COURSE CALENDAR DESCRIPTION

Introduces the basics of communications and networking. Topics include transmission media; fundamental limits; protocols and hierarchies; the OSI model; encoding of data as signals; error and flow control; medium access; routing; internetworking; transport services; high-level applications. Prerequisites: cumulative GPA of 4.50 or better over all major EECS courses (without second digit "5"); LE/EECS 2030 3.00 or LE/EECS 1030 3.00; SC/MATH 1310 3.00. Previously offered as: LE/CSE 3213 3.00. PRIOR TO SUMMER 2013: SC/CSE 3213 3.00.

INSTRUCTOR(S)

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<th>Name</th>
<th>Section / Format / Term</th>
<th>Contact Email</th>
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<td>Wang, Ping</td>
<td>Sec. E / LECT / F</td>
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ADDITIONAL INFORMATION

TOPICS AND CONCEPTS

This course is an introduction to communications and networking. Topics covered include the distinction between information and data, between signal and data, between symbol and data, and between analogue and digital data; fundamental limits due to Shannon and Nyquist; protocol hierarchies; the OSI model; encoding of analogue/digital data; data link protocols; error and flow control; medium access; Ethernet; routing of packets in networks; transport services and protocols; high-level applications and their protocols.

SCHEDULE OF TOPICS

Week 1 Module 1: Introduction
Week 2 Module 2: Layered Architectures
Week 3 Module 3: Physical Layer Fundamentals
Week 4 Module 3: Physical Layer Fundamentals
Week 5 Module 4: Physical Layer Fundamentals
Week 6 Module 4: Date Linker Layer Fundamentals
Week 7 Module 4: Date Linker Layer Fundamentals
Week 8 Module 4: Date Linker Layer Fundamentals
Week 9 Module 4: Network Layer Fundamentals
Week 10 Module 5: Network Layer Fundamentals
Week 11 Module 5: Transportation Layer Fundamentals
Week 12 Module 7: Upper Layers

Depending on the flow of the course, the topics to be covered may be subject to minor change.
COURSE LEARNING OUTCOMES
1. Explain network architectures in terms of the open systems interconnect (OSI) model and the role of each layer in the model.
2. Classify networks in terms of topology, channelization, and routing characteristics.
3. Explain and calculate physical communication limits imposed by wired and wireless channels in terms of delay, noise, and capacity.
4. Explain and quantify means of signal representation for digital communication and describe communication system arrangements for forward and backward error control.
5. Describe and analyse channelization strategies and medium access control techniques.
6. Explain routing strategies through switched networks

SUGGESTED TEXTBOOKS

EVALUATION SCHEME
Quizzes /Assignments - 20%
Midterm Examinations - 30%
Final Examination - 50%
Note: Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles.

ASSIGNMENT SUBMISSION
Proper academic performance depends on students doing their work not only well, but on time. Accordingly, assignments for this course must be received on the due date specified for the assignment. Assignments may be hand written, however all those that are intelligible/messy may be at the professor’s or Teaching Assistant’s discretion be given a score of zero. Assignments are to be handed in during lectures, tutorials, or through the course Moodle site as specified by the respective instructions.

LATENESS PENALTY
All students are expected to complete their coursework (assignments etc) in a timely fashion. All late assignments reports should be given to the instructor. Late assignments etc. will be subject to a reduced grade of 20% of the maximum grade per day late (where weekends will also count as two days). A mark of zero will be applied if the assignment is submitted after the solutions have been posted.

MISSED TESTS
Students who miss the quizzes or mid-term examination (or leave the examination), due to documented illness, or miss the quizzes or mid-term examination due to prior arrangement as documented with approval as legitimate from the Course Instructor, the weight will be added to their final exam. Otherwise, the mark will be zero. There will be no alternative dates scheduled to make up the quizzes or midterm. If a student leaves the midterm examination after 25 minutes, the midterm will be graded and that mark will be applied. Absence to quizzes or midterm(s) must be accompanied by a formal and valid explanation within 24 hours of said absence. In addition to university policies on granting a deferral final exam, the granting of a deferral final exam also requires that the student has performed satisfactorily in the course according to the evaluation scheme established in this Course outline, excluding the final examination for which deferral privileges are requested.

CLASSROOM ETIQUETTE
Photography, movie making, or voice recording during class by any means is not permitted without my or the TAs permission. If you are late use a seat on the outside of the class room, the professor will ask you to leave if you cause a disruption coming in late. The use of electronic devices (smart-phones, tablets, etc.) during lectures and tutorials is only permitted for education purposes.

NETiquette
In all online communications (e.g., email, online discussion, or other forms of online communications), please consider the guidelines from the Core Rules of Netiquette by Virginia Shea (http://www.albion.com/netiquette/corerules.html). Sometimes, online behaviour can appear to be inappropriate or disrespectful that it requires attention and follow up. In this case, please make sure you let your instructor know immediately so that the right resources can be identified to help.

GENERAL POLICIES
• Marked course work/tests will be returned only during class. If you miss picking up the material during one class it will be made available to you in the next two classes.
• All appeals of marks for quizzes/assignments, and mid-term exam must be made within one week from the day of posting of results and submitted to the appropriate TA (for assignments) or to the instructor (for mid-terms).
• All course mark appeals will be addressed via email as it allows time for reflection and documentation. Appeals will not be done by in-person-meeting.
• The final examination is for evaluation purposes only, and the paper will not be returned or made available to students after it is marked. Each exam is checked three times for accuracy.

REMINDERS
• All students are expected to familiarize themselves with the following information:
  • General information (http://calendars.registrar.yorku.ca/2013-2014/policies/index.htm)
  • Senate policy on academic honesty and the academic integrity website (http://www.yorku.ca/secretariat/policies/document.php?document=69) and (http://www.yorku.ca/tutorial/academic_integrity/)
  • Ethics review process for research involving human participants (http://www.yorku.ca/research/support/ethics/)
  • Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities (http://www.yorku.ca/secretariat/policies/document.php?document=68)
• Additional resources related to add/drop courses, student life, academic resources, campus services, …etc. can be found at this link: http://www.yorku.ca/yorkweb/cs.htm

COPY-RIGHT
Lectures and course materials, including power point presentations, outlines, and similar materials, are protected by copyright. The instructor is the exclusive owner of copyright and intellectual property in the course materials. You may take notes and make copies of course materials for your own educational use. You may not and may not allow others to reproduce or distribute lecture notes and course materials publicly for commercial and non-commercial purposes without my express written consent. If it can be shown that these terms were violated by you, your grade can be changed to an F even after the course is completed.

ACADEMIC INTEGRITY LINKS
• Senate Policy on Academic Honesty - http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/
• Academic Integrity - http://lassonde.yorku.ca/academic-integrity

STUDENT LINKS
• Student Rights and Responsibilities - http://oscr.students.uit.yorku.ca/student-conduct
• Religious Observance - https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/wa/regobs
• Academic Accommodation for Students with Disabilities - http://secretariat-policies.info.yorku.ca/policies/academic-accommodation-for-students-with-disabilities-policy/
• Student Accessibility Services (SAS) - https://accessibility.students.yorku.ca/
• York University’s Policies on Sexual Violence - http://secretariat-policies.info.yorku.ca/policies/sexual-violence-policy-on/
• York University’s Policies on Gender/LGBTQ*/Positive Space - http://rights.info.yorku.ca/lgbtq/

LAND ACKNOWLEDGEMENT
• We acknowledge our presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, the Huron-Wendat, and the Métis. It is now home to many Indigenous Peoples. We acknowledge the current treaty holders, the Mississaugas of the New Credit First Nation. This territory is subject of the Dish With One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region.
• The Indigenous Framework for York University: A Guide to Action can be found here: http://indigenous.info.yorku.ca/
• Meaning of a land acknowledgement: http://healthydebate.ca/opinions/indigenous-land-acknowledgements

Many courses utilize Moodle, York University’s course website system. If your course is using Moodle, click here to access it.

Moodle @ York University