Course Information

1 Who's Who in Tcom 370 ...

Instructor: Santosh S. Venkatesh
Contact: 362 Moore (GRW), 898-9493, venkat.esh@ee.upenn.edu
Office Hours: Wednesdays and Fridays 1:00 pm - 2:00 pm, or by appointment

TA: Tom Weber
Contact: Room 403, Hollenback Center, 3000 South Street
Directions: http://pobox.upenn.edu/~nrotc/location.html
Phone: 898-7436, Email: tweber@pobox.upenn.edu
Office Hours: Tuesdays and Thursdays 9:30 am - 10:30 am

Secretary: Drucilla Spanner
Contact: 363 Moore (GRW), 898-6823, spanner@ee.upenn.edu

2 ... and What's What in Tcom 370

This course covers the basics of digital communications over computer and telephone networks. The course progression will be taken more or less sequentially from the following “menu.” The instructor does not guarantee that all topics will be covered or that new topics will not be added!

Introduction to communication architectures, interplay between computation and communication; the currency of communications—from bits to messages—; services, protocols, and hierarchical layering; OSI and TCP/IP communication architectures.

Physical layer of communications, physical media; signals; Fourier representations and bandwidth; capacity; modems; data transmission schemes.

Link layer of communications, error detection and correction; data compression; ARQ protocols; synchronization and framing; HDLC protocol.

Medium access control sublayer, broadcast channels; local area networks; ALOHA protocol; ethernet.

3 Lectures

Lectures will be held in Moore 23 on Tuesdays and Thursdays from 1:30 pm to 3:00 pm.

4 Recitations

Optional (but highly recommended) recitations will be held in Moore 23 on Mondays from 6:00 pm to 7:00 pm. The recitations will be conducted by Tom Weber.

5 Prerequisites

A solid foundation in trigonometry and basic integral and differential calculus is required. Students will be expected to be able to do standard integration and differentiation and to be able to manipulate trigonometric functions. In addition, some elementary concepts from probability theory will be used and Sys 301, or equivalent, is a corequisite.
6 Textbook and References

The following text by Stallings is required.


While most of the topics encountered in the course are covered in the text, the course progression will not linearly follow the order in the textbook; in addition, some topics will be covered in greater detail than in the text while a few course excursions will also touch on topics not covered in the text. The student will find lecture attendance (or, at very least, access to a good set of lecture notes) to be of importance. There are many other texts which may be consulted with advantage. Two such with slightly different emphases from the course textbook are listed below.


7 Grading

The cumulative grade will be decided based upon performance in assigned homework, two in-class quizzes, a midterm examination, and a final examination. The distribution of credit is as follows:

- Homework problem sets: 10%
- Two in-class quizzes: 20%
- Midterm examination: 30%
- Final examination: 40%

8 Homework

The assigned homework will consist of reading and problem sets usually drawn from the course textbook. The homework is essential to a proper understanding of the course material and success in the examinations is problematic in the absence of sustained effort at solving the homework problems throughout the semester; in particular, a belated effort to go through the problem solutions on the eve of an examination is unlikely to yield success. While selected problems will be covered in class and in the recitations and solutions made available, it is the student's responsibility to ensure that he or she thoroughly understands each problem set.

8.1 Collaboration and Reference Policy

Collaboration on homework in study groups is encouraged. While such collaboration in the sense of discussions is allowed, students must write up the final solutions of the homework problems alone and not simply copy the material from another source. All collaborators must be clearly and explicitly acknowledged in the first page of the
submitted homework. Acknowledged collaboration will have no effect on the received grade but is demanded by intellectual probity. Unacknowledged collaboration is theft.

No outside reference material is permitted; in particular, handouts, solutions, and course notes from previous incarnations of this course are expressly forbidden. Anti-intellectual behaviour such as plagiarism will be regarded most severely. This has no place in a community of scholars and students are expected, nay constrained, by the honour system to comport themselves with the utmost integrity.

8.2 Late Policy

Problem sets will typically be assigned on Thursdays and should be handed in at the course secretary’s office (Moore 363) before 12:00 noon of the day they are due (a week from assignment). Late submissions will not be accepted.

9 Quizzes and Examinations

The two in-class quizzes will be of 30 minute durations apiece. The midterm examination will be in-class of 80 minutes duration. The final examination will be of 120 minutes duration. All quizzes and examinations will be closed-book and cumulative unless indicated otherwise in class.

Missed examinations or quizzes will not be allowed to be retaken except when University of Pennsylvania guidelines are met for cases of illness or emergency. Under such officially sanctioned circumstances, a missed examination or quiz may, at the instructor’s discretion, be replaced by an oral examination.

9.1 Quiz and Examination Schedule

These are tentative and subject to change.

- Final examination: Between May 4 and May 12. To be announced.

10 Newsgroup

Discussion on course material is encouraged both in class and in a hyperlink newsgroup on the course web page http://www.seas.upenn.edu/~tcom370. All registered students in the class will have automatic access to the newsgroup through the class web page. Send mail to cets@seas.upenn.edu if you have access problems.

All class-related questions should be posted in the class newsgroup and not emailed directly to the instructor or TA. Students are encouraged to jump in with responses to posted questions. The newsgroup will be scanned by the TA and instructor and responses posted to unanswered queries on Mondays, Wednesdays, and Fridays.