# CST K232 Communications and Networking Syllabus

**Semester:** Spring 2016

**Class Format:** Online via Blackboard Learn

**Instructor**: Allan Anderson
Private Contact Methods: Blackboard Learn Messaging (preferred) *or* aanderson@trcc.commnet.edu (emergency only) for private (one-to-one) communications
Public Blackboard Discussions: all students and instructor communications on class topics – this is the primary class communication method outside of the classroom
Campus Office Hours: Wednesday (1:00 pm - 2:30 pm, 4:30 pm – 6:00 pm), other days/hours by appointment
Campus Office: Room C/106
Campus Phone: (860) 215-9403 (with voice mail)
Instructor Response Time Objectives: Electronic Messages - 48 hours (weekdays), 72 hours (weekends)
Discussion posts - 24 hours (weekdays), 48 hours (weekends)
Assignment grading – 1 week or less from due date (no assignments are graded before the due date)
Phone messages – 72 hours (weekdays), 96 hours (weekends)

**Textbook:** Jim Kurose and Keith Ross, *Computer Networking: A Top-Down Approach, Sixth Edition*, Pearson, 2013, 978-0-13-285620-1

**Software**: This course will use the Python programming language for network programming assignments. Students will need to download this free software (specifically Python 2.7) and install it on their own computer. In addition other no-charge software may be required during the semester.

**Withdrawing from the course:** A student who simply stops submitting work will receive a grade based on the submitted work only which will usually be a failing grade. To receive a "W" grade instead, apply for a withdrawal through the registrar's office by May 9th. A "W" will be entered on the student transcript.

**Academic Integrity:** Students are expected to do their own work in this class. Working together to better understand the material is acceptable. Submitting duplicate work is not and will adversely affect the assignment grade. Actively participating in the discussion boards both to ask and to answer questions is expected of all students. Posting of detailed instructions for "how to" responses to questions is encouraged but posting of a complete solution is not. Example violations include but are not limited to:

- Copying a file or any portion of a file from another student.
- Sharing or allowing another student to copy your files or any portion of a file.
- Duplicating or distributing copies licenses for software programs and/or services.

**Class cancellations:** as a fully online class with no meetings on campus, any college delay or closing due to weather or other circumstances will have little to no impact on scheduled activities for this class. However, if there is an impact (such as a widespread power outage might cause), then your instructor will inform you of any changes to existing dates.

**Students with Disabilities:** If you are a student with a disability and believe you will need support services and/or accommodations for this class, please contact the Disabilities Support Services at TRCC. Please note that the instructor cannot provide accommodations based upon disability until the instructor has received an accommodation letter from the Disabilities Counselor.

**Course Objectives:**

- To provide the student with guidelines for appropriate electronic communication techniques in a business/academic environment and the opportunity to use these techniques for class activities throughout the semester. Specifically this will include Blackboard class announcements, discussions, messages, assignment submissions, and other techniques as appropriate. In addition, this will include the opportunity to use your TRCC online learning portfolio in Digication for certain class activities. Using appropriate sources and formulating effective writing strategies will be embedded in all writing activities.
- To provide the student with knowledge of the fundamental concepts underlying current networking technologies.
- Specifically at the course completion students will be able to describe, explain and discuss modern networking features including but not limited to the following:

| | |
|---|---|
| • The Internet<br>• End systems, access networks, and links<br>• Packet switching and circuit switching<br>• Delay, loss, and throughput in networks<br>• Network protocol layers and service models<br>• Network security topics<br>• History of networking<br>• Principles of network applications<br>  ○ HTTP<br>  ○ FTP<br>  ○ Email<br>  ○ DNS<br>  ○ UDP<br>  ○ TCP<br>• Elementary socket programming | • Principles of transport layer services<br>  ○ Multiplexing/demultiplexing<br>  ○ Reliable data transfer<br>  ○ Flow control<br>  ○ Congestion control<br>• Principles of network layer services<br>  ○ Service models<br>  ○ Forwarding versus routing<br>  ○ Broadcasting and multicasting<br>• Principles of link layer services<br>  ○ Error detection and correction<br>  ○ Multiple access<br>  ○ Link layer addressing<br>• Principles of wireless networking<br>• Principles of network security<br>  ○ Cryptography<br>  ○ Authentication<br>  ○ Message integrity |

**Lab Assignments**: Weekly assignments from the end of chapter problems or from additional instructor handouts will be given. The hand-in format will be via Blackboard Learn unless otherwise noted. Class assignments should be submitted on or before the due date and time. A late assignment will lose 10% of the score for that assignment if submitted late. No assignments will be accepted after the cutoff date. Assignments will be graded on professionalism, accuracy, style and completeness. The details for each assignment, including work to be done and the due date and cutoff date, will be posted in that assignment's drop box. Students are encouraged to interact with the instructor or other students on these assignments via Blackboard Learn discussion boards but must personally perform the necessary actions to complete the assignments.

**Grading and Evaluation Criteria:**

20 % of the grade is based on a final examination
30 % of the grade is based on chapter examinations
40 % of the grade is based on assigned labs
10% of the grade is based on discussion (classroom and online) participation and an instructor designated assignment for submission as a General Education artifact using Digication

Final course grades will be assigned as objectively as possible, according to the following scale (a class curve may be used at the discretion of the instructor):

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|---|---|
| 90 - 100% | A- to A |
| 80 - 89% | B- to B+ |
| 70 - 79% | C- to C+ |
| 60 - 69% | D- to D+ |
| 59% and Below | F |

| Week | Topics – check Blackboard for details | Text Assignments |
|---|---|---|
| 1-2 | Computer Networks and the Internet | Chapter 1 |
| 3-4 | Application Layer | Chapter 2 |
| 5-6 | Transport Layer | Chapter 3 |
| 7-8 | The Network Layer | Chapter 4 |
| 9-10 | The Link Layer: Links, Access Networks, and LANs | Chapter 5 |
| 11-12 | Wireless and Mobile Networks | Chapter 6 |
| 13-14 | Security in Computer Networks | Chapter 8 |
| 15 | | Final Exam |

Note: The foregoing course outline is subject to change as conditions warrant.