

# Computer Science 157: Design and Analysis of Algorithms

**Lecture location:** CIT 368

**Lecture hours:** T\Th 10:30 - 12:00 PM

**Instructor:** Claire Mathieu (claire.brown.edu), CIT 555

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**Text:** *Algorithms* by Sanjoy Dasgupta, Christos Papadimitriou and Umesh Vazirani

## Problem Sets

This class features 5 problem sets, one every two weeks, which correspond to topics taught in class. Each problem set has 4 problems involving writing an algorithm, and you have two options as to how to complete them:

- You attend a problem session where you discuss all the problems (more on this below) and then do a write up on one problem assigned to you.
- You do all four problems and create a full write up for each of them.

The first option is generally preferable, but if you don't attend the problem session you'll be required to do the entire problem set in order to get credit. Please put effort into making your solutions clear, precise, and concise. Precise instructions (which will be designed to facilitate the grading process) will follow later.

## Problem Session

The idea of problem sessions is as follows

1. You receive a problem set with four problems, one of which is to be your problem (we assign which).
2. Over the course of a week you create a preliminary solution for your problem, and look over the other three problems. The depth to which you go is up to you, but you want to be able to present/discuss these

problems intelligently at the session. Having a typed-up solution for your problem is very helpful but if you're stuck on your problem it's alright to go into the problem session with only some ideas on a solution.

3. You attend a problem session and in a group of four, where each person was assigned a different problem, you'll present and discuss each problem in turn. You can brainstorm solutions, refine existing ones, and check for bugs. It's meant to be a collaborative experience.
4. In the remaining week you finish up your problem, write up the solution and hand it in.

### **Homework**

A homework will be assigned with each problem set. Homeworks consist of relatively simple problems on the course material, and are generally much easier than problem sets. They tend to be due a week from when they're assigned. Homeworks must be fully completed; there's no assigned problems like in problem sets

### **Handing in**

Typed solutions (especially in L<sup>A</sup>T<sub>E</sub>X format) are very strongly encouraged for homework and are mandatory for problem sets. Handwritten solutions will be accepted for homework, but if something is illegible, it will receive no credit. No late assignments will be accepted without explicit prior permission from the instructor. Please drop assignments into the bin in the second floor hallway (near the FishBowl).

Corrections to the inevitable errors in assignments will be emailed to the listserv `cs157@list.brown.edu`. Make sure you either check your cs email regularly, or forward it to an account you do check. You are responsible for all information sent to the listserv. Solutions to the homeworks will be posted on the course web page <http://www.cs.brown.edu/courses/cs157>.

We will return graded assignments to the handback bin.

### **General Advice**

When you've got an algorithm to write, start early. Algorithms often require a certain amount of cleverness, which is hard to call up on the spot. This class is an order of magnitude easier if you read the problems early and let them sit in your brain for a while.

## TA Hours

TA hours will be on the website somewhat later, after more people know their course schedules.

### **\*\*\* Collaboration policy \*\*\***

Homeworks are of two types, collaborative and non-collaborative and they will be clearly designated. Collaborative homeworks are intended to foster interaction in problem solving, but each student is firmly expected to complete his/her work independently: do your own write up. Non-collaborative homeworks are intended to test the individual knowledge; they are take-home exams, and students are expected to comply with the strictest code of non-collaboration. The only references a student can use are their own notes taken in class, the class textbook, and the course website. Using any other source including online sources (e.g. Wikipedia) is not permitted. The honor code will be firmly enforced. If you need assistance with a particular homework problem, or any concepts in general, please see one of the TAs or the instructor.

## Exams

There will be one in-class midterm and a take-home final exam.

## Grading

The final grade will be determined as follows:

- 30% Problems sets and homeworks and participation
- 30% Midterm
- 40% Final exam