Statistical Mediation Analysis – PSYC 6300/5351

Fall 2021

Instructor Information

Instructor	**Email**	**Office Location & Hours**
Lauri Jensen-Campbell	lcampbell@uta.edu	Life Science 406 – TR 2:00 – 3:30p** or by Appointment First Tuesday of Month – No office hours

Office Telephone	**Faculty Profile**	**Graduate Teaching Assistant**
817-272-5191	https://mentis.uta.edu/explore/profile/lauri-jensen-campbell	Kristen Hull

General Information

Time and Place of Class of Meetings

Tuesdays and Thursdays – 11:00A –12:20P. Class will be synchronous on-line via Teams. Class will also be video-taped for students to re-watch at a later time if they so choose.

Description of Course Content

This course is intended to provide a graduate level overview of statistical mediation analysis as a general data-analytic technique. The course will emphasize the conceptual underpinnings of the techniques rather than mathematical computations. Students should already be familiar with general linear models and moderated multiple regression.

Student Learning Outcomes

This course is designed to provide hands-on experience in conducting statistical mediation analysis with SPSS JASP, and the latest version of R/R Studio (all free except SPSS). Computer applications of the statistical techniques that are covered will be emphasized. Homework exercises will be included to illustrate designs, analyze data, and provide experience in writing in APA style. Of course, it is impossible to touch upon all of statistical issues related to statistical mediation analysis. However, in combination with the readings, we will obtain an overview of the basic statistical techniques used in these analyses.

Course Materials

Required Materials

This course will provide some hands-on experience in mediation/moderation methods in addition to covering theory. As such, students will need access to R/Rstudio, SPSS-X, and JASP (https://jasp-stats.org/download/).

Required Text

MacKinnon, D.P. (2008). Introduction to Statistical Mediation Analysis. New York: Lawrence Erlbaum Associates.

Hayes, A.F. (2018). Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. (2nd ed.). New York: The Guilford Press.

There may be additional required readings assigned throughout the semester that are not part of your required textbook. They will be provided as PDFs via CANVAS.

Recommended Websites

David Kenny's Website: http://davidakenny.net/kenny.htm

Preachers Papers and Programs: http://www.quantpsy.org/medn.htm

Andrew F. Hayes Website: https://www.afhayes.com/index.html

Dr. Alan Reifman's SEM Course: http://reifman-sem.blogspot.com/

Technology Requirements

You will need access to CANVAS, Teams, and Respondus Lockdown for this course. Students can access tutorials on these tools by clicking on the "Get Started" Box on their Canvas Homepage. You will need a webcam for bother Respondus Lockdown and Teams. You will need a Flipgrid account to upload and review presentations.

REEF Polling: You will need to purchase a license to REEF (https://app.reef-education.com/#/login) and install it on a device that supports a web browser, which you will be bringing to EVERY class and lab. These devices include laptops, iOS, Android and Windows mobile devices. The only device it does not support is a Blackberry. You will be using this application for in-class and in-lab participation, attendance, and weekly quizzes. It is your responsibility to have the application loaded on a device and ready for use by Tuesday, September 7.

Grading Information

Grading

Students are expected to keep track of their performance throughout the semester which Canvas facilitates and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels.

Assignment	Total Points
Homework (5 points apiece – 10 assignments)	50
Summary of Proposed Project	30
Paper	100
Class Participation	50
Project Video	50
Critique of Projects	20
TOTAL POINTS	300

90% - up   A   80%-89% B   70% -79% C   65-69% D   Below 65

Mediation/Moderation Project

You will be required to find a data set related to your field of study that can be analyzed using statistical mediation analysis procedures. *That is, you are to either use your own data or data available through an advisor or through a public archive (e.g.,* http://www.icpsr.umich.edu/ *or* https://osf.io/ *)*. The purpose of the paper is to provide hands-on experience in conducting these analyses and interpretation within your research area. A 10 - 15 page, *stapled* write-up *in APA style* is due on the day listed on your syllabus. The paper will include all sections required in an APA paper (i.e., title page, abstract, introduction, method, results, discussion, references, tables, and figures). Statistical printouts should be included in an appendix. *Projects not written in APA style will be penalized a LETTER GRADE*. No late assignments will be accepted.

Homework

It is critical that you learn how to conduct and interpret mediation analyses using computer software. The purpose of the homework assignments is to ensure that you are capable of carrying out the analyses discussed in class and that you are able to interpret these analyses. To achieve the full 5 points, you must provide a clear, correct answer that is conveyed in a professional manner fitting of graduate level work. Each homework assignment will be completed by the following week in which it assigned. No late assignments will be accepted.

Participation

1. You may have quizzes over the readings and/or class lectures.

2. We will use the polling throughout the semester to assess your individual participation/knowledge in each class.

3. There may be in-class group discussions. You will be breaking out into smaller groups to discuss topics and/or complete assignments and then report back to the class what you decided/discussed.

The overall participation grade will be graded out of percent correct. For example, only students who get 100% of their participation (from attendance, quizzes, and group discussions) will receive the full 100 points.   Students who have a quiz average of 95% will receive 95 points, and so forth. Obviously, some participation assignments may be weighted more than others.

Make-up Policy

There are no make-ups for in-class assignments, homework, participation, or quizzes. If you miss an assignment, you will receive a 0 for that assignment.

Expectations for Out-of-Class Study

A general rule of thumb is this: for every credit hour earned, a student should spend 3 hours per week working outside of class. Hence, a 3-credit course might have a minimum expectation of 9 hours of reading, study, etc. Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 2-3 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc. given this is a graduate course.

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.

Institution Information

UTA students are encouraged to review the below institutional policies and informational sections and reach out to the specific office with any questions. To view this institutional information, please visit the Institutional Information page (https://resources.uta.edu/provost/course-related-info/institutional-policies.php) which includes the following policies among others:

- Drop Policy
- Disability Accommodations
- Title IX Policy
- Academic Integrity
- Student Feedback Survey
- Final Exam Schedule

Additional Information

Attendance

At the University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator of student success. Each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance.

As the instructor of this section, I have established the following attendance policy: Attendance is MANDATORY. It is your responsibility to attend the ENTIRE class and ***not be late***. This is NOT a correspondence course (i.e., a distance education course); thus, you are expected to be in class and to participate in class.   There is no distinction between excused and unexcused absences in the class. You are either present or you are not present. Excessive absences for any reason will adversely affect your grade.

However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report

when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report must the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Canvas. This date is reported to the Department of Education for federal financial aid recipients.

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. Non-emergency number 817-272-3381.

Library Information

Research or General Library Help

Ask for Help

- Academic Plaza Consultation Services (library.uta.edu/academic-plaza)
- Ask Us (ask.uta.edu/)
- Research Coaches (http://libguides.uta.edu/researchcoach)

Resources

- Library Tutorials (library.uta.edu/how-to)
- Subject and Course Research Guides (libguides.uta.edu)
- Librarians by Subject (library.uta.edu/subject-librarians)
- A to Z List of Library Databases (libguides.uta.edu/az.php)
- Course Reserves (https://uta.summon.serialssolutions.com/#!/course_reserves)

Study Room Reservations (openroom.uta.edu/)

Project Schedule

As the instructor for this course, I reserve the right to adjust this exam schedule in any way that serves the educational needs of the students enrolled in this course. –Lauri A. Jensen-Campbell.

Date	Subject
October 28	Detailed 1 -2 page summary of proposed project with proposed analyses and proposed data set
December 3	Paper and Videos are due via Flipgrid (You can tape in Teams and upload to Flipgrid where you can edit)
December 10	Last Day to review and critique each other's projects using the rubric provided.

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Week	Topic	Reading	Exercises
8/26 – 8/31 9/2	Introduction to Statistical Mediation	MacKinnon – Chapter 1 Hayes – Chapters 1 – 3 Baron & Kenny (1986)	
9/7-9/9	Application of the Mediation Model	MacKinnon – Chapter 2	**HW1:** MacKinnon Exercise 1.3, 1.7, 2.1, 2.5, 2.6
9/14-9/16	Single Mediation Model	MacKinnon – Chapter 3 Hayes – Chapter 4	**HW2:** MacKinnon 3.2
9/21-9/23	Single Mediator Model Detail/Effect Sizes	MacKinnon – Chapter 4 Hoyle & Kenny (1999)	**HW3:** MacKinnon 4.3 (enter data in SPSS; use SPSS Macro to help generate effect sizes, etc.; attach printout with HW)
9/28-9/30	Multiple Mediator Model	MacKinnon – Chapter 5 Hayes – Chapter 5 & 6	**HW4:** MacKinnon 5.3; Analysis and Interpretation of data set (to be provided) using SPSS Macro.
10/5-10/7	Path Analysis Models	MacKinnon – Chapter 6	**HW5:** Path Analysis TBA
10/12-10/14	Latent Variable Mediation Models/SEM Basics	MacKinnon – Chapter 7 Tabachnick & Fidell – Chapter 14	**HW6:** SEM Basics TBA
10/19-10/21	Confirmatory Factor Models (SEM)	Schreiber et al (2006) Arbuckle (2007) – Example 8 (pp 139-146)	HW7: CFA TBA
10/26-10/28	Developing Structural Equation Models		HW8: SEM TBA
11/2-11/4	Developing Structural Equation Models	Barrett (2007)	
11/9-11/11	Reporting SEM Research/Model Validation	Furr – Chapter 13	**HW9:** SEM II TBA
11/16-11/18	Mediation and Moderation	MacKinnon – Chapter 10 Hayes – Chapters 7-9	HW10: Mediated Moderation TBA
11/23	Conditional Process Analyses	Hayes – Chapters 10-12	NO HOMEWORK – WORK ON PAPER
11/25	Thanksgiving	No Class	
11/30 – 12/2	Mediation in Categorical Data	MacKinnon – Chapter 11	NO HOMEWORK
12/7	Catch-up day		NO HOMEWORK