SCOTTSDALE COMMUNITY COLLEGE
A MARICOPA COMMUNITY COLLEGE

Scottsdale Community College (SCC) credits the diverse Indigenous people still connected to the land on which we gather. Our college resides on the tribal territory of the Salt River Pima-Maricopa Indian Community (SRP-MIC). SRP-MIC is a federally recognized nation - one of 22 Arizona Indigenous nations and one of 574 across the United States. Attached to this physical space is a painful history of forced removal and the resulting intentional genocide of its Indigenous people. We remain appreciative of our ability to teach, learn and serve in a space of such importance and reverence.

SCC acknowledges the land on which we are situated today as the traditional land and home, established by Executive Order on June 14, 1879, of two distinct tribal nations: the Onk Akimel O'odham (Pima) and the Xalychidom Piipaash (Maricopa) people. We take this opportunity to thank the original caretakers of this land. We offer our respect to their Elders and to all O'odham and Piipaash people of the past, present and future.

Course Information

Semester & Year:	Fall 2023
Course Title:	Mathematical Analysis for Business
Course Prefix & Number:	MAT 217
Section Number:	32750
Credit Hours:	3
Start Date:	August 22nd, 2023
End Date:	December 15th, 2023
Location:	CM 465 or Virtual Class Meeting Zoom Link
Zoom Meeting Info:	Meeting ID - 876 1678 6774 Passcode - 505711
Meeting Days:	Tuesday and Thursday
Meeting Times:	5:00 PM – 6:15 PM

Course Format

This course has multiple attendance options for students to use. Students have the option of attending in-person meetings by coming to the class or the live-online virtual meetings through Zoom. The start date for the course is August 22nd, 2023. The end date for the course is December 15th, 2023. The class is scheduled to meet from 5:00 PM until 6:15 PM regardless of mode of attendance. Meetings are not recorded. The link and information for attending virtually are given in the course information section of this syllabus.

Exams in this course must be taken in-person on campus at the time and date listed in the syllabus. There are no online options for exams.

Instructor Information

Instructor:	Gabriel Tarr
Email:	gabriel.tarr@scottsdalecc.edu
Phone:	480-425-6746
Office Location:	CM 419 or Office Hours Zoom Link (during office hours)
Office Hours:	Monday and Wednesday 10:30 AM – 11:45 AM
	Tuesday and Thursday 3:30 PM – 4:45 PM

Course Description

An introduction to the mathematics required for the study of business. Includes multivariable optimization, Lagrange multipliers, linear programming, linear algebra, probability, random variables, discrete and continuous distributions.

Prerequisites

Prerequisites: A grade of C or better in MAT212, or MAT213, or MAT220, or MAT221.

Course Competencies

1. Solve linear systems with two and three equations using various methods, including matrices. (I)
2. Use technology to solve application problems with 3+ variables. (I)
3. Solve linear programming problems using the graphical method. (II)

4. Solve multivariable optimization problems with and without constraints. (II, III)
5. Solve counting problems using various counting techniques. (IV)
6. Define probability using sample spaces, and apply to real-world scenarios. (V, VI)
7. Define basic statistics (measure of central tendency and dispersion), and apply to real-world problems. (V)
8. Describe properties of discrete and continuous probability distributions, and apply to solve real-world problems. (V, VI)
9. Describe the normal distribution and its characteristics. (VI)
10. Find probabilities for normal random variables by using the normal distribution. (VI)

Texts and Course Materials

Required Texts: There is no physical textbook for this class. Due to the topics of the course, the course contains content from several textbooks. You can download and/or print the textbook sections from within each unit section in MOER.

Online Course Management System: This course uses MOER, an Online Course Management System developed by David Lippman and the State of Washington. All of the Online Homework will be accessed through this system. Grades will also be posted through this system. The software is free to use and can be accessed here at moer.maricopa.edu. Failure to enroll in MOER and complete the required syllabus quiz by the due date will result in being withdrawn from the course.

Course ID: **17695** **Enrollment Key**: **32750**

Calculator Requirement: A graphing calculator or graphing calculator app is required for this course. The instructor strongly recommends a TI-83/84. Calculators with QERTY keyboards or those that perform symbolic algebra (such as the TI-92/TI89) are not allowed. You are expected to bring your calculator to each class session. Your cell phone may NOT be used as a calculator on your exams. The SCC Media Center will rent calculators this semester on a first-come basis. Go to the Media Center located in the Information Technology (IT) Building to rent a graphing calculator. Rentals are first-come, first-served and there are limited quantities.

Computer Access, Webcam, Microphone, and Email: You will need regular access to a computer with online capabilities in order to complete online assignments.

You will need access to a webcam and a microphone to attend the course virtually through Zoom. Your webcam must be on to attend virtually.

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.

- Zoom (for optional office hours)

Streaming Media/Audio/Video Tools

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

- YouTube

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.

Withdrawing from the Course: If it becomes necessary to withdraw from the course, you should speak with admissions office and fill out the proper forms there. There is a last day to withdraw without an instructor's signature. It is not guaranteed that you will be able to withdraw from the course after this date.

Math/Science Tutor Center: Free online tutoring is available online at the following link. http://www.scottsdalecc.edu/students/tutoring/math. You will need to know your Maricopa gmail account ID and password, and self-enroll in a Canvas course. Details can be found at the link above.

Email and Contacting the Instructor: It is HIGHLY inappropriate for your family members, guardians, private tutors, former teachers, or any other third-party actors to contact your instructor to discuss anything related to your academic standing in this class. The instructor is more than happy to discuss your academic standing with YOU (the student), but emails, messages, and phone calls from third-party actors on your behalf will not receive a response (except in extreme circumstances as determined by the instructor). In certain cases, these third-party actors may be blocked from contacting the instructor.

Be respectful of your classmates and the instructor. Don't be a jerk!

Grading Standards & Practices

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, it is an evaluation of PERFORMANCE. This means your grade is dependent upon how well you demonstrate your comprehension of the subject through application and completion of the items listed above in the course competencies. Furthermore, it is immoral to reach out to your instructor about the consequences of not receiving a certain grade in the course. Please do not ask for extra credit or "a few extra points" in order to make a certain grade for scholarships, admittance to a certain program, or athletic eligibility. Emails and messages of this nature will be ignored.

Grade Scale

Letter Grade	Points Range
A	90 – 100%
B	80 – 89.9999%
C	70 – 79.9999%
D	50 – 69.9999%
F	0 – 49.9999%

Grade Distribution

Exams (60% of course grade): There will be four exams in this course. Your exams are meant to test your PERSONAL mathematical aptitude of topics covered prior to each exam in this class, but occasionally you will be required to draw from your PERSONAL aptitude in topics covered in pre-requisite courses, your real-life experiences, and common sense.

Make up exams will only be granted under extreme circumstances. You should meet with your instructor AT LEAST TWO WEEKS BEFORE THE SCHEDULED EXAM to discuss arrangements. This discussion must take place BEFORE the scheduled date of the exam. Failure to adhere to this policy may result in a 0 for the exam.

Homework (20% of course grade): You will be expected to complete regular homework assignments using MOER. It will benefit you to write out the homework problems and show your work as if the instructor were grading each assignment by hand. Assignments and due dates will be posted in MOER. If you miss a due date, you have 255 late passes that you are able to use with no penalty to your homework grade. Each late pass only extends the due date for 24 hours, so that 255 goes quickly if you fall too far behind.

Quizzes (15% of course grade): There are a total of five quizzes. Each quiz will be due every few weeks and will cover recent material from class. You will be required to upload your work and submit each quiz in MOER. You may work in pairs (with another student from this class) on quizzes. However, you must acknowledge and name the other student. The work you submit must be your own written or typed work. Due dates will be posted in MOER. Late quizzes will not be accepted. Quizzes that are exact duplicates or copies of other students' work will receive a score of 0 for all parties involved.

Participation (5% of course grade): Participation is useful in determining how well students are comprehending the material. The more people participate in class and demonstrate how well they are working with the material, the easier students may find the exams to be.

In-Person Participation: Working problems at the board, explaining your solutions (not just giving answers) to the class (including Zoom students), asking questions of others' solutions, answering questions in class, collaborating with other students during class.

Live-Online Participation: Working problems in your notebook or using the zoom whiteboard as in-person students are at the boards, explaining your solutions (not just giving answers) to the class (including in-person students), answering questions in class, collaborating with other students in breakout rooms on Zoom, posting pictures of (or typing) your solutions on the MOER forums.

In addition, any student may engage in respectful discussion about how current scientific, social, political, or economic events relate to the content we have covered

recently in class, or engage in respectful discussion about how something personal in their life relates to the content we have covered recently in class.

Response Time

Students can expect a response time of up to 24 hours (not including weekends, holidays, or breaks) for the instructor to respond to messages sent via MOER or email. Students can expect assignments to be graded within 8 calendar days of the assignment's due date.

Attendance Policy

Any student with three unexcused absences may be withdrawn from the course. Any student who misses an exam may be withdrawn from the course. You are responsible for knowing the material covered during any class time missed via absence or tardiness. If you are sick, please do not come to class. You may watch the videos in MOER covering the content on your own time or join virtually. If something is confusing to you from these videos or the homework, please meet with the instructor during office hours.

Instructional Contact Hours (Seat Time)

This is a three (3) credit-hour course. Students should plan to spend at least three hours on course content or seat time (direct instruction). For this class, the typical student should plan to spend at least 6 hours on homework and other out-of-class activities weekly. Some students may spend much more time per week. Accelerated courses will require additional time per week.

Online Tutoring

SCC's tutors are available online to help with your courses. You may work with an SCC tutor remotely using Google Meet, your phone, or email. Visit the Tutoring & Learning Centers page for detailed information on the five learning center's hours and procedures.

If you need tutoring, it is highly recommended that you utilize SCC tutors since they are more familiar with SCC coursework, instructor expectations, and assignments.

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.

Tentative Course Calendar

Date	**Topic or Section**
Tuesday, August 22, 2023	MAT 217 Introduction and Linear Functions Review
Thursday, August 24, 2023	Solving Linear Systems with 2 and 3 Unknowns (1.1)
Tuesday, August 29, 2023	Matrices and Matrix Operations (1.2)
Thursday, August 31, 2023	Solving Linear Systems with Row Reduction (1.3)
Tuesday, September 5, 2023	Solving Linear Systems with Matrix Inversion (1.4)
Thursday, September 7, 2023	Systems of Inequalities and Their Graphs (1.5)
Tuesday, September 12, 2023	Solving LP Problems with Graphs and Technology (1.6)
Thursday, September 14, 2023	Review for Exam 1
Tuesday, September 19, 2023	**Exam 1**
Thursday, September 21, 2023	Multivariate Functions (2.1)

Date	Topic or Section
Tuesday, September 26, 2023	Derivatives Review from MAT 212
Thursday, September 28, 2023	Partial Derivatives (2.2)
Tuesday, October 3, 2023	Partial Derivatives (2.2)
Thursday, October 5, 2023	Determining Extrema for Bivariate Functions (2.3)
Tuesday, October 10, 2023	Determining Extrema using Lagrange Multipliers (2.4)
Thursday, October 12, 2023	Review for Exam 2
Tuesday, October 17, 2023	**Exam 2**
Thursday, October 19, 2023	Sets and Venn Diagrams (3.1)
Tuesday, October 24, 2023	Counting Principles (3.2)
Thursday, October 26, 2023	Introduction for Probability (3.3)
Tuesday, October 31, 2023	Probability Using Counting Principles (3.4)
Thursday, November 2, 2023	Conditional Probability and Independence (3.5)
Tuesday, November 7, 2023	Review for Exam 3
Thursday, November 9, 2023	**Exam 3**
Tuesday, November 14, 2023	Describing Data (4.1)
Thursday, November 16, 2023	Discrete Random Variables (4.2)
Tuesday, November 21, 2023	Binomial Distribution (4.3)
Thursday, November 23, 2023	**Academic Holiday - No Class**
Tuesday, November 28, 2023	Continuous Random Variables (4.4)
Thursday, November 30, 2023	Continuous Random Variables (4.4)
Tuesday, December 5, 2023	Normal Distribution (4.5)
Thursday, December 7, 2023	Normal Distribution (4.5)
Tuesday, December 12, 2023	Review for Exam 4
Thursday, December 14, 2023	**Exam 4**

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.