# Course Missive

*Spring 2015*

## Course Staff

| **Professor** | Office | Email |
|---|---|---|
| Caroline Klivans | 182 George St Rm 323 | Caroline_Klivans@brown.edu |

| **Teaching Assistants** | Email |
|---|---|
| Alex Constantino (Head TA) | acconsta@cs.brown.edu |
| Nicolas Schank (Head TA) | nschank@cs.brown.edu |
| Alan Hwang | ah44@cs.brown.edu |
| Alexa Van Hattum | avanhatt@cs.brown.edu |
| Angelia Wang | afwang@cs.brown.edu |
| Athyuttam (Atty) Eleti | aeleti@cs.brown.edu |
| Daniel Nurieli | dnurieli@cs.brown.edu |
| Florina Heredea | fheredea@cs.brown.edu |
| Harjasleen Malvai | hmalvai@cs.brown.edu |
| Jacques Van Anh | jvananh@cs.brown.edu |
| Jemma Issroff | jissroff@cs.brown.edu |
| John Palmer | jcpalmer@cs.brown.edu |
| Kenneth Lin | kl47@cs.brown.edu |
| Kieran Barry | kb25@cs.brown.edu |
| Louisa Conwill | lconwill@cs.brown.edu |
| Michael Zellinger | mzelling@cs.brown.edu |
| Neel Virdy | nvirdy@cs.brown.edu |
| Raymond Zeng | rz14@cs.brown.edu |
| Sam Johnson | sj4@cs.brown.edu |
| Sorin Vatasoiu | svatasoi@cs.brown.edu |
| Tara Basu Trivedi | tbasutri@cs.brown.edu |

## Introduction

Welcome to CS22, Introduction to Discrete Structures and Probability. This course is intended primarily for first and second-year computer science students and has no prerequisites. The course fills a core requirement for the A.B. and Sc.B. tracks in computer science, and is a prerequisite for CS51 and several upper-level CS courses. From the course announcement:

> Seeks to place on solid foundations the most common structures of computer science, to illustrate proof techniques, to provide the background for an introductory course in computational theory, and to introduce basic concepts of probability theory. Introduces number theory, logic, graph theory, combinatorics, probability, and Markov chains.

# Lectures

Lectures will be given by Professor Klivans on Mondays, Wednesdays, and Fridays from 9:00am to 9:50am in Solomon Room 001. Course-related announcements may be made in class and, while you are not required to attend, you are responsible for anything covered in lecture. To that end, you are encouraged to ask questions in lecture and we suggest that you write down definitions and theorems presented in class. Professor Klivans will not strictly follow the text, and may skip topics in the book or lecture on subjects not in the text. Class notes will generally not be provided.

# Problem Sessions

There will be a problem session every week on **Sunday, 3-5pm in CIT 165**. At the problem sessions, TAs will solve problems step by step and present examples that will not be covered in class. Problems covered will include classic problems in discrete mathematics and homework problems from previous years. You are strongly encouraged to attend these for more practice and understanding, but they are not required.

# Assignments

## Homework

Homework will be released every Wednesday by the end of class and will cover material presented in lecture up to that day. (It may occasionally include material that will be taught on the Friday of that week.)

All homeworks are due Tuesdays at 11:00 pm in the CS22 bin on the 2nd floor of the CIT.

*Unexcused late homeworks will receive no credit.*

Incorrect solutions may receive partial credit. If you have an idea on how to solve a problem but are unable to provide a complete solution or proof, please explain your approach and your reasoning as clearly as you are able. However, please do not list random facts and theorems without clear (and explained!) reasoning.

For partially correct solutions, we recommend stating what is missing or why your solution is not fully correct. Doing so shows the grader that you understood the complexities of the problem and that you thought deeply about how to solve it, which provides us many more opportunities to give you partial credit. Conversely, glossing over inconsistencies and omissions may lead the grader to assume that you do not understand those aspects of the problem.

Written solutions to the homeworks will be posted on the course website after all student handins have been graded.

### Style

As an introductory course, CS22 introduces many students to the wonderful world of formal proofs. As such, a small portion of each homework grade will be based on 'style.' For exactly how these points will be allocated, please refer to the style guide.

### Regrade Policy

If you believe a mistake was made in grading some of your work, you may request a regrade. To request a problem be regraded, please see the TA *who graded that problem* at his or her office hours. If you still have a dispute after speaking with the TA who graded the problem, please see an HTA or the professor during their hours.

### Legibility of Homework

You may type or handwrite your homework as long as it is neat and legible. Please keep this in mind if you choose to handwrite your homework. As noted in the style guide, anything excessively messy or difficult to read will automatically lose all style points; further points may be docked for recurrent offenses. Completely illegible handins or solutions will not be graded.

We encourage you to learn LaTeX, a type-setting program especially useful for writing up mathematically-intensive documents. Links are provided to LaTeX resources from the course webpage. In addition, we have provided a template that you may use as a starting point for type-setting your assignments. LaTeX is a tool that you will probably have to learn at some point if you plan on studying computer science or math, so we suggest you learn it now. You may also opt to use Lyx, which is free software with a nice GUI that you can use to typeset your homework. It's fun!

There will be a LaTeX workshop specifically for CS22 students at a time to be announced.

### Cover Sheet

There is a cover sheet template included on the CS22 website. We expect all homeworks to have that cover sheet, or an equivalent, stapled in front of it. By equivalent, we mean a table of similar size and with the same layout, and it must be on the first page of the homework. A LaTeX file including the cover sheet is also on the website.

## Exams

There will be two midterms and a final. The midterms will be on February 27 and April 3 during the evening. The final is on May 7 from 2pm to 5pm, location to be announced. If you have any conflicts with the exams, please email `cs022headtas@cs.brown.edu` as soon as possible and at least one week before the scheduled exam time.

# Grading

You can view your grades by logging in to `http://canvas.brown.edu`. The following is an *approximate* guide to the grading breakdown:

| Type | Percentage |
|---|---|
| Homeworks (10) | 45 % |
| Midterm Exams (2) | 30 % |
| Final Exam | 25 % |

# TA Hours

TA hours will be held throughout the week in the CIT. Hours are posted on the course website. If any changes are made to the hours schedule, an announcement will be emailed to the class list. TAs will gladly help clarify homework questions, explain concepts covered in homeworks, and help with general questions about course material. While we do expect you to think about the problems individually first, we encourage you to come to hours for help. TA hours can help you gain great understanding of the material and problem-solving strategies –they are not just intended as a last resort. Bottom line: utilize this resource!

TAs are here to help you, but remember, TAs are students too and have their own classwork. Please don't ask a TA questions outside of official TA hours – technically, they are not even allowed to answer them. If you need to talk to a particular TA, feel free to email them and set up a time to meet. If you feel that you can't possibly make any scheduled TA hours, please get in touch with the Head TAs.

## Clinic

Certain TA hours are marked as Clinic hours, 2 hours daily Sunday to Tuesday. Clinic is intended to be more open and collaborative than regular TA hours: students are encouraged to form groups and work on the problems together, and TAs will check in on groups as they are working rather than making the groups wait in a line or think of a specific question. Individual students who have a specific question or regrade request are more than welcome to get a TA's attention, as well. Unlike at regular TA hours, if several

individual students ask general questions about course content that are very similar, the TA will address them simultaneously rather than separately.

**Clinic is not exempt from the collaboration policy.** You may not write up your actual homework in clinic. Your time at clinic is meant to provide you with an understanding of the problem; anything written during clinic should be given to the TA to be thrown away.

# Communication

The **course web page** is an indispensable resource. You can find online postings of assignments, solutions, course notes, announcements, TA hours, and other miscellanea. The course web page can be found at:

`http://www.cs.brown.edu/courses/cs022/`

CS22 also uses Piazza, an online academic forum where students can convene virtually to explore the course materials and ask questions to the course staff and other students. A link to the Piazza page is provided on the course website. A link to enroll is also provided on the course website. If you are registered for the course, the enrollment code will be sent to your Brown email address after the first class. If you do not receive that email and still wish to enroll in Piazza, please email the HTAs.

If you have administrative questions, comments about the course, or have a problem with a TA, you should email Prof. Klivans and the Head TAs at `cs022headtas@cs.brown.edu` or show up for their hours.

# Collaboration Policy

In order to help the course staff evaluate each student in CS22 as fairly and individually as possible, we have written a homework collaboration policy by which we expect all students will abide.

You may discuss problems with your classmates. However, the presented solution must be EXCLUSIVELY your work. You may not take away notes from preliminary discussions or from clinic, nor keep collaborating (with

classmates) while preparing your write-up: at this stage only consultations with course staff are permitted.

This policy is described in more detail as part of Homework 0. Note that we will not grade any of your work until we have recieved a signed copy of the collaboration policy as part of Homework 0.

# Course Materials

The recommended textbook for this course is *Mathematics for Computer Science* by Eric Lehman, Thomson Leighton, and Albert R. Meyer. It is available for free in .pdf format on the documents page of the course website.