

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
Office:	Bolin Science Hall, Room 126A
Office phone:	397-4578
E-mail:	<i>catherine.stringfellow@msutexas.edu</i>
Office Hours:	MWF 9:30-10:30am, T 10-10:30, 2-3pm, R 9:30-10:30am, 2-3pm & 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>
Boardwork 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: Although student attendance is not calculated into the grade, attendance will be taken each day to track students. If a student is absent more than 2 classes without an excuse and is not performing well in class, a report will be submitted to the Dean of Students and the student may be dropped from the class. Classes will not be streamed for absent students, whether it is excused or not.

Behavior in the classroom: Students are to assist in maintaining a classroom environment that is conducive to learning. This means that the presence of electronic devices other than your calculator are not to be seen, heard, or implied, ever. Questions are encouraged and discussion is acceptable, provided it is pertinent and does not distract from the lesson. The use of electronic devices is discouraged in this class.

Make Up Work/Exams/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.

- For planned excused absences: Homework/Quiz/Exam may be turned in/taken early by prior arrangement.
- For unplanned excused absences: Quizzes cannot be made up, but the lowest one will be dropped. A student must make up a missed exam within 4 working days.
- Late homework must be submitted by next class meeting and will be subject to a 10% penalty.

Computer Requirements: Taking this class requires you to have access to a computer (with Internet access) to access online course material. *Personal computer technical difficulties will not be considered a reason for extra time to submit assignments, tests, or online discussion postings.* Computers are available on campus in various areas of the buildings, as well as the in the library. 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 (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

Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). The Department of Computer Science has adopted the following policy related to cheating (academic misconduct). The policy will be applied to all instances of cheating on assignments and exams as determined by the instructor of the course. (See below for link to MSU definitions.)

- 1st instance of cheating in a course: The student will be assigned a non-replaceable grade of zero for the assignment, project or exam. *If the grade does not result in a letter grade reduction, the student will receive a one letter grade reduction in course.*
- 2nd instance of cheating in a course: The student will receive a grade of F in course & immediately be removed from course.
- All instances of cheating will be reported to the Department Chair and, in the case of graduate students, to the Department Graduate Coordinator.

Note: Letting a student look at your work is collusion and is academic misconduct!

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.

University Policies and Procedures

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

Covid Precautions

Students are encouraged to wear a mask. Any vulnerable or unvaccinated person should wear an N95 or equivalent, if they want to protect themselves from others. Students may also meet the instructor via Zoom by appointment. Covid vaccinations are provided free of charge – and may be obtained on campus on designated vaccine clinic days or by appointment at the Vinson Health Center, or by local pharmacies.

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. 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 has been provided. For additional information, 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. Please note, open carry of handguns, whether licensed or not, and the carrying of all other firearms, whether open or concealed, are prohibited on campus. 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 at MSU Campus Carry Policy <https://msutexas.edu/campus-carry/rules-policies>. If you have questions or concerns, please contact MSU Chief of Police Patrick Coggins at patrick.coggins@msutexas.edu.

Recording of Class Lectures

Permission must be requested in writing and obtained from the instructor before recording of class lectures. If permission is granted, the recording may only be used by the student making the recording. Recordings (or any class materials) may NOT be posted on any internet source without written permission of the instructor. Failure to adhere to the policy may result in removal from the course with a grade of F or other appropriate punishment.

Midterm Progress Report

In order to help students keep track of their progress toward course objectives, the instructor for this class will provide a Midterm Progress Report for all students in the course through each student's WebWorld account. Midterm grades will not be reported on the students' transcript; nor will they be calculated in the cumulative GPA. They simply give students an idea of where they stand at the midpoint of the semester. Students earning below a C at the midway point should a) schedule a meeting with the professor and b) Seek out tutoring.

Important Dates

Visit [MSU's Registrars](https://msutexas.edu/registrar/_assets/files/pdfs/spring22front.pdf) website Important Dates https://msutexas.edu/registrar/_assets/files/pdfs/spring22front.pdf