

**Tarleton State University
Department of Mathematics**

**Elementary Statistical Methods
MATH 1342-040
(CRN 82530)
Fall 2022**

Class Meeting Times and Place:

TR 1:40-2:55 pm in Math 209

Instructor: Dr. White
Phone: 254-968-1982
Dept. Office: 254-968-9168

Office: Math 331
e-mail: white@tarleton.edu

Student Hours (office hours):

- **MWF 10-10:50 am in Math 331**
- **TR 3-3:50 pm in Math 331**
- Other times by appointment

Catalog Description: Elementary Statistical Methods (3-0)

Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Technology will be incorporated where appropriate. Credit cannot be awarded for both MATH 1342 and MATH 3450.

Course Prerequisites:

Enrollment in this course will be in accordance with the Mathematics Placement and Continuing Enrollment Rules.

Student Learning Outcomes:

At the conclusion of the course, the student will be able to:

1. 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 both discrete and continuous random variables.
6. Describe and compute confidence intervals.
7. Solve linear regression and correlation problems.
8. Perform hypothesis testing using statistical methods.

Textbook and Materials:

- *Statistics*, 13th edition, by McClave & Sincich
- MyStatLab access code
 - [Note: With the MyStatLab access code, you have access to the e-textbook. Access to the e-textbook will be fine for this course.](#)
- Calculator with stats capabilities (TI-84 Plus is highly recommended)
- Access to a computer with a webcam and microphone (for any required virtual assignments and/or virtual interactions)

Grading System:	4 Unit Tests	60%
	Daily Grade	20%
	Final Exam	20%

Grading Scale:	90-100	A
	80-89	B
	70-79	C
	60-69	D
	0-59	F

Notes on Grading System & Grading Scale:

- Course grades will be rounded to the nearest whole number using the traditional rounding rules. For example, if the course grade is 89.5, that grade would round to a 90 and would be a letter grade of A. A grade of 89.4 would round to an 89 and would be a letter grade of B.
- Do not ask your instructor for additional “curving” of course grades outside of rounding to the nearest whole number as described in the bullet point above. “Curving” has already happened with dropping some of the low daily grades (see details below) and replacing the single lowest test grade with the final exam score if the final exam score is higher (see details below).
- Tarleton differentiates between a failed grade in a class because a student never attended (F0 grade), stopped attending at some point in the semester (FX grade), or because the student did not pass the course (F) but attended the entire semester. These grades will be noted on the official transcript. Stopping or never attending class is considered an unofficial withdrawal and can result in the student having to return aid monies received. For more information, see the Tarleton Financial Aid website.
- **FERPA:** Due to privacy issues, grades cannot be discussed unless identity can be established.

Unit Tests:

We will have 4 Unit Tests during the semester.

- All Unit Tests will be departmental and will be administered “in person” during your scheduled class time.
- If you miss a Unit Test, then you will receive a 0 for that test. The Final Exam score will replace your one lowest Unit Test grade if the Final Exam score is higher.

Daily Grade:

Your daily grade will be composed of the following components: online homework through MyStatLab, and short written work (quizzes) submitted through Canvas.

Notes on Daily Grade:

- For quizzes, I will approve a maximum of two “extension requests” during the semester, so please pay close attention to due dates. You may request an extension on a quiz assignment by emailing your instructor with the assignment information.
- Your two extension requests for quizzes may be used at any point up to the unit exam, and the last day that you can work on any extended quiz assignment is November 30 (so that daily grades can be finalized before the final exam).
- 5% of your daily grade scores will be dropped at the end of the semester. For example, if we have 38 daily grades, we will drop your lowest 2 daily grade scores at the end of the semester.
- Some daily grades may be taken **during** your class time. If you are absent on a day when a daily grade like this is taken, you will receive a 0 on that assignment, and those assignments cannot be made up unless you are involved in a documented university-sponsored activity (for which you notified your instructor **prior** to the absence).

Final Exam:

The Final Exam will be comprehensive and will be administered “in person” on Monday, December 5, 2022, from 3:30 p.m. to 5:30 p.m. Room locations for the Final Exam will be announced by your instructor before the last day of class. Your one lowest Unit Test score will be replaced with your final exam score IF the final exam score is higher.

Note on Final Exam:

- You must take the Final Exam. The Final Exam on its own counts for 20% of your overall course grade, regardless of whether it replaces your lowest Unit Test grade or not. There are no “exemptions” from the final exam.

Extra Credit:

No extra credit or bonus points will be given in the course, and test scores will not be curved. Students are expected to complete regular assignments and tests to the best of their ability. Grades will be assigned as a result of that work and effort and not changed by exterior work.

Student Responsibilities:

The student is *solely* responsible for:

- Completing each assignment by the specified due date.
- Obtaining assignments and other materials for classes from which they are absent.
- Utilizing, as needed, all available study-aid options (including meeting with the instructor, referring to outside texts, etc.) to resolve any questions that they might have regarding homework, course material, and/or projects.
- Giving as much of an effort as it takes to pass this course.

Absence Policy:

Attendance records will be kept for each class meeting. As stated in the University catalog, “the faculty member has the responsibility and authority to determine whether a student may make up assignments and/or examinations resulting from absences. Students may request makeup consideration for valid and verifiable reasons such as serious illness (such as hospitalization), death in the immediate family, or legal proceedings.”

Calculator Policy:

Each student will be required to have an approved graphing calculator available for use. The TI-84 Plus is the recommended choice, but other TI models (TI-82, TI-83, TI-83+, TI-nSpire, etc.) or other brands are acceptable. Teachers will use primarily the TI-84 Plus in the classroom. Students using other brands are responsible for learning how to operate their calculators. The instructor reserves the right to prohibit the use of calculators on certain assignments or tests. A limited number of calculators are available for rent. Students should see the main department office (MATH 142) for more information.

Cell phone, Electronic Device policy:

Cell phones and electronic devices are not to be used during class time unless prior permission has been given by the instructor. Devices should be turned off or placed in silent mode during class time.

Student Success Statement – Americans with Disabilities Act:

Tarleton State University is committed to complying with the Americans with Disabilities Act (www.ada.gov) and other applicable laws. If you are a student with a disability seeking an accommodation for this course, please contact Disability Resources at 254.968.9400 or visit <https://www.tarleton.edu/drt/>

COVID-related Information:

Anyone feeling ill or exhibiting any symptoms commonly associated with COVID-19 is encouraged to stay home and monitor said symptoms and/or consult a physician. Commonly associated symptoms may be found here: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>

The university reserves the right to both reduce classroom capacity and utilize remote instructional modes should either become necessary during the semester. The university will provide relevant guidance concerning both classroom capacity reductions and any changes to instructional modes directly to faculty. Faculty will communicate relevant changes to students.

Student Safety and Title IX:

You are in college to achieve academic success, but you must feel safe and take care of yourself to reach your full potential. You have the right to pursue your education in a safe environment. Title IX makes it clear that violence, harassment, and discrimination based on sex and gender are civil rights offenses subject to accountability. *If you or someone you know has been harassed or assaulted, there is help and support on campus.* You may seek assistance confidentially through the Student Counseling Center or the Student Health Center. You may also make a report to the campus Title IX coordinator, which may trigger a university investigation (not a criminal investigation). Additionally, you may pursue criminal charges through the university police department. If the assault occurred away from campus, UPD can assist you in connecting with the appropriate law enforcement agency.

Student Counseling Center: 254-968-9044 (phone is answered 24 hours a day, 7 days a week), Traditions North (First Floor)

Student Health Services: 254-968-9271, Traditions North (First Floor)

Title IX Coordinator: 254-968-9754, Admin Annex 1, Room 106

University Police Department: 254-968-9002, located on the corner of Harbin and Frey

Student Resources and Basic Needs:

Any student who has difficulty affording groceries or accessing sufficient food to eat each day, or who lacks a safe and stable place to live, is urged to contact the professor. In Stephenville, the Tarleton Purple Pantry is located in the lower level of the Thompson Student Center with an external door facing the Dining Hall. In Fort Worth, the Tarleton Purple Pantry is located in room 360. Request swipe entry access at www.tarleton.edu/purplepantry. Learn about additional related resources at www.tarleton.edu/TexConnect.

University Policy:

Students are responsible for knowing and abiding by the policies and information contained in the Tarleton Student Handbook. [See the Student Handbook].

Academic Conduct:

Any student guilty of academic dishonesty, cheating, or plagiarism in academic work shall be subject to disciplinary action. [See the Student Handbook] The instructor may initiate disciplinary action in and case of academic misconduct.

Standards of Conduct & Academic Honesty:

Cheating, plagiarism, or doing work for another person who will receive academic credit is impermissible. This includes the use of unauthorized books, notebooks, or other sources in order to secure or give help during an examination, the unauthorized copying of examinations, assignments, reports, or term papers, or the presentation of unacknowledged material as if it were the student's own work. Disciplinary action may be taken beyond the academic discipline administered by the faculty member who teaches the course in which the cheating took place.

Academic Honesty Statement:

Tarleton State University expects its students to maintain high standards in personal and scholarly conduct. Students guilty of academic dishonesty are subject to disciplinary action. Academic dishonesty includes, but is not limited to, cheating on examination or other academic work, plagiarism, collusion, and the abuse of resource materials. The faculty member is responsible for initiating action for each case of academic dishonest that occurs in his/her class. Academic honesty is expected. The University's Academic Integrity Policy will be maintained.

Tarleton State University Mission, Vision, and Values:

Mission: Tarleton State University, a founding member of The Texas A&M University System, transforms generations by inspiring discovery, leadership, and inclusion through educational excellence.

Vision: Tarleton will be the premier comprehensive regional university in the nation, with a keen focus on student success, teaching, and research.

Values:

- **Excellence** – Tarleton Texans pursue greatness in all efforts, promoting a spirit of leadership, adaptability, and innovation for exceptional outcomes and a better world.
- **Integrity** – Tarleton Texans hold to the highest ethical standards and commit to serving others through transparency and accountability in everything we do.
- **Respect** – Tarleton Texans create an inclusive community by embracing diverse perspectives with civility, honoring tradition, and promoting teamwork so everyone thrives.

Study Aids:

- The Mathematics Clinic offers to all students enrolled in mathematics courses an opportunity to obtain free tutoring. The Mathematics Clinic is located in Room 203, and it is open daily M-F so that you can receive help in your coursework. Hours will be announced and posted.
- Tutoring: The Tutoring and Learning Center (TLC) offers free tutoring for Tarleton State University students. Tutors help clarify concepts introduced in class and will help you become an independent learner. Our tutors are selected based on their academic performance and interpersonal skills and receive training each semester to become certified tutors. Tutoring sessions are appointment based, include one to three students per one-hour session, and are held both in the Dick Smith Library and online. If you have further questions please email our office at tutoring@tarleton.edu or visit the Tutoring and Learning Center online at tarleton.edu/tlc.

Notes:

- Students are expected to interact with professors and peers in a respectful manner that enhances the learning environment. Professors may require a student who deviates from this expectation to leave the face-to-face (or virtual) classroom learning environment for that particular class session (and potentially subsequent class sessions) for a specific amount of time. In addition, the professor might consider the university disciplinary process (for Academic Affairs/Student Life) for egregious or continued disruptive behavior.
- In the event that the university is closed for a scheduled class time, whatever was scheduled for that day and/or whatever was due that day will be scheduled and/or due on the next scheduled class time.
- If the university must switch to a remote instructional mode during the semester, then access to a computer with a microphone and a webcam will be required for synchronous delivery of content and/or synchronous online testing using proctoring software.
- You are expected to present a TSU ID upon request.
- All items contained in this syllabus are subject to change as the semester progresses. Students will be notified in advance of any change.

MATH 1342 (Elementary Statistical Methods) Calendar – Fall 2022

	Content
<p>Unit 1</p> <p>Student Learning Outcomes (SLOs): 1, 2, 7</p>	<ul style="list-style-type: none"> • Section 2.1 – Describing Qualitative Data • Section 2.2 – Graphical Methods for Describing Quantitative Data • Section 2.3 – Numerical Measures of Central Tendency • Section 2.4 – Numerical Measures of Variability • Section 2.6 – Numerical Measures of Relative Standing (Percentiles & Quartiles) • Section 2.7 – Methods for Detecting Outliers: Box Plots • Section 2.8 – Graphing Bivariate Relationships • Section 11.2 – Fitting the Model: The Least Squares Approach • Section 11.5 – The Coefficients of Correlation and Determination <p>Unit 1 Test – Thursday/Friday – September 15/16, 2022 (during your regularly scheduled class time and in your regularly scheduled room)</p>
<p>Unit 2</p> <p>Student Learning Outcomes (SLOs): 1, 3, 4, 5</p>	<ul style="list-style-type: none"> • Section 4.1 – Two Types of Random Variables • Section 4.2 – Probability Distributions for Discrete Random Variables • Section 4.3 – Expected Values of Discrete Random Variables • Section 4.4 – The Binomial Random Variable • Section 5.1 – Continuous Probability Distributions • Section 2.5 – Using the Mean and the Standard Deviation to Describe Data • Section 2.6 – Numerical Measures of Relative Standing (z-scores & Empirical Rule) <p>Unit 2 Test – Wednesday/Thursday – October 12/13, 2022 (during your regularly scheduled class time and in your regularly scheduled room)</p>
<p>Unit 3</p> <p>Student Learning Outcomes (SLOs): 1, 4, 6</p>	<ul style="list-style-type: none"> • Section 5.3 – The Normal Distribution • Section 7.1 – Identifying and Estimating the Target Parameter • Section 7.2 – Confidence Interval for a Population Mean: Normal (z) Statistic • Section 7.3 – Confidence Interval for a Population Mean: Student’s t-Statistic • Section 7.4 – Large Sample Confidence Interval for a Population Proportion • Section 7.5 – Determining the Sample Size <p>Unit 3 Test – Thursday/Friday – November 3/4, 2022 (during your regularly scheduled class time and in your regularly scheduled room)</p>
<p>Unit 4</p> <p>Student Learning Outcomes (SLOs): 1, 4, 8</p>	<ul style="list-style-type: none"> • Section 8.1 – The Elements of a Test of Hypothesis • Section 8.2 – Formulating Hypotheses and Setting Up the Rejection Region • Section 8.3 – Observed Significance Levels: p-Values • Section 8.4 – Test of Hypothesis about a Population Mean: Normal (z) Statistic • Section 8.5 – Test of Hypothesis about a Population Mean: Student’s t-Statistic • Section 8.6 – Large Sample Test of Hypothesis about a Population Proportion <p>Unit 4 Test – Monday/Tuesday – November 21/22, 2022 (during your regularly scheduled class time and in your regularly scheduled room)</p>
<p>Final Exam</p>	<p>Comprehensive Final Exam – Monday, December 5, 2022 (from 3:30 p.m. to 5:30 p.m. CST based on the University Final Exam Calendar - room location to be announced)</p>