

Title: CS436: Distributed Computer Systems
Offering: Winter 2011

WWW: http://bit.ly/uw_446-11 [The web page will be periodically updated]
Twitter: @cs436 (<http://twitter.com/cs436>) [Important updates broadcast here]

Lectures: Tuesday & Thursday 0830 - 0950 MC 4064

Instructor: Dr. Reid Holmes; DC 3351. Office hours by appointment. rth.cs436@gmail.com
TAs: Ali Abedi; DC 3549. Office hours by appointment. a2abedi@cs.uwaterloo.ca

Course objective:

This course provides a systems-oriented view of communication technology focusing on essential functionality and performance. Students learn to understand basic networking and distributed systems mechanisms. After this course, students should be able to assess technology alternatives and understand their impact on IT infrastructure and applications. We will also investigate several current widely-deployed distributed systems.

Course expectations:

It is expected that students attend lecture and complete the required assignments. Some lectures will include hands-on activities; participation in these exercises is essential to succeed in the class. Slides will be provided via the course web page; these will be password protected. Any material discussed in class or in the required readings will be examinable unless otherwise noted.

Textbooks:

James F. Kurose and Keith W. Ross. Computer Networking: A Top-Down Approach, 5th edition.
Andrew S. Tanenbaum and Maarten Van Steen. Distributed Systems: Principles and Paradigms. 2nd edition.

Required readings: Posted online.

Required readings: There will be three assignments. The last two will predominantly consist of creating and validating your own software. Assignments can be completed individually or in teams of two. Any individual portion of an assignment **must** be completed individually without collaboration of any kind. We may apply MOSS to compare all handed-in assignments to each other and to past years to check for undocumented collaboration. The assignments will be similar to those in past years (links provided on course web page), you are **strongly** encouraged to read those past assignments to familiarize yourself with the amount of coding they require.

Overview of topics:

- The network protocol stack
- Application, Transport, Network, Link, and Physical layers
- HTTP, SMTP, and DNS
- Sockets (TCP and UDP)
- Switching, circuits, ethernet networks, wireless networks
- Security
- Cloud computing, deployed distributed systems

Course schedule / assessment:

Pre-course survey	Jan 4 - in class	Pass/Fail
First assignment	Jan 27 @ 0800	10%
Second assignment	Feb 24 @ 0800	10%
Mid-Term	March 3 - in class	20%
Third assignment	Mar 31 @ 0800	10%
Post-course survey	Mar 31 - in class	Pass/Fail
Final exam	April 8 - 21 (Date TBD)	50%

You **must** pass the final exam **and** all pass/fail assignments to pass the course. Marked assignments and the midterm will be returned in class.

Late policy: No late work will be accepted without *prior* discussion and documentation.

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check www.uwaterloo.ca/academicintegrity/ for more information.]

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please be certain to contact the department's administrative assistant who will provide further assistance. Discipline: A student is expected to know what constitutes academic integrity [check www.uwaterloo.ca/academicintegrity/] to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, www.adm.uwaterloo.ca/infosec/Policies/policy71.htm. For typical penalties check Guidelines for the Assessment of Penalties, www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm.

Appeals: A decision made or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition) or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm.

Note for Students with Disabilities: The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.