

**Texas A&M University--San Antonio**  
at One University Way, San Antonio, TX 78224  
Department of Computational, Engineering, and  
Mathematical Sciences (CEMS)  
**Fall 2024**



**MATH 1324: Math for Business & Social Sci. I**  
**Section:** 01L; MWF 11:00 – 11:50 CAB 223  
**Support:** MWF 12:00 – 12:50 CAB 223  
**Credit Hours:** 6 credits

**Instructor:** Mr. E. Cruz  
**Office:** Hall 314Z **Phone:** 210-784-2247  
**e-mail:** [ecruz1@tamusa.edu](mailto:ecruz1@tamusa.edu) (Please include your full name, class, & section # in all emails, and do not start your emails with “Hey”)

**Office hours:** M, F: 1pm – 2pm  
T: 3:15pm – 4:15pm  
S: By Appointment

**Coreq:** The coreq part of MATH 1324 is designed to help you. It is designed for you to get extra help while in class. Make sure you attend class and take advantage of this portion of the class.

### **COURSE DESCRIPTION & MATERIALS:**

**Catalog Description:** Students will study topics from college algebra (linear equations, quadratic equations, functions and graphs, inequalities), mathematics of finance (simple and compound interest, annuities), linear programming, matrices, systems of linear equations, and applications to management, business and social sciences. This course meets the standards for the Mathematics category of courses under the core curriculum. Prerequisite: Evidence of math equivalent to High School Algebra II ('C' or above) or placement.

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**Required E-Textbook:** Online access code for *Mathematics with Applications In the Management, Natural & Social Sciences*, 13<sup>th</sup> ed., Lial, Hungerford, Holcomb, 2024, Pearson Addison-Wesley, ISBN-9780137892198; ISBN-9780137891870 (E-book included with access code). Optional: Students can purchase a loose-leaf version of text for a low cost if desired (check bookstore).

**Calculator Policy:** Scientific and graphing calculators are permitted. Many topics will be covered with the aid of the TI-84 plus graphing calculator. **NOTE:** Laptops, cell phone, & other mobile devices are NOT acceptable calculators.

**Student Learning Outcomes:** Upon completion of this course, students will:

1. Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solve and interpret real-world problems.
2. Recognize and solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
3. Apply and explain basic matrix operations, including linear programming methods, to solve application (business) problems.
4. Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
5. Interpret and apply matrix techniques and probability analyses to model applications to management, economics, and business problems

MATH 1324 helps students develop critical thinking, communication, and empirical and quantitative skills by focusing on student understanding of key algebraic concepts to include recognizing, identifying, solving, analyzing, and explaining applications of various mathematical functions in management, economics, and business problems.

**List of Topics:** Topics to be covered include but are not limited to the following:

1. Graphs (Section 2.1)
2. Equations of Lines (Sections 2.2)
3. Linear Models & Applications (Section 2.3~3.3)
4. Functions, Graphs, and Transformations (Sections 3.1-3.2)
5. Quadratic Functions and Applications (Section 3.4)
6. Polynomial and Rational Functions (Section 3.5-3.6)
7. Exponential and Logarithmic Functions (Sections 4.1-4.4)
8. Simple and Compound Interest (Sections 5.1)
9. Annuities, Future Value & Sinking Funds (Section 5.2)
10. Consumer Loans & Amortization (Section 5.3)
11. Systems of Linear Equations and Augmented Matrices (Sections 6.1-6.3)
12. Basic Matrix Operations (Sections 6.4)
13. Linear Inequalities and Linear Programming (Sections 7.1-7.3)
14. Simplex Method (Sections 7.4-7.5)
15. Probability and Expected Value (Sections 8.3, 9.1)

The instructor reserves the right to modify/update the topics as appropriate.

### **COURSE WORK & GRADE DISTRIBUTION:**

**Homework: 20%**

**Exams: 45%**

**Final Exam: 35%**

**Exams:** There will be three in class exams. All exams are closed books and closed notes to be completed during class time. The format of the exams will be discussed the day before each exam. I am NOT out to trick you! If you come to lecture (and pay attention, of course) and do the assigned homework you should do well on the exams. There may be a random check of calculators. If the student is found with inappropriate material on the calculator they are using, the student will receive a 0 on the test

**Final Exam:** In order to pass this class, students *must* take a comprehensive final exam scheduled during Finals Week. Finals cannot be rescheduled or missed (for dire & unforeseen medical or family emergencies, students must consult with me). The final exam may be used to replace your lowest regular exam grade. **The final exam must be completed by the announced due date. NO EXCEPTIONS.**

### **COURSE REQUIREMENTS & EXPECTATIONS**

**Class Attendance:** Students are expected to attend all classes. A student may be dropped after the 6<sup>th</sup> absence without any additional notice. Announcements and changes will be communicated through Blackboard. If you miss a class, it is your responsibility to go over the material. You can ask me questions during my office hours *after* you have gone over the material in the book.

**Make-up Policy:** No make-up exams will be given. However, the lowest of the three regular exams may be replaced by the final exam score. You are expected to always be present for major exams. Exams must be taken on the date specified. You must be present for the final exam.

**Dropping the Course:** It is the student's responsibility to drop a course. The instructor may not automatically drop you (unless it is for attendance). Please check the academic calendar webpage of TAMU-SA for the last day to drop a course or withdraw from the university. Please contact the Welcome Center at 784-1300 if you desire to drop the course.

**Blackboard:** Students are responsible for checking Blackboard regularly for announcements, assignments, & other support materials posted there. However, students are also responsible for all announcements & assignments which are given in the classroom. Please use my TAMUSA e-mail if you need to communicate with the instructor about the lecture.

**NOTE:** There will NOT be an extra credit assignment, please DO NOT ask for it at the end of the semester. Start studying today! You have enough time to get the perfect grade. To be successful in this course, take responsibility for your learning & plan to study at least 2 hours for each class hour. Do not get behind; do not hesitate to ask for help. Make good use of the resources that are available to you, especially your book & your instructor. Save all your graded assignments, exams & quizzes until you receive your final grade.

**Communication etiquette:** When using Jaguar email, please employ professional writing skills, Correspondence should begin with an appropriate salutation including the professor's academic title with last name and end with an appropriate closing with the student's full name. (Once a thread has been established, it may not be necessary to use a salutation or your full name each time.) The body of the correspondence should always demonstrate good spelling, grammar, punctuation, and general courtesy. Please allow at least two business days for email replies. **Do not start emails with "Hey"**

### **CLASS RULES:**

1. Regular participation and attendance is VERY IMPORTANT in this class! You are enrolling in a THREE HOUR math course, so expect to work on your Math work very frequently. Waiting to work on one day at the end of the week would be disastrous for this three hour course! Homework from the textbook is never late—it will be accepted until the day of the final; however, you should be doing on-line homework as soon as possible after it's covered during lecture. Failure to complete work will result in lower grades.
2. An absence in this online course is defined as the following: Not attending an online lecture at the scheduled time. You will receive a participation grade based on our online meetings. Every day missed will result in a deduction from your participation points.
3. You should be doing homework, worksheets, and/or quizzes daily. Optional activities such as study plan or videos do not satisfy the participation requirement. To be counted as "participating", you must attend class and be involved by taking notes, asking questions and working on classroom exercises. If needed, seek help so that you can re-try homework in order to get your grades up.
4. Please do not ask me to extend the due dates. If a problem arises, please contact me so I can work with you. Work ahead on the assignments whenever possible (remember... if something can go wrong, it will).
5. If you need additional help, please ask! Your instructor is available to help both in-class & during office hours, and students also have access to free online tutoring through Jaguar Tutoring in the ALC. I will be available online every day, Mon - Fri. either during office hours or through email: [amain@gmail.com](mailto:amain@gmail.com)

### **IMPORTANT UNIVERSITY POLICIES & RESOURCES**

University Email Policy and Course Communications: All correspondence between professors and students must occur via University email accounts. You must have your Jaguar email account ready and working. If it is not working, contact the help desk at [helpdesk@tamusa.edu](mailto:helpdesk@tamusa.edu) or at 210-784-HELP (4357). If you don't hear back within 48 hours, contact them again. They have many requests during the first part of the semester, so you may need to follow up with them.

Academic Accommodations for Persons with Disabilities: Texas A&M University-San Antonio is committed to providing all students with reasonable access to learning opportunities and accommodations in accordance with The Americans with Disabilities Act, as amended, and Section 504 of the Rehabilitation Act. If you experience barriers to your education due to a disability or think you may have a disability, Disability Support Services is located in the Central Academic Building, Suite 210. You can also contact us via phone at (210) 784-1335, visit us <https://www.tamusa.edu/Disability-Support-Services/index.html> or email us at [dss@tamusa.edu](mailto:dss@tamusa.edu).

Disabilities may include, but are not limited to, attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability-related needs with Disability Support Services and their instructors as soon as possible.

**Academic Learning Center:** The Academic Learning Center provides free course-based tutoring to all currently enrolled students at Texas A&M University-San Antonio. Students wishing to work with a tutor can make appointments through the Brainfuse online tutoring platform. Brainfuse can be accessed in the *Tools* section of Blackboard. You can contact the Academic Learning Center by emailing [tutoring@tamusa.edu](mailto:tutoring@tamusa.edu), calling (210) 784-1307, or visiting the Central Academic Building, room 202. You can contact the Academic Learning Center by emailing [tutoring@tamusa.edu](mailto:tutoring@tamusa.edu) or calling (210)-784-1332. Online tutoring is also available for after hours and weekend assistance through Brainfuse.

While tutoring hours may change based on tutor schedules and availability, the current tutoring hours for MATH in the ALC are as follows:

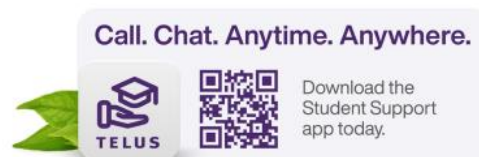
|           | <b>Appointments available</b> | <b>Walk in Tutoring – No appointment needed</b> |
|-----------|-------------------------------|---|
| MONDAY    | 8 am – 6 pm                   | 9 am – 5 pm                                     |
| TUESDAY   | 8 am – 6 pm                   | 9 am – 5 pm                                     |
| WEDNESDAY | 8 am – 6 pm                   | 9 am – 5 pm                                     |
| THURSDAY  | 8 am – 6 pm                   | 9 am – 5 pm                                     |
| FRIDAY    | 8 am – 5 pm                   | 9 am – 5 pm                                     |

**Counseling/Mental Health Resources:** As a college student, there may be times when personal stressors interfere with your academic performance and negatively impact your daily functioning. If you are experiencing emotional difficulties or mental health concerns, support is available to you through the Student Counseling Center (SCC). To schedule an appointment, call 210-784-1331 or visit Madla 120.

All mental health services provided by the SCC are free and confidential (as the law allows). The Student Counseling Center provides brief individual and group therapy, crisis intervention, consultation, case management, and prevention services. For more information on SCC services visit [tamusa.edu/studentcounseling](http://tamusa.edu/studentcounseling)

*Crisis support is available 24/7 by calling the SCC at 210-784-1331 (after-hours select option '2').*

Additionally, the TELUS Student Support App provides a variety of mental health resources to including support for in the moment distress, an anonymous peer to peer support network, mental health screenings, podcasts, and articles to improve your mental wellbeing.



**Emergency Preparedness:** JagE Alert is Texas A&M University-San Antonio’s mass notification. In the event of an emergency, such as inclement weather, students, staff and faculty, who are registered, will have the option to receive a text message, email with instructions and updates. To register or update your information visit: <https://tamusa.bbcportal.com/>.

More information about Emergency Operations Plan and the Emergency Action Plan can be found here: <https://www.tamusa.edu/about-us/emergency-management/>.

Download the SafeZone App (<https://safezoneapp.com/>) for emergencies or call (210) 784-1911. Non-Emergency (210) 784-1900.

Financial Aid and Verification of Attendance: According to the following federal regulation, 34 CFR 668.21: U.S. Department of Education (DoE) Title IV regulation, a student can only receive Title IV funds based on Title IV eligibility criteria which include class attendance. If Title IV funds are disbursed to ineligible students (including students who fail to begin attendance), the institution must return these funds to the U.S. DoE within 30 days of becoming aware that the student will not or has not begun attendance. Faculty will provide the Office of Financial Aid with an electronic notification if a student has not attended the first week of class. Any student receiving federal financial aid who does not attend the first week of class will have their aid terminated and returned to the DoE. Please note that any student who stops attending at any time during the semester may also need to return a portion of their federal aid.

Writing, Language, and Digital Composing Center: The Writing, Language, and Digital Composing Center supports graduate and undergraduate students in all three colleges as well as faculty and staff. Tutors work with students to develop reading skills, prepare oral presentations, and plan, draft, and revise their written assignments. Our language tutors support students enrolled in Spanish courses and students composing in Spanish for any assignment. Our digital studio tutors support students working on digital projects such as eportfolios, class presentations, or other digital multimedia projects. Students can schedule appointments through JagWire under the Student Services tab. Click on “Writing, Language, and Digital Composing Center” to make your appointment. The Center offers face-to-face, synchronous online, and asynchronous digital appointments. More information about what services we offer, how to make an appointment, and how to access your appointment can be found on our website at <https://www.tamusa.edu/academics/>.

Meeting Basic Needs: Any student who has difficulty affording groceries or accessing sufficient food to eat every day or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to submit a CARE referral (<https://www.tamusa.edu/university-policies/Student-Rights-and-Responsibilities/file-a-report.html>) for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to direct you to available resources.

Military Affairs: Veterans and active-duty military personnel are welcomed and encouraged to visit the Office of Military Affairs for any question involving federal or state VA Education Benefits. Visit the Patriots’ Casa building, room 202, or to contact the Office of Military Affairs with any questions at [military.va@tamusa.edu](mailto:military.va@tamusa.edu) or (210)784-1397.

Religious Observances: Texas A&M University-San Antonio recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes for regular session classes.

The Six-Drop Rule: Students are subject to the requirements of Senate Bill (SB) 1231 passed by the Texas Legislature in 2007. SB 1231 limits students to a maximum of six (6) non-punitive course drops (i.e., courses a student chooses to drop) during their undergraduate careers. A non-punitive drop does not affect the student’s GPA. However, course drops that exceed the maximum allowed by SB 1231 will be treated as “F” grades and will impact the student’s GPA.

Statement of Harassment and Discrimination: Texas A&M University-San Antonio is committed to the fundamental principles of academic freedom, equality of opportunity and human dignity. To fulfill its multiple

missions as an institution of higher learning, A&M-San Antonio encourages a climate that values and nurtures collegiality, diversity, pluralism and the uniqueness of the individual within our state, nation, and world. All decisions and actions involving students and employees should be based on applicable law and individual merit. Texas A&M University-San Antonio, in accordance with applicable federal and state law, prohibits discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, or veteran status. Individuals who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the appropriate offices within their respective units.

Texas A&M University-San Antonio faculty are committed to providing a safe learning environment for all students and for the university as a whole. If you have experienced any form of sex- or gender-based discrimination or harassment, including sexual assault, sexual harassment, domestic or dating violence, or stalking, know that help and support are available. A&M-San Antonio's Title IX Coordinator can support those impacted by such conduct in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The university strongly encourages all students to report any such incidents to the Title IX Coordinator. Please be aware that all A&M-San Antonio employees (other than those designated as confidential resources such as counselors and trained victim advocates) are required to report information about such discrimination and harassment to the university. This means that if you tell a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the university's Title IX Coordinator ([titleix@tamusa.edu](mailto:titleix@tamusa.edu), 210-784-2061, CAB 439K). If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact the Student Counseling Center at (210) 784-1331, Madla Rm 120.

Pregnant/Parenting Students: Texas A&M-San Antonio does not require a pregnant or parenting student, solely because of that status or issues related to that status, to (1) take a leave of absence or withdraw from their degree or certificate program; (2) limit the student's studies; (3) participate in an alternative program; (4) change the student's major, degree, or certificate program; or (5) refrain from joining or cease participating in any course, activity, or program at the University. The university will provide such reasonable accommodations to pregnant students as would be provided to a student with a temporary medical condition that are related to the health and safety of the student and the student's unborn child. These could include maintaining a safe distance from substances, areas, and activities known to be hazardous to pregnant individuals and their unborn child; excused absences because of illness or medical appointments; modified due dates for assignments; rescheduled tests/exams; taking a leave of absence; and being provided access to instructional materials and video recordings of lectures for excused absences, if these would be provided to any other student with an excused absence. Pregnant/parenting students are encouraged to contact the Title IX Coordinator with any questions or concerns related to their status ([titleix@tamusa.edu](mailto:titleix@tamusa.edu); 210-784-2061; CAB 439K).

Texas A&M-San Antonio has also designated the Title IX Coordinator as the liaison officer for current or incoming students who are the parent or guardian of a child younger than 18 years of age. The Title IX Coordinator can provide students with information regarding support services and other resources.

Students' Rights and Responsibilities: The following statement of students' rights and responsibilities is intended to reflect the philosophical base upon which University Student Rules are built. This philosophy acknowledges the existence of both rights and responsibilities, which is inherent to an individual not only as a student at Texas A&M University-San Antonio but also as a citizen of this country.

*Students' Rights*

1. A student shall have the right to participate in a free exchange of ideas, and there shall be no University rule or administrative rule that in any way abridges the rights of freedom of speech, expression, petition and peaceful assembly as set forth in the U.S. Constitution.
2. Each student shall have the right to participate in all areas and activities of the University, free from any form of discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, or veteran status in accordance with applicable federal and state laws.
3. A student has the right to personal privacy except as otherwise provided by law, and this will be observed by students and University authorities alike.
4. Each student subject to disciplinary action arising from violations of university student rules shall be assured a fundamentally fair process.

### *Students' Responsibilities*

1. A student has the responsibility to respect the rights and property of others, including other students, the faculty and administration.
2. A student has the responsibility to be fully acquainted with the published University Student Rules found in the Student Handbook, [Student Code of Conduct](#), on our website, University Catalog and to comply with them, as well as federal, state, and local laws.
3. A student has the responsibility to recognize that student actions reflect upon the individuals involved and upon the entire University community.
4. A student has the responsibility to recognize the University's obligation to provide an environment for learning.
5. A student has the responsibility to check their university email for any updates or official university notification.

We expect that students will behave in a manner that is dignified, respectful, and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

Students are expected to exhibit a high level of honesty and integrity in their pursuit of higher education. Students engaging in an act that violates the standards of academic integrity will find themselves facing academic and/or disciplinary sanctions. Academic misconduct is any act, or attempt, which gives an unfair advantage to the student. Additionally, any behavior specifically prohibited by a faculty member in the course syllabus or class discussion may be considered as academic misconduct. For more information on academic misconduct policies and procedures please review the [Student Code of Conduct](#). (<https://www.tamusa.edu/university-policies/student-rights-and-responsibilities/documents/Student-Handbook-2022-23.pdf>) or visit the resources available in the OSRR website (<https://www.tamusa.edu/university-policies/student-rights-and-responsibilities/academic-integrity.html>).

**No Use of Generative AI Permitted:** Math 1314 assumes that all work submitted by students will be generated by the students themselves, working individually or in groups. Students should not have another person/entity do the writing of any portion of an assignment for them, which includes hiring a person or a company to write assignments and/or using artificial intelligence (AI) tools like ChatGPT. Use of any AI-generated content in this course qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

Electronic Devices: The use of phones or other electronic devices for non-class related activities is not allowed. Anyone who is observed text messaging or using an electronic device during class for a non-class related purpose will be given a warning, and as a further action that person will be asked to drop the class. Devices should be turned off and put away during exams and quizzes.

Important Dates:

|                 |   |
|-----------------|---|
| August 26       | First day of classes                                      |
| September 2     | Labor Day Holiday – No classes                            |
| November 11     | Last day to drop with an automatic “W”                    |
| November 19     | Last day to drop a course or withdraw from the University |
| November 27     | Study Day – No classes                                    |
| December 5      | Last day of classes                                       |
| December 6      | Study Day – No classes                                    |
| December 7 - 13 | Final exams   |

*The complete academic calendar is available online: <https://www.tamusa.edu/academics/academic-calendar/index.html>*

**COVID-19 SYLLABUS STATEMENT**

The safety of our campus community is paramount to our ability to provide our students, faculty, and staff with a productive and secure learning and working environment. While masks are not required, we do encourage everyone to wear a mask when the situation warrants OR if you remain unvaccinated. The university maintains a covid-19 web-site with current data, safety protocols, and reporting guidelines at <https://www.tamusa.edu/community-safety-together/index.html> .