

CMPS 3233-201: Theory of Computation

Spring 2022

Instructor: Tina Johnson, Bolin 126F, (940) 397-6201, tina.johnson@msutexas.edu

Course Prerequisite: CMPS 2433 with a grade of C or better

Text: Intro to Formal Languages & Automata (w/CD) Edition: 6th, Linz, ISBN 978-1284077247, Digital ISBN 978-1284077254

Software: [JFLAP](#), open-source.

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.

Course Grades

| | |
|-------------------|----------------|
| Exams (3) | 60% (20% each) |
| Quizzes/Boardwork | 20% |
| Homework/JFLAP | 20% |

Tentative Agenda

| Week | Date | Material Covered |
|-----------|---------------------|---|
| 1 | Jan 11, 13 | Course Information, Ch 1: Intro, Sets, Proofs |
| 2 | Jan 18, 20 | Ch 1, Ch 2: Finite Automata |
| 3 | Jan 25, 27 | Ch 2 |
| 4 | Feb 1, 3 | Ch 3: Reg. Expressions/Grammars |
| 5 | Feb 8, 10 | Ch 3, Review |
| 6 | Feb 15, 17 | Test 1: Ch 1-3.2 , Ch 4: Reg. Languages |
| 7 | Feb 22, 24 | Ch 3.3, Ch 4 |
| 8 | Mar 1, 3 | Ch 5: Context-Free Languages/Grammars (CFL/CFG) |
| 9 | Mar 8, 10 | Ch 5, 6: Simplification of CFG, Normal Forms |
| 10 | March 14-19 | Spring Break, No Classes, ENJOY!! |
| 11 | Mar 22, 24 | Ch 6 |
| 12 | Mar 29, 31 | Review, Test 2: Ch 3.3-6 |
| 13 | Apr 5, 7 | Ch 7: Pushdown Automata |
| 14 | Apr 12, 14 | Ch 8 (8.2 only): Closure properties of CFLs Holiday Break, No Classes Thurs, Apr 14 |
| 15 | Apr 19, 21 | Ch 9: Turing Machines |
| 16 | Apr 26, 28 | Ch 11, Review |
| | Thurs, May 5, 1-3pm | Test 3 (Final): Ch 7-11 |

Course and Department Policies:

Electronic Devices: The use of electronic devices is discouraged in this class. Students who intend to use a laptop or tablet should sit in the back row(s) of the class to avoid distracting other students.

Late Work: Late homework will be accepted with a penalty of 5 points per day late and will be accepted only until homework is returned (usually class after due date). Quizzes cannot be made up, but one quiz/homework grade will be dropped.

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Procedures: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given).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 had 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 resulting 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.

See Also: [MSU Student Handbook](#): Appendix E: Academic Misconduct Policy & Procedures

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 the [Disability Support Office](#) 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. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information, please refer to the [Policy on Carrying Concealed Handguns on Campus](#). 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.

Important Dates: See the [Spring 2022 Academic Calendar](#) for important dates.