Course number, Course CRN, COURSE TITLE

MATH 3350-110, 80180, PRINCIPLES OF BIOSTATISTICS

Fall 2023

Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

This course will run from: 08/28/2023 - 12/15/2023

This is a 100% online course, and uses the A&M-Central Texas Canvas Learning Management System [https://tamuct.instructure.com/].

I will hold an open office hour every Friday. The time will be posted every Monday in a weekly announcement.

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Dr. Audrie Cruz-Sealey

Office: Virtual Office Hours by Appointment

Email: a.cruz-sealey@tamuct.edu

Office Hours

There will be an open hour every Friday that will be posted Monday of every week.

All other hours will be by Appointment Only.

Office hours will take place in the WebEx conference room.

Student-instructor interaction

Responses to emails will take place within 24 hours, including weekends.

Emergency Warning System for Texas A&M University-Central Texas

SAFEZONE. SafeZone provides a public safety application that gives you the ability to call for help with the push of a button. It also provides Texas A&M University-Central Texas the ability to communicate emergency information quickly via push notifications, email, and text messages. All students automatically receive email and text messages via their myCT accounts.

Downloading SafeZone allows access to push notifications and enables you to connect directly for help through the app.

You can download SafeZone from the app store and use your myCT credentials to log in. If you would like more information, you can visit the <u>SafeZone</u> website [www.safezoneapp.com].

To register SafeZone on your phone, please follow these 3 easy steps:

- 1. Download the SafeZone App from your phone store using the link below:
 - <u>iPhone/iPad</u>: [https://apps.apple.com/app/safezone/id533054756]
 - Android Phone / Tablet [https://play.google.com/store/apps/details?id=com.criticalarc.safezoneapp]
- 2. Launch the app and enter your myCT email address (e.g. {name}@tamuct.edu)
- 3. Complete your profile and accept the terms of service

For updates on COVID information, please monitor the University <u>website</u> [https://www.tamuct.edu/covid19/]

COURSE INFORMATION

Course Overview and description

An introduction to statistical methods that are applied in Biology and Agriculture to support findings with reliable evidence. Use of technology and hands-on spreadsheet assignments are required in this course. This course covers, collection, description, analysis and presentation of data. Topics covered include: study design, probability, confidence intervals, hypothesis testing, discrete vs. continuous data, ANOVA, correlation and regression. Prerequisite: Math 2413-Calculus I.

Course Objective or Goal

- 1. Describe how biostatistics plays a role in different professional areas such as public health and biomedical research;
- 2. Design an appropriate study and use statistical tools to reach and communicate reasonable conclusions.
- 3. Select an appropriate sampling method to determine a sample size given a word problem and accompanying data set and calculate numerical summaries, including measures of central tendency, such as mean, median and mode and measures of variation, such as range and standard deviation.
- 4. Compute and interpret empirical, theoretical and subjective probabilities using appropriate rules.
- 5. Examine, analyze and compare various sampling distributions for both discrete and continuous data.
- 6. Construct a confidence interval and interpret the meaning of the bounds of the interval given a real-life application.
- 7. Implement the appropriate hypothesis test given a situation when a claim is stated and be able to identify Type 1 and Type 2 errors.
- 8. Construct a best-fit regression model with single or multiple independent variables and assess its validity and explain how it applies to a given word problem or case study.
- 9. Apply the One-Way and Two-Way analysis of variance and focus on the interpretation of results from technology.

Required Reading and Textbook(s)

Biostatistics for the Biological and Health Sciences. Triola, Triola and Roy. Pearson. 2nd Edition.

COURSE REQUIREMENTS

Grading Criteria Rubric and Conversion

Weight (%)	Points
10%	100 points
10%	5 Quizzes @ 20 pts each
20%	8 labs @ 25 pts each
15%	150 points
15%	150 points
30%	300 points
100%	1000 points
	10% 10% 20% 15% 15% 30%

Posting of Grades

- MyMathLab Homework and Quizzes will be auto graded.
- Exams and labs will be graded and returned to the student no later than one week after the due date.

Grading Policies

MyMathLab Homework & Quizzes—One extension is permitted for the entire course. The homework and quiz for one chapter will be extended for one week past the original due date.

Exams—Make up exams can only be taken after documentation of an emergent situation is submitted to the instructor.

Exams will be proctored using Proctorio. You will need to have a webcam and audio set up in order for your test to be proctored.

Labs—Labs will NOT be accepted after the due date.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

Day	Topic	Student Outcome	Reading	Due Date
August 28 th	Intro to Course/ Download R/ Lab #1	1		
August 30 th	Types of & Collecting Data	2	Section 1.2 and 1.3	Chap 1 & Lab #1 Due: 09/03/23
September 5 th	Frequency Distributions & Histograms	2	Section 2.1 and 2.2	
September 7 th	More Graphs & Misleading Graphs	2	Section 2.3	
September 12 th	Scatterplots & Lab #2	2	Section 2.4	Chap 2, Quiz & Lab #2: 09/17/23
September 14 th	Measures of Center & Variation	3	Section 3.1 and 3.2	
September 18 th	Measures of Relative Standing & Boxplots & Lab #3	3	Section 3.3	Chap 3 Due & Lab #3: 09/24/23
Santamban 20th	Basics of Prob. & Addition/Mult Rule or 20 th 4 Section 4.1 an	Section 4.1 and		
September 20 th	Extra Credit Assignment	7	4.2	
September 25 th	Complements and Conditional Prob.	4	Section 4.3	Chap 4 Due, Quiz & Extra Credit Due: 10/01/23
September 27 th	Unit 1 Exam Review	1 - 4	Chap 1 – 4	
	Unit 1 Exam	1 – 4	Opens: 10/02/23	Closes/Due: 10/08/23
October 2 nd	Prob. Distributions & Binomial Distributions	5	Section 5.1 and 5.2	
October 4 th	Poisson Distributions & Lab #4	5	Section 5.3	Chap 5 Due & Lab #4: 10/08/23
October 10 th	Normal Distribution	5	Section 6.1 and 6.2	
October 12 th	The Central Limit Thm & Lab #5	5	Section 6.4	Chap 6 Due & Lab #5: 10/15/23
October 16 th	Confidence Intervals: Population Mean & Proportion	6	Section 7.1 and 7.2	
October 18 th	Confidence Intervals: Population Standard Deviation or Variance	6	Section 7.3	Chap 7 Due & Lab #6: 10/22/23
October 23 rd	Hypothesis Testing: Proportion	7	Section 8.1 and 8.2	
October 25 th	Hypothesis Testing: Mean	7	Section 8.3	

October 30 th	Hypothesis Testing: Standard Deviation or Variance	7	Section 8.4	Chap 8 & Quiz Due: 11/05/23
November 1st	Unit 2 Exam Review	5 - 7	Chap 5 – 8	
	Unit 2 Exam	5-7	Opens: 11/06/23	Closes/Due: 11/12/23
November 6 th	Two Proportions and Means	8	Section 9.1 and 9.2	
November 8 th	Two Dependent Samples	8	Section 9.3	Chap 9 Due & Lab #7: 11/12/23
November 13 th	Correlation and Regression	8	Section 10.1 and 10.2	
November 15 th	Prediction Intervals	8	Section 10.3	
November 27 th	Multiple Regressions	8	Section 10.4	Chap 10, Quiz Due & Lab #8: 12/03/23
November 29 th	Goodness of Fit & Contingency Tables	9	Section 11.1 and 11.2	Chap 11 Due 12/10/23
December 4 th	One-Way Anova	9	Section 12.1	
December 6 th	Two-Way Anova	9	Section 12.2	Chap 12 Due: 12/10/23
December 8 th	Final Exam Review	1 - 9	Chap 1 - 12	
	Final Exam	1 – 9		Closes/Due: 12/15/23

Important University Dates

August 28, 2023	Classes Begin for Fall Semester
August 30, 2023	Deadline for Add, Drop, and Late Registration for 16- and First 8-week
September 13, 2023	Deadline to drop 16-week Classes with No Record
October 23, 2023	Class Schedule Published for Spring Semester
October 27, 2023	Deadline for Graduation Application for Ceremony Participation
November 6, 2023	Registration Opens for Spring Semester
November 9, 2023	Deadline to Drop 16-Week Classes with a Quit (Q) or Withdraw (W)
November 10, 2023	Veteran's Day (University Closed)
November 23-24, 2023	Thanksgiving (University Closed)
December 15, 2023	Deadline for Applications for Tuition Rebate for Fall Graduation (5pm)
December 15, 2023	Deadline to Withdraw from University for 16- and Second 8-Week Classes
December 15, 2023	Deadline for Degree Conferral Applications to the Registrar's Office \$20 Late Application Fee
December 15, 2023	Fall Semester Ends
December 15, 2023	Fall Commencement Ceremony
December 19, 2023	Deadline for Faculty Submission of 16-Week and Second 8-Week Final Class Grades (due by 3pm)

https://www.tamuct.edu/registrar/academic-calendar.html

TECHNOLOGY REQUIREMENTS AND SUPPORT

Technology Requirements

This course will use the A&M-Central Texas Instructure Canvas learning management system. We strongly recommend the latest versions of Chrome, Firefox, Edge, or Safari browsers. Canvas will run on Windows, Mac, Linus, iOS, android, or any other device with a modern web browser. Canvas no longer supports any version of Internet Explorer.

Logon to A&M-Central Texas Canvas [https://tamuct.instructure.com/] or access Canvas through the TAMUCT Online link in myCT [https://tamuct.onecampus.com/] by clicking on the "TAMUCT Online Canvas" tile. You will then log in through our Microsoft portal.

Username: Your MyCT email address. Password: Your MyCT password

Canvas Support

Use the Canvas Help tab, located at the bottom of the left-hand menu, for issues with Canvas. You can search the support articles or use the Email, Call, or Chat buttons at the bottom of the support pop-up to contact the Canvas Help Desk.

For issues related to course content and requirements, contact your instructor.

Online Proctored Testing

Texas A&M University-Central Texas uses Proctorio for online identity verification and proctored testing. This service is provided at no direct cost to students. If the course requires identity verification or proctored testing, the technology requirements are: Any computer meeting the minimum computing requirements, plus web camera, speaker, and microphone (or headset). Proctorio requires use of the Chrome web browser with their custom plug in installed.

Other Technology Support

For log-in problems, students should contact Help Desk Central, 24 hours a day, 7 days a week.

Email: helpdesk@tamu.edu

Phone: (254) 519-5466

Web Chat: [http://hdc.tamu.edu]

Please let the support technician know you are an A&M-Central Texas student.

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Warrior Center for Student Success

The Warrior Center for Student Success is a comprehensive academic support department at A&M-Central Texas, dedicated to fostering an environment of excellence and empowerment among its student body. The center offers a wide range of programs and services to ensure every student reaches their full potential, and is a haven for students seeking guidance, resources, and a strong support network to excel in their educational journey.

ADA Access and Accommodations: Texas A&M University-Central Texas ensures that students with disabilities have equal access to educational opportunities by providing appropriate accommodations and support services. If you believe you have a physical, learning or socio-emotional disability requiring reasonable accommodations, please visit <u>Access and Inclusion</u> [https://www.tamuct.edu/student-affairs/access-inclusion.html] for more details or contact the Office of Access and Inclusion, WH-212; (254) 501-5836. Any information you provide is private and confidential.

Success Coaching and Peer Mentoring: Our experienced Success Coaches work one-on-one with students to develop personalized action plans, set academic goals, and build effective study strategies, time management skills, and resilience. Our Peer Mentors provide a valuable support system, offering guidance, encouragement, and a relatable perspective to help students navigate their academic and personal challenges. For more details call 254-501-5836 or 254-501-5928 or visit Academic Support [https://www.tamuct.edu/student-affairs/academic-support.html]. Click the link to schedule a session (virtual or in-person) with a success coach bit.ly/3q7uB50 or visit WH, 111.

Testing Services: We offer a secure and comfortable environment for students and members of the community to take courses and distance learning exams, as well as placement tests and professional certification exams. Our Testing Service also offers resources and support referrals for testing related challenges (test anxiety, learning disabilities, etc.) and supports all approved ADA accommodations. Call (254) 519-5830 or visit the <u>Testing Center</u> [https://www.tamuct.edu/testing-center/].

Tutoring and Supplemental Instruction Services: Our team of qualified Tutors and Supplemental Instructors assist students in various non-writing subjects, promoting academic comprehension and enhancing learning outcomes. Click the link to schedule a tutoring session with a TAMUCT tutor (virtual or in-person) or view tutor availability https://www.tamuct.edu/student-affairs/academic-support.html//#tutoring] or call (254) 501-5836 or visit the Tutoring Hub in Warrior Hall, 111.

Academic Integrity

Texas A&M University-Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. All academic misconduct concerns will be referred to the Student Conduct Office. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

For more information regarding the student conduct process, [https://www.tamuct.edu/student-affairs/student-conduct.html].

If you know of potential honor violations by other students, you may submit a referral, [https://cm.maxient.com/reporting.php?TAMUCentralTexas].

Drop Policy

If you discover that you need to drop this class, you must complete the Drop Request Dynamic Form through Warrior Web.

[https://federation.ngwebsolutions.com/sp/startSSO.ping?PartnerIdpId=https://eis-

prod.ec.tamuct.edu:443/samlsso&SpSessionAuthnAdapterId=tamuctDF&TargetResource=https%3a%2f%2fdynamicforms.ngwebsolutions.com%2fSubmit%2fStart%2f53b0502-4f36-be43-f02a4202f612].

Faculty cannot drop students; this is always the responsibility of the student. The Records and Admissions Office will provide a deadline on the Academic Calendar for which the form must be completed. Once you submit the completed form to the Records and Admissions Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Records and Admissions Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Pregnant and/or Parenting Students Rights and Accommodations

Texas A&M University-Central Texas supports students who are pregnant, experiencing pregnancy-related conditions, and/or parenting. In accordance with requirements of <u>Title IX and related guidance from US Department of Education's Office of Civil Rights</u>, the Associate Dean in the Division of Student Affairs, (254) 501-5909, can

assist students who are pregnant, experiencing pregnancy-related conditions, and/or parenting by provide flexible and individualized reasonable accommodations. Students should seek out assistance as early in the pregnancy as possible through the Pregnancy-&-Parenting-webpage [https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html]. For more information, please visit Student Affairs [https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html]. If you would like to read more about these requirements-and-guidelines-online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

<u>Title IX of the Education Amendments Act of 1972</u> specifically prohibits discrimination against a student based on pregnancy, childbirth, false pregnancy, termination of pregnancy, or recovery from any of these conditions [https://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.html].

Students experiencing any form of discrimination due to any of these conditions are encouraged to reach out to the Title IX Coordinator, 254.519.5716, titleix@tamuct.edu, Founders Hall 317B, or the Associate Dean of Student Affairs, 254.501.5909, Warrior Hall 105.

Title IX Rights and Reporting Responsibilities

Texas A&M University-Central Texas is committed to creating a safe and open learning environment for all students. If you or another student has experienced any form of gender discrimination or sexual misconduct, including sexual harassment, sexual assault, dating/domestic violence, and/or sex-based stalking, help and support are available. Our university strongly encourages all members of our campus community to report incidents and seek support for gender discrimination and sexual misconduct through the Title IX Office. You may contact the Title IX Office at 254.519.5716, titleix@tamuct.edu. Founders Hall 317B, or learn more by visiting the Title IX webpage [https://www.tamuct.edu/compliance/titleix.html].

Please be aware that that under Title IX, Texas Senate Bill 212, and System Regulation 08.01.01, [https://policies.tamus.edu/08-01-01.pdf] all university employees are mandated reporters and are required to disclose information about suspected or alleged violations as listed above and defined in System Regulation 08.01.01. If the Title IX Office receives information about an incident, they will reach out to offer information about resources, rights, and procedural options as a member of the campus community. Although I have an obligation to report, you will, in most cases, control how your case will be handled. When working with the Title IX Office you will have access to resources and accommodations but also have the opportunity to express if you wish to move forward with an investigation. Our goal is to make sure you are aware of the options available to you as a student. Community members are not required to respond to this outreach.

If you or another student wishes to speak to a confidential employee who does not have this reporting responsibility, you can contact the Student Wellness & Counseling Center, [https://www.tamuct.edu/student-affairs/student-counseling.html], 254.501.5955, or swacc@tamuct.edu, located in Warrior Hall Room 207L or the Student Support Advocate, 254.501.5978 or ssa@tamuct.edu, located in founder Hall Room 317D.

University Library & Archives

The University Library & Archives provides many services in support of research across campus and at a distance. We offer over 350 electronic databases containing approximately 1,203,947 eBooks and 134,750 journals, in addition to the 96,879 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place virtually through WebEx, Microsoft Teams or in-person at the library. Schedule an appointment here

[https://tamuct.libcal.com/appointments]. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group workspaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our <u>Library website</u>

[https://tamuct.libguides.com/index]

University Writing Center

Located in Warrior Hall 416 and online, the University Writing Center (UWC) at Texas A&M University—Central Texas (A&M—Central Texas) is a free service open to all A&M—Central Texas students. The face-to-face hours of operation are from 10:00 a.m.-5:00 p.m. Monday and Thursday in Warrior Hall 416. Online tutoring is available Monday thru Thursday from 10:00 a.m.-5:00 p.m. and from 6:00-9:00 p.m. and on Saturdays from 12:00-3:00 p.m.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing, our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the UWC is here to help!

Students may arrange a one-to-one session with a trained and experienced writing tutor by making an appointment via WCOnline [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu if you have any questions about the UWC, need any assistance with scheduling, or would like to schedule a recurring appointment with your favorite tutor.

OTHER POLICY STATEMENTS

A Note about Sexual Violence at A&M-Central Texas

Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student Wellness and Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).

Sexual violence can occur on our campus because predators often feel emboldened, and victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don't agree with their behaviors and tell survivors we will support them. Your actions matter. Don't be a bystander; be an agent of change. For additional information on campus policy and resources visit the <u>Title IX webpage</u> [https://www.tamuct.edu/compliance/titleix.html].

Behavioral Intervention

Texas A&M University-Central Texas cares about the safety, health, and well-being of its students, faculty, staff, and community. If you are aware of individuals for whom you have a concern, please make a referral to the Behavioral Intervention Team. Referring your concern shows you care. You can complete the referral online

[https://cm.maxient.com/reporting.php?TAMUCentralTexas].

Anonymous referrals are accepted. Please see the <u>Behavioral Intervention Team</u> website for more information [https://www.tamuct.edu/bit]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5805.

INSTRUCTOR POLICIES

Homework and Quizzes: may be accessed after due date with a 30% deduction. The final day to access homework and quizzes is Sunday of Week 15.

Exams: In order to make up an exam, documentation must be provided by a physician or the professor will decide if the situation deems an extension.

Labs: Labs will NOT be accepted after the due date.

VIRTRUAL CLASSROOM SETUP

- 1. Please keep your cell phones on vibrate.
- 2. Sign into Webex Office Hours using your First and Last Name.

Copyright Notice

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