IS 450/650 -01/-03, UMBC
"Data Communications and Networks"
Spring 2017
TR 08:30/MW 14:30
ITE 233/Sherman 014

Instructor: Jeff Martens
Office: ITE 413 / UMBC Dept. of IS / Baltimore, MD 21250
E-mail: jmartens@umbc.edu
URL: https://userpages.umbc.edu/~jmartens/
Schedule: https://userpages.umbc.edu/~jmartens/sched.html
Office hours: by appointment, and

- Mondays and Wednesdays 16:00–18:00
- Tuesdays (and some Thursdays) 10:00–12:00
- Tuesdays and Thursdays 16:15–18:00

This semester *many* of my office hours will be preempted by meetings. For the correct times for a specific week, see the sign-up sheet outside my office.

The Text: Kurose and Ross *Computer Networking: a Top-Down Approach*, sixth edition[1].

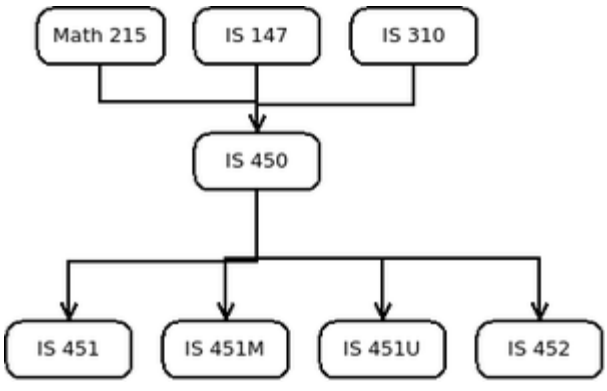
Course Objectives:

- To understand the issues involved in designing and building networks and systems using networks.
- To understand how information travels across networks and internetworks.
- To understand layered protocols and software—how they work and why they are used.

In this course the emphasis is very much upon engineering and scientific **principles**, and very much **not** on current technologies. In other words, we focus on learning with long-term value, not short-term.

Course Rationale:
Where does this course fit into the curriculum?

- This is the first in a series of networking courses, two of which are required for the BS in IS.
- Networking is fundamental to information systems in general; understanding it in some depth is most useful.
- This course lays a foundation for that understanding.



Catalog description:

> IS 450 Data Communications and Networks (Credits: 3) This is an introductory survey course in data communications and networking. It surveys basic theory and technology of computer networking. A single networking protocol stack is also covered in depth. **Prerequisites:** Completion of the IS B.S. gateway plus MATH 215 or 221.

Course Outline:
The course will cover the text approximately in order. Some sections will be skipped, and we may not cover the last chapters in depth.

Topic(s)	**Chapter/Sections**
Intro	1
Application Layer	2.1, 2.5, 2.6
Transport Layer	3.1–3.7
Network Layer	4.1, 4.2, 4.4–4.7
Link Layer	5–5.5, **5.7**
Wireless	6
Network Security	8.1–8.3, 8.5–8.9

Lecture notes and other materials will be on Blackboard, and there are supplementary materials at `https://userpages.umbc.edu/%7ejmartens/courses/is450/`

Important Dates:

- The **midterm**:
  - MW sections Monday March 27
  - TR sections Tuesday March 28
- The **final** examination:
  - MW sections Friday May 19 13:00–15:00
  - TR sections Thursday May 18 08:00–10:00

Reading the text and working exercises from the text are important. Keep up with the reading, doing each reading before it is discussed in class. Please feel free to send me comments and **questions** about the reading and class via e-mail, and to visit me during office hours.

Grades will be based upon the following.

- 39% on a closed-book, closed-notes final examination (36% for grad students). **No early or late final exams will be given.**
- 34% on a closed-book, closed-notes midterm (32% for grad students).

- 27% on a number of homework exercises (25% for grad students).

  Each homework assignment will clearly state the number of points that the assignment is worth. The homework average will be the sum of all of these points earned over the possible homework points. Homeworks will be due electronically at a specific time and date. Blackboard will then cut off submissions. Since there is always a chance that Blackboard's clock may differ from yours, or that Blackboard may experience difficulties, be sure to submit early. **NO late homeworks will be accepted.**

  Also, students are allowed, nay, encouraged to **work together** on the homeworks. Just be sure to **understand** the answers to all the questions.

- Additionally, students in IS 650 will submit a paper at the end of the semester which will be worth 7% of the total grade.

Academic Integrity:
Each student should read and consider the following message from the Provost, which can also be found at `https://www.umbc.edu/undergrad_ed/ai/`:

> "By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, the Faculty Handbook, or the UMBC Policies section of the UMBC Directory."

During Tests and Quizzes
Clear off your desk, no talking once I begin distributing the test, no cell phones, and no texting. **All** work on any test or quiz **must** be your own—no looking at other students' test forms and no other communication with other students, or anyone else other than the instructor. If a cell phone rings or I see anyone even look at a cell phone, it is **mine** until after the test—or longer if there's test-related information on it, forcing me to turn the cell over to the **Academic Conduct Committee**. Any communications among students once the test is distributed may be interpreted as cheating.

Use the **restroom** before the test. **Wandering in and out** of the classroom is **unacceptable** during either a test or a lecture. If you have a problem that requires that you leave the room during a test, please see Student Disability Services and get it excused well before the test.

Electronic Devices: Some students use **laptop computers** to take notes. This is acceptable as long as it does not become a distraction to the instructor or to other students. In general, do not use any electronic device for **SMS**, **e-mail**, **web surfing**, or the like while in class. A student who acts as if he or she does not want to be in the class may be asked to leave.

No **cell phones** ringing or other audible alerts.

No electronic devices other than calculators will be allowed during **tests**. Cell phone **screens** must not be visible during a test. If a cell screen is visible, I will flip it over so it is not; I may also look carefully at the screen before flipping it over.

Attendance is very important. As Woody Allen observed, *Eighty percent of success is showing up.* Absences often result in lower grades. If you are not able to come to class, contact me. Remember that absence from class does not excuse one from assigned work, and students who miss class should obtain class notes from other students, not from the instructor.

Inclement Weather:

- Any work due or test scheduled on a class date that has been canceled due to inclement weather will be due the next class meeting.
- Be familiar with the UMBC Inclement Weather/Emergence Policy: `http://www.umbc.edu/facultystaff/inclementweather.html`.
- If class is canceled, watch Blackboard for possible additional readings and alternate graded materials to make up for missed class periods.

Student Disability Services: UMBC is committed to eliminating discriminatory obstacles that disadvantage students based on disability. Student Support Services (SDS) is the UMBC department designated to receive and maintain confidential files of disability-related documentation, certify eligibility for services, determine reasonable accommodations, develop with each student plans for the provision of such accommodations, and serve as a liaison between faculty members and students regarding disability-related issues. If you have a disability and want to request accommodations, contact SDS in the Math/Psych Bldg., room 213 or at 410-455-2459. SDS will require you to provide appropriate documentation of disability. If you require accommodations for this class, make an appointment to meet with me to discuss your SDS-approved accommodations.

Incompletes: a grade of incomplete (I) *may* be considered only if most of the course is completed satisfactorily. In particular, students anticipating an incomplete before the withdrawal deadline, regardless of the reason, should withdraw from the course. A student with an average below 70% is not performing satisfactorily, and so will not be granted an incomplete.

Recycling: Note that recycling is available throughout campus, usually immediately outside each classroom. Use it.

References

[1] James F. Kurose and Keith W. Ross. *Computer Networking: a Top-Down Approach Featuring the Internet*. Pearson, Upper Saddle River, NJ, sixth edition, 2013.