



Math 2305.01W: Discrete Mathematics

COURSE SYLLABUS: Summer I 2020 (June 1st – July 2nd)

INSTRUCTOR INFORMATION

Instructor: **Adam Bowden**

Office Location: **Binnion B-317**

Office Hours: **10am – 11am Mon. through Thur. via Zoom** (link: <https://zoom.us/j/3829563118>) or by appointment.

Office Phone: **903-886-5953**

Office Fax: **903-886-5945**

University Email Address: adam.bowden@tamuc.edu

Preferred Form of Communication: **Email**

Communication Response Time: **Within 24 hours on weekdays.**

COURSE INFORMATION

Textbook: *Discrete Mathematics*, 5th Edition, by Kenneth A. Ross and Charles R. B. Wright (ISBN 9780130652478)

Chapters 1, 2, 3, 4, and 5 of the text will be covered.

Homework assignments will be posted online for all students. A textbook will be used for reference only.

Course Description

A course designed to prepare math, computer science, and engineering majors for a background in abstraction, notation, and critical thinking for the mathematics most directly related to computer science. Topics include: logic, relations, functions, basic set theory, countability and counting arguments, proof techniques, mathematical induction, combinatorics, discrete probability, recursion, sequence and recurrence, elementary number theory, graph theory, and mathematical proof techniques. Prerequisites: Math 2413 with a grade of C or better.

Student Learning Outcomes

Upon successful completion of this course, students will:

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. Demonstrate the ability to solve problems using counting techniques and combinatorics in the context of discrete probability.
4. Solve problems involving recurrence relations and generating functions.
5. Use graphs and trees as tools to visualize and simplify situations.
6. Perform operations on discrete structures such as sets, functions, relations, and sequences.
7. Construct proofs using direct proof, proof by contraposition, proof by contradiction, proof by cases, and mathematical induction.
8. Apply algorithms and use definitions to solve problems to prove statements in elementary number theory.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Students will need to check their campus email and MyLeo Online (D2L) regularly to stay informed of class announcements. Accessing MyLeo Online (D2L) each week is also mandatory to access assignments and exams. Also required is the use of a cell phone camera or document scanner in order to submit digital copies of any paper assignments and the written portion of exams. Use of a graphing calculator (equivalent to a TI-84 or below) is not required, but is recommended.

Instructional Methods

Instruction will include live online lectures, prerecorded video lectures and demonstration, and posted handouts and notes for each chapter.

Student Responsibilities or Tips for Success in the Course

Attendance and Participation

Attendance will be taken by the last login time on MyLeo Online (D2L), submission of weekly assignments, and completion of exams. Not logging in and completing assignment for a week will count as an absence. If you have extenuating circumstances and miss any part of a week's assignments, please contact me ASAP. Extensions can be given in the case of university excused absences.

Study Time per Week

A general rule of thumb for how much time to spend each week for a class is two to three times the credit hours for the class. Hence, for a three-credit hour class, a good suggestion is to spend 6 to 9 hours each week working on assignments or studying the material. However, for a summer class, we are condensed down into five weeks. Hence it is recommended to spend more time each week than a normal semester to complete assignments and prepare for exams.

GRADING

Final grades in this course will be based on the following scale:

A = 90% - 100%

B = 80% - 89%

C = 70% - 79%

D = 60% - 69%

F = 59% or Below

Assessments

HOMEWORK: Homework will be assigned each week on D2L and must be submitted as a digital document into the proper place on D2L as per the instructions. Students will be expected to turn in their own work for the assigned problems. No credit will be received unless work or explanation is shown for each question. **Completing homework and turning it in on time is a must for success. No late homework is accepted except at your instructor's discretion.**

QUIZZES: Quizzes will be occasionally given on D2L on previously learned material. In general, NO makeup quizzes will be given unless by excused absence.

PROJECTS: Two projects will be assigned to go further in depth with some of the materials. Instructions will be posted to D2L.


EXAMS: There will be **two** exams and a comprehensive final. An online video review and set of review questions will be provided before each exam. Exams will be accessed through D2L during the time frame given. Each exam will require written work to be submitted within 30 minutes of completion in order to receive credit. Partial credit is given *only* if the work neatly and clearly demonstrates progress toward the correct answer. **No outside materials or disallowed electronic devices (such as cell phones) are permitted during exams.** The only device allowed is an approved graphing or scientific calculator. **Each exam will be accompanied by an honesty statement. Agreeing to this is required in order to received credit for the exam.**

No make-up exams may be given without prior notice of a university excused absence.

However, at the end of the semester, I will drop the lowest exam grade with the final exam grade, provided the final exam grade is higher.

FINAL EXAM: The final exam is comprehensive and will be given on the last day of class.

GRADES: Tests: 50%
Homework/Quizzes/Projects/Attendance: 20%
Final: 30%

Each student's average for the course will be posted in your MyLeo Online account. To access the course, you will go into MyLeo and the "Apps" and look for the app for "MyLeo Online (D2L Brightspace)". You should see directions to choose your course from the course grid that looks like: . Once you have chosen the correct course, you will be able to see your "grades" option.

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements: <https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support: https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements: <https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

Interaction with Instructor Statement

Students are expected to check their campus email regularly. Any questions or concerns may be addressed to the instructor's campus email. A response will be provided within 24 hours on weekdays. Emails over the weekend may take longer for responses.

It is vital that students be engaged and participating in class. Everyone is welcome to ask questions during class to further understanding of the concepts. Furthermore, I welcome any questions you may have after class.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: <https://www.britannica.com/topic/netiquette>

Appropriate classroom behavior is required from those who attend this class. For the online format, this means treating classmates with respect in any online discussions or communication. If someone is not treating others in the class appropriately, they will be asked to change this behavior and can lose points for any related assignments. Serial disruptors will be asked to withdraw from the class.

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

In order to ensure fairness and high academic standards, any actions which violate the principles of academic integrity through dishonesty or cheating are given serious consideration.

In order to understand what constitutes a violation of academic integrity and the consequences of such behavior, the university's policies may be reviewed at:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>. In particular, awareness of the following definitions is essential

in order to know what represents academic dishonesty (pages 6 – 7):

- **“Cheating:** Intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices or materials in any academic exercise. Unauthorized materials may include anything or anyone that gives a student assistance, and has not been specifically approved in advance by the instructor.”
- **“Complicity:** Intentionally or knowingly helping, or attempting to help, another to commit an act of academic dishonesty.”
- **“Plagiarism:** The appropriation of another person's ideas, processes, results, or words without giving appropriate credit.”

Any form of academic dishonesty which is observed will be noted. The student will be informed of why their behavior falls under this category and cannot be allowed. The event will then be reported under the guidance of university procedure. The university's policies regarding these matters are outlined at the link above. Depending on the severity of the circumstances, disciplinary action may be taken.

Please be aware that while your instructor does not suspect every student of attempting to engage in dishonest behavior or cheating, certain measures may be taken during the semester to encourage integrity, honesty, and learning. Some of these measures may include asking for calculators to be cleared, all electronic devices (except for those approved) to be put away, or for an honesty statement to be signed.

Students with Disabilities-- ADA Statement

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 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

Texas A&M University-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.

Campus Concealed Carry Statement

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 the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

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.

COURSE OUTLINE / CALENDAR

<u>Week 1</u> <u>(June 1 - 4)</u>	<u>Week 2</u> <u>(June 8 - 11)</u>	<u>Week 3</u> <u>(June 15 - 18)</u>	<u>Week 4</u> <u>(June 22 - 25)</u>	<u>Week 5</u> <u>(June 29 - July 2)</u>
• 1.1	• 2.2	• 3.3	• 4.5	• Final Exam
• 1.2	• 2.3	• 3.4	• 5.1	• Review
• 1.3	• 2.4	• 3.5	• 5.2	• Final Exam
• 1.4	• 3.1	• 4.2	• 5.3	
• 1.5	• 3.2	• 4.3	• Review	
• 1.6	• Review	• 4.4	• Exam 2	
• 1.7	• Exam 1			
• 2.1				

By Remaining Enrolled In This Course, All Students Agree To Abide By The Policies Of This Class, As Stated In The Syllabus