Administrivia

CS 4410: Operating Systems  
Spring 2024  
Professor Robbert van Renesse

[R. Agarwal, L. Alvisi, A. Bracy, M. George,  
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Inclusion

• We strive to make CS4410 a welcoming, safe, equitable, and respectful environment, consistent with Cornell's commitments
• We recognize that the society we live in is none of those things, that we have implicit biases, and that we have to work hard every day to counter those biases to create an inclusive environment
• If you witness a bias incident or have been the victim of one, please file a confidential report with Cornell
• If you have any suggestions such as improvements to the web site, syllabi, slides, homework and exam questions, and so on, you can email cs4410-prof@cornell.edu.
# Emotional Help

<table>
<thead>
<tr>
<th>Cornell Health</th>
<th><a href="https://health.cornell.edu/services/mental-health-care">https://health.cornell.edu/services/mental-health-care</a></th>
<th>Cornell University Health Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Disability Services</td>
<td>sds.cornell.edu</td>
<td>Ensures that all aspects of student life are accessible, equitable, and inclusive of those with disabilities. Send accommodation letters to Veronica VanCleave-Seeley (vv48, Gates 401) by Sep 15.</td>
</tr>
</tbody>
</table>

Get help. Get documentation. The earlier the better. Also, please look out for each other
How this class is organized

- Who’s Who
- Before you take this class…
- Communication
  - Lectures, OHs, FAQ, etc.
  - Getting Help
- Homework, exams
About RVR

• Ph.D. C.S., Vrije Universiteit Amsterdam
  • Amoeba Distributed Operating System
• Industry: Research Scientist @ AT&T Bell Labs
  • Unix, Plan 9
• Serial entrepreneur
  • Reliable Network Solutions (IP → Amazon)
  • D.A.G. Labs (acquired by FAST, then by Microsoft)
  • Exostellar (ongoing)

**Interests:** scalable and fault tolerant distributed systems

**Non-geek:** musician (trad. jazz), swing dance, unicycling
Who are the TAs?

Aaron Ye
Abhijeet Saha
Andrew Cheng
Barry Wang
Cameron Goddard
Christy Song
Elise Song
Emily Zhang
Jacqueline Wen
Jessica Ip
Jorge Tapias Gomez
Joseph Ugarte
Lisa Li

Marta Liang
Michael Wei
Nikita Kasumov
Peter Huo
Rohit Valiveti
Sanjit Basker
Seth Norman
Shreehari Srinivasan
Stanley Jiang
Stephanie Lu
Steven Long
Tucker Stanley
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Prerequisites

• CS 3410, CS 3420 or equivalent required

Otherwise: you must contact an instructor, explain your situation and request permission
Course Content

Five Components

1. Lectures
2. Reading
3. Homework Assignments
4. Programming Assignments
5. Exams

You are expected to keep up with all four
Draft Syllabus

- Introduction
- Architectural Support for OSs
- Processes and Threads
- Synchronization
- Scheduling
- Memory Management
- File systems
- Networking (local only)
- Security
Required Textbook

OPERATING SYSTEMS
THREE EASY PIECES

REMZI H. ARPACI-DUSSEAU
ANDREA C. ARPACI-DUSSEAU
UNIVERSITY OF WISCONSIN–MADISON

• Free online
• Buy a PDF or a printed version
Also: RVR’s book

Concurrent Programming with Harmony

Robbert van Renesse
Cornell University

• Free online
• Free PDF download, or read online
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- Homework, exams
- Grades & Policies
Communications

- Web page
- Lectures
- Ed Discussion
- Office Hours
- CMSX
Course Web Page

http://www.cs.cornell.edu/courses/cs4410/

• Schedule, exam & due dates
• First homework assignment posted on web page
• Homework release and due dates
• Slides posted before each lecture

Let’s have a look around at the web site
CMSX

https://cmsx.cs.cornell.edu

- Assignments
- Grades & Regrades
Lectures

• Tues/Thurs 10:10-11:25pm, live
• No recording
Office Hours

• Slots will be posted online
• *Starts next week*
• Evenings/weekends probably on Zoom
Ed Discussion

• Anonymous to other students, but not anonymous to us
• Ask anything you want, but do not share code unless posted privately to staff
• Provide peer-to-peer help
  • Each student should feel safe, welcome, respected
  • Respect diverse talents and ways of learning
Email

cs4410-staff@cornell.edu: time sensitive matters
• Goes to professors & TAs

cs4410-prof@cornell.edu: sensitive matters
• Goes to RVR only

Please no emails to personal email accounts
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Homework

• Assigned approx. once every other week
• Individualized, fillable PDFs
  • (slight) randomization of problem parameters, multiple choice questions, etc.
  • Fully auto-graded (no TAs involved)
  • Regrade requests due within a week
• 2 slip days / assignment
• Max. 6 slip days total
• Your “worst” homework is dropped
  • this does not apply to programming assignments
Homework 1 due Saturday!

• Posted on CMSX and on course web site
• Must be submitted on CMSX
  • request an account (but not today)
  • however, having an account on CMSX does not mean you’ve been enrolled
Programming Assignments

• three different concurrent programming assignments
• work in groups of 2 or 3 students, or do it by yourself if you prefer
Group Code of Conduct

- Each student should feel safe, welcome, respected
- *Participate, but don’t dominate*
- Be patient
- Respect diverse talents and ways of learning
- Fight your implicit biases

A well-run team benefits *all* participants
Academic Integrity & Honor Code

All submitted code must be your own
• Different groups are not allowed to share code
• OK to discuss concepts with any other students

Violations will be prosecuted
Exams

- 2 prelims (March 12, April 23), 1 final (mid May)
  - make-up and exam are back-to-back
    - no other make-up exams
  - best two out of three
    - all exams weighed the same
- Exam questions are versions of homework questions
- Includes questions about lectures, homework, books
- Cumulative
- Regrade requests due within a week
Academic Integrity

Why not cheat?

• It hurts you in various ways:
  – It reduces the value of your Cornell degree
  – It stresses you out because you might get caught
  – You won’t feel good about yourself afterward
  – The energy that goes into cheating is better used for learning (studying for the exams)
  – High-risk, low reward
• It hurts other students:
  – It stresses them out

If you need help, get it early
Semester Grades

15%  Homework Assignments
30%  Programming Assignments
55%  Exams (best 2 out of 3)

• No “curving”
  – CS4410 is not a competition
  – Your grade reflects your learning objectives, not how well you did compared to others
  – Goal is to give everyone an A

• Weighing of individual assignments TBD