CS 390 Syllabus - Fall 2025

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1 Course Description

This is an elementary study of theoretical aspects of computer science. Topics in formal languages and automata theory are covered including regular languages, regular expressions, finite automata, context-free languages, pushdown automata, grammars, Turing machines, and unsolvable problems.

This is a web-based class requiring independent responsibility and online communication skills on the part of the student. There are no regularly-scheduled class meetings.

1.1 Meeting Times and Delivery Method

If you are registered for CRN 26484, you are in the on-campus, face-to-face section.

- Class meets MWF 12:00-12:50PM in DRGS 1117.

If you are registered for CRN 23086, 23087, or 23088, you are in the on-line (asynchronous) section. There are no regularly scheduled lecture meetings.

- There is an synchronous orientation session, conducted via Zoom.
- Additional synchronous sections may be announced at the discretion of the instructor.

Attendance at these is optional, and recordings will be made available afterwards. See the course Outline and the Canvas calendar and To-Do lists for details.

1.2 Course Objectives

Students completing this course should be able to:

- Demonstrate knowledge of the primary mathematical models of computation (automata) that underpin Computer Science.
- Demonstrate knowledge of formal languages and their relationship to automata.
- Be able to construct, work with, and prove properties of the basic forms of automata and formal languages.
- Understand and be able to discuss the relationship of automata and formal languages to practical issues in programming languages and software development.

1.3 Instructor

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Please make sure to include the course name "CS390" in the subject line of any email related to this course.

1.3.1 Office Hours

Office hours are posted online at the website https://sites.google.com/view/lusili/home/teaching?authuser=0

General questions about course content and reports of website problems should normally be asked in the Discussions area in Canvas or via email.

Questions about grades, quiz content, and other graded activities **must** be sent to l3li@odu.edu, not posted in the Discussion area.

For more discussion on course communications, please refer to the Communications policy.

2 Basic Course Information

2.1 Text

The textbook for this course is

- Hopcroft, John E. and Motwani, Rajeev and Ullman, Jeffrey D., *Introduction to Automata Theory, Languages, and Computation* (3rd Edition), 2006, ISBN 0321462254, Addison-Wesley Longman Publishing Co.

2.2 Course Prerequisites

- a grade of C or better in CS 250 and in CS 381

- Math 163

Students are also expected to be familiar with the use of standard Internet-based tools including email and web browsers.

3 Course Policies

3.1 Required Software

3.1.1 CS Account

All students taking this course must have activated a login and e-mail account on the CS Dept.'s Unix network. (This is distinct from any Midas or other account you may have from the general University computer center – the ODU ITS).

You may have a CS account already if you were registered for a CS class in a recent semester. If not, you will need to create a new account. Go to the CS Dept. home page and look for "Account Creation". *All students in this course are responsible for making sure they have a working CS Unix account by the end of the first week of the semester.*

3.1.2 Web Browser

You will need a reasonably up-to-date version of the Edge, Firefox, or Chrome web browser. Other browsers or older versions of these may also be acceptable, but cannot be guaranteed so, because the course materials are not tested with other and older browsers.

- Neither Internet Explorer (Windows) nor Safari (Apple) are recommended. They might work. They might not.
- You will need to permit Javascript to run in your browser.

3.1.3 Exam Proctoring

The midterm and final exams will be proctored. You will have a variety of proctoring options available to you via SmartProctoring.

- All students will be responsible for arranging their proctoring choices at least one week in advance of each exam.

The weekly quizzes are not proctored.

3.2 Due Dates and Late Submissions

Late quizzes and make-up exams will not normally be permitted.

Exceptions to this and other grading policies will be made only in situations of unusual and unforeseeable circumstances beyond the student's control, and such arrangements must be made promptly, prior to the due date in any situations where the conflict is foreseeable.

"*I've fallen behind and can't catch up*", "*I'm having a busier semester than I expected*", or "*I registered for too many classes this semester*" are *not* grounds for an extension.

3.3 Academic Honesty

Everything turned in for grading in this course must be your own work.

Quizzes are open book, open-notes open-course website.

During exams you may access the course website.

You may not, however, use non-course websites nor consult with another human, either in person, or electronically, on exams and quiz material.

You are expected to conform to academic standards in avoiding plagiarism. See also the discussion on using external resources, below.

The instructor reserves the right to question a student orally or in writing and to use his evaluation of the student's understanding of the assignment and of the submitted solution as evidence of cheating.

Students who contribute to violations by sharing their solutions with others may be found to be in violation of this policy. This includes showing material to other students in person and *posting partial, complete, or even speculative solutions in any public area, whether physical or on the internet*.

This policy is *not* intended to prevent students from providing legitimate assistance to one another. Students are encouraged to seek/provide one another aid in learning to use the support systems, or to general issues relating to the course subject matter. The same guideline applies to discussions, whether face-to-face or on-line, with anyone other than the course instructor and TAs – general aid on the subject matter of the course is OK. Specific discussions of solutions to any graded activity are forbidden.

Violations will be reported to the Office of Student Conduct and Academic Integrity.

3.3.1 Using External Resources

In quizzes and exams, you may use "answers" that you find already posted on the internet (but may not solicit new ones) provided that you acknowledge your sources appropriately.

- If you use someone else's thoughts, proofs, or arguments, you **must cite your source** appropriately, in a fashion that allows me to verify it.
- If you use someone else's wording, you must enclose that wording in quotation marks **and** cite your source.

That said, **you** are responsible for making sure that the cited and/or quoted material is relevant to the question I asked, even when taken out of context from the original source.

- Nothing shows me that **you** do not understand the course material faster than copying an answer to a different question than the one I actually asked!
- Many of the lowest scores on prior semesters' exams came from students copying and pasting answers that only matched the question I actually asked in a few key words or phrases.
- I have fairly low patience for this. If a clearly copied answer is not **obviously** relevant to the question I asked, I am not going to spend a lot of effort trying to study it and figure out ways in which it might be twisted into relevance.

  Therefore,

- **You** are responsible for any alterations or bridging discussion necessary to make an copied argument or quotation match the question being asked.
- If the quoted source uses different notation schemes than what we have introduced in this course, you **must** reformulate the notation into that of **this** course.
- Be aware that different authors may have subtle differences in definitions of terminology, statement of theorems, etc. Again, if you quote external material, it is **your** responsibility to recognize and adjust for such differences.

3.4 Grading

quizzes	50%
Midterm Exam	20%
Final Exam	30%

Most modules of the course will include a quiz.

The lowest quiz score will be dropped.

Further notes on grading.

4 General University Policies

The ODU Catalog lays out a wide variety of University policies that are binding upon both students and faculty. All students are required to abide by these.

4.1 Accommodation for Disabilities

Students are encouraged to self-disclose disabilities that have been verified by the Office of Educational Accessibility by providing Accommodation Letters to their instructors early in the semester in order to start receiving accommodations. Accommodations will not be made until the Accommodation Letters are provided to instructors each semester.