# CSCI 525 – NETWORKING I (FALL 2015)

*(Last updated: August 31, 2015)*

## INSTRUCTOR

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## CLASS MEETING

Web-based (3 credits)

## COURSE DESCRIPTION

This course covers the basic principles and operations of computer networks. Topics include basic data communications, the OSI model, protocols and topologies. In addition, students will have the opportunity to gain practical experience with the installation and administration of TCP/IP platforms. Additionally, TCP/IP networking and protocols will be covered to understand the Internet core functions including routing, subnetting, and reliable data transfer. The Internet architecture and operations will also be reviewed with core services and applications.

## EXPECTED STUDENT LEARNING OUTCOMES

- Define and understand basic Data Communications, networking topologies, the OSI Model and the IEEE 802 standards.
- Observe and gain experience with networking platforms from the SPX/IPX and TCP/IP environment.
- Understand subnetting, and the use of IP addresses, and the fundamentals of IP routing.
- Integration of data communications, topologies, IEEE 803 standards, networking platforms, and subnetting into an understanding of modern computer networking.

## PREREQUISITES

CSCI 515 and 516 (co-requisite)

## COURSE MATERIAL

- **[KR] Computer Networking: A Top-Down Approach**, 6th edition, James Kurose and Keith Ross, ISBN: 0132856204, Addison-Wesley, 2012 (required).
- **[ZA] Networks of Computer Scientists and Engineers**. Youlu Zheng and Shakil Akhtar, Oxford University Press, 2001. (reference)

## GRADING (TENTATIVE)

| | | | |
|---|---|---|---|
| Homework | 30% | A: 90 or above | |
| Midterm Exams | 30% | B: 80 – 89.x | |
| Final Exam | 20% | C: 70 – 79.x | |
| Quizzes | 20% | D: 60 – 69.x | |
| | | F: Below 60 | |

## LATE POLICY

The deadline for any assignment can be extended with a 15% penalty per day. No deadline can be extended by more than two days. Assignments will NOT be accepted 48 hours after the due date. No technical excuse (e.g., eCollege technical problem).

## MAKEUP POLICY

There will be no makeup exams in general. Makeup exams may be given to students under extreme circumstances, such as hospitalization, serious injury, death in the family, etc, with prior notification _and_ official documents.

## COLLABORATION POLICY

Students are encouraged to talk to each other, to the instructor, or to anyone else about any of the assignments. Any assistance, though, must be limited to discussion of the problem and sketching general approaches to a solution. _Each student must write out his or her own solutions to the homework_. Consulting another student's or group's solution is prohibited, and submitted solutions may not be copied from any source. These and any other form of collaboration on assignments constitute cheating. If you have any question about whether some activity would constitute cheating, please feel free to ask.

## ACADEMIC INTEGRITY

Your commitment as a student to learning is evidenced by your enrollment at Texas A &M University-Commerce. "All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See Student's Guide Handbook, Policies and Procedure, Conduct). All phones, pagers, and other communication devices are to be turned off or place on silent mode during class. Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified.
Anyone cheating will receive a zero on the work they are doing, and subsequent cheating will result in a failing grade.

## STUDENTS WITH DISABILITIES

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities.  Among other things, this

legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities.  If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library, Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu

## BASIC TENETS OF COMMON DECENCY

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment."  (Student's Guide Handbook, Policies and Procedures, Conduct.)  This means that rude and/or disruptive behavior will not be tolerated.

## SMOKE, VAPOR & TOBACCO FREE ENVIRONMENT

University Procedure 34.05.99.R1 now prohibits the use of vapor/electronic cigarettes, smokeless tobacco, snuff and chewing tobacco inside and adjacent to any building owned, leased, or operated by A&M – Commerce.

## DISCLAIMER

This syllabus is meant to provide general guidance of what to expect from this course. The instructor reserves the right to make changes as appropriate based on the progress of the class. All changes made to this syllabus during the semester will be announced.  This document has been posted electronically. If you print a copy of it, please be sure to consult the last modified date of the online version to verify that your printed copy is current.

## SCHEDULE (TENTATIVE)

| WEEK | CONTENT | ASSIGNMENT | READING |
|---|---|---|---|
| **1** (8/31) | Course introduction and overview<br>Intro to computer networks (part 1) | | [KR] Ch1.1-1.3 |
| **2** (9/7) | Intro to computer networks (part 2)<br>- internet delay model, protocol layering, net security | | [KR] Ch1.4-1.6 |
| **3** (9/14) | Application layer (part 1)<br>- HTTP, FTP, SMTP | | [KR] Ch2.1-2.4 |
| **4** (9/21) | Application layer (part 2)<br>- DNS, P2P, socket programming | HW#1 out | [KR] Ch2.5-2.7 |
| **5** (9/28) | Transport layer (part 1)<br>- Services, UDP, reliable data transfer | | [KR] Ch3.1-3.4 |
| **6** (10/5) | Midterm Exam 1 | | |
| **7** (10/12) | Transport layer (part 2)<br>- TCP, Congestion management | | [KR] Ch3.5-3.7 |
| **8** (10/19) | Network layer (part 1)<br>- Datagram, router architecture, IP protocol | HW#2 out | [KR] Ch4.1-4.4 |
| **9** (10/26) | Network layer (part 2)<br>- Routing algorithms/protocols | | [KR] Ch4.5-4.6 |
| **10** (11/2) | Midterm Exam 2 | | |
| **11** (11/9) | Link layer (part 1)<br>- Services, error detection/correction | | [KR] Ch5.1-5.2 |
| **12** (11/16) | Link layer (part 2)<br>- Multiple access protocols | HW#3 out | [KR] Ch5.3 |
| **13** (11/23) | No class (Thanksgiving) | | |
| **14** (11/30) | Link layer (part 3)<br>- Switched LANs, VLANs<br>Wrap up | | [KR] Ch5.4 |
| **15** (12/7) | Final Exam (comprehensive) | | |