Syllabus for CPSC 465/565

Spring 2016

Instructor: James Aspnes

Description

Models of asynchronous distributed computing systems. Fundamental concepts of concurrency and synchronization, communication, reliability, topological and geometric constraints, time and space complexity, and distributed algorithms.

Meeting times

Lectures are MW 14:30–15:45 in [[[**To be announced.**]]].

On-line course information

The lecture schedule, course notes, and all assignments can be found in a single gigantic PDF file at http://www.cs.yale.edu/homes/aspnes/classes/465/notes.pdf. You should probably bookmark this file, as it will be updated frequently.

Staff

The instructor for the course is James Aspnes. Office: AKW 401. Email: james.aspnes@gmail.com. URL: http://www.cs.yale.edu/homes/aspnes/.

The undergraduate learning assistants for the course are [[[**To be announced.**]]].

Office hours can be found in the course calendar at Google Calendar, which can also be reached through James Aspnes's web page.

Textbook

Hagit Attiya and Jennifer Welch, *Distributed Computing: Fundamentals, Simulations, and Advanced Topics*, second edition. Wiley, 2004. QA76.9.D5 A75X 2004 (LC). ISBN 0471453242.

On-line version: http://dx.doi.org/10.1002/0471478210. (This may not work outside Yale.)

Errata: http://www.cs.technion.ac.il/~hagit/DC/2nd-errata.html.

Reserved books at Bass Library

Nancy A. Lynch, *Distributed Algorithms*. Morgan Kaufmann, 1996. ISBN 1558603484. QA76.9 D5 L963X 1996 (LC). Definitive textbook on formal analysis of distributed systems.

Ajay D. Kshemkalyani and Mukesh Singhal. *Distributed Computing: Principles, Algorithms, and Systems*. Cambridge University Press, 2008. QA76.9.D5 K74 2008 (LC). ISBN 9780521876346. A practical manual of algorithms with an emphasis on message-passing models.

Course requirements

If you are taking this as CPSC 465: Six homework assignments (60% of the semester grade) plus a final exam (40%).

If you are taking this as CPSC 565: Six homework assignments (48% of the semester grade), a presentation (12%) and a final exam (40%).

Each presentation will be a short description of the main results in a relevant paper chosen in consultation with the instructor, and will be done in front of the class during one of the last few lecture slots. If numbers and time permit, it may be possible to negotiate doing a presentation even if you are taking this as CPSC 465.

Use of outside help

Students are free to discuss homework problems and course material with each other, and to consult with the instructor or a TF. Solutions handed in, however, should be the student's own work. If a student benefits substantially from hints or solutions received from fellow students or from outside sources, then the student should hand in their solution but acknowledge the outside sources, and we will apportion credit accordingly. Using outside resources in solving a problem is acceptable but plagiarism is not.

Questions and comments

Please feel free to send questions or comments on the class or anything connected to it to the instructor at james.aspnes@gmail.com.

For questions about assignments, you may be able to get a faster response using Piazza, at http://piazza.com/yale/fall2017/cpsc465. Note that questions you ask there are visible to other students if not specifically marked private, so be careful about broadcasting your draft solutions.

Late assignments

Late assignments will not be accepted without a Dean's Excuse.

Academic integrity statement

The graduate school asks that the following statement be included in all graduate course syllabi:

> Academic integrity is a core institutional value at Yale. It means, among other things, truth in presentation, diligence and precision in citing works and ideas we have used, and acknowledging our collaborations with others. In view of our commitment to maintaining the highest standards of academic integrity, the Graduate School Code of Conduct specifically prohibits the following forms of behavior: cheating on examinations, problem sets and all other forms of assessment; falsification and/or fabrication of data; plagiarism, that is, the failure in a dissertation, essay or other written exercise to acknowledge ideas, research, or language taken from others; and multiple submission of the same work without obtaining explicit written permission from both instructors before the material is submitted. Students found guilty of violations of academic integrity are subject to one or more of the following penalties: written reprimand, probation, suspension (noted on a student's transcript) or dismissal (noted on a student's transcript).