This page contains the syllabus for Networking for Spring 2016. "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)

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**Syllabus**

Networking (CS 442) -- Spring 2016

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CS 442 002 - Networking - 3 credits  
Spring 2016

**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:** Tuesdays and Thursdays, 11:00am - 12:30pm, or email to schedule an appointment.  
**Email:** mehrgan.mostowfi@unco.edu  
**Homepage:** [http://www.mathsci.unco.edu/facstaff/mostowfi/](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 301 -- Algorithms and Data Structures
- Knowledge of general programming concepts, and a high-level programming language.

**Course topics:** This course will cover the following topics:

- Week 1 (January 11 – January 17): Protocol layers and service models. OSI and Internet protocols.
- Week 3 (January 25 – January 31): Application layer protocols and client-server model
- Week 4 (February 1 – February 7): Application layer protocols and client-server model
- Week 5 (February 8 – February 14): Sockets programming (client-server and web server programs).
- Week 6 (February 15 – February 21): Sockets programming (client-server and web server programs).
- Week 7 (February 22 – February 28): Application layer protocols and client-server model
- Week 8 (February 29 – March 6): Reliable data transfer. Semantics and syntax of TCP.
- Week 9 (March 7 – March 13): Reliable data transfer. Semantics and syntax of TCP.
- Week 10 (March 14 – March 20): Spring Break (No Classes)
• Week 11 (March 21 – March 27): Principles of congestion control: reactive and proactive, efficiency and fairness. Midterm Exam <
• Week 12 (March 28 – April 3): Principles of routing: link-state and distance vector. Semantics and syntax of IP.
• Week 13 (April 4 – April 10): Principles of routing: link-state and distance vector. Semantics and syntax of IP.
• Week 14 (April 11 – April 17): Principles of routing: link-state and distance vector. Semantics and syntax of IP.
• Week 15 (April 18 – April 24): Error detection including checksums and CRC. Multiple access protocols including IEEE 802.3 Ethernet.
• Week 16 (April 25 – May 1): Wrap-up for Final Exam
• Week 17 (May 2 – May 8): 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% (final demo on Monday, May 2, 2016, 10:45am - 1:15pm, late submissions will not be accepted)
• Midterm exam: 25% (In-class exam on Tuesday, March 2, 2016)
• Comprehensive final exam: 31% (take-home exam, due on Sunday, May 8, 2016 at 11:59pm)

The grading scale is "no worse than":

• 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 January 7, 2016