



## MATH 1342.09P Elementary Statistical Methods

### SYLLABUS

Spring 2022

*Subject to any new Texas legislative mandate changes.*

#### COURSE INFORMATION:

Meeting times: TR 11:00-12:15 PM (However, all classes will start remotely until Jan 31)

Meeting location: through zoom link: [Link](#)

**Course Modality:** However, due to the current COVID-19 situation, we will have our class meeting online via following zoom link, until you are informed by me for our regular face-to-face meetings.

**Course Material:** course slide will be available here in this link: [Link](#)

question and solution of homework, quizzes, and exams will be posted on Blackboard.

#### INSTRUCTOR INFORMATION:

Instructor Name: **Md Salman Rahman**

Phone: (956) 445-7918

E-Mail: [mdsalman.rahman01@utrgv.edu](mailto:mdsalman.rahman01@utrgv.edu) (better to contact me by email)

Office location: TBD

Office hours: TBD

#### COURSE DESCRIPTION, PREREQUISITES & MODE OF LEARNING

This course provides an elementary overview of the nature and uses of descriptive statistics, inferential statistics, and probability. Topics include statistical graphs, measures of central tendency and dispersion, linear regression, empirical and theoretical concepts of probability, the Central Limit Theorem, interval estimation, and hypothesis testing. Prerequisites: TSI exemption in Math, or College Ready TSI status in Math, or Satisfactory grade in Developmental Math course.

#### COVID-19 RESOURCES:

Please visit the [UTRGV COVID-19 protocols web page](#) for the most up to date COVID-19 campus information and resources. The [COVID-19 Frequently Asked Questions \(FAQs\) web page](#) offers additional guidance to specific questions. To submit a question for the FAQ, please email [WelcomeBack@utrgv.edu](mailto:WelcomeBack@utrgv.edu).

#### UTRGV VACCINE PORTAL

UTRGV Students are eligible to receive the COVID-19 Vaccine. Students may access and complete their vaccine profile via the [UTRGV Vaccine Portal](#). For additional information on the COVID-19 Vaccine, please visit the [UTRGV Vaccine web page](#).

#### LEARNING OUTCOMES (OBJECTIVES) FOR THE COURSE

Upon successful completion of this course, students will:

- A. Distinguish between a population and a sample and identify which is a representative sample and which is not.
- B. Distinguish and describe the difference between Statistics and Probability and explain the role of probability in statistics.
- C. Represent, organize and visualize given data through tables or pictures.
- D. Distinguish the differences between central tendencies and dispersions and be able to use calculators (or software in general) to calculate them.

- E. Solve linear regression and correlation problems and interpret their outcomes.
- F. Develop skills in dealing with univariate and bivariate data and be able to draw conclusions on the required parameters.
- G. Calculate probabilities for binomial and normal probability distributions and use binomial and normal probability tables.
- H. Calculate confidence intervals and interpret the outcomes and do testing of hypotheses using Normal table and t table for p-values and critical values (or software) and interpret outcomes drawn from hypothesis testing.

#### LEARNING OBJECTIVES FOR CORE CURRICULUM REQUIREMENTS

Core Objectives	UTRGV Student Learning Outcome Statement	Core Area Requiring this SLO
<b>Critical Thinking</b>	Students will demonstrate comprehension of a variety of written texts and other information sources by analyzing and evaluating the logic, validity, and relevance of the information in them to solve challenging problems, to arrive at well-reasoned conclusions, and to develop and explore new questions.	All Core Areas
<b>Communication Skills</b>	Students will demonstrate the ability to adapt their communications to a particular context, audience, and purpose using language, genre conventions, and sources appropriate to a specific discipline and/or communication task.	All Core Areas
<b>Empirical &amp; Quantitative Skills</b>	Students will be able to make and communicate informed conclusions and predictions based on the interpretation, manipulation, and analysis of empirical and quantitative data.	Math, Life & Physical Sciences, Social & Behavioral Sciences
<b>Teamwork</b>	Students will collaborate effectively with others to solve problems and complete projects while demonstrating respect for a diversity of perspectives.	Communication, Life & Physical Sciences, Creative Arts
<b>Social Responsibility</b>	Students will recognize and describe cultural diversity, the role of civic engagement in society, and the link between ethics and behavior.	Language, Philosophy, & Culture; Creative Arts; American History; Government & Political Science; Social & Behavioral Sciences
<b>Personal Responsibility</b>	Students will demonstrate an awareness of the range of human values and beliefs that they draw upon to connect choices, actions, and consequences to ethical decision making.	Communication; Language, Philosophy, & Culture; American History; Government & Political Science

#### REQUIRED (PLTL) STUDY SESSION

Attending a PLTL study session from the Student Learning Center is a required component of this course. PLTL sessions are designed to give you the opportunity to practice questions and problems in a small group environment with a student leader who has done well in the course in the recent past. Attendance at PLTL sessions is mandatory; if you miss five or more study sessions, you will not receive any of the course grades allocated to the PLTL sessions.

Weekly worksheets will be provided by the tutor for the students to solve. The PLTL leader will then collect the completed worksheets from students and send them to the instructor for grading. Your PLTL grade, attendance and graded worksheets, will count as 5% of your overall course grade.

## REQUIRED TEXTBOOK

*A Brief Version Elementary Statistics A step by step approach.* (8th ed.) by Allan Bluman. McGraw-Hill Education Paperback ISBN 978-1-259-96943-0. Retail Price: \$280 new; \$210 used; \$123 loose leaf. [Digital and Rental options are also available]

## HOMEWORKS

Homework will be assigned regularly through blackboard. About 10 homework will be posted under the folder “Homework and Exams” on blackboard. An announcement and an email will be sent every time a homework will be assigned. You will have three trials for each homework of which the maximum grade will be recorded as your HW score. Please take the three trials to learn about your mistakes and how to correct them, and don’t make random choices. Remember the goal here is to learn and not to make a score like in a game.

## EXAMS

There will be three in-class exams. All exams must be taken during their scheduled times. Please see the tentative schedule below for the dates and content to be covered on each exam. No make-up exams or retests will be given. Missing an exam will result in a grade of zero.

## FINAL EXAM

A comprehensive final exam will be given at the end of the semester and must be taken during the scheduled final exam dates. Of the three in-class exams, the one with the lowest score will be dropped and replaced with the final exam’s score (given that the final exam score is greater than at least one of the three in-class exams scores) if and only if you have no more than 3 unexcused absences. There are no make-up or retests for the final exam. Missing the final exam will result in a grade of zero.

## QUIZZES

Quizzes will consist of a set of problems to be completed by students in or outside of class. Quizzes may be assigned to students individually or in groups.

## GRADING POLICY

The course grade will be computed as follows:

Component	%
Attendance	5%
PLTL	5%
Homework	15%
Quizzes	10%
Exams (three in-class)	45%
Final Exam	20%
Total	100%

The course grade will be assigned according to the following scale: A (90-100%) B(80-89%) C(70-79%) D(60-69%) F(below 60%)

## CALCULATORS (Recommended):

1. Graphing calculator TI 83 or TI 84
2. Excel
3. Scientific Calculator

## COURSE CALENDAR

WEEK	SECTIONS AND TOPICS
Week 1	<p><b>Syllabus</b></p> <p><b>1.1, 1.2, (1.3 optional)</b></p> <p>Population vs Sample; Descriptive &amp; Inferential Statistics; Types of variables.</p>
Week 2	<p><b>2.1, 2.2, 2.3</b></p> <p>Organizing Qualitative and Quantitative Data (Frequency Tables); Pie Chart and Bar Graphs; Frequency and Relative Frequency Histograms; Identify Shapes of Distributions; Stem-and-Leaf Plots.</p>
Week 3	<p><b>3.1, 3.2</b></p> <p><u>Measures of central tendency:</u> Mean, Median, Mode, Midrange, Weighted Mean.</p> <p><u>Measures of variation:</u> Population Variance and Standard Deviation; Sample Variance and Standard Deviation; Chebyshev and Empirical Rules.</p>
Week 4	<p><b>3.3, 3.4</b></p> <p><u>Measures of position:</u> Z-scores, Percentiles, Quartiles.</p> <p>5-Number Summary and Boxplots.</p>
Week 5	<p><b>TEST 1 (Ch. 1, 2, 3)</b></p>
Week 6	<p><b>4.1, 4.2, 4.3</b></p> <p>Sample Spaces and Probability of Events; Addition Rules of Probability for Compound Events; Multiplication Rules for Compound Events; Conditional Probability.</p>
Week 7	<p><b>5.1, 5.2</b></p> <p>Discrete Probability Distributions; Mean, Variance and Standard Deviation of Discrete Probability Distributions.</p>
Week 8	<p><b>5.3</b></p>

	<p>Binomial distribution.</p> <p><b>6.1</b></p> <p>Normal Distribution.</p>
Week 9	<p><b>6.2, 6.3, (6.4 optional)</b></p> <p>Applications of Normal Distributions; Sampling Distribution of Sample Means and Central Limit Theorem; Application of Central Limit Theorem.</p>
Week 10	<p><b>TEST 2 (Ch. 4, 5, 6)</b></p>
Week 11	<p><b>7.1, 7.2, 7.3, (7.4 optional)</b></p> <p>Point Estimate and Interval Estimates; Sample Size Determination; Confidence Interval for Mean when <math>\sigma</math> is unknown (t-distribution).</p>
Week 12	<p><b>8.1, 8.2, 8.3, (8.4 optional)</b></p> <p>Introduction to Hypothesis Testing; Type I and Type II Errors; Hypotheses Testing of Means when <math>\sigma</math> is known (z-test); Hypotheses Testing of Means when <math>\sigma</math> is unknown (t-test); Critical Value and p-value approach.</p>
Week 13	<p><b>TEST 3 (Ch. 7, 8)</b></p>
Week 14	<p><b>10.1, 10.2</b></p> <p>Scatter plots; Correlation and Regression.</p>
Week 15	<p><b>REVIEW FOR FINAL EXAM</b></p> <p><b>[9.2 (optional), 9.3 (optional)]</b></p> <p><i>Testing the difference between two means; independent samples (2-sample t-test)</i></p> <p><i>Testing the difference between two means; dependent samples (paired t-test)</i></p>
Week 16	<p><b>FINAL EXAM</b></p>

#### BLACKBOARD SUPPORT

If you need assistance with course technology at any time, please contact the [Center for Online Learning and Teaching Technology](#) (COLTT).

<b>Campus:</b>	<b>Brownsville</b>	<b>Edinburg</b>
<b>Location:</b>	Casa Bella (BCASA) 613	Education Complex (EEDUC) 2.202
<b>Phone:</b>	956-882-6792	956-665-5327

**Toll Free: 1-866-654-4555**

Office Hours: Monday - Friday, 7:30 a.m. - 6:00 p.m.

Support Tickets Submit a Support Case via our [Ask COLTT Portal](#)

### **24/7 Blackboard Support**

*Need Blackboard assistance after hours? You can call our main office numbers, 956-882-6792 or 956-665-5327, to speak with a support representative.*

**ATTENDANCE:** Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV's attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; have been provided such an accommodation by Student Accessibility Services (SAS); for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

### **ABSENCE/SICK POLICY:**

When setting your attendance policy for the fall semester, please consider COVID-19-related extenuating circumstances. For instance, you may encounter students who cannot attend class at the scheduled time of a face-to-face, hybrid or synchronous course because they answer "Yes" to any of the COVID screening questions, they need to self-isolate because of exposure, or they become sick with COVID and are unable to complete assignments or exams by the original due date. It will be important to consider how you will accommodate students in these and similar situations and share your approach with students in the syllabus. Based on the student reporting protocol (to be shared separately), the student will be able to provide you documentation from the UTRGV COVID-19 response team.

**Makeup Work:** Additionally, if work can be made up, what mechanisms have you set up to help students keep up with coursework in the event they have to miss class? Will you have recordings of all class meetings available? Will on-line quizzes/examinations be available?

Should you elect to record your instruction, sample syllabus language is included here:

*The use of recordings will enable you to have access to class lectures, group discussions, etc. in the event you have to miss a synchronous or face to face class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA), UTRGV's acceptable-use policy, and UTRGV HOP Policy STU 02-100 Student Conduct and Discipline. A recording of class sessions will be kept and stored by UTRGV, in accordance with FERPA and UTRGV policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. **You may not share recordings outside of this course.** Doing so may result in disciplinary action under UTRGV HOP Policy STU 02-100 Student Conduct and Discipline.*

**ACADEMIC INTEGRITY:** Members of the UTRGV community uphold the [Vaquero Honor Code](#)'s shared values of honesty, integrity and mutual respect in our interactions and relationships. In this regard, academic integrity is fundamental in our actions, as any act of dishonesty conflicts as much with academic achievement as with the values of honesty and

integrity. Violations of academic integrity include, but are not limited to cheating, plagiarism (including self-plagiarism), and collusion; 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 (Board of Regents Rules and Regulations, STU 02-100, and UTRGV Academic Integrity Guidelines). **All violations of Academic Integrity will be reported to Student Rights and Responsibilities through [Vaqueros Report It](#).**

## UTRGV POLICY STATEMENTS

**STUDENTS WITH DISABILITIES:** Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive reasonable academic accommodations should contact **Student Accessibility Services (SAS)** for additional information. For accommodation requests to be considered for approval, the student must apply using the [mySAS portal](#). and is responsible for providing sufficient documentation of the disability to SAS. Students are required to participate in an interactive discussion, or an intake appointment, with SAS staff. Accommodations may be requested at any time but are not retroactive, meaning they are valid once approved by SAS. Please contact SAS early in the semester/module for guidance. Students who experience a broken bone, severe injury, or undergo surgery may also be eligible for temporary accommodations.

### **Pregnancy, Pregnancy-related, and Parenting Accommodations:**

Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) should submit the request using the form found at <https://www.utrgv.edu/pregnancyandparenting> for review by **Student Accessibility Services**.

### **Student Accessibility Services:**

**Brownsville Campus:** Student Accessibility Services is located in 1.107 in the Music and Learning Center building (BMSLC) and can be contacted by phone at (956) 882-7374 or via email at [ability@utrgv.edu](mailto:ability@utrgv.edu).

**Edinburg Campus:** Student Accessibility Services is located in 108 University Center (EUCTR) and can be contacted by phone at (956) 665-7005 or via email at [ability@utrgv.edu](mailto:ability@utrgv.edu).

### **MANDATORY COURSE EVALUATION PERIOD: Required on all syllabi. Do not modify.**

Students are encouraged to complete an ONLINE evaluation of this course, accessed through your UTRGV account (<http://my.utrgv.edu>); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available on or about:

Spring Module 1 (7 weeks)	February 23 – March 1, 2022
Spring Regular Term 2022	April 15 – May 4, 2022
Spring Module 2 (7 weeks)	April 20 – 26, 2022

**SEXUAL MISCONDUCT and MANDATORY REPORTING:** In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report to the Office of Institutional Equity & Diversity (OIED@utrgv.edu) any instance, occurring during a student’s time in college, of sexual misconduct, which includes sexual assault, stalking, dating violence, domestic violence, and sexual harassment, about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at [www.utrgv.edu/equity](http://www.utrgv.edu/equity), including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect that is free from sexual misconduct, discrimination, and all forms of violence. If students, faculty, or staff would like confidential assistance, or have questions, they can contact OVAVP (Office for Victim Advocacy & Violence Prevention) at (956) 665-8287, (956) 882-8282, or [OVAVP@utrgv.edu](mailto:OVAVP@utrgv.edu).

**COURSE DROPS:** According to UTRGV policy, students may drop any class without penalty earning a grade of DR (drop) until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

**STUDENT SERVICES:** Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Student Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email ([ucentral@utrgv.edu](mailto:ucentral@utrgv.edu)) or telephone: (956) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.

Students seeking academic help in their studies can use university resources in addition to an instructor’s office hours. University Resources include the Advising Center, Career Center, Counseling Center, Learning Center, and Writing Center. The centers provide services such as tutoring, writing help, counseling services, critical thinking, study skills, degree planning, and student employment. In addition, services such as the Food Pantry are also provided. Locations are listed below.

Center Name	Brownsville Campus	Edinburg Campus
<b>Advising Center</b> <a href="mailto:AcademicAdvising@utrgv.edu">AcademicAdvising@utrgv.edu</a>	BMAIN 1.400 (956) 665-7120	EITTB 1.000 (956) 665-7120
<b>Career Center</b> <a href="mailto:CareerCenter@utrgv.edu">CareerCenter@utrgv.edu</a>	BINAB 1.105 (956) 882-5627	ESTAC 2.101 (956) 665-2243
<b>Counseling Center</b> <a href="mailto:Counseling@utrgv.edu">Counseling@utrgv.edu</a> <a href="#">Mental Health Counseling and Related Services List</a>	BSTUN 2.10 (956) 882-3897	EUCTR 109 (956) 665-2574
<b>Food Pantry</b> <a href="mailto:FoodPantry@utrgv.edu">FoodPantry@utrgv.edu</a>	BCAVL 101 & 102 (956) 882-7126	EUCTR 114 (956) 665-3663
<b>Learning Center</b> <a href="mailto:LearningCenter@utrgv.edu">LearningCenter@utrgv.edu</a>	BMSLC 2.118 (956) 882-8208	ELCTR 100 (956) 665-2585
<b>Writing Center</b> <a href="mailto:WC@utrgv.edu">WC@utrgv.edu</a>	BLIBR 3.206 (956) 882-7065	ESTAC 3.119 (956) 665-2538

The UTRGV academic calendar can be found on [My.UTRGV](#) at the bottom of the screen prior to login. Some important dates for Spring 2022 include:

Spring Module 1

January 12	First day of classes.
January 12	Last day to add a class or register for Spring 2022 Module 1 classes.
February 22	Last day to drop a class or withdraw.
March 2	Final Exams (Term Ends)
March 4	Grades Due at 3 p.m.



### Spring Regular Term

January 18	First day of classes.
January 23	Last day to add a class or register for Spring 2022 classes.
March 14-19	Spring Break. No classes.
April 11	Last day to drop a class or withdraw.
April 15-16	Easter Holiday. No classes.
May 5	Study Day – NO classes
May 6-12	Final Exams
May 16	Grades Due at 3 p.m.

### Spring Module 2

March 9	First day of classes.
March 9	Last day to add a class or register for Spring 2022 Module 2 classes.
April 19	Last day to drop a class or withdraw.
April 27	Final Exams (Term Ends)
April 29	Grades Due at 3 p.m.

**DEAN OF STUDENTS RESOURCES:** The Dean of Students office assists students when they experience a challenge with an administrative process, unexpected situation such as an illness, accident, or family situation, and aids in resolving complaints. Additionally, the office facilitates student academic related requests for religious accommodations, support students formerly in foster care, helps to advocate on behalf of students and inform them about their rights and responsibilities, and serves as a resource and support for faculty and campus departments.

[Vaqueros Report It](#) allows students, staff and faculty a way to report concern about the well-being of a student, seek assistance in resolving a complaint, or report allegations of behaviors contrary to community standards or campus policies.

The Dean of Students can be reached by emailing [dos@utrgv.edu](mailto:dos@utrgv.edu), by logging into [Virtual Office hours](#) in which a representative is available Monday-Friday 9:00-11:00 a.m. and 1:00-4:00 p.m, or by visiting one of the following office locations: Cavalry (BCAVL) 204 or University Center (EUCTR 323). Phone: 956-665-2260.