Math 1308 – Elementary Statistics
Section 503

Course Instructor

Czarina Reyes, PhD
czarina.reyes@uta.edu
Faculty Profile: https://www.uta.edu/profiles/czarina-reyes
The instructor will respond to email inquiries within 24-48 hours.
Office Hours: See Live Webcast/Office Hour Schedule

Learning Resource Center – Mathematics Emporium

Email: mathemporium@uta.edu
Website: http://www.uta.edu/math/emporium/
Facebook: https://www.facebook.com/pages/UTA-Math-Emporium/460329394127443

Math Department Office

Pickard Hall 478
Phone: 817-272-3261

Textbook and Materials

You have a couple of options for this course depending on personal preference. If you choose to purchase your items through the UTA bookstore http://www.bkstr.com/texasatarlingtonstore/shop/textbooks-and-course-materials and have questions, you may contact Shiva in the bookstore: shiva@uta.edu.

1. **Access Code and Textbook Bundle**: *Fundamentals of Statistics*, 4th Ed., Sullivan, Pearson Ed. Inc., 2014. ISBN# 1323042555 (custom); containing MyLabsPlus (MLP) access code.
2. **Access Code for MyLabsPlus**: Purchase your stand-alone access code at the UTA bookstore— or purchase online at www.uta.mylabsplus.com on the first class day. There is a free E-book within the MLP website.

Calculator Policy

Students may choose to use a scientific, non-graphing calculator on all assignments including tests and the final exam. If so, it MUST be one of the following models explicitly:

Texas Instruments 30X series: TI-30Xa, TI-30XIIS, TI-30XIIB, TI-30XS(Multiview)
Casio FX series: FX-82MS, FX-85M-S, FX-260SLR, FX-260SLRPK, FX-260SLRSCH
Sharp EL series: EL-501X, EL-501XBGR, EL-501XBWH, EL-531X, EL-531XBGR, EL-531XBWH
Canon F series: F-604, F-710

No variation of model will be accepted. This includes but is not limited to plus and pro models.

Software and System Requirements

Mozilla Firefox and Google Chrome are the recommended and supported browsers for this course. The course also has the following options for system requirements:

- Windows 7.0 or higher
- Mac OS x 10.8 or higher

Students are encouraged to use the Browser Check on the initial page within the MLP system in order to check and/or update (free download) the following software requirements:

- Adobe Flash Player version 11.9 or higher
- Adobe Reader version XI or higher

Course Elements

Course Lectures and Webcasts

Content material, videos, and instructions can be found in the unit tabs within Blackboard. The course is separated into 3 units of material which will correspond to the 3 chapter tests. Within each unit there are two blocks with specific details and assignment requirements. Preparation will take place within Blackboard and all graded assignments are found within the MLP system.

You will have weekly webcasts with your course instructor. See Webcast/Office Hours Schedule for details and times. You will access the webcasts through the live webcasts tab within Blackboard. Participation in the live webcasts is optional, however you can earn up to 5 points of extra credit towards your final exam.

Schedule of Lessons and Tests

You must complete all assignments and tests by the due dates. Due dates are listed in **MyLabsPlus** and also in the Course Schedule located in Blackboard. **All deadline times are in Central Time**.

Grade Calculation

Assignment Categories	Percent of Grade
Quizzes	20%
Chapter Exams (Average of 3 Tests)	50%
Comprehensive Final Exam	30%
Total:	100%

- The lowest quiz grade will be dropped at the end of the semester.
- In the event you are not satisfied with one of your three chapter exam scores, you may ask your instructor for a retake. Only ONE retake on a chapter exam of your choosing will be granted. Please reference the course schedule for specific retake dates. You MUST solicit and receive approval from your instructor prior to taking your ONE retake exam. All retakes must be complete prior to the final exam.

Grading Scale

Grades will be computed based on the following distribution. Grades are rounded up accordingly.

90 — 100%	A
80 — 89%	B
70 — 79%	C
60 — 69%	D
Below 60%	F

Homework and Quizzes

All homework and quizzes will be assigned in MyLabsPlus. (www.uta.mylabsplus.com) All homework and quiz assignments are available to you on the first class day. The automated system will provide feedback on assignments immediately upon submission.

- **NO late quizzes will be accepted,** so watch the due dates on the MyLabsPlus calendar. You will receive a zero for any assignments not submitted.
- There is a homework assignment covering each section of material and 6 content quizzes. Homework assignments are set for unlimited access. You have two attempts at each quiz, provided you achieve at least 75% on the associated homework assignments as a prerequisite for the 2nd attempt. Each quiz has a 45 minute time limit and must be completed once opened. Quizzes cannot be saved and resumed later.
- All homework assignments contain learning aids to help you through the material. Be careful not to become overly dependent on these aids or you may not perform well on the exams. You have three chances at a question per attempt. To gain access to the next attempt once a question is marked wrong; simply select the "similar exercise" button at the bottom of the homework screen. Quizzes are designed to check your knowledge retention and therefore do not contain the learning aids except in review mode once the quiz has been submitted.
- If you have trouble completing the assignments, please seek some form of tutoring and/or see your instructor or coach for assistance.

Extra Credit: Technology Assignments

This course contains three related concept assignments. These assignments will reinforce work done by hand using technology and will count as bonus points on a chapter exam based on the percentage score earned on each assignment. No more than 5 points can be earned on any given test. Extra credit will be applied at the end of the semester and cannot apply to the final exam.

Tests

There will be three online proctored chapter tests throughout the course of the semester. (Please reference the course schedule for exact dates.)

- All chapter tests are found within MLP and are comprised of questions that must be completed within 90 consecutive minutes. Tests cannot be opened, saved, and returned to at a later time. Tests are opened a few days prior to the deadlines.

- You may use one 3x5 index card with notes front and back, an approved scientific calculator (see list of approved calculators in Materials section), approved formula sheets, and blank scratch paper. No additional materials are allowed.
- The approved formula sheets are located in the back of your textbook in a foldout chart. These formulas pages will also be posted to Blackboard.
- All exams are either taken in the Math Emporium Computer Lab (PKH 308) on the UTA campus by appointment only or by making arrangements for online proctoring with Proctor U which requires prior scheduling and a webcam. Students are solely responsible for their own scheduling and the fees associated with using the service. See tab in Blackboard called Testing/Proctor U for details.
- Use of any unauthorized notes or electronic devices including but not limited to: StatCrunch, Excel, cell phones, and graphing calculators during an exam will result in a grade of ZERO.

Final Exam

The final exam is a comprehensive, proctored exam containing material from all sections covered over the course of the semester. (Please reference the course schedule for exact dates.)

- The final is found within MLP and is comprised of questions that must be completed within 150 consecutive minutes. The final cannot be opened, saved, and returned to at a later time. It will be opened a few days prior to the deadline.
- You may use two 3x5 index cards with notes front and back, an approved scientific calculator (see list of approved calculators in Materials section), approved formula sheets, and blank scratch paper. No additional materials are allowed.
- The approved formula sheets are located in the back of your textbook in a foldout chart. These formulas pages will also be posted to Blackboard.
- The final exam can either be taken in the Math Emporium Computer Lab (PKH 308) on the UTA campus by appointment only or by making arrangements for online proctoring with Proctor U which requires prior scheduling and a webcam. Students are solely responsible for their own scheduling and the fees associated with using the service. See tab in Blackboard called Testing/Proctor U for details.
- Use of any unauthorized electronic devices or notes during an exam will result in a grade of ZERO.

Makeup Policy

In addition to the policy that NO late quizzes will be accepted (see Homework and Quizzes), **there are no make-up exams.** If you know ahead of time that you are going to be out for a legitimate reason, it is your responsibility to inform me and make the necessary arrangements. If you have a conflict with a scheduled exam due to a school sponsored or excused event, you MUST have documentation and you MUST arrange to take the test BEFORE you leave. To request an alternate test date because of an approved conflict, please fill out the Alternate Test Date Request Form which can be found in Blackboard and email the form along with the necessary documentation at least two weeks prior to the first exam. A request for a rescheduled exam will only be considered in rare, documentable, and verifiable instances. The decision to grant an alternate test date will be at the sole discretion of the instructor and/or course coordinator.

Announcements: Found in *MyLabsPlus* and in *Blackboard*.

- Students are responsible for all information found in these announcements.
- Students should check for new announcements at least twice a week.

Help for Students

- Online Coach – information is found within a tab in your Blackboard course.
- Math Emporium – computer lab located in Pickard Hall 308, offers free daily tutoring. For details and scheduling visit the website, http://www.uta.edu/math/emporium/
- Math Clinic – located in Pickard Hall 325, offers free daily help.
- University Tutoring Service http://www.uta.edu/universitycollege/current/academic-support/learning-center/tutoring/index.php Ransom Hall Suite 205.
- Maverick Resource Hotline (817-272-6107). https://www.uta.edu/universitycollege/resources/resource-hotline.php
- Counseling and Psychological Services (CAPS) https://www.uta.edu/caps/
- Additional Online Course Help: https://www.khanacademy.org/

Course Objectives

Course Catalog Description

Topics may include collection, analysis, presentation, and interpretation of data. Analysis includes descriptive statistics, probability, relationships between variables and graphs, elementary statistical models, hypothesis testing, inference, estimation, correlation, regression and confidence intervals. The use of mathematical software and calculators is required.

Learning Objectives and Outcomes

After completing the course, students should be able to demonstrate the following competencies:

1.0 Use statistical vocabulary and explain the use of data collection and statistics as tools to reach reasonable conclusions.
2.0 Recognize, examine, and interpret the basic principles of describing and presenting data, using tools such as frequency distributions and various graphs.
3.0 Compute, compare, and interpret summary data descriptions.
4.0 Compute and interpret empirical and theoretical probabilities using counting techniques and probability theory.
5.0 Explain the role of probability in statistics for both discrete and continuous random variables.
6.0 Examine, analyze, and compare various sampling distributions for both discrete and continuous random variables, including the normal distribution.
7.0 Describe and compute confidence intervals.
8.0 Perform hypothesis testing using statistical methods and interpret the results.
9.0 Solve linear correlation and regression problems.

Course Competencies

1.0 To demonstrate competency in statistical vocabulary, the student should be able to:
- 1.1 Use the proper terms to be able to communicate statistical ideas.
- 1.2 Determine the difference between descriptive statistics and inferential statistics.

- 1.3 Demonstrate an ability to understand the statistical terms that are commonly used in textbooks, newspapers, magazines, and on television and radio in society today.

2.0 To demonstrate competency in frequency distributions and graphs, the student should be able to:
- 2.1 Organize a frequency distribution.
- 2.2 Draw histograms, frequency polygons, and ogives to illustrate data in frequency distributions.
- 2.3 Interpret and draw other commonly used graphs including time series graphs, Pareto charts, pie graphs, and stem and leaf plots.

3.0 To demonstrate competency in data description, the student should be able to:
- 3.1 Calculate and interpret common measures of central tendency such as mean, median, mode, and mid-range using both grouped and ungrouped data.
- 3.2 Calculate a weighted mean.
- 3.3 Calculate and interpret common measures of variability such as range, standard deviation, and variance for both grouped and ungrouped data.
- 3.4 Calculate z-scores (standard scores), percentile ranks, and quartiles to determine the relative positions of raw scores in a data set.
- 3.5 Apply Chebyshev's Theorem to data sets in order to calculate expected proportion of outcomes in given intervals.
- 3.6 Read and interpret percentile graphs.
- 3.7 Calculate inter-quartile range and quartiles for data sets.
- 3.8 Determine outliers for a set of data.
- 3.9 Draw box plots for data sets.

4.0 To demonstrate competency in elementary probability theory and the use of counting rules to find probabilities, the student should be able to:
- 4.1 Calculate probabilities by using sample spaces.
- 4.2 Determine the complement of an event and to calculate the corresponding probability.
- 4.3 Recognize the difference between classical, empirical, and subjective probability.
- 4.4 Calculate probability using the addition rules.
- 4.5 Recognize mutually exclusive events in order to correctly calculate the corresponding probabilities.
- 4.6 Find the probability of two or more independent events.
- 4.7 Find the probability of two or more dependent events.
- 4.8 Apply the formula for conditional probability.
- 4.9 Calculate probabilities using terms such as "and," "or," and "at least one."
- 4.10 Use tree diagrams as a counting technique.
- 4.11 Calculate with counting techniques using multiplication rules.
- 4.12 Recognize permutations and to count outcomes using permutation formulas.
- 4.13 Recognize combinations and to count outcomes using combination formulas.
- 4.14 Use counting rules to find probabilities.

5.0 To demonstrate competency in discrete probability distributions, the student should be able to:
- 5.1 Construct a probability distribution for a random variable.
- 5.2 Determine the mean, variance, standard deviation, and the expected value for a discrete random variable.
- 5.3 Find the exact probability for x successes in n trials for a binomial experiment.

6.0 To demonstrate competency in the Normal Distribution, the student should be able to:
- 6.1 Identify distributions as symmetrical or skewed.
- 6.2 Identify the properties of the Normal Distribution.
- 6.3 Find the area under the Standard Normal Distribution given various z values.
- 6.4 Find probabilities for a normally distributed variable by transforming it into a standard normal variable.
- 6.5 Find specific data values for given percentages using the Standard Normal Distribution.
- 6.6 Use the Central Limit Theorem to solve problems involving sample means for large and small samples
- 6.7 Use the normal approximation to compute probabilities for a binomial variable.

7.0 To demonstrate competency in confidence intervals, the student should be able to:
- 7.1 Find the confidence interval for the sample mean.
- 7.2 Estimate the confidence interval for the population mean.
- 7.3 Find confidence intervals and sample size for proportions.

8.0 To demonstrate competency in hypothesis testing, the student should be able to:
- 8.1 Understand the definitions used in hypothesis testing.
- 8.2 State the null and alternative hypotheses.
- 8.3 State the five steps used in hypothesis testing.
- 8.4 Find critical values used in the classical approach.
- 8.5 Determine the P-value in the P-value approach.
- 8.6 Test means using the t test.
- 8.7 Test proportions using the z test.
- 8.8 Explain the relationship between type I and type II errors.

9.0 To demonstrate competency in the concepts of correlation and regression, the student should be able to:
- 9.1 Draw a scatter plot for a set of ordered pairs.
- 9.2 Find the Pearson Product Moment correlation coefficient.
- 9.3 Perform a hypothesis test to see if there is any significant positive or negative correlation.
- 9.4 Find the equation of the regression line.
- 9.5 Make predictions when an appropriate correlation exists.

Course Policies

Drop Policy

If you withdraw from the course for any reason, you must follow University procedures. It is your responsibility to execute these procedures correctly and within the deadlines. **Instructors are unable to drop students**. The Math Department Office can help with the withdrawal process. We strongly recommend that you drop the course if you are significantly behind in completing the required assignments. Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/aao/fao).

Accommodations and Americans with Disabilities Act

The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA), and Section 504 of the Rehabilitation Act. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the Office for Students with Disabilities (OSD). Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364.
Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671.

Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364. CAPS is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems, and make positive changes in their lives.

Grade Grievances

Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog. For undergraduate courses including this one, see http://catalog.uta.edu/academicregulations/grades/#undergraduatetext. For student complaints, see http://www.uta.edu/deanofstudents/student-complaints/index.php.

Non-Discrimination Policy

The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.

Title IX

The University of Texas at Arlington ("University") is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. For information regarding Title IX, visit www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.

Academic Integrity

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. This course includes a zero tolerance policy for academic dishonesty and students are expected to adhere to the UT Arlington Honor Code:

> *I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence. I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents' Rule 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at https://www.uta.edu/conduct/.
Students found guilty of cheating will receive a grade of "F" for the course.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Series 50101, Section 2.2)

Student Support Services

UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at http://www.uta.edu/universitycollege/resources/index.php.

The Library's 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation. http://library.uta.edu/academic-plaza.

The IDEAS Center (2nd Floor of Central Library) offers free tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email IDEAS@uta.edu or call (817) 272-6593.

Electronic Communication

UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Campus Carry

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit http://www.uta.edu/news/info/campus-carry/

Student Feedback Survey

At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Final Review Week

A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Phone Numbers

In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. We further recommend that you enter the UTA Police Department's emergency phone number into your own mobile phone. For non-emergencies, contact the UTA PD at 817-272-3381.

Student Intellectual Property Rights Statement

A student shall retain all rights to work created as part of instruction or using university technology resources.