SCOTTSDALE COMMUNITY COLLEGE

A **MARICOPA** COMMUNITY COLLEGE

Course Title: Discrete Mathematics

Course Information

Semester & Year:	Spring 2025		Start Date:	January 28, 2025
Course Prefix & Number:	MAT 227		End Date:	May 9, 2025
Section Number:	30147		Room Number:	CM 453
Credit Hours:	3		Meeting Days:	TTh
			Meeting Times:	3:30 PM – 4:55 PM

Course Format

The course format for this course is In Person with a flexible attendance (HyFlex) component using WebEx.

Instructor Information

Instructor:	Patricia Dueck
Email:	patricia.dueck@scottsdalecc.edu
Phone:	(480)423-6594
Office Location:	CM 453
Office Hours:	MW, 4:00 PM to 5:30 PM, CM 453
	TTh, 2:30 PM to 3:30 PM, CM 453

Virtual office hours are the same as above at this link:

https://meet.google.com/gdz-kwbo-vez.

Please inform me via email ahead of time if you plan on attending. I often forget to turn on the computer during office hours.

Others by appointment

Course Description

Course emphasizes discrete mathematics connections to computer science by exposing students to foundational concepts of set theory, logic, counting, induction, proof techniques, graph theory, and algorithms.

Prerequisites

A grade of C or better in MAT212, or MAT213, or MAT220, or MAT221, or permission of Department or Division Chair.

Course Competencies

1. Establish the validity of logical propositions.

2. Compare the cardinality of given sets.

3. Study the correctness of a proof.

4. Classify a proof.

5. Solve a recurrence relation.

6. Identify the properties of a relation.

7. Create proofs using relations, order relations, and equivalence relations.

8. Calculate permutations and combinations of sets.

9. Calculate the empirical probability of an event.

10. Solve problems involving modular arithmetic.

11. Identify the properties of a graph.

12. Determine paths, cycles, and connectivity given a graph.

13. Represent a graph with its incidence matrix.

14. Use Big-O notation to study the growth of a given function.

Texts, Course Materials and Technologies

- **Text: *Essentials of Discrete Mathematics (Required)***
  3rd edition
  ISBN: 9781284056242
  Author: Hunter

- **Internet:** The ability to use the internet is required as much of the course is on Canvas as well as access to WebEx, used for HyFlex attendance.

- **Web Cam:** Both video and audio capabilities are necessary in order for you to attend class using WebEx

Course Technologies

View the [Accessibility Statements & Privacy Policies](#) of technologies used in this course.

Maricopa Systems

This course uses key Maricopa systems for course management and communication.

- Canvas Learning Management System
- Student Maricopa Gmail Account
- Maricopa Open Educational Resource Learning System (MOER)

Synchronous Communication Tools

This course implements the use of web conferencing and/or other synchronous course tools.

- Webex
- Google Meet

Streaming Media/Audio/Video Tools

This course uses webcasting, lecture capture systems, YouTube, and/or other streaming media services.

- Scanner App (such as CamScanner)
- YouTube
- Films on Demand

Student Assignment Tools

This course requires students to participate in or submit assignments using desktop or cloud-based applications.

- Google Products
- Scanner App (such as CamScanner)
- Microsoft Office

Course Policies

First, students are also responsible for the college policies included on the [Student Regulations](#) page of the Maricopa Community College District website.

Second, there are policies that govern this specific course, MAT 227.

Policy on Incomplete: In order to receive an incomplete in the course, the student must have completed at least 90% of the course work and have a passing grade at the time the incomplete is taken.

Policy on Student Grades: Final grades are calculated using the scale listed in the syllabus. FINAL GRADES ARE NON-NEGOTIABLE. It is unethical to reach out at the end of the semester and request "a few extra points" or discuss the consequences of not earning the grade you want in the class. Messages of this nature will not receive a response.

Policy on Exams using Disability Resource Services (DRS): Students using DRS to assist with this course are responsible for setting up any necessary accommodations prior to taking any assessments. This is only for items for which DRS is needed.

Cell Phones and Etc.: Upon starting class all cell phones and other objects of tech communication need to be turned off. If there is a true emergency call/text you are expecting, let the instructor know before class. You will forfeit your attendance point if your cell phone goes off during class, you are texting during class or you are using a computer to surf the internet. Of course, with live online portion of the class this cannot be policed. However, it is the smart student who has the self-control to avoid all possible distractions, and pay attention to what is going on in class.

Note: No audio, photos or video of class, instructor or classmates are permitted unless by special request. Photos of work on the boards permitted.

Graphing Calculator: A graphing calculator is required for this course. The suggested calculator is the TI-83/84. Please have the calculator for class daily. Calculators with CAS systems or QWERTY keyboards may not be used during exams.

Calculator Rental for Students: The Media Center will rent calculators this semester. Students must bring a copy of their schedule, a photo ID, and credit/debit card for payment. It costs $10, and rentals must be done before 5pm.

Other options (cannot be used during exams):

Exams:

1) There will be 3 exams given during the semester (including the final). These exams will involve a mix of mechanical skills and conceptual reasoning. The best possible preparation for the exams is regular attendance and completion of assigned homework.

2) Each exam is in-person, proctored and possibly part take-home, non-proctored exam to be completed under a time limit over a weekend. Information regarding the non-proctored portion will be explained carefully when the first exam of this type occurs.

3) There are **no make-up exams** unless you have a valid excuse accompanied with documentation or you have spoken with the instructor before the time of the exam.

4) You have *one week* to complete the make-up exam and you may receive a 10% reduction in points regardless of the excuse.

5) You may only make-up one exam per semester. The second missed exam will receive a grade of 0 (zero).

6) Exams are never curved.

7) All exams must be taken in person, in class or in the testing center

Homework, Quizzes & Projects:

1) Homework will be assigned after each class. Students may work together on homework, but each individual student should complete and write up their own work.

2) Homework sets will be due the first class period of every week at the beginning of class (even for those attending virtually) unless it is an exam day.

3) These hand-written problems from part (1) will be graded as follows: Two to four problems will be graded as chosen by the instructor. Each HW set is at most a total of 14 points.

4) **Two** homework quizzes will be dropped at the end of the semester.

5) *No make-up homework sets or quizzes of any kind are allowed*.

6) There also may be group quizzes, or different kinds of individual quizzes at other times in the semester.

7) Projects are assigned in class at various times and may be completed in groups.

Participation:

We have lots of STEM events happening across campus and you can find them on the STEM Canvas page. If you attend these events, you will receive 3 points extra credit added to your HW total for each event. The events will be announced in class and on the STEM Canvas page, for which you need to sign up at the link below:

https://learn.maricopa.edu/enroll/KACCX6

Final Exam:

The final exam will be taken on May 8, 2024 at 3:35 PM in our regular classroom. There will be no make-ups given for the final for personal reasons, including nonrefundable airplane tickets. See below for exceptions.

Final Exam Make-up Policy:

The final exam schedule listed in the Schedule of Classes will be strictly followed. Exceptions to the schedule and requests for make-up examinations can be granted only by the Department Chair and for one of the following reasons:

1. religious conflict (e.g., the student celebrates the Sabbath on Saturday)

2. the student has more than three exams scheduled on the same day as the math final

3. there is a time conflict between the math final and another final exam.

If there is a last-minute personal or medical emergency, the student may receive a grade of Incomplete (see note about incomplete grades earlier in this syllabus) and make up the final within one calendar year. Again, make-up exams will NOT be given for reasons of nonrefundable airline tickets, vacation plans, work schedules, weddings, family reunions, and other such activities. Students should consult the final exam schedule before making end-of-semester travel plans.

Student Expectations:

Students are expected to be courteous, respectful and empathetic to peers and instructor. Be in class on time, be prepared for class, participate in class activities, follow assignment instructions, effectively complete assignments and turn them in by the appropriate due dates. You are also expected to maintain knowledge of your grade standing and contact the instructor if concerns arise. Students are also responsible for all college policies included in the college catalog and the student handbook.

Generative Artificial Intelligence (AI) Policy

Opening Statement Regarding Generative Artificial Intelligence (AI)

The World Economic Forum defines generative AI as "a category of artificial intelligence (AI) algorithms that generate new outputs based on the data they have been trained on. Unlike traditional AI systems that are designed to recognize patterns and make predictions, generative AI creates new content in the form of images, text, audio, and more."

Some examples of generative AI tools include but are not limited to: ChatGPT, Google Bard, Microsoft Copilot, Stable Diffusion, GrammarlyGo, and Adobe Firefly.

No Generative Artificial Intelligence (AI) Allowed

In this class, all work submitted must be your own. The use of generative AI tools will be considered academic misconduct (see Administrative Regulation 2.3.11 1.B(b)) and will be treated as such. If you are unsure if the tool or website you are using is a generative AI tool, please contact the instructor for further clarification before using the tool or website.

Grading Standards & Practices

Grade Scale

Letter Grade	Points Range
A	90 – 100%
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	0 – 59%

Percent Allocation

Each Exam	28%
HW Sets	16%

Attendance Policy

- Attendance is expected.
- You are to be in class every day it is scheduled.
- You may be dropped after three absences.
- You are expected to be in class on time.
- You are expected to stay the full length of class once you come to class.
- If you have a legitimate need to leave class early, please notify your instructor before class starts.
- You may attend class 5 times virtually so if you are ill or running very late you may still attend class virtually
- Just showing up and warming a chair is one point every day.
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Assignments (Homework)

Again, homework sets are due during the first class period each week (unless it is an exam day). Please see the Syllabus page on our Canvas course for the list of Homework problems and the course schedule. You have to attend class to be able to turn in homework. If you are attending in person, you can hand in written copies. If you are attending class virtually on the day homework is due, you will complete it at home, scan it and submit it to Canvas at start of class.

Assigning of Grades

Your grade is NOT a commodity; it has not been purchased with your tuition. You have the right to be graded fairly, but you do NOT have the right to any specific grade. Your grade is not a reflection of you as a person. Your grade is not a measurement of effort. Your grade is an evaluation of PERFORMANCE. This means it is dependent upon how well you demonstrate your comprehension of the subject through application and completion of the items listed above and below in this syllabus.

Response Time

Students can expect a response time of 72 hours for the instructor to respond to messages sent via the Canvas Learning Management System or email. Students can expect assignments to be graded within 14 days of the assignment's due date.

Instructional Contact Hours (Seat Time)

This is a three (3) credit-hour course. Plan to spend at least three hours on course content or seat time (direct instruction) and 6 hours on homework weekly. Accelerated courses will require additional time per week.

Tutoring

The Math Tutor Center

The Math Tutor Center offers in-person as well as remote tutoring to students currently enrolled in mathematics courses at SCC. Remote tutoring is being offered online via Google Meet and can be accessed via computer or phone.

Click Here (https://www.scottsdalecc.edu/students/tutoring/math) to find out how and when to reach a free SCC Math Tutor!

Non-SCC Tutoring Service (use as last resort)

As much as possible, it is highly recommended that you first utilize your professor then use the SCC Math Center tutors since they are familiar with SCC coursework, instructor expectations, and assignments; however, if you need to work with a tutor outside regular Math Center hours, you have access to a 24/7 online tutoring service called Brainfuse. You may utilize up to 6 hours of online tutoring through Brainfuse per semester and have the option of requesting additional time if needed.

To access Brainfuse and begin working with a tutor:

1. Visit the **SCC Online Tutoring Services Through Brainfuse** page (https://www.scottsdalecc.edu/students/tutoring/online-tutoring)
2. Click the **Visit a tutor online** button
3. Enter your MEID and password
4. Choose your topic and subject
5. Click the **Connect** button

Please use your time effectively and be prepared with your questions before you connect to a tutor. Tutors and students communicate in real-time so whatever you type, draw, or share on the screen, the tutor sees, and vice versa. You may also want to have screenshots ready if applicable. All Brainfuse sessions are recorded for review later.

Learning Tools and Your Privacy and Security

SCC utilizes a variety of software applications and web-based tools operated by third party vendors to support student learning. To allow student access to the application, site or tool, certain identifiable information may be required to establish a user name or password, and submit work and/or download information from these tools. Inherent with all internet-based tools, there is a risk that individuals assume when electing to use these tools, as they may place information at risk of disclosure.

To use learning tools responsibly, please observe all laws and the Maricopa Community College District [Student Conduct Code](#), such as copyright infringement, plagiarism, harassment or interference with the underlying technical code of the software. As a student using a learning tool, you have certain rights. Any original work that you produce belongs to you as a matter of copyright law. You also have a right to the privacy of your educational records. Your contributions to learning tools constitute an educational record. By using the tool, and not taking other options available to you in this course equivalent to this assignment that would not be posted publicly on the internet, you consent to the collaborative use of this material as well as to the disclosure of it in this course and potentially for the use of future courses.

Students are responsible for the information contained in this syllabus, the Syllabus page in your Canvas course and the **College Policies & Student Services** page found in the First Steps module of your Canvas course. Students will be notified by the instructor of any changes in course requirements or policies.