

Sp 2025 East Texas A & M university Math 2305 – Discrete Math

This is the syllabus for Math 2305.01E-Discrete Mathematics for Spring 2025. Please read it carefully. You will be responsible for all information given in the syllabus, and for any modification to it that may be announced in classes.

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Office hours: MW: 11:00am-12:00pm, MTR: 2:00-3:00 pm,
or by appointment

Class schedule and room: TR 11:00am-12:15pm, Binn 302

Text: DISCRETE MATHEMATICS, 5th Edition, by Kenneth A. Ross and Charles R. B. Wright. Tentatively, chapters 1, 2, 3, 4 of the text will be covered. If time permits, parts of Chapter 6 will also be covered.

Course Description: Mathematical models, mathematical reasoning, sets, binary relations, counting and algorithm analysis, infinite sets. Prerequisites: CS 151 and Math 2414.

Learning Outcomes: Upon successful completion of this course, the students will be able to:

1. Construct mathematical arguments using logical connectives and quantifiers.
2. Verify the correctness of an argument using propositional and predicate logic and truth tables.
3. Solve problems involving recurrence relations and generating functions.
4. Perform operations on discrete structures such as sets, functions, relations, and sequences.
5. Construct proofs using direct proof, proof by contraposition, proof by contradiction, proof by cases, and mathematical induction.
6. Apply algorithms and use definitions to solve problems and to prove statements in elementary number theory.

Instruction: Instruction will include lecture, demonstration and models, and some group work, based on time available.

Attendance: Attendance will be checked and it is your responsibility to sign the attendance roll sheet. It is your benefit to attend the class.

Tests: There will be three midterm tests and a final exam for the course. The tentative schedules for the exams are:

Test 1: Feb. 06, Thursday 11:00am-12:15pm.

Test 2: Mar. 06, Thursday 11:00am-12:15pm.

Test 3: Apr. 10, Thursday 11:00am-12:15pm.

Final exam: The comprehensive final exam is scheduled on
May 6, Tuesday, 10:30am-12:30pm.

No makeup will be given for the tests. If you miss one test with evidence showing that you have an acceptable reason for that, the average of your other two test grades will be used as the grade for the test you missed. This provision will only be applied to ONE exam, so students should make every effort to be present and well-prepared for all exams.

Homework & Quizzes: Homework for the course has been assigned (see the last page of this syllabus). You are strongly recommended to work out homework assignments on a regular basis since **No one can learn mathematics without doing it!** The assigned homework problems will be collected to grade **every Wednesday (from the 2nd week)** in the class before the lecture begins. Some homework problems or their similar forms will be used as test questions.

Course grades: The course grade consists of

Homework & Quizzes:	15%
Three Tests :	60%
Final exam:	25%.

The letter grades will be assigned using the following scale:

A: 90-100% B: 80-89% C: 70-79% D: 60-69% F: 0-59%

Withdrawal Policy: Concerning the deadlines and consequences of withdrawals please check on <http://www.tamuc.edu/admissions/registrar/academicCalendars/>

Tutoring & Help : A better way to learn math is to keep progress and leave no gaps in one's study. So please get help as soon as you need it and do not wait until it is too late. You are welcome to come to me or go to Math Skills Center located in **Bin 328** where you can find free tutors for help. The tutoring hours of Math Skills Center for the current semester are:

MTWR 10am – 6pm, and F 10am – 2pm

Academic Integrity: I have a **NO TOLERANCE** policy for cheating and if you are caught cheating you will fail this course. Cheating in this course includes the following:

- Giving or receiving answers during an exam or quiz.
- Viewing the exam or quiz answers of others.

- Having notes/practice work available during quizzes or tests.
- Possession or access to test items before the test is given.
- Deception in getting an excused absence to obtain the undeserved opportunity to make-up work.
- Use of cell phones or text messaging technology during exams or quizzes. You may not use the calculator on your cell phones.
- Improper citations in written works, or using another person's ideas and words as your own without giving proper credit.
- **Any** method, no matter how well rationalized or accepted, which improves a person's grade by any means other than study and skillful performances on exams and/or other assignments.

Students found guilty of an act of academic dishonesty in this course will be subject to receiving an "F" in this course.

Classroom Behavior: "All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment" (See Student's Guidebook). A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

AI use policy: Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

The information for students with disability: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning

environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact: Office of Student Disability Resources and Services, Texas A&M University-Commerce, Gee Library, Room 132, Phone (903) 886-5150 or (903) 886-5835, Fax (903) 468-8148, email: StudentDisabilityServices@tamuc.edu

Counseling & Help: The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

Campus Concealed Carry Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to (<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

Spring 2025 Math 2305 Homework Assignments

- Section 1.1: 3, 4, 19.
Section 1.2: 2, 5, 9, 14.
Section 1.3: 1(a), (c)(d) (f), 3, 10.
Section 1.4: 1, 2, 8.
Section 1.5: 2, 4, 11, 13(a), (e), (f).
Section 1.6: 3, 5, 6, 7.
Section 1.7: 3, 4, 15.
Section 2.1: 1, 2, 6, 7, 9, 12 (a), (b).
Section 2.2: 1, 2, 7(a), (d), 8, 9.
Section 2.3: 10, 11, 12, 13 (a), (b).
Section 2.4: 2, 3(a), (b), 13.
Section 2.5: 5.
Section 3.1: 1(a), (c),(d), 4 (a), (b), 7 (a).
Section 3.2: 1 (a), (b), 2, 3 (a), (b), (f), 6, 10 (b), (e).
Section 3.3: 3 (d), (e), (f), 5(b), (e), 16(a), (c), 18(a), (d).
Section 3.4: 7, 8(a), 10, 13.
Section 3.5: 1 (c), (e), 2 (d), (f), 6, 12.
Section 4.2: 4(a), 5, 14, 24.
Section 4.3 1 (a), (c), 2 (b), (d), 3 (b), (c), 13.
Section 4.4: 1, 3, 10, 11.
Section 4.5: 2, 4, 11(a).
Section 4.7: 3 (a), (d), 6, 8 (b), (d), 13(a), (b).
Section 6.1: 1, 2, 9, 10.
Section 6.2: 1, 2, 7.
Section 6.3: 1, 2, 3.

To be continued