1 Times and Locations

- Lectures: Monday and Friday 1:00 pm–2:20 pm in CS 2129.
- Office hours: Office Hours: Monday 11:30 am–1:00 pm in CS 2129.
- TA: Dzejla Medjedovic <dzejlam@gmail.com>.
- TA Office Hours: Friday 11:00 am–1:00 pm in CS 1309.

2 What This Course is About

Goals of Class

- Learn an underlying set of algorithmic techniques to solve problems in system design, programming, daily life, and theory.
- Learn how to write algorithms having performance guarantees.
- Learn how to make a proof of correctness.
- Learn algorithmic ways of modeling computer systems, and other aspects of “life.”
- Appreciate beauty in algorithms.

Particular Focus

- Theory that is useful to both theoreticians and system builders.
- Big Data
- Randomization

3 How to Do Well in This Class

- Study. This is advanced material, which requires effort to digest.
- Do all the problem sets seriously.
- Go over lectures and lecture photos several times. (E.g., recopy your notes.)
- Best way to study for exams: Redo all the old problem sets and old exams from scratch.
• Work with a partner. Work in a group.
• Don’t get lost. If you are having trouble or falling behind, please come see me.
• Come to office hours.
• Start the homework early.
• When you don’t understand something, ask questions in class—to me, not your neighbor.

4 Prerequisites
• Mathematical maturity.
• Some programming background/undergraduate algorithms class.

5 Requirements
• One final.
• One midterm.
• 5-7 problem sets. (Every 1-2 weeks.)

6 Problem Sets
• Do problem sets in latex.
• Put an example/picture for each problem.
• Hand in both the PDF and a tarball of the source. Hand in problem sets electronically and submit hard copy.
• Please keep copies of all work that you hand in.
• Late assignments will not be accepted.
• If you work with people or have any other sources, you must cite them.

Problem-Solving Procedures on Homework
• Cite whom you work with.
• You must write up all your solutions yourself.
• You can share ideas, but it is plagiarism to share any part of your writeup.
• It is plagiarism to get your solution from any other student’s writeup.
• Don’t try to Google solutions. It’s not worth it. You may get the answer but you won’t learn as much. You will get seriously burned if you are caught plagiarizing.

• If learn the answer to one of your problems from a book or from the web, then you must cite. You will get burned if you search for answers on the web, rather than trying to solve them.

**Handing-in-Homework Procedures**

• This is about saving TA effort.

• Hand in assignments with a partner. (Partners can be different from the people who you collaborated with to solve the problems.)

• Both partners hand in assignments stapled together.

• The assignment to be graded should be on top and the one not to be graded should be on the bottom.

• Please indicate who your partner is. Please also indicate “please grade” or “please don’t grade” for your assignment.

**7 Camera**

• We’ll take photos of everything I write on the chalkboard. Then I’ll post on Blackboard.

• Some days I’ll forget my camera. If you have a camera, please bring it to serve as a backup. I’ll be grateful.

**8 Grading**

• Homework and participation will be worth approximately 15% of the grade, the midterm will be worth approximately 35% of your grade, and final will be worth approximately 50% of your grade. I reserve the right to adjust this formula for generating raw scores by a small amount (e.g., 5%-7%).

• You get 25% of any question in an exam by saying I don’t know.

**9 Dates**

• The midterm takes place some time between October 21, 2013 or up to a few weeks later. (Let me know when your other exams are to avoid as many conflicts as possible.)

• The final exam takes place on Wednesday, December 18, 2013 from 8:00 am–10:45 am according to the Stony Brook final examination schedule. (Yuck.) See [http://www.stonybrook.edu/registrar-finals.shtml](http://www.stonybrook.edu/registrar-finals.shtml).
10 Books

There is no single textbook for this course. Recommended textbooks include:

Recommended Books

- Algorithm Design by Jon Kleinberg and Éva Tardos.
- MIT Open Courseware Introduction to Algorithms 6.046J/18.401J.
- Scribe notes from previous years I taught the course.

11 Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person’s work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

- I take academic honesty very seriously. Infractions have serious consequences.
- It is your responsibility to ensure that you understand what constitutes academic dishonesty.
- Representing another person’s work as your own is always wrong. It is wrong in this course. It is wrong in your profession. It is wrong in life. It is wrong. Period.
- Always cite! If you work with multiple people, cite with whom you worked.
- Copying (or approximately copying) a solution from the web or someone else’s solution and putting in your problem set is plagiarism (even if you cite).
- Sharing any part of your write-up (latex, PDF, postscript, figures, or hard copy) before the assignment due date is academic dishonesty and invites plagiarism. Your own write-up is private information and should not be shared before submission.
- You will be able to find solutions to some of the homework problems on the web or from more senior students. It is academic dishonesty to search for and use such solutions in preparing your own write-up for the assignment, and it is plagiarism to copy such solutions and to submit as your own.
• You can work together to solve problems, but you must write up your own solutions, writing only those ideas and answers that you personally fully understand, and stating in your write-up with whom you worked to obtain the solution.

• It is academically dishonest to hand in a solution that you don’t understand.

12 Americans with Disabilities Act

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

13 Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students’ ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook. If you have any questions, please contact Donna Di Donato in the Office of Undergraduate Academic Affairs (2-7080).

14 Scribing

If students want to scribe lectures in latex, please let me know. You will get some extra credit for the scribing, but not enough to make it worthwhile just for the grade. It’s worthwhile because of the experience doing technical writing.

If multiple students scribe the same lecture, then just the best set of scribe notes gets extra credit.