

Department of Mathematical, Physical, and Engineering Sciences

MATH 1342 (004,005) Introductory Statistics

Fall 2024

Instructor: Dr. Nadeem A. Malik, PhD
Credit hours: 3 credits MATH
Office hours: MW 10-11am; at other times by appointment through email or zoom.
Office: STEC room 311 or online by appointment
E-mail: nadeem.malik@tamusa.edu

Lecture & Recitation Schedule

	Section 005	Section 004
Lecture:	MWF 09:00 – 09:50	TR 12:30 – 01:45
Recitation:	F 10:00 – 10:50	T 02:00 – 02:50
Classroom:	CH 203	STEC 231

[CH=Classroom Halls; STEC=Science, Technology & Engineering Center.]

Note: Recitation classes are part of the course and students are expected to attend.

Final Exam: To be announced.

Evaluation of Student Performance and Grading (approximately; subject to change at any time)

Unit-exams	55% (all)	Roughly 60 mins each.
Final Exam	20%	120 mins.
HomeWorks	12% (all)	
Quizzes	13% (all)	Roughly 15 – 20 mins each (online or during recitation classes).

Grade Scale: 90 – 100% = A; 80 – 89.9% = B; 70 – 79.9% = C; 60 – 69.9% = D; Below 60% = F

Course Description: Students will study the collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Appropriate technology used. 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 higher) or placement.

Online Course Platform: Students will complete online homework assignments and track related grades by using Pearson’s MyStatLab course platform (access codes are available in the Brytewave link via Blackboard).

All-important announcements, materials, and grades will be provided via Blackboard (BB) so it is important that you monitor activity on Blackboard frequently. **Students are responsible for checking blackboard regularly for announcements, assignments, and other support materials posted on Blackboard.**

Required Textbook: Fundamentals of Statistics Informed Decisions Using Data Sixth Ed., Sullivan (ISBN:). The online version of this textbook is available via Pearson's MyStatLab, so you are advised NOT to purchase your own copy. (But if you want to, you will be able to purchase MyStatLab through the bookstore website <https://www.bkstr.com/texasamsanantoniostore/home>.)

Required Course Equipment: A scientific calculator - TI 30XIIS

Student Learner Objectives:

1. Apply and explain the use of data collection and statistics as tools to reach reasonable conclusions.
2. Recognize, examine and interpret the basic principles of describing and presenting data.
3. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.
4. Explain the role of probability in statistics.
5. Examine, analyze and compare various sampling distributions for basic discrete and continuous random variables.
6. Describe, compute and explain confidence intervals.
7. Solve and interpret simple linear regression and correlation problems.
8. Perform hypothesis testing using statistical methods and interpret results.

COURSE REQUIREMENTS and EXPECTATIONS

Class Attendance: Students are expected to attend classes (lectures and recitation) as scheduled and be prepared to participate in discussions, in-class exercises, quizzes and problem presentation, and be aware of what has been covered in every class and any announcements and course policy changes made in class. Announcements and changes will also be communicated through Blackboard. You are welcome to ask questions during my office hours; however, it is your responsibility to learn the material. In addition, if you cannot avoid situations that prevent you from being on time or if you must leave early, please minimize class interruption.

Electronic Devices: Cell phones, laptops, I-Pads, Kindles, and other electronic devices must be turned off and put away during class. **Anyone who is observed text messaging or using an electronic device during class will be marked absent as a further action will be asked to drop the course.**

Examinations: There will be three exams during the semester and a comprehensive final exam (regular classroom/periods during finals week).

Exceptions: For a legitimate reason you may be granted a make-up exam by the instructor. Students will need to notify the instructor that they will miss an exam and provide a reason for their absence within 24-hrs of the scheduled exam date. Your instructor may be notified by e-mail or in person only. Inform your instructor to make arrangements if you know in advance that you will be unable to take an exam at the

regular time. Students who fail to follow prescribed procedures will receive a grade of **zero** on the missed exam.

Homework: You will be assigned homework problems via MyStatLab.

Accommodation: Some students many have issues which puts them at a disadvantage especially during examinations (e.g. panic attack, anxiety, etc.). Such students can contact the DSS (Disability Support Service) who will assess your needs and forward their recommendation to the instructor confidentially. The instructor will act upon their recommendation – this could include, for example, longer time for the student to complete an exam, or taking the exam in a quiet room, etc. (See Policies and Resources, below)

Dropping the Course: It is the student’s responsibility to drop a course. *The instructor may not automatically drop you. Last day to drop with an automatic “W” and Last day to drop a course or withdraw from the university can be checked on [academic calendar webpage](#) of TAMUSA.* Please contact the Welcome Center at 784-1300 if you desire to drop the course.

Your Instructor’s Commitment to Academic Honesty and Integrity: Your instructor is sympathetic to the pressures faced by many students (e.g., full time employment, family responsibilities), and will do his best to provide you with any assistance you may need to succeed in this course. However, he also committed to awarding grades based on students’ honest efforts. Therefore, your instructor will accept no excuses for any form of academic misconduct. All incidents of suspected academic dishonesty will be investigated and pursued to the fullest extent permitted by university policy.

Academic Dishonesty: Students at Texas A&M University-San Antonio are expected to adhere to the highest standards of academic honesty and integrity. Academic Dishonesty for which a student is subject to penalty includes cheating, plagiarism, fabrication, multiple submission, misrepresentation of academic records, facilitating academic dishonesty, unfair advantage, violating known safety requirements and ethical misconduct. This includes holding other students to same standards and reporting any incidents of alleged violation of the honesty policy to the instructor involved or, if necessary, to the appropriate academic department head. All students are responsible for being familiar with the Academic Dishonesty Policy which may be found in the Texas A&M University-San Antonio Student Handbook.

Key Dates

August 26	First day of class
November 11	Last day to drop with an automatic “W”
November 19	Last Day to drop or withdraw from the University
November 27	Study Day - No classes
November 28-30	Thanksgiving Holiday – University Closed
December 05/06	Last day of classes/Study Day - No classes
December 07-13	Final Exams

The complete academic calendar is available online:

<http://www.tamusa.edu/provost/academicresources/academiccalendar.html>

Weekly Schedule (subject to change at any time)

Week	Section	Topic
1	1.1	Introductions
2	1.2	Observational Studies vs Design
	1.3	Sample Random Sampling
	1.4	Other Effective Sampling Methods
3	2.1	Organizing Qualitative Data
	2.2	Organizing Quantitative Data
4	Exam 1 M 3.1	Covers Chapter 1 and 2 Measures of Center
5	3.2	Measures of Dispersion
	3.3	Grouped Data
	3.4	Measures of Position and Outliers
6	3.5	Boxplots
	4.1	Correlation
	4.2	Linear Regression
7	Exam 2	Covers Chapter 3 and 4
8	5.1	Probability Rules
	5.2	Addition Rule and Compliments
	5.3	Conditional Probability and Independence
9	5.4	Conditional Probability and Independence continue
	5.5	Counting Techniques
	6.1	Discrete Random Variables
10	Exam 3	Covers Chapters 5 and 6.1
11	6.2	The Binomial Probability Distribution
	7.1	Properties of the Normal Distribution
	7.2	Applications of the Normal Distribution
12	8.1	Distribution of the Sample Mean
	8.2	Distribution of the Sample Proportion
13	9.1	Estimating a Population Proportion
	9.2	Estimating a Population Mean
14	10.1	The Language of Hypotheses Testing
	10.3	Hypothesis Test for a Population Mean
15		Review for the Final Exam

16	TBA	
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IMPORTANT POLICIES AND RESOURCES

Academic Accommodations for Persons with Disabilities: The Americans with Disabilities Act Amendments Act (ADAAA) of 2008 and the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights protection for persons with disabilities. Title II of the ADAAA and Section 504 of the Rehabilitation Act require that students with disabilities be guaranteed equal access to the learning environment through the provision of reasonable and appropriate accommodation of their disability. If you have a diagnosed disability that may require an accommodation, please contact Disability Support Services (DSS) for the coordination of services. The phone number for DSS is (210) 784-1335 and email is dsupport@tamusa.edu.

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, calling (210) 784-1307, or visiting the Central Academic Building, room 202.

Academic Learning Center: All currently enrolled students at Texas A&M University-San Antonio can utilize the Academic Learning Center for subject-area tutoring. 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.Services@tamusa.edu, calling (210) 784-1307, or visiting the Central Academic Building (CAB), room 202. Online tutoring is also available for after hours and weekend assistance.

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

	Appointments available	Walk in Tutoring – No appointment needed
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	9 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/or 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 Modular C, Room 166 (Rear entrance).

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.

Crisis support is available 24/7 by calling the SCC at 210-784-1331 (after-hours select option '2'). For more information and self-help resources, please visit www.tamusa.edu/studentcounseling

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 Preparedness and the Emergency Response Guide can be found here: <https://www.tamusa.edu/uploadfile/folders/sdbowen23/pdf/pdf-635073426137928167-10.100.20.116.pdf>

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.

Jaguar Writing Center: The Jaguar Writing Center provides writing assistance to graduate and undergraduate students in all three colleges. Writing tutors work with students to develop reading skills, prepare oral presentations, and plan, draft, and revise their written assignments. Students can make individual or group appointments with a writing tutor. The Writing Center is located in the Central Academic Building, Suite 208. Appointments can also be made through JagWire under the services tab. 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 contact the Dean of Students (DOS@tamusa.edu) for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to provide any resources they may possess.

Military Affairs: Veterans and active-duty military personnel are welcomed and encouraged to communicate, in advance if possible, and special circumstances (e.g., upcoming deployment, drill requirements, disability accommodations). You are also encouraged to visit the Patriots' Casa in-person room 202, or to contact the Office of Military Affairs with any questions at military@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.

Respect for Diversity: We understand that our students represent diverse backgrounds and perspectives. When we are equity-minded, we are aware of differences and inequalities and are willing to discuss them so we can act to resolve them. The University is committed to building cultural competencies, or the attitudes, skills, and knowledge that enable individuals and organizations to acknowledge cultural differences and incorporate these differences in working with people from diverse cultures. Respecting and accepting people different than you is vital to your success in the class, on campus, and as a future professional in the global community. While working together to build this community we ask all members to:

- Share their unique experiences, values, and beliefs.
- Be open to the views of others.
- Honor the uniqueness of their colleagues.
- Value each other's opinions and communicate respectfully.
- Keep confidential discussions that the community has of a personal (or professional) nature.
- Use this opportunity together to discuss ways in which we can create an inclusive environment in this course and across the A&M-San Antonio community.

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.

Covid 19 Updates: 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, particularly inside the buildings, in order to reduce the spread of covid-19. 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>.

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, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, gender identity, or gender expression. 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 victims 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, 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, Modular C.

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.

No Use of Generative AI Permitted

MATH 1342 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.