

Advanced Seminar in Health Education  
**MEDIATION & MODERATION ANALYSIS**

<b>Course Number:</b>	HSC7937 – Spring 2025; Class Number 11926; Section 3D44
<b>Instructor:</b>	JeeWon Cheong, Ph.D.
<b>Class Time &amp; Location:</b>	Monday Period 8 – 9 (3:00 PM - 4:55 PM) Wednesday Period 9 (4:05 PM - 4:55 PM)
<b>Credit Hours:</b>	3 semester hours
<b>Office Hours:</b>	Thursdays 3:00 – 4:00 pm; and <b>by appointment</b>
<b>Contact Information:</b>	Email <a href="mailto:jwcheong@ufl.edu">jwcheong@ufl.edu</a>

## Overview

Mediation and moderation are central in social and behavioral science research. Mediation explains and tests the underlying mechanisms by which the predictor variable affects the outcome variable, while moderation specifies under what conditions the predictor affects the outcome. Statistical techniques investigating mediation and moderation are among the most widely used data analysis techniques in a variety of disciplines. The primary goal of this course is to provide students with theoretical concepts of mediation and moderation and hands-on experience with relevant analytical techniques.

Classes will be structured as a combination of lectures and computer lab sessions. Theoretical and conceptual basics will be covered in the lectures, and students will have hands-on experience with computer programming using SPSS through the computer sessions, as well as homework assignments so that they can formulate research questions, choose appropriate models, and draw appropriate conclusions based on the data analysis.

This course is a course for doctoral students in health and related research fields, designed to provide an exposure to statistical mediation and moderation. It is limited to students who have taken courses on multiple regression and equivalent classes.

## Textbooks:

- Aiken, L. S. & West, S. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage Publications.
- MacKinnon, D. P. (2008). *Introduction to Statistical Mediation Analysis*. Psychology Press: Taylor and Francis Group

## Recommended books:

- Cohen, J., Cohen, P., West, S. G., & Aiken, L. A. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences (3rd edition)*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Hosmer, D. W. & Lemeshow, S. (2000). *Applied logistic regression (2<sup>nd</sup> Ed.)*. New York, NY: Wiley & Sons, Inc.

**Additional Readings and course handouts** will be uploaded on the CANVAS course website each week. Course handouts and SPSS program examples related to the topics covered in class are partly derived from various sources. All the materials generated for this course (e.g., handouts, assignments & exam problems, computer examples) are copyrighted.

## Evaluation

a. **Exam (30%):** There will be one midterm exam, which will be open book and handouts. You can use textbooks and handouts for the exam, but **no internet search**. The midterm exam is scheduled for **Monday, March 23 (Week 11)**. There will be no final exam.

***NOTE:** A make-up exam will **NOT** be given without proper documentation of an excusable absence, as defined by the University of Florida policy.*

b. **Homework Assignments (25%):** There will be approximately 3 – 4 homework assignments. Each homework assignment will involve data analysis, writing up the results, and answering questions regarding the conceptual issues. Data will be provided for each assignment.

c. **Final Research Project (30%):** You are required to develop a research project. The project can be on any topic you are interested in, and you can use your own data set; however, one of the analytical techniques taught in this course should be used for data analysis. The project can be a new project or a modified version of a previous study (e.g., reanalyzing the data using different methods). Merely replicating a completed study or a study in progress is not acceptable.

You should turn in a 2 – 3 page outline of your project by **Wednesday, March 11 (Week 9)**. This outline should include the title, research questions you want to address, a brief background of the research topic, and a brief description of analytic plans. If the project involves reanalyzing the data, you should clearly describe the differences between the previous and the current studies. The project will be presented in class on **April 20 and 22**. Your presentation (approximately 25 minutes) must include (a) Introduction (brief); (b) Method (detailed, mainly focusing on analysis overview); (c) Results (detailed); and (d) Discussion (brief). Detailed attention should be paid to how to report the results and interpret the findings. **Presentation slides should be turned in by 5 pm the day before your presentation. If you wish to submit revised slides incorporating the comments from your presentation, please submit them by 5:00 p.m. on Friday, April 24.**

d. **Attendance and Participation (15%):** You are responsible for coming to class on time and participating regularly. Per University of Florida policy, excused absences include medical appointments and illness (with doctor's note), deaths in the family (with documentation), and school events (with documentation on school letterhead). Additional absences require documentation of medical excuses or extenuating circumstances and must be submitted within 1 week of the absence using the "Excused Absence Request Form" (located on the CANVAS course website). Ultimately, the student who is absent/late is responsible for obtaining notes, announcements, and materials covered in the class they missed from a classmate.

## Grading Scale

A	93% - 100%
A-	90% - 92.9%
B+	85% - 89.9%
B	80% - 84.9%
C+	75% - 79.9%
C	70% - 74.9%
F	Below 70%

For information on current UF grading policies for assigning grade points, please refer to the link to the university grades and grading policies (<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>).

## Tentative Class Schedule

Week	Dates	Topics	Readings*
1	Jan 12	Course Overview	Handouts
	Jan 14	Review of multiple regression	
2	Jan 19	<b><i>Martin Luther King Jr. Day: No class</i></b>	
	Jan 21	Review of multiple regression	Handouts; <i>Homework 1 out</i>
3	Jan 26	Third variables in the model	Mac Ch 1 - 4
	Jan 28	Med: Single mediator models	
4	Feb 2	Med: Single mediator models	Mac Ch 1 - 4
	Feb 4	Reading of Baron & Kenny (1986) and MacKinnon et al. (2002);	
5	Feb 9	Med: Multiple mediator models	Mac Ch 5
	Feb 11	Med: Effect size and power for testing mediation	Handouts; <i>Homework 2 out</i>
6	Feb 16	Med: Computer-intensive methods mediation models	Mac Ch 12
	Feb 18	Med: Logistic regression	Handouts
7	Feb 23	Med: Mediation analysis with categorical variables	Mac Ch 11; <i>Homework 2 in</i>
	Feb 25	Class discussion	
8	Mar 2	Mod: Interaction between continuous predictors	A & W Ch 1 – 3; <i>Homework 3 out</i>
	Mar 4		
9	Mar 9	Mod: Interaction between categorical and continuous predictors	A & W Ch 4, 7;
	Mar 11	Mod: Testing three-way interaction <b><i>Final Project outline due by 11:59 pm via email</i></b>	
10	Mar 16	Spring Break: No class	
11	Mar 23	<b><i>Midterm Exam</i></b>	
	Mar 25	Class discussion	<i>Homework 3 in</i>
12	Mar 30	Mod: Interaction in logistic regression; Probing interaction in higher-order (curvilinear) regression	A & W Ch 5, 6, & 8
	Apr 1		
13	Apr 6	Combination of med & mod	Mac Ch 10
	Apr 8	Mediation with complicated research designs	Handouts
14	Apr 13	Med: Causal mediation and additional topics	Mac Ch 7 – 9
	Apr 15	Introduction to machine learning approach to mediation analysis	
15	Apr 20, 22	<b><i>Presentation of Class Project</i></b>	

\* Mac: MacKinnon, D. P. (2008); A &amp; W: Aiken, L. S. &amp; West. S. (1991)

## **Students with Special Learning Needs**

Any student with verification of disabilities will be provided every reasonable accommodation in the appropriate manner to assist them in meeting the academic requirements of the course as expected of all students enrolled after registering with the Disability Resource Center (<https://disability.ufl.edu/get-started/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. Please provide documentation to the instructor within the first two weeks of class. Such students should notify the instructor so that special arrangements can be made. If special needs/circumstances arise, you must notify me immediately, not at the course's end.

## **Grade adjustments**

It is unethical and in direct violation of the UF Student Honor Code to request an unjustifiable grade adjustment (UF Student Honor Code: “Conspiracy to Commit Academic Dishonesty”). Under no circumstances will I ever ‘round up’ a student’s grade (89.9% is a B+), nor will I offer extra credit. Additionally, I only discuss grades face-to-face (never via email or phone) to protect student privacy. If a grade input error occurs, students are strongly encouraged to notify me as soon as possible. If an error occurred, the grade will be adjusted. *Note:* Students have 1 week to contest a grade from the date the grade is posted on Canvas. After the 7 days have passed, students waive their right to contest the grade.

## **Online Course Evaluation Process**

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open.

## **Instructor Office Hours**

Students are encouraged to visit their instructor during posted office hours, should questions or concerns arise during the semester. If you cannot make office hours, we can schedule an appointment outside the designated office hours. I am not, however, able to send or discuss grades or any other points via e-mail according to the department’s and university’s student privacy policy.

## **Academic Honesty**

University of Florida students are bound by the Honor Pledge. On all work submitted for credit by a student, the following pledge is required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Student Honor Code and Conduct Code (Regulation 4.040) specifies a number of behaviors that are in violation of this code, as well as the process for reported allegations and sanctions that may be implemented. All potential violations of the code will be reported to Student Conduct and Conflict Resolution. If a student is found responsible for an Honor Code violation in this course, the instructor will enter a Grade Adjustment sanction which may be up to or including failure of the course.

## **Title IX**

University of Florida has zero tolerance for sexual discrimination, harassment, assault/battery, dating violence, domestic violence, or stalking. Students are encouraged to report any experienced

or witnessed occurrences to law enforcement and/or one of UF's Title IX Coordinators. Students can report incidents or learn more about their rights and options by contacting Student Conduct and Conflict Resolution at 202 Peabody Hall, 352-392-1261; or visit:

### **Class Recording**

Per the House Bill 233 Intellectual and Viewpoint Diversity Act, students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

### **Course Ground Rules**

1. Respect each other's opinions and comments even though you may not agree. Each of you has a heritage, history, and variety of life experiences that influence how you see the world. We tend to attach labels, develop values, and express attitudes based on this diversity. It is this diversity, however, that makes us each unique and important. In this classroom, we will attempt to minimize the barriers associated with sensitive or controversial topics and maximize learning together in a trusting environment.
2. If you come in late or leave early, use the doors at the back of the classroom. Please leave the back row empty for those who enter after class has started. This is to alleviate any interruptions for both you and the instructors.
3. The use of electronic devices during class is permitted only for accessing class materials. Please do not use laptops, cell/smart phones, electronic tablets, etc., for surfing the internet, checking emails, or accessing materials irrelevant to this class.
4. Please do not begin packing up until you have been officially dismissed by the instructor.

When a few people start to pack up it is distracting to the instructor and fellow students. Please be respectful and wait until the class is concluded.

5. Students are prohibited from unnecessary side conversations, sleeping, completing outside work, reading off topic materials (such as newspapers) while class is being conducted.

### **Campus Resources:**

- **Library Support:** The Department of Health Education and Behavior has a designated librarian to support your research needs. To contact your subject specialist visit: <https://uflib.ufl.edu/specialists/>.

There are many ways to receive assistance concerning using the libraries or finding resources.

### Health and Wellness

- *U Matter, We Care*: If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.
- *Counseling and Wellness Center*: [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- *Student Health Care Center*: Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).
- *University Police Department*: [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- *UF Health Shands Emergency Room / Trauma Center*: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).
- *GatorWell Health Promotion Services*: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) or call 352-273-4450.

### Academic Resources

- *E-learning technical support*: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).
- *Career Connections Center*: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- **Library Support**: Various ways to receive assistance with respect to using the libraries or finding resources.
- *Teaching Center*: Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring.
- *Writing Studio*: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- *Student Complaints On-Campus*: [Visit the Student Honor Code and Student Conduct Code webpage for more information](#).
- *On-Line Students Complaints*: [View the Distance Learning Student Complaint Process](#).