

## CS 341 Automata Theory

### Elaine Rich

Fall 2014

#### Classes:

Unique	Time	Room	Final Exam Time	Final Exam Location
53040	T, TH 9:30 – 11:00	GDC 1.304	Wed, Dec. 10, 9:00 - noon	

#### Goals:

See the class website: <http://www.cs.utexas.edu/users/ear/cs341/>

#### Prerequisites:

Computer Science 429 or 429H with a grade of at least C-.

#### Textbook:

I have written a text book for this class. It is: *Automata, Computability and Complexity: Theory and Applications*, Prentice-Hall, 2008. It should be available at the Coop or online from Amazon or Barnes and Noble. One option is to purchase the electronic version of the book. But you'll notice (below) that all the exams in this class are open book. Obviously computers aren't allowed during the exam. **So, if you decide to buy the ebook, make sure that you have a way to borrow a hardcopy for the three exams.**

There is a [website](#) that goes along with the book. It is organized into pages that correspond to the chapters of the book. On those pages, you will find links to many other useful sites.

If you would like another book as a supplementary text, I recommend *Introduction to the Theory of Computation*, Michael Sipser. Brooks/Cole, 1996.

#### Staff

		Office	Office Hours
Elaine Rich	<a href="mailto:ear@cs.utexas.edu">ear@cs.utexas.edu</a>	GDC 5.810	T, W 11:00 - noon
Sultan Kulakhmetov	<a href="mailto:sulakul@gmail.com">sulakul@gmail.com</a>	GDC basement	TBD

## Prerequisites

To do well in this class, you need to know some logic and have some experience proving things. You need some background in the design and analysis of algorithms, including simple ones involving graphs. And you need at least a couple of semesters of programming experience. Here are the official prerequisites: The following coursework with a grade of at least C- in each: Computer Science 311, 311H, 313H or 313K; Computer Science 314, 314H, 315, or 315H; Computer Science 310, 310H, 429, or 429H; 331, 331H, 341, 341H, 357 or 357H; and Mathematics 408C, 408K, or 408N. If you think you have the background but not the prerequisites, come talk to me.

## Regular Monday study sessions

On MONDAY evenings, there will be somewhat organized study sessions. We'll start in about the third week of the semester. They'll be from 6:00 to 8:00 in GDC 6.302, except that on Monday, March 25, we will meet in GDC 2.502.

These sessions will be run by students who have taken CS 341 in the past and actually liked it. If you're having any difficulty at all working on the problems on your own, make sure to come to these sessions. Also, you can come to find a guaranteed study group.

## Grading

I think we all wish that we could have courses without grades. You hate worrying about grades. I hate having to assign grades. But grades are essential to insuring that your degree has the value it deserves. So we have to have a grading system and that system has to have three essential properties:

- It has to motivate everyone to learn as much as possible.
- It has to be fair to everyone in the class.
- It has to be a true measure of how much each student knows about the class material.

For this class, I will assign grades using the following formula:

- Midterm Exams: 38%
- Final Exam: 35%
- Homeworks: 15%
- Take home quizzes: 7%
- Class participation, effort, and, in exceptional cases, substantial improvement over the course of the semester: 5%

If you believe that we have made a mistake in grading any of your work, you have a week from the time it was returned to submit to us a written description of the problem. After that week, no grading issues will be revisited.

## Exams

There will be two midterm exams and a final. All exams are open book, meaning you may bring the textbook (or one other book) to the exam. But you may not bring other things (e.g., homework answers, old exams). Obviously computers aren't allowed during the exam. ***So, if you decide to buy the ebook, make sure that you have a way to borrow a hardcopy for the three exams.***

The two midterm exams will be given on TUESDAY EVENINGS. Students with a conflict at this time should inform the instructor at least two weeks before the exam. Arrangements for a makeup the following Wednesday morning will be made. The exam schedule is as follows:

	Date	Time	Room
Midterm 1	Tuesday, Oct. 7	7:00 - 9:00 pm	TBD
Midterm 2	Tuesday, Nov. 2	7:00 - 9:00 pm	TBD
Final	Wednesday, Dec. 10	9:00 – noon	

## Homeworks

The only way to learn the material in this class is to practice. It's like learning to play the piano. You can't learn much just by watching someone else. You actually have to do it yourself. You should plan to spend at least five hours every week working problems.

Most weeks there will be a homework assignment that you will be asked to turn in. The homework assignments will be posted on Piazza. Homeworks are due in class on the date specified. Homework answers will be posted on Piazza. Homeworks will not be accepted once the answers have been published. If you cannot make it to class, you may submit your homework early, either at an earlier class or to me in my office. Electronic submissions are a problem for several reasons. Therefore we have established the following policy for them: Everyone gets one free electronic submission. We will only accept additional electronic submissions in cases of emergency. Note that out of town job interviews and things of that sort are not emergencies. In those cases, plan ahead.

Most (probably all) of the homework assignments will contain some problems marked with an asterisk. Those problems are optional. They won't be graded. We provide them so that you can get additional practice. Solutions to them will be included with the other homework solutions.

See the [class policy on academic integrity](#) for the rules on working with other people on homework assignments. The rules described there will be strictly enforced. **If you copy answers from anyone (and this includes copying my answers as handed out in previous semesters), you will fail the class.**

## **Class Attendance and Quizzes**

Most of the material that will be covered in class is in the book. However, we will use the class time to clarify issues and to work additional problems. It is important that you come.

To encourage class attendance, there will be take-home quizzes handed out during class. There will be about 10 of them during the semester. To get a copy of the quiz, you must be in class. None will be handed out later, nor will they be available on the web. You may not make copies of the quiz; only originals will be accepted. Quizzes must be handed in at the class following the one at which they were handed out. Each student must hand in his or her own quiz. No make ups will be allowed. We will drop one quiz score so you can miss one without any penalty.

## **Piazza**

Piazza is a free online gathering place where students can ask, answer, and explore 24/7. Read more at [www.piazza.com](http://www.piazza.com). We will use Piazza for important class announcements. In addition, you can use it to post questions and get answers both from other students and from the instructors. Once registration has settled down, we will enroll everyone in the class Piazza forum.

## **Canvas**

We will use Canvas to record grades. You can access it at  
<http://canvas.utexas.edu/>.

## **Students with Disabilities**

Any student with a documented disability (physical or cognitive) who requires academic accommodations should contact the Division of Diversity and Community Engagement, Services for Students with Disabilities at 471-6259 (voice) or 471-4641 (TTY for users who are deaf or hard of hearing) or <http://www.utexas.edu/diversity/ddce/ssd/> as soon as possible to request an official letter outlining authorized accommodations.

## **Academic Integrity and the UT Student Honor Code**

UT's Student Honor Code states: "As a student of The University of Texas at Austin, I shall abide by the core values of the University and uphold academic integrity." You can watch an excellent video about the honor code [here](#).

You should read carefully the [class policy on academic integrity](#). Cheating of any form will not be tolerated and will result in a failing grade in the class.

### **Religious Holidays**

By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, or an assignment in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

### **Additional Class Policies**

You should read [CS Department Code of Conduct](#). The policies described there will be followed in this class.