Texas A&M University - Central Texas

PSYC 5316-110
Advanced Quantitative Methods & Experimental Design

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Daniel A. Clark, Ph.D.
Office: Warrior Hall Room 318 I
Email: Preferred email communication is through e-mail: daniel-clark@tamuct.edu

Office Hours: Click here for appointment link.
    In person:
    Tuesday: 2 pm - 5 pm

    Thursday: 2 pm - 5 pm

    Online:

    Monday, Wednesday, Friday: 8 am - 12 pm, 1pm - 4 pm

Mode of Instruction and Course Access:
This course is a 100% online course and uses TAMUCT's Canvas system
(https://www.tamuct.instructure.com). Students will use their Canvas username and password
(communicated separately) to logon to this system.

Student-Instructor Interaction:
    The professor will logon to the course in Canvas every week day (Monday through Friday)
    and will reply to email within two business days.

    If students have a course-related question, these should be posted in Study Hall (discussion
    board) instead of sending the professor an email/message. When posted in Study Hall, both
    classmates and the professor are able to reply to questions, and all students will have access
    to the information.

    Students are expected to logon to the course in Canvas daily to review and post
    assignments, read discussion boards, review announcements, check messages, etc.
    The professor will provide feedback on assignments by marking grading rubrics and/or
    posting comments as needed in the Submission box or on attached documents. Students
    should review all assignments in the Grade Center when grades are posted to examine and
    apply the feedback on subsequent assignments.

    Students can message the professor to schedule an appointment to talk via Collaborate
    when needed.

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 SafeZone 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:
   - iPhone/iPad: [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 website
[https://www.tamuct.edu/covid19/]

COURSE INFORMATION

Course Overview and Description:
This course provides an overview of advanced statistical techniques to analyze quantitative data resulting from experimental and quasi-experimental research designs. This course is a continuation of PSYK 500 and PSYK 501 and requires students to demonstrate proficiency in the use of SPSS for data analysis. The course reviews One-Way and Two-Factor ANOVA. Other topics include ANCOVA, MANOVA, MANCOVA, multiple regression, logistic regression, data reduction techniques (factor analysis and principal components analysis), and non-parametric analyses appropriate for two- and multi-group designs. The course emphasizes the integration of multivariate and advanced statistical design with applicable research paradigms. Prerequisite(s): PSYK 500 and PSYK 501.

Course Objective (Student Learning Outcomes):

1. *Demonstrate comprehension and application of factual knowledge (terminology, classifications, methods, trends).* Students will compute one-way and two-factor analysis of variance, analysis of covariance, multiple analysis of variance, multiple analysis of covariance, multiple regression, logistic regression, data reduction techniques (factor analysis and principal components analysis), and non-parametric analyses appropriate for two- and multi-group designs. Students will demonstrate their ability to compute functions on homework assignments and exams.

1.   *Demonstrate comprehension and application of factual knowledge of fundamental principles, generalizations, or theories regarding basic statistics.* Students will read, discuss, and write about theoretical concepts underlying inferential statistics, including empirical distributions, theoretical distributions (including the normal distribution), sampling distributions, the Central Limit Theorem, and the logic underlying confidence intervals and hypothesis testing. Students will demonstrate their ability to discuss and write about selected concepts on the Concept Application Discussions.

1.   *Integrate course material to improve thinking, problem solving, and decisions.* Students will identify the variables under study including independent and dependent variables, state the research hypotheses, identify the number of samples under study and scores per participant, select the appropriate inferential tests, draw statistical conclusions from the numerical results of analyses, and present them in APA style. Examples and problems will be applied to research in psychology. Students will demonstrate these skills on Homework Problems, SPSS assignments, APA style Results sections, Research Article Analyses, and Exams.

1.   *Analyze and critically evaluate ideas, arguments, and points of view*. Students will respond to others' writing (including that of peers and experts in the field) on statistical concepts and substantiate their comments with course materials. Students will state null and alternative research hypotheses that are supported by information provided for research scenarios. Students will demonstrate their ability to critically evaluate ideas on the Concept Application Discussion replies (weekly) and Research Article Analyses.

1.   *Demonstrate skill in expressing oneself in writing*. Using appropriate APA style, students will write Concept Application Discussions each week with replies, Research Article Analyses, and APA style Results sections.

Required Reading and Textbook(s)

Required Texts:

Harlow, L. (2014). *The essence of multivariate thinking*, (2nd ed.). New York, NY: Routledge

Fairchild, A.J., & MacKinnon, D.P. (2009). A general model for testing mediation and moderation effects. *Prevention Science*, 10 (87-99). doi: 10.1007/s11121-008-0109-6

COURSE REQUIREMENTS

Course Sequence of Instruction:

When first logging on to Canvas, students should go to the "assignments" tab. All of the important work will either be linked or directly posted to the modules posted there.

Course Requirements:
Students are responsible for meeting the course requirements as scheduled for each module in the course calendar. **Assignments may not be submitted for credit after the due date** (i.e., late work policy; makeup work policy).

All assignments must be written in students own words. No credit will be awarded for quoted or plagiarized material on any assignment. **Writing assignments may be screened through plagiarism detection tools (e.g., TurnItIn) before a grade will be assigned.**

Participation (25%):

- *Discussions and Replies -* These will be discussions that we will have on the forums concerning different statistical techniques.

- *Participation Quizzes (PQ) -* After watching an instructional video, students will answer a few questions to confirm that it has been viewed.

Data Analysis Assignments (DA) - 35% - Students will be given data to analyze and answer short answer or multiple choice questions concerning your analysis results. These assignments will require software for data analysis.

Research Application Assignments - 40% - In these assignments, you will be finding a research article from a psychology peer-reviewed article that uses the analysis that we are studying during that particular unit. Once you enter the assignment, you will be uploading a pdf on Canvas. After the upload, you will answer a series of open ended questions about the analysis that was done for the article. The idea for these assignments is for you to get to see how these analyses are used in the

Posting of Grades:

Grading Scale: Grades are not 'given' in this course; they are earned. Students earn grades by actively reading material, by participating in course discussion, and by applying subject-matter content on written assignments. Grades are determined based on the percentage of points earned on each assignment and the assignment's weight toward the overall course grade.

Grade	University Definition	Percentage
A	Excellent	90-100
B	Good	80-89
C	Fair	70-79
D	Not Passing for Graduate Courses	60-69

Grade Posting: All students' grades will be posted in the Canvas grade book after the assignment due date has passed. On the writing assignments, the professor will begin reading, grading and recording grades on the day they are due and will have all grades posted by the following Monday. Students should regularly monitor their grades in the Canvas grade book, and *students should not hesitate to ask the professor about any grade or concern*.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

PSYC 5316: COURSE OUTLINE AND CALENDAR

Week	Module	Instructional Activities	Assignments Due
1	Module 1: Background Information	Read Introduce yourself in forum Answer Discussion Questions	Introduce yourself DQ.1
2-3	Module 2/3: Multiple Regression Hierararchical Multiple Regression	Read Chapter 3	PQ.1-7 DA.1 App.1
4	Module 4: Analysis of Covariance	Read Chapter 4	PQs DA App
5	Module 5: Multivariate Analysis of Variance	Read Chapter 5	PQs DA App
6	Module 6: Logistic Regression	Read Chapter 6	PQs DA App
7	Module 7: Factor Analysis	Read Chapter 9	PQs DA App
8	Module 8A: Multilevel Modeling	Read Chapter 8 Write Application Discussion	PQs
9	Module 8B: Multilevel Modeling	Read Chapter 8 Write Application Discussion	PQs DA App
10	Module 9: Structural Equation Modeling Overview	Read Chapter 9 Write Application Discussion	PQs
11/12	Module 10:Path Analysis	Read Chapter 10	PQs DA

			App
13/14	Module 11:Mediation		PQs DA App
15/16	Module 12: Moderation		PQs DA App
16	Final Exam Week		

Important University Dates - See https://www.tamuct.edu/registrar/academic-calendar.html

TECHNOLOGY REQUIREMENTS AND SUPPORT

In this course, we will be using at least two different software programs to compute statistical analyses. My preference is for you to use a free software called Jamovi. It is a little different than SPSS, but it is free! You can download it here: https://www.Jamovi.org/

Since SPSS is pretty commonly used in psychology, we will be discussing it. You are welcome to use the software in the campus computer labs, or you can purchase your own software at: https://www.onthehub.com/spss/

If you choose to purchase SPSS, there are many different versions of SPSS available. Although it is slightly more expensive, please choose at least the "Standard GradPack" because the lower priced options are not capable of completing the analyses needed for this course.

Technology Requirements

This course will use the A&M-Central Texas Instructure Canvas learning management system. **We strongly recommend the latest versions of Chrome or Firefox browsers. 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/]. You will log in through our Microsoft portal.

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

Canvas Support

Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select "Chat with Canvas Support," submit a support request through "Report a Problem," or call the Canvas support line: 1-844-757-0953.

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

Online Proctored Testing

A&M-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 also requires the Chrome web browser with their custom plug in.

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

Drop Policy

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

[https://dynamicforms.ngwebsolutions.com/casAuthentication.ashx?InstID=eaed95b9-f2be-45f3-a37d-46928168bc10&targetUrl=https%3A%2F%2Fdynamicforms.ngwebsolutions.com%2FSubmit%2FForm%2FStart%2F53b8369e-0502-4f36-be43-f02a4202f612].

Faculty cannot drop students; this is always the responsibility of the student. The Registrar's Office will provide a deadline on the Academic Calendar for which the form must be completed. Once you submit the completed form to the Registrar's 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 Registrar's 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.

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 Office of Student Conduct. 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 report,

[https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0].

Academic Accommodations

At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier-free education. The Office of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the university's programs, services and activities. If you believe you have a disability requiring reasonable accommodations, please contact the Office of Access and Inclusion, WH-212; or call (254) 501-5836. Any information you provide is private and confidential and will be treated as such.

For more information, please visit our [Access & Inclusion](https://tamuct.instructure.com/courses/717) Canvas page (log-in required) [https://tamuct.instructure.com/courses/717]

Important information for Pregnant and/or Parenting Students

Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more information, please visit [Student Affairs](https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html) [https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html]. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these [requirements and guidelines](http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf) online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender—including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Associate Dean in the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University's Title IX Coordinator.

Tutoring

Tutoring is available to all A&M-Central Texas students, on a remote online basis. Visit the Academic Support Community in Canvas to view schedules and contact information. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Student success coaching is available online upon request.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, success coaching, or have any other question, contact Academic Support Programs at (254) 501-5836, visit the Office of Student Success at 212F Warrior Hall, or by emailing studentsuccess@tamuct.edu.

Chat live with a tutor 24/7 for almost any subject from on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive online

tutoring support at no additional cost. This tool provides tutoring in over 40 subject areas except writing support. Access Tutor.com through Canvas.

University Writing Center

University Writing Center: Located in Warrior Hall 416, 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. For the Fall 2021 semester, the hours of operation are from 10:00 a.m.-5:00 p.m. Monday thru Thursday in Warrior Hall 416 (with online tutoring available every hour as well) with satellite hours available online only Monday thru Thursday from 6:00-9:00 p.m. and Saturday 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 at 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 by making an appointment via WCOnline at 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.

University Library

The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 400,000 eBooks and 82,000 journals, in addition to the 96,000 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. 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 work spaces, 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 Library website [http://tamuct.libguides.com/index].

OPTIONAL 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 Title IX webpage [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/reportingform.php?TAMUCentralTexas&layout_id=2].

Anonymous referrals are accepted. Please see the Behavioral Intervention Team 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 254-501-5800.