These are the emails that I sent to the class before the course began

Sent March 2, 2020 - textbook

When I looked through my Sent email box, I did not find the message about the textbook that I thought I had sent on the same day that I sent several messages to you. I apologize if this message is a duplicate. In case it is not a duplicate, here is a summary of what I THOUGHT I sent in that message.

1. The book's author, Elaine Rich, has given us permission to use the book in PDF form, at no charge. It is available at https://www.rose-hulman.edu/class/csse/csse474/textbook/. The entire book can take a while to load into PDF-reading application, so I also made PDFs of various prats of the book.
2. It's hard to beat "free" for a textbook price.
3. In case you prefer to purchase a paper copy of the book:
   a. The Rose bookstore has (or had, I don't know if they have sold them) a couple of copies left over from a previous term.
   b. Many copies are listed on abeslist.com. Most of the inexpensive copies are the international edition, which has the same contents as the original edition.
4. The page numbering in the free edition is different from the printed edition. I will attempt to find all page number references in my course materials and replace them with chapter/section references. If you find any that I miss, please let me know. I'll give bonus homework points to the first person to report any errors in my course materials.

Sent Feb 29: Reminder of reading quizzes due days 1 and 2.

Now that winter term is over, it seems like a good time to remind you of the reading and quizzes that you should do before the course begins. Again the main purpose of doing these things before the course starts is to alert you that if you are deficient in your math background you are going to have to work extra hard to make up for that while you are also working on this challenging course.

Reminder: Reading quizzes due class days 1 and 2 (over mathematical background material).
I have attached the quizzes. I made a correction to quiz 1 problem 3 (there was an extra closing parenthesis).
To find the textbook, go to https://www.rose-hulman.edu/class/csse/csse474/textbook/ .
You should read Sections A.1 through A.6.9 and A.7.2 before the course begins, and read chapters 1 and 2 before day 2.

This week I will be working on updating the schedule page and the materials on Moodle. I will send one more email to let you know when those are ready for student consumption.

Claude

1. **Feb 11, 2020 – three emails**

Spring Exam schedule and no-class-meeting days (email #1 from Feb 11)

> **Final Exam:** In this course, the most important and most difficult material comes after the second in-class exam, so I think it is important that everyone takes the final exam. Since almost half of the class members are seniors, the final cannot happen during final exam week.
> Instead it will be Thursday evening of 10th week, 6-10 PM.
> You must be there for this exam. If you know now that you have a conflict with that time, you should let me know within the next week. Otherwise, don't let anyone else put that time in your schedule.
>
> **In-class exams:** Tuesdays, weeks 4 and 7 during your regular class meeting time.

Days when class will not meet:
Monday, March 23. Diane have applied to be guardians of our son with Down Syndrome who just turned 18. 9:30 on March 23 is the time the judge set for our hearing.
Friday, April 10. Who wants to have class on the day before the break? I don't!

MA/CSSE 474: This is a VERY difficult course for some students (email #2 from Feb 11)
Welcome in advance to Theory of Computation. I love to teach this course and I want all of you to succeed. Based on course evaluations from the previous 474 offerings, almost all students find the course to be very enlightening and enjoyable (and also a lot of work!).

474 is all about "how do we mathematically model computation, and what can we prove based on those models?" It is a very abstract course, and many of the results that you will prove are counter-intuitive. I believe that the intellectual level of this material is as high as any other CSSE course, and probably as high as any course on campus, with the possible exception of Functions of a Real Variable.   There is a lot of work because most students need a lot pf practice if they are to get to the point of grasping the most difficult concepts from the last 1/3 of the course.

Every time I teach the course there are a few students who quickly discover that their background from the Discrete Math courses is not strong enough to handle the material from this course. My hope is that if you are in that position, you will discover it **now**. Then you can either develop a plan to fix that before the course begins or you can drop the course and prepare yourself to take it this summer or next spring. I hope you will do preparation, and the rest of this message is designed to help you with that.

We can only spend a little bit of class time reviewing the mathematical background for this course. So since 2014, I have had students make sure that they were up-to-speed on the background material before the course began. This reduced significantly the drop-out rate and also improved the average grades of students who finished the course. So I will be doing the same thing this year.

The course textbook is [Automata, Computability and Complexity: Theory and Applications 1st Edition by Elaine A. Rich](). See my separate email about obtaining the book.

Appendix A is one of the best things about this textbook. It contains a concise review of the needed mathematical background. It also gets you accustomed to the kind of mathematical notation that will be used throughout the book.   **You should read Sections A.1 through A.6.9 and A.7.2 before the course begins**, and complete a "reading quiz" over the material. That quiz will be due at the beginning of the first day of class. Think of completing this quiz as your "admission ticket" to the course.
   a. Complete quiz 1, which is due at the beginning of the first day's class.
   b. Bring a hard copy of the completed quiz to class. (you may not use a late day for this assignment). You can
          i. Complete the quiz electronically and print it, or
          ii. Print it and legibly complete it by hand.
There is a second reading/prep quiz, mainly reviewing the basics of strings and sets of strings, and the concatenation of strings and sets of strings. It will be due in class on Tuesday

I have attached Appendix A, the author's PowerPoint slides for that appendix, and the pre-term reading quizzes so you can preview them and see what is expected.

To do right away: Take a quick (15 minute) look through the Appendix A pages listed above to see what is there and to get an idea of how much work you will have to do in order to get a thorough understanding of at least 75-80% of that material before the course begins. Plan your time accordingly. Some of you will look through it and say, "I remember almost all of this stuff; I do not need to spend much time on it." Others may say, "I never

understood some of this stuff, and I have forgotten a lot of what I used to know. I'd better plan to spend a lot of time on this so I will be ready for the 474 course."

What you should not say/think: "I have a lot of learning/re-learning to do, but I am sure it will be all right if I wait until after the course begins." Some students who start this course with background deficiencies are never able to catch up; they are the ones who end up dropping the course.

I may have painted a bleak picture here. Fortunately, that picture does not apply to most students. Students who got an A in MA275 and remember most of the material should find that with only a small amount of "memory refresh" they are ready to jump into the 474 material, do well, and enjoy it. Students with lower grades or a lot of elapsed time since your DISCO courses will have more to do to be ready, assigned pages from the textbook appendix has all of the mathematical background you need to know, so there is a simple way to remedy any background deficit if you'll take the time to do it.

Finally, I know that it is very unusual to require work from students before the course begins. I only do it for this course. I do not require students to learn new material before the course begins; they only need to review material that they should already know, and see it in the perspective of the notation that will be used in this course.

If you have questions about this process, you can email me. If you have questions about the material from appendix A, you can also email me, but it may be better to post them on Piazza, where other students can possibly answer your questions, and all students can see both your question and the answers from students and instructor. Please resist the temptation to post anonymously to Piazza; it will enhance the 474 community of students know whom they are talking to.

MA/CSSE 474: Online Summer Course (email #3 from Feb 11)

Several students have asked me lately whether I plan to offer the course again this summer. Yes. It will be a full-summer (June 4-August 21) online course. Maybe it will be better for some of you (and the spring course is so crowded).

The summer course will be mostly the same as the spring course. Here are the main differences:

1. No face-to-face lectures. I have made a few videos, but you'll need to get most of the material by reading the textbook.
2. Exams count a lower percentage of the grade. It is more difficult to administer exams securely and reliably. In the summer I'll have only two exams, and those exams will be 50% of the course grade. During the spring term, there will be three exams and they will be 75% of the course grade.
3. Because of the two days off for Independence Day and the lack of a Final Exam week, the course is shorter. So there are typically one or two fewer required homework assignments.
4. Except for exam days, there is never a requirement that you do things on a particular day. If you know you'll have to be "out of the loop" for a few days, due to vacation or whatever, you can do the work in advance.
5. I will allow a limited number of late days for homework in the summer course. With 85 students in the spring course, I don't think we can get grading done in a timely manner if we allow late days.
6. Communication with me and other students will mainly be via email and Piazza. I will occasionally have "virtual office hours" using Zoom, and perhaps we can arrange for additional Zoom meetings .
7. Typically there are only about 15 student in the summer course, so there is more opportunity for personal attention. On the other hand, I will be traveling a lot during the summer. I should be able to answer your email and Piazza questions within 24 hours (and more frequently some days), but synchronous communication may be more difficult.
8. If you need more than 3.5 weeks to review the math background for the course, you'll have almost 4 months before the course begins.