Algorithms and Complexity / (Adv)

Introduction

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This unit comes in two flavors

COMP 2x07

- COMP 2007: Algorithms and Complexity
- COMP 2907: Algorithms and Complexity (Adv)

Both units share this lecture time, but the advanced class has an extra hour of lecture where we will go more in depth into the topic of the week.

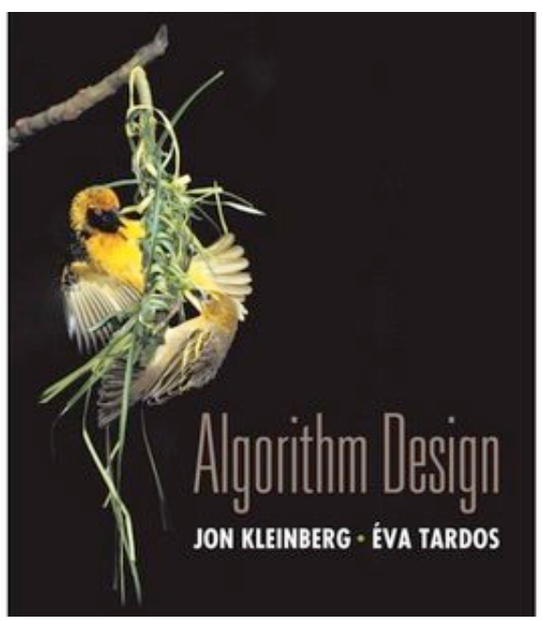
About this unit

Timetable

- Lecture: Mondays 10:00am-noon, Merewether Lecture Theatre 2
- Adv. lecture: Mondays 4:00pm-5:00pm, New Law School Seminar 030

Textbook

- "Algorithm Design" by Tardos & Kleinberg



Blackboard

- quizzes and assignments
- lecture recordings

Piazza

- discussion & questions

Aims of this unit

This unit provides an introduction to the design and analysis of algorithms. Its main aims are

(i) learn how to develop algorithmic solutions to computational problem

(ii) develop understanding of algorithm efficiency and the notion of computational hardness.

Assume basic knowledge of discrete math

- graphs
- big O notation
- basic proof techniques

Assessments

We will have three kinds of assessments

- Assignments (20%)
- Quizzes (20%)
- Final exam (60%)

Exam barrier of 40%

Assignments

There will be 12 short homework assignments

The objective of these is to teach problem solving skills

Assignments will be released on each Monday of weeks 1-12, and will be due on Monday of the following week

Your assignment mark will be the average of the best 10 out of 12 individual assignments marks. It represents 20% of your final mark

Some assignments will involve programming. We will use:

- MOSS for detecting code similarities
- PASTA for the submission server

Quizzes

There will be 12 short quizzes during the tutorials

The objective of these is to re-enforce the lecture material

You will take you quiz during your tutorial in weeks 2-13

Your quiz mark will be the average of the best 10 out of 12 individual quiz marks. It represents 20% of your final mark

Final exam

The final will be 2.5 hours long. It will consist of 5 problems similar to those seen in the tutorials, plus one challenge problem

The final will test your problem solving skills

There is a 40% exam barrier

The final exam represents 60% of your final mark

Our advice is that you work hard on the assignments throughout the semester. It's the best preparation for the final.

Tutorials

After the main lecture, we will post a tutorial sheet for the week in the class homepage (see blackboard UoS materials link)

To get the most out of the tutorial, try to solve as many problems as you can *before* the tutorial. Your tutor is there to help you out if you get stuck, not to lecture.

At the end of the week, we will post solutions to selected exercises (see blackboard UoS materials link)

Contacting us

Unless your's is a personal issue, do not sent us direct email.

Instead, post your questions in Piazza so that others can benefit from the answers. And don't be shy to answer another student's question if you know the answer.