EE360C: Algorithms

Course Logistics

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Fall 2018

Course Logistics

- Course description
  - We will study combinatorial algorithms, with a focus on theoretical style in lectures, quizzes and exams, and practical application through programming assignments
- Prerequisites
  - M325K or PH313K: Discrete Mathematics
  - You should be comfortable writing, compiling, and debugging Java programs of moderate complexity (i.e., EE422C System Design and Implementation II/EE322C Data Structures isn't going to hurt)

Course Logistics (cont.)

- Textbook:
  - J. Kleinberg and E. Tardos. Algorithm Design. Addison Wesley, 2005.
- Optional Recommended Texts:
  - T. H. Cormen, C. E. Leiserson, R. H. Rivest, and C. Stein. Introduction to Algorithms. McGraw-Hill, 2009 (Third Edition).
  - B. Eckel. Thinking in Java. Prentice Hall, 2006 (Fourth Edition).

Evaluation and Grading

- Evaluation
  - Weekly quizzes: 25% of grade
  - Programming assignments: 20% of grade
  - Exams: 50% of grade (2 exams: 15% each; final exam: 20%)
  - Participation: 5% of grade
- Grading Scale
  - Final grades will be assigned based on a curve. The curved grades cannot be lower than the standard numerical criteria (e.g., 94-100 = **A**, 90-93 = **A-**, 87-89 = **B+**, etc).

Assignments

- Homework
  - given out weekly
  - **not collected or graded**
  - **a weekly quiz of great similarity to the homework will be graded**
  - if you do the homework, the quiz should be straightforward

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- Programming Assignments
  - 3 programming assignments
  - due (approximately) two weeks after assigned **electronically** at 11:59pm (via Canvas)
  - **no late assignments will be accepted**

Missing quizzes

- Two lowest quizzes are dropped (so can miss two without penalty).

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- **No make-up quizzes**

EXAMS

- **Exam** dates:
  - **Wednesday** October 3 at 7:00pm-8:30pm
  - **Wednesday** October 31 at 7:00pm-8:30pm
  - Final TBD–awaiting date and time assignment for uniform exam from Registrar's office
- All exams are cumulative, but later material is emphasized.

Course Expectations

- Attendance
  - You should attend class. Lecture notes will be made available, but they should not be considered a substitution for attending class.
  - Participation points if you are active in class

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- Collaboration
  - You can discuss both homework problems and programming assignments with other students *at a conceptual level*
  - Do **not** write or program while talking to a fellow student
  - Do **not** use any other resources without citation

Coordination of sections

- **You need to take weekly quizzes in section you are registered (the section quizzes will be different)**
- You are welcome to attend the other section subject to available seats
- All sections will share the TAs
- All sections will have the same homeworks, uniform midterms and final exam
- All sections will share the same Piazza forum for questions
- You are encouraged to both post and answer other student questions: this will count towards your participation grade

Teaching Assistants

- Graduate TAs:
  - Cameron Chalk: ctchalk2@gmail.com
  - Karishma S Mulani: karishma.mulani@utexas.edu
  - Eftychia Vakaliou: effyvakaliou@gmail.com
- Undergraduate TAs:
  - Melanie Feng: melanie.feng@gmail.com
  - Nicholas H Jang: nich.jang@utexas.edu
  - Robert P Streit: rpstreit@utexas.edu

Recitation Sections

- "Structured office hours": TA works out problems on the board, collaboratively with the students.
- Morning and afternoon on Fridays (time TBD)
- Optional but highly recommended!

Communicating with Us

- The best way to ask questions about lecture or assignments is through the discussion boards on Piazza (follow Piazza link on Canvas)
- We will all monitor the discussion board, and that way others can benefit from the answer to your question
- **Do not post partial problem solutions or code to the discussion board!**

Course Overview

- Review of Discrete Math and Proof Techniques
- Algorithm Analysis
- Graphs and Graph Algorithms
- Greedy Algorithms
- Divide and Conquer
- Dynamic Programming
- Network Flow
- NP-Completeness
- Approximation Algorithms (TBD)
- Randomized Algorithms (TBD)