THE UNIVERSITY OF TEXAS AT EL PASO

COLLEGE OF SCIENCE

DEPARTMENT OF MATHEMATICAL SCIENCES

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Course #:	12784
Course Title:	STAT 2480: Elementary Statistical Methods
Credit Hrs:	4
Term:	Fall 2020
Course Meetings & Location:	Online Course August 24, 2020 – December 11, 2020
Prerequisite Courses:	One of 1320, 1508, 1411, TCCN 1314 or equivalent
Course Fee: (if applicable)	None
Instructor:	Francis Biney
Contact Info:	Math Department Phone number: (915) 747-5761 E-mail address: fbiney@utep.edu E-mails will be answered between 9:00 am and 4:00 pm Mondays-Fridays. E-mails received outside of these windows will be addressed during the next period.
Office Hrs:	TR 3.30pm to 5pm or by appointment on Blackboard Collaborate. To access office hours: sign in to Blackboard> on the left menu, click the Collaborate Ultra link > select the office hours session> join.
Textbook	The Practice of Statistics in the Life Sciences, fourth edition, by Baldi and Moore, **ISBN-13: 978-1-319-01337-0** Available only on Macmillan website and UTEP Bookstore The Sapling Plus online homework package is required.
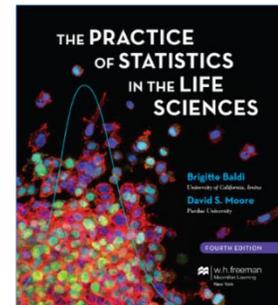
Required Technology/ Materials

- Sapling Plus homework account
  - must access from Blackboard initially
- MiniTab 19 –Statistical Software
  - the temporary license provided by UTEP

You will also need regular access to a computer, stable, consistent internet, Blackboard, and your UTEP e-mail account.

Course Objectives (Learning Outcomes):	STAT 2480 is an introductory statistics class primarily for biological and life sciences. At the successful completion of this class:

I. A student will be able to identify key components of a statistical study, including experimental design, sampling plan, descriptive statistics, statistical analysis, and will be able to critique the conclusion of the study based on strengths and weaknesses of the paper.

II. A student will be able to calculate and interpret data utilizing both numerical and graphical summaries to support conclusions.

III. A student will be able to calculate and model problems using fundamental probability properties and basic probability distributions

IV. A student will be able to choose the appropriate statistical test for a given data set, perform the test, and utilize the conclusion to make a decision about a formal hypothesis.

V. A student will be able to design and implement all of the elements of a statistical study, including experimental design, sampling plan, descriptive statistics, statistical analysis, and will present the findings in a formal research paper.

Activities and Assignments:	The course is split into topic modules. Modules include a combination of textbook reading, lecture notes, writing assignments, labs, and homework.

Video Lectures: Lecture and lab videos will be posted in each module with note in onenote. You are expected to do the assigned readings from your book and watch the associated videos.

Exams: There are three exams for the course: two mid-terms and a comprehensive final. The exams will be conducted on Sapling. You will have a practice exam for each that counts towards your Learning Curve (participation) grade.

Project: As a group, you will design a research study, collect and analyze data, and present your findings in a written paper. The final project will be submitted during the last week of the semester.

Specific due dates and assignments can be found in the Project Module of Blackboard.

Labs: Labs consist of a quiz, a lab assignment from the manual, and a blog post. All of these components are together in a folder for each module. The blog post instructions can be found in the lab manual and on the Lab Blog Homepage.

Homework: There are 12 homework assignments for the course, one per non-test module. They are solely conducted on Sapling Plus. Due date information can be found on the Calendar (last page) and in Sapling Plus.

Writing Assignments: You will have a variety of writing assignments throughout the semester. Each one has different instructions and is related to a specific module. They fit into one of two broad categories 'Exploring an Article (EAS)' and 'Thinking About Statistics (TAS).' A comprehensive guide to each of these is included on Blackboard. Individual instructions for assignments are also included in each respective module.

Learning Curve: Learning curve is an adaptive learning tool in Sapling plus. These assignments introduce you to the textbook material with easy questions. You get points for each question you get correct and do not lose points for questions you miss. Once you have reached the target goal for the Learning Curve, it is considered complete. You will be graded on the number of Learning Curves you complete.

Course Schedule: A comprehensive course schedule is attached as the last pages of this syllabus. Semester highlights are included.

- August 24 – Classes Begin
- September 7 – Labor Day (No Class Meeting)
- September 9 – Census Day (Last day to drop without a W)
- **September 30 – Exam 1 Due**
- **October 28 – Exam 2 Due**
- October 30 – Course Drop Deadline
- December 3 – Last Day of Classes
- December 4 – Dead Day

- **December 9 – Final Exam Due**

Grading Policy: You will be graded on homework, exams, labs, discussion boards, learning curve, and the project. The course grade is based on:

15% Exam I
15% Exam II
15% Cumulative Final Exam
15% Project
15% Homework Assignments
10% Lab Quizzes and Lab Blogs
10% Writing Assignments (TAS & EAS)
5%   Learning Curve

Letter grades are determined according to the following scale:

Grade	Score
A	90-100
B	80-89
C	70-79
D	60-69
F	<60

Activity Specific Policies: Online homework assignments in Sapling Plus have ten attempts per question. Ensure you have answered all of the sub-questions before submitting, as those empty submissions are counted as incorrect. You may request a 3-day extension for a 15% (flat) penalty.

Make-up Policy: Lab quizzes and Blogs, Writing Assignments, and Learning Curves cannot be submitted late for credit. If you feel like you have some extenuating circumstance, or have an excused absence that will keep you from completing an assignment or quiz, please contact me right away and be prepared to show supporting documentation. I reserve the right to excuse or exempt assignments and quizzes if the situation is warranted.

Exam: A make-up exam will only be given in extraordinary circumstances (severe illness, death in the immediate family), and with appropriate documentation (e.g., doctor's note).

Attendance Policy: Because this is an online class, participation is assessed by the completion of module activities. You can fully participate in class by:
  - Completing all assigned readings and watching video lectures

- Completing the Writing Assignments and commenting on classmates' posts
- Completing all module activities (labs, assignments)
- Completing all major assignments (exams, project)

Each aspect of the course builds on the previous topic. By completing things in the order provided, you are building the foundation needed for the next step.

Failure to submit any weekly assignment for two weeks, or failure to complete an exam will result in being dropped from the course.

Academic Integrity Policy: The University policy is that all suspected cases or acts of alleged scholastic dishonesty must be referred to the Dean of Students for investigation and appropriate disposition. Any student who commits an act of scholastic dishonesty is subject to discipline. 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. Each student is responsible for notice of and compliance with the provisions of the Regents' Rules and Regulations, which are available for inspection electronically at https://www.utsystem.edu/offices/board-regents/regents-rules-and-regulations.

All students are expected and required to obey the law, to comply with the Regents' Rules and Regulations, with System and University rules, with directives issued by an administrative official in the course of his or her authorized duties, and to observe standards of conduct appropriate for the University. A student who enrolls at the University is charged with the obligation to conduct himself/herself in a manner compatible with the University's function as an educational institution.

Any student who engages in conduct that is prohibited by Regents' Rules and Regulations, U. T. System or University rules, specific instructions issued by an administrative official or by federal, state, or local laws is subject to discipline, whether such conduct takes place on or off campus or whether civil or criminal penalties are also imposed for such conduct.

Netiquette: You will be interacting with your fellow students in an online setting. Consider your audience when making posts. Your tone should be professional and respectful. When commenting on other's posts, ensure your contribution addresses the work, not the person. You should only say things you would be comfortable saying in a face to face setting.

Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professors only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation first to request the permission of the writer(s).

Disability Statement: If you need accommodations for your success, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by e-mail to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website https://www.utep.edu/student-affairs/cass/

The student is responsible for informing me of the accommodations needed and will be responsible for proactive actions regarding having accommodations met.

Military Statement: If you are a military student who may potentially be called to military service or training during the semester, you are encouraged to contact your instructor as soon as possible.

Drop Deadlines: The last day to drop the course without a "W" is September 7. The last day to drop the course with a "W" is October 30. Students who decide to drop the course must process a drop form, with the Registrar's Office, before October 30. Please note that the College of Science will remain aligned with the University and will not approve any drop requests after that date.

Failure to make adequate forward progress in the course is grounds for instructor initiated drops.

Class Procedures

Week	Dates	Module	Monday	Wednesday	Friday	Sunday	University Notes
							Key: Q## = Lab Quiz, B## = Blog Entries, int = initial, res = response, HW## = Homework, EAS# = Exploring an Article, TAS# = Thinking About Statistics
1	Aug 24 - Aug 30	M00: Getting Started	Reading: Syllabus, Introduction Blog Watch: MiniTab download, Course Navigation	Q00: Syllabus Quiz	B00 int:Self Introduction	B00 Res: Self Introduction HW00: Practice Assignment	Fall Classes Begin Aug 24
2	Aug 31 - Sept 6	M01: Experimental Design	Reading: Chapter 6 and 7 Watch: Video Lecture	Q01: Lab Random Selection Q02: Lab Random Assignment Learning Curve: 6 and 7	B01: Lab 1 B02: Lab 2 EAS1: Article Selection	HW01: Chapters 6 and 7	
3	Sept 7 - Sept 13	M02: Critically Evaluating a Study	Reading: 12 components Watch: Video Lecture	TAS1 Prep: Group assignment	TAS1 Int: 6 questions posted on Blog EAS2: Main Components	HW02: CEA TAS1 Res: Group discussions	Labor Day Sept 7th - No Classes Census Day Sep 9th - Last day to drop without a W
4	Sept 14 - Sept 20	M03: Data Summaries	Reading: Chapters 1 and 2 Watch: Video Lecture	Q03: Lab Data Summaries Learning Curve 1 and 2	B03: Lab 3 EAS3: Data Summaries	HW03: Chapters 1 and 2	

5	Sept 21 - Sept 27	M04: Correlation and Regression	Reading: Chapters 3 and 4 Watch: Video Lecture	Q04: Lab Correlation and Regression Learning Curve 3 and 4	B04: Lab 4 TAS 2 int: Regression Toward Mean	TAS2 Res: Regression Toward Mean HW04: Chapters 3 and 4	
6	Sept 28 - Oct 4	M05: Exam 1	**Practice Exam 1 Due**	**Exam 1 Due**			
		Project			CP1: Background Research	**Group Selection**	
7	Oct 5 - Oct 11	M06: Probability	Reading: Chapter 9 and 10 Watch: Video Lecture	Learning Curve 9 and 10	TAS3 int: Monty Hall Problem	TAS3 Res: Monty Hall Problem HW05: Chapters 9 and 10	
		M07: Binomial	Reading: Chapter 12 Watch: Video Lecture	Q05 Binomial Learning Curve 12	TAS 4 - Binomial Concept Map	HW06: Chapter 12	
8	Oct 12 - Oct 18	M08: Density Curves	Reading: Chapter 11 Watch: Video Lecture	Q06: Gaussian Curves Learning Curve 11	TAS 5 - Density Histograms	HW07: Chapter 11	
		Project			CP2: Data Definitions and Sampling		
9	Oct 19 - Oct 25	M09: Central Limit Theorem	Reading: Chapter 13 Watch: Video Lecture	Q07: Sampling Distribution Learning Curve 13	TAS 6 - CLT Experiment	HW08: Chapter 13	

10	Oct 26 - Nov 1	M10: Exam 2	**Practice Exam 2 Due**	**Exam 2 Due**	CP3: Descriptive Statistics		Drop Day Oct 30th - Last day to drop with a W
11	Nov 2 - Nov 8	M11: Intro to Hypothesis Test	Reading: Chapters 14, 18, and 19 Watch: Video Lecture	Q08: Randomization Distribution Learning Curve 14 and 19	EAS 4 Hypothesis testing and analysis	HW09: Chapter 19	
12	Nov 9 - Nov 15	M12: T-test and Power	Reading: Chapters 17 and 15 Watch: Video Lecture	Q09: Power Q10: Confidence Intervals Learning Curve 17 and 15	TAS 7 - Hypothesis Testing Concept Map	HW10: Chapter 17	
13	Nov 16 - Nov 22	M13: Chi-Square	Reading: Chapter 21 and 22 Watch: Video Lecture	Q11: Chi-Square Learning Curve 21 and 22	TAS 8 - Chi Square Expt Blog EAS 5 Limitations	HW11: Chapters 21 and 22	
14	Nov 23 - Nov 29	M14: ANOVA	Reading: Chapter 24 Watch: Video Lecture	Q12: ANOVA Learning Curve 24		TAS 9 - ANOVA concept map HW12: Chapter 24	Thanksgiving Holiday Nov 26th -27th No classes
		Project				CP4 Hypothesis Tests	Dead Day Dec 4th - No Classes
15	Nov 30 - Dec 6	Final Project and Review	Final Exam Review	**Practice Exam 3 Due** CP5 Limitations		Project Corrections Due	Final Exam Week
16	Dec 7 - Dec 13	M15: Final Exam		**Exam 3 Due**			