IC322 Computer Networks

Course Policy, FALL AY20

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Course Description: The course presents the fundamental theoretical concepts, characteristics and principles of computer communications and computer networks, and analyzes and assesses these foundational concepts with respect to network performance and network design. These concepts and principles will be applied in weekly hands-on laboratories.

Credits: 2-2-3

Learning Objectives:

1. Evaluate the operation and performance of practical computer-network protocols for communications.
2. Understand fundamentals of network communications include routing, congestion control techniques, internet-working, addressing, connection establishment, and reliable transport.
3. Understand and develop client-server applications for communicating across a network.
4. Use modern tools to analyze network traffic.
5. Understand the legal and moral issues associated with network communications and the world-wide effects of illicit hacking. (Supports General Student Outcome (4))
6. Evaluate the level of security of a network, and understand how to further secure it.
7. Understand the principles of wireless networks and underlying electromagnetic spectrum technology.

Student Outcomes:

4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

Textbook(s):
Required:
Computer Networking, A Top-Down Approach, Jim Kurose and Keith Ross, 7th Edition, 2017 (5th, or 6th Ed. ok)

Optional:
Wireshark Network Analysis, Laura Chappell, 2nd Edition, 2012
TCP/IP Guide, Charles M. Kozierok, 1st Edition, 2005

Reading Checks: There will be reading assignments daily for this course. It is highly recommended you buy a physical copy of the text book. Daily reading checks will be given at the start of each class. Your reading check average will be applied as extra credit towards exams at 6W, 12W and the final exam.

Extra Instruction: Extra instruction (EI) is strongly encouraged and should be scheduled by email (or EI calendar) with the instructor. EI is not a substitute lecture; students should come prepared with specific

questions or problems.

Collaboration: The guidance in the Honor Concept of the Brigade of Midshipmen and the Computer Science Department Honor Policy must be followed at all times. See `www.usna.edu/CS/resources/honor.php`. Specific instructions for this course:

- Homework and Labs: Collaborative conversations with regard to syntax and strategies for accomplishing labs and "routine" out-of-class programming assignments is allowed **with the exception of projects**. However, design and implementation must be the work of the individual student handing in the final product. Thus, the actual pencil-to-paper or fingers-to-keyboard work must be your own. Copying a file or parts of a file from anyone is *strictly* prohibited. All assistance and collaboration must be documented, and Midshipmen must clearly state on their assignment who they collaborated with. Note: Although you may collaborate with other students for IC322 labs, other courses in the department will treat them differently, so ensure you read the course policy for your other courses before assuming they also allow laboratory collaboration.
- Projects: All projects *must* be submitted in order to pass this class. You must do your own work in designing, implementing, and testing your projects without assistance from anyone except for your instructor or, if properly documented, the other IC322 instructors for this semester. The Department Policy Concerning Programming Projects provides detailed guidance.
- Quizzes and Exams: All written exams will be closed book. Practicum exams will be given during a lab period. You may only use your paper-based notes, the official class notes from the web, or your textbook for the practicum. On all exams, quizzes, and practicums you may not receive assistance from any source.

Any cheating will result in, at a minimum, a zero for the assignment, quiz, or exam in question. All collaboration and outside sources should always be cited. The same rules apply for giving and receiving assistance. If you are unsure whether a certain kind of assistance or collaboration is permitted, you should assume it is not, work individually, and seek clarification from your instructor.

Classroom Conduct: Specific preferences and guidance for day-to-day classroom instruction will be provided by each instructor. If the instructor is late more than 5 minutes, the section leader will keep the class in place and report to the Computer Science department office. If the instructor is absent, the section leader will direct the class. Drinks are permitted, but they must be in re-closable containers. Food, alcohol, smoking, smokeless tobacco products, and electronic cigarettes are all prohibited. Cell phones must be silent during class.

Late Policy: Penalties for late submission of graded work may vary among courses or from semester to semester, but they will be the same for all sections of a given course. For *this* course:

- Each student will receive two *grace cards* for the semester. They may be used to extend a due date for an assignment 24 hours without deduction. They can be used on homework, labs and projects. They can be combined for a single 48 hour extension.
- Any assignment that is turned in late, but by the start of the next class meeting after it was due, will incur a 20 percent deduction after grading. Any assignment submitted later than this will receive no credit.
- All items (homework, labs, and projects) must be submitted to pass this course; if you are providing the assignment after the answers have been published, the work cannot be a copy of the online answers and must be your own.

Grading:

	6 weeks	12 weeks	16 weeks	Final
HW & Quizzes	25%	20%	20%	20%
Labs	25%	20%	15%	15%
Project 1		10%	5%	5%
Project 2			10%	10%
Exam (6wk)	50%	25%	25%	15%
Exam (12wk)		25%	25%	15%
Exam (Final)				20%