



Spring 2023

Course Information

Course Title: Discrete Mathematical Structures

Course Prefix & Number: MAT 227

Section Number: 26044/35111

Credit Hours: 3

Course Format

The course format for this course is Online, 01/30/2023 – 05/10/2023

Instructor Information

Instructor: Amy Volpe

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Phone: 480.423.6035

Office Location: CM-403

Course Description

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

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

Course Objectives

1. Establish the validity of logical propositions. (I)
2. Compare the cardinality of given sets. (I)
3. Study the correctness of a proof (I)
4. Classify a proof. (I)
5. Solve a recurrence relation. (II)
6. Identify the properties of a relation. (II)
7. Create proofs using relations, order relations, and equivalence relations. (II)
8. Calculate permutations and combinations of sets. (III)
9. Calculate the empirical probability of an event. (III)
10. Solve problems involving modular arithmetic. (IV)
11. Identify the properties of a graph. (V)
12. Determine paths, cycles, and connectivity given a graph. (V)
13. Represent a graph with its incidence matrix. (V)
14. Use Big-O notation to study the growth of a given function. (VI)

Texts, Course Materials and Technologies

Chapter readings are available as pdfs in the online learning system MOER. There is an optional text you may purchase. The information is below.

Technology:

1. MOER Account (FREE)

This course uses MOER, an Online Course Management System developed by David Lippman and the State of Washington. All the Course Materials will be accessed through this system. Grades will also be posted through this system. The software is free to use and can be accessed at <https://MOER.maricopa.edu/> Once you have an account, you can enroll in the course using the information below.

Course ID: 16862

Enrollment Key:1234

2. **Calculator:** You will need a calculator occasionally for this class. You will need a calculator that performs matrix operations for exams unless you would prefer to do them by hand. You may use your calculator on exams and assignments.

3. **Computer:** You will need regular access to a computer (with Internet access) in order to complete the online assignments that are part of this course. Your computer will need a web-cam for the proctored online testing. The labs and computer locations on campus may be used to access your online work (IT-100 computer lab, library, LC 371 Writing Center lab, Math Tutoring Center). You will need to have an SCC Network Login account to access the computers on campus.

4. **Email:** Your Maricopa Email address is part of your account automatically as an SCC student. I will primarily contact you via email and MOER. You can forward your Maricopa Gmail to another account, as you prefer.

Course Policies

The following are policies specific to this course. Students are also responsible for the college policies included on the [Student Regulations](#) page of the Maricopa Community College District website.

Late Passes

- Students are given 5 late passes at the beginning of the course.
- Each late pass extends a single homework assignment by 48 hours from the due date (so Monday at 11:59 pm instead of Saturday at 11:59 pm).
- You may only use **one late pass per assignment**. No assignments may be completed for credit more than 2 days after the due date.
- Once you are out of late passes, you may not complete any late assignments for credit.
- Late passes cannot be used on exams.
- Late exams may be approved by the instructor and will receive a 15% penalty per day late. Email or message your instructor if you would like to request a late exam with a penalty.

Grading Standards & Practices

The information below explains the structure of the course, requirements, and grading procedure.

- 1) There are 11 Chapters in this course.
- 2) For each Chapter, you must submit a homework assignment. Homework assignments are submitted in the MOER system and may be typed or an image file may be uploaded.

There are 2 in person proctored exams for this course. They must be taken by the dates and location indicated in the course calendar in MOER.

- 3) Students who do not complete both Exams will earn a grade of W.

Required Assignments	Number of Assignments	Percent of Total Grade
1. Online Homework	11	44%
2. Midterm Exam	1	28%
3. Final Exam	1	28%

Grades are updated continually and visible in the MOER Gradebook section. Check there often to see your overall percent in the course. Final letter grades are assigned as indicated below.

Course Grade: A	90% – 100%
Course Grade: B	80% – 89.9%
Course Grade: C	70% – 79.9%
Course Grade: D	60% – 69.9%
Course Grade: F	Less than 60%
Course Grade: W	See Withdrawal section of Syllabus

Response Time

Students can expect a response time of 24 hours for the instructor to respond to messages sent via MOER, Canvas Learning Management System, or email. Students can expect assignments to be graded within 48 hours of the assignment's due date.

Attendance Policy

Attendance in an online classroom involves consistent and regular progress on the course assignments. Failure to complete two assignments may result in being withdrawn from the course.

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 twelve hours on homework weekly. Accelerated courses will require additional time per week.

Withdrawal Policy

Class Policies

- 1) Failure to complete your orientation exercise and testing options assignment with 100% in MOER by Friday, 2/03/2022, will result in being dropped from the course.
- 2) Students who do not complete the 2 proctored exams will be withdrawn.
- 3) Students who fall behind schedule by more than one Chapter may be withdrawn.
- 4) Students who do not complete any work in MOER for 10 consecutive days (and are behind schedule) may be withdrawn.

If you find that you need to withdraw from the course, please speak to me first. I may be able to recommend other options or discuss alternative courses of action concerning future classes.

College Policies

- 1) Student may initiate an official withdrawal from any course by submitting a withdrawal form with required signatures to the A&R office within published deadlines.
- 2) Failure to attend any classes is not a guarantee for a refund or an excuse of debt incurred through registration. See Refund Policy in the [2019-2020 College Catalog](#), page 241.
- 3) Official date of withdrawal is last date of attendance as determined by student's withdrawal or as reported by the instructor.
- 4) The official date of withdrawal will determine degree of refund, if any.
- 5) Failure to file an official withdrawal form within published deadlines can result in a failing grade and may affect refund of course tuition and fees.

Technology Statement(s)

Third-Party Learning Tools

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, submit work and/or download information from these tools. Inherent with all internet-based tools, there is risk that individuals

assume when electing to use the products and services made available by these tools, as they may place information at risk of disclosure.

In this course, we will use MOER and Respondus Lockdown Browser + WebCam to complete or participate in assignments, activities and/or access course materials. [Accessibility Statements and Privacy Policies](#) for all tools used at SCC are available.

To use the third-party tools responsibly, please observe all laws and the Maricopa Community College District [Student Conduct Code](#). Some specific aspects of law and conduct code to remember are prohibitions against copyright infringement, plagiarism, harassment or interferences with the underlying technical code of the software. As a student using a third-party 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 the third-party learning tool constitute an educational record. By using the third-party 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.