OSI and Internet protocols.
- Week 3 (Jan 26 – Feb 1, 2015): Application layer protocols and client-server model
- Week 4 (Feb 2 – 8, 2015): Application layer protocols and client-server model
- Week 7 (Feb 23 – Mar 1, 2015): Application layer protocols and client-server model
- Week 8 (Mar 2 – 8, 2015): Reliable data transfer. Semantics and syntax of TCP.
- Week 10 (Mar 16 – 22, 2015): Spring Break (No Classes)
• Week 15 (Apr 20 – Apr 26, 2015): Error detection including checksums and CRC. Multiple access protocols including IEEE 802.3 Ethernet.
• Week 16 (Apr 27 – May 3, 2015): Wrap-up for Final Exam
• Week 17 (May 4 – 10, 2015): No classes, comprehensive final exam, project due

Grading: Students will earn a grade based on assignments, a project, mid-term exam, and a comprehensive final exam. The grade breakdown is:

• Assignments: 18% (three assignments, assigned roughly every third week)
• Project: 26% (due on Friday, May 8, 2015 by 11:59pm - early submission is very highly recommended, late submissions will not be accepted)
• Midterm exam: 25% (take-home exam, due on Mar. 15, 2015 at 11:59pm)
• Comprehensive final exam: 31% (take-home exam, due on May 10, 2015 at 11:59pm)

The grading scale is "no worse than" (+" or "+" grades MAY be given to marginal performance, but do not expect them):

• A = 90% through 100% and above
• B = 80% through 89.99%
• C = 70% through 79.99%
• D = 60% through 69.99%
• F = Less than 59.99%

Course policies:

• I expect you to make sure your UNCO email works and check your email regularly. Email will be the main means of communication between you and me. Not having checked your email will not be accepted as an excuse for missing due dates or other important information.

• If you must submit work late you need to talk to me at least one-week before the due date in question. Otherwise, late work cannot be accepted except in cases of verifiable emergencies.

• It is highly recommended that you attend class. I may choose to track attendance.

• We will be observing all university policies regarding religious holidays and disability policies. Any student requesting disability accommodation for this class must inform the instructor giving appropriate notice. Students are encouraged to contact Disability Support Services (www.unco.edu/dss) at (970) 351-2289 to certify documentation of disability and to ensure appropriate accommodations are implemented in a timely manner.

• Incomplete ("I") grades will only be given in the case of severe hardship including verifiable medical emergencies or legal troubles. Simply being "overloaded" and unable to complete your work is not grounds for an "I" grade.

• Out of courtesy to other students please make sure that you turn off, or place in silent mode, your cell phone.

Academic Integrity/Academic Dishonesty: I expect students to be honest and not cheat on their assignments, project, and exams. Students may work together on the project with one other person in the class. Both students will earn the same grade. The exams must be completed without giving or accepting assistance from other students. Any source code copied from another source must be credited as such. Open source software used must maintain all headers and other information as required by the open source license used. I expect you to know the University's policies on student conduct, academic dishonesty, etc. UNC's policies and recommendations for academic misconduct will be followed. For additional information, please see the Dean of Student's website, Student Handbook link and current catalog.

Every part of this syllabus is subject to adjustment as the semester progresses. Please contact me as soon as possible if you have particular interest in material that is relevant to the class topic but not covered in enough detail; I will be happy to accommodate reasonable requests for modifications.

Last update on April 29, 2015