CS 428/528: Computer Networks
Spring 2017

Overview

Instructor:	Dr. Yao Liu yaoliu@binghamton.edu (preferred means of communication) 607-777-4365 Q08, Engineering Building
Class Meeting:	Tuesdays and Thursdays 2:50pm – 4:15pm SW 112
Office Hours:	Tuesdays, Thursdays 1:30pm – 2:30pm
Recommended Textbooks:	*Larry L. Peterson and Bruce S. Davie*, **Computer Networks: A Systems Approach**, *Morgan Kaufmann; 5th edition; 2011* *James F. Kurose and Keith W. Ross*, **Computer Networking: A Top-Down Approach**, *Pearson; 6th edition; 2012*
Teaching Assistant:	Chao Zhou (czhou5@binghamton.edu)
TA Office Hour:	Mondays and Thursdays 12:00pm – 1:00pm
TA Office:	G25, Engineering Building

This course provides students with data communications fundamentals and computer networking methods using the OSI 7-layer reference model to organize the study. Topics to be covered include, but not limited to, physical communications, MAC protocols, data link protocols, inter- and intra-domain routing, the TCP/IP protocol suite, transport protocols, and application layer protocols. Advanced topics, such as Internet content delivery, overlay networks, and network security, will also be covered. Students will also gain hands-on programming experience using socket programming in the course projects.

Prerequisites

CS350 Operating Systems.
Working knowledge of the Linux environment.
Programming ability in C.

Tentative Schedule

Lecture	Topic
Lecture 1	Introduction
Lecture 2	Flow/error control
Lecture 3	Media access control
Lecture 4	Internetworking
Lecture 5	Routing
Lecture 6	TCP/UDP protocols
Lecture 7	Network applications
Lecture 8	Network security

Note the schedule is tentative and subject to change with advanced announcements in the class. Likely, more lectures covering materials beyond the book will be added depending on the progress.

Grading

The course will be graded according to the following proportions.

Item	Percentage
Class Participation	5%
Homework Assignments	20%
Programming Projects	20%
Group Presentation	5%
Midterm Exam	20%
Final Exam	30%

Undergraduate and graduate students will be graded separately. The final letter grading is relative to the rest of the class, but cutoffs will not be higher than: $A :\geq 92$, A^- : $[90, 92)$, B^+ : $[88, 90)$, B : $[82, 88)$, B^- : $[80, 82)$, C^+ : $[78, 80)$, C : $[72, 78)$, C^- : $[70, 72)$, D : $[60, 70)$, $F :< 60$.

Class Participation: Class participation will be graded based on attendance and how actively a student participates in class discussions. Each student can have up to 2 un-excused absence. Students with legitimate reasons may be excused with prior consent from the instructor. Please inform the instructor of any expected absence in advance.

Homework Assignments: There will be 4 – 5 homework assignments. To reduce errors in grading, homework must be typewritten and submitted to myCourses. Hand-written submission will not be graded. Homework is usually due in one week. Late homework will not be accepted. All homework must be individual work. Disputes to any grading must be resolved with the TA or the instructor within one week after the score is released to the students.

Programming Projects: Students will work on 2 programming projects. All projects are in the C programming language. Students must work individually on the project. Late projects will be accepted up to one day after the deadline with a penalty of 10% of the project. Students with legitimate excuses should contact the instructor before the deadline and submit appropriate document to be exempted from this rule. Disputes to any grading must be resolved with the TA or the instructor within one week after the score is released to the students.

Group Presentation: Towards the end of semester, students will form groups and present research papers in the field of computer networking. Each group can have 2 or 3 students. Grade will be based on the quality of slides, if the presentation is well-organized, clarity of the presentation, and if the presenters were able to properly answer questions about the topic.

Midterm & Final: The midterm exam is (tentatively) scheduled on March 14, 2017. The final exam will be scheduled during the university's final exam week. The final exam is cumulative. There will be review sessions before both exams. Both the midterm and final exams will be closed book. However, each student will be allowed to bring one-page cheat sheet (US-letter paper, single-sided) to the exams. Note that at exam time, any cheat sheet that does not the conform to the guidelines can be rejected by the instructor. No early exams will be given. Students with legitimate and verified excuses should contact the instructor before the exam date to arrange a makeup exam.

Academic Honor Policy

Students are required to strictly follow the rules and guidelines laid out in the Binghamton University Academic Honesty Policy and the Watson School Student Academic Honesty Code. Students are prohibited from collaborating on assignments and/or projects, or seeking answers or help from the Internet. Anything submitted as a homework or project must be the student's original work. Any violation of the honor code will result in referral to the honor committee with a recommendation that the student be awarded an F for the class.