

SYLLABUS
CMPS 3233: Theory of Computation

Catalog Description: Study of the fundamental mathematical properties of hardware, software, and their applications. Emphasis is on the capabilities and limitation of computers, including finite automata, push-down automata, and Turing machines.

Instructor:	Dr. Catherine V. Stringfellow
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Office Hours:	MWF 10:30-11:30am, T 11-12, 2-3pm, R 11-12, 3-4pm & by Appt

Credits: 3 (3 hour lecture)

Course Prerequisite: Minimum grade of C in CMPS 1063 and CMPS 2433.

Required Textbook and Materials:

Intro to Formal Languages & Automata (w/CD) 6th ed., by Peter Linz (Jones& Bartlett Learning) 9781284077247 DIGITAL ISBN-13: 9781284077254

Software: JFLAP, open source

General Objectives

- 1) To familiarize students with the foundations and principles of computer science
- 2) To learn fundamental principles of the recognition and classification of formal languages

Specific Objectives: Upon completion of the course students should be able:

- 1) to learn how to create deterministic and non-deterministic automata to accept languages
- 2) to understand formal languages and grammars and the machines that recognize them, as well as the Chomsky hierarchy
- 3) to convert between equivalent structures, such as regular expressions to FA, NDFAs to DFAs, etc.
- 4) to understand Turing machines, and write Turing machine programs
- 5) to understand the concept of computability

Instructional Method: Primarily lecture and class participation. Every student will be required to present assigned problems to the class. The problems will come primarily from the homework assignments.

Course Assignments and Evaluation: Quizzes and homework assignments will be assigned. Quizzes may be announced or unannounced. These will consist of problems from those at the end of sections in the text and the JFLAP manual and problems provided by the instructor. Homework problems may or may not be graded. Students will be called upon to work problems on the board – if unprepared it will be a 0 for the problem. Final grades will be based on the following criteria.

<u>Activity</u>	<u>percentage of grade</u>
Board work and participation	10%
Quizzes	10%
Homework assignments (including JFLAP)	20%
Two exams	40%
Final (Tues. May 2, 10:30am-12:30pm)	20%

Grades may be determined according to this scale (approximate):

A	90% - 100%	B	80% - 89%
C	70% - 79%	D	60% - 69%

COURSE AND DEPARTMENT POLICIES

Attendance Policy: Students with more than three unexcused absences will be dropped from the course. It is imperative students attend their group meetings both in and out of class, as this can impact their contribution to the project and hence their grade. Occasional in-class time will be given for group meetings.

Late Work: Late work may be submitted within 48 hours of due date/time except for the last week of class, but there will be a 10% penalty assessed.

Make Up Work/Tests/Quizzes: Students need a valid university excuse (e.g., excuse from the doctor, death in the immediate family, etc.) to make up work or tests. If you know ahead of time that you will miss a quiz or exam, please arrange to take it early. Refer to [MSU Texas Student Handbook](#).

Computer Requirements: Taking this class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. **Personal computer technical difficulties will not be considered a reason for extra time to submit assignments, tests, or online discussion postings.** Online class material can be accessed from any computer in the world which is connected to the internet. Computers are available on campus in various areas of the buildings, as well as the Academic Success Center. Contact your instructor immediately upon having computer trouble. If you have technical difficulties in the course, there is also a student helpdesk available to you. The university cannot work directly on student computers due to both liability and resource limitations, however they are able to help you get connected to our online services. For help, log into [D2L](#).

Policy on Testing Process

The Department of Computer Science has adopted the following policy related to testing.

- All bags, purses, electronics, including smart watches (turned off), books, etc. will be placed in the front of the room during exams, or in an area designated by the instructor.
- Unless otherwise announced by the instructor, nothing is allowed on the desk but pen/pencil/eraser and test papers.
- A student who leaves the room during an exam must turn in the test and will not be allowed to return.

Academic Misconduct Policy & Procedures

Academic misconduct is cheating, collusion, and plagiarism: it is the act of using either published or unpublished source material of other students, persons, or generative AI (unless there are instructions that allow it), and must follow accepted techniques of crediting. The Department of Computer Science has adopted the following policy related to academic misconduct. The policy will be applied to all submission of work for credit as determined by the instructor of the course, e.g., assignments, quizzes and exams. (See below for link to MSU definitions.)

- 1st instance of cheating in the program: The student will be assigned a non-replaceable grade of zero for the assignment, project or exam. If the final grade in the course, does not result in a one letter grade reduction, the student will receive a one letter grade reduction in course.
- Further instances of cheating in any course within the program: The student will receive a grade of F in the course & be removed from the course.
- All instances of cheating will be reported to the Department Chair, the MCOSME Dean, the Dean of Graduate Students, if a graduate student, and the Office of Rights and Responsibilities, who may decide at their own discretion to impose a stiffer sanction based on knowledge of other instances of cheating at MSU Texas.

Note: Showing your work to another student is collusion – it is academic misconduct.

All submitted work using sources (other than your own brain) must include citations and a reference page using IEEE format. No quoted material will be accepted without prior approval.

See Also: [MSU Student Handbook](https://msutexas.edu/student-life/_assets/files/handbook.pdf): Appendix E: Academic Misconduct Policy & Procedures
https://msutexas.edu/student-life/_assets/files/handbook.pdf

Inclement Weather

Classes (and quizzes) may be held online in D2L, in cases of inclement weather. Online courses will be available under Virtual Classroom under the Communication tab.

UNIVERSITY POLICIES AND PROCEDURES

Student Resources: Quick access to several student resources can be found at [Student Resources](#).

Student with Disabilities: Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from disability support office during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Disability Support Office has been provided. For additional information you may contact the Disability Support Office in Clark Student Center 168 - Phone: (940) 397-4140

Policy on Concealed Handguns on Campus

Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's webpage on [Campus Carry](#) at <https://msutexas.edu/police/policies-laws/index.php>. If you have questions or concerns, please contact Interim MSU Chief of Police at steven.callarman@msutexas.edu

Refer to [MSU Student Handbook](https://msutexas.edu/student-life/_assets/files/handbook.pdf), https://msutexas.edu/student-life/_assets/files/handbook.pdf for all other policies.

IMPORTANT DATES

See https://msutexas.edu/registrar/_assets/files/pdfs/spring25front.pdf for [Important Dates](#).