

Syllabus

Com S 311

Fall 19

Staff

- Instructor: Pavan Aduri, 112 Atanasoff Hall. pavan@cs.iastate.edu.
- Instructor. Steve Kautz, 101 Atanasoff Hall. smkautz@iastate.edu
- Instructor. Donald Stull, Communications 1200F. dstull@iastate.edu.

- Teaching Assistant. Xiaoyun Fu. xfu@iastate.edu
- Teaching Assistant. Trent Muhr. muhr@iastate.edu.
- Teaching Assistant. Marios Tsekitsidis. tseki@iastate.edu
- Teaching Assistant. Jiajie Li jiajiel@iastate.edu
- Teaching Assistant. Tang Ling ling@iastate.edu
- Teaching Assistant. John Wahlig jlwahlig@iastate.edu
- Teaching Assistant. Matthew Pauk. mppauk@iastate.edu
- Teaching Assistant. Katherine Braught. kbraught@iastate.edu

Lectures and Recitations

- Section A: Tuesday, Thursday 8:00–9:20AM, Marston 2155. Pavan Aduri.
- Section D: Tuesday, Thursday 2:10–3:30PM, Marston 2300. Donald Stull.
- Section C. Tuesday, Thursday 3:40–5:00PM, Physics 0005. Steve Kautz.

- Section 1: Wednesday, 2:10–3:00PM, Pearson 1105, Trent Muhr.
- Section 2: Thursday, 2:10–3:00PM, Atanasoff B0029, Xiaoyun Fu.

- Section 3: Monday, 2:10–3:00PM, Pearson 1105, Trent Muhr and Katherine Braught.
- Section 4: Tuesday 2:10–3:00PM, Atanasoff B0029, Xiaoyun Fu and Jiajie Li.
- Section 6: Tuesday, 1:10–2:00PM, Carver 0160, Marios Tsekitsidis and John Wahlig.
- Section 7: Wednesday, 9:00–9:50AM, Gilman 1051, Marios Tsekitsidis and Tang Ling.
- Section 8: Monday, 3:10–4:00PM, Atanasoff B0029, Marios Tsekitsidis

Office Hours *Please see the Canvas main page (Modules) for a table of staff office hours.*

Course Objectives.

- Know a set of standard algorithms (and data structures) and be able to model a problem to use them.
- Gain a strong foundation in designing algorithms based on common techniques, including greedy, divide and conquer, dynamic programming, etc.
- Be able to reason about correctness of algorithms, either by proof or providing a counter example.
- Be able to recognize intractable problems and have an idea on how to develop approximation algorithms.
- Be able to implement algorithms given their description.

Course Topics (Tentative)

- Run time, Big O, and asymptotic bounds
- Sorting and searching
- Divide and Conquer
- Graphs and graph algorithms
- Greedy algorithms
- Dynamic programming
- NP completeness
- Approximation algorithms and Heuristics

Exams. There are two midterm exams and a final exam. Midterm exams are on **Oct 3** and **Nov 6** at 8:15PM–9:45PM. Please note that these are night exams.

Homeworks and Programming Assignments. Homeworks and programming assignments will be assigned over the semester. There will be around 5–7 Home works and 2–3 Programming Assignments. **A programming assignment and a homework might be assigned at the same time.** All assignments must be submitted electronically via Canvas. Programming Assignments must written in Java. Homeworks can be either hand written and scanned(must be legible) or typed. Assignments that do not follow the submission guidelines will not be graded and will receive 0 points. **A homework and/or programming assignment will be due during the dead week.**

Grading

- Midterm Exam 1: 10 %
- Midterm Exam 2: 15%
- Final Exam: 25 %
- Homeworks: 30%
- Programming Assignments: 20%

Letter Grades. We will curve to assign letter grades. Average will be $C+$. Minimum cumulative numeric grade required to avoid F is 45%. We will divide the range 100 to *Average* into equal size buckets and assign grades $A, A-, B+, B, B-$ and $C+$. Similarly, we will divide the range 45 to *Average* into equal size buckets and assign grades $D-, D, D+, C-, C$.

Text Book. Algorithm Design, Kleinberg and Éva Tardos.

Academic Dishonesty Policy. The class will follow Iowa State Universities policy on academic dishonesty. Anyone suspected of academic dishonesty will be reported to the Dean of Students Office. Please see <http://www.dso.iastate.edu/ja/academic/misconduct.html>

Accessibility Statement. Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. Students requesting accommodations for a documented disability are required to work directly with staff in Student Accessibility Services (SAS) to establish eligibility and learn about related processes before accommodations will be identified. After eligibility is established, SAS staff will create and issue a Notification Letter for each course listing approved reasonable accommodations. This document will be made available to the student and instructor either electronically or in hard-copy every semester. Students and instructors are encouraged to review contents of the Notification Letters as early in the semester as possible to identify a specific, timely plan to deliver/receive the indicated accommodations. Reasonable

accommodations are not retroactive in nature and are not intended to be an unfair advantage. Additional information or assistance is available online at www.sas.dso.iastate.edu, by contacting SAS staff by email at accessibility@iastate.edu, or by calling 515-294-7220. Student Accessibility Services is a unit in the Dean of Students Office located at 1076 Student Services Building.

DeadWeek. This class follows the Iowa State University DeadWeek policy as noted in section 10.6.4 of the Faculty Handbook.

Harassment and Discrimination. Iowa State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon race, ethnicity, sex (including sexual assault), pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation, gender identity, genetic information, or status as a U.S. veteran. Any student who has concerns about such behavior should contact his/her instructor, Student Assistance at 515-294-1020 or email dso-sas@iastate.edu, or the Office of Equal Opportunity and Compliance at 515-294-7612.

Religious Accommodation. If an academic or work requirement conflicts with your religious practices and/or observances, you may request reasonable accommodations. Your request must be in writing, and your instructor or supervisor will review the request. You or your instructor may also seek assistance from the Dean of Students Office or the Office of Equal Opportunity and Compliance.

Contact for Information On University Policies. If you are experiencing, or have experienced, a problem with any of the university policies (on academic dishonesty, dead week, harassment and discrimination, ,religious accommodation) email academicissues@iastate.edu.