Advanced Seminar in Health Education

MEDIATION & MODERATION ANALYSIS

Course Number:	HSC 7937 – Spring 2022; Section 3D44
Instructor:	JeeWon Cheong, Ph.D.
Class Time & Location:	Wednesday Period 8 – 10 (3:00 – 6:00 pm); TUR B310
Credit Hours:	3 semester hours
Office Hours:	Tuesdays 3:00 – 5:00 pm; and **by appointment**
Contact Information:	Email jwcheong@ufl.edu

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 lab 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 an elective 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* (2nd Ed.). New York, NY: Wiley & Sons, Inc.

Additional Readings: TBA

Exams & Assignments:

Exam: There will be one in-class midterm exam, which will be open book and handouts. You can use the textbook and handouts for the exam. The midterm exam will be on **March 2nd (Wed)**. There will be no final exam.

Homework Assignments: There will be approximately 4 – 5 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.

Final Research Project: 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 previous studies (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 **March 16th (Week 11)**. 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 20th**. Your presentation (approximately 30 – 35 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 material should be turned in by **5 pm on April 19th**.

Evaluation & Grading Scale

Assignments	Grading Scale
1. Class Participation: 10%	A 93% - 100% A- 90% - 92.9%
2. Homework Assignments: 30%	B+ 85% - 89.9% B 80% - 84.9%
3. Midterm Exam: 30%	C+ 75% - 79.9% C 70% - 74.9%
4. Final Project: 30%	F Below 70%

Handouts

You will be provided with handouts and program examples related to the topics covered in class. These materials are partly derived from various sources including Drs. Leona Aiken, Steve West, and David MacKinnon at Arizona State University. All the materials generated for this course (e.g., handouts, assignments & exam problems, computer examples) are copyrighted.

Tentative Class Schedule

Week	Dates	Topics	Readings*
1	Jan 5	Course Overview	Handouts
2	Jan 12	Review of multiple regression	Handouts
3	Jan 19	Med: Single mediator models I	Mac Ch 1 - 4
4	Jan 26	Med: Single mediator models II & Multiple mediator models.	Mac Ch 1 – 4 Mac Ch 5
5	Feb 2	Med: Computer intensive methods mediation models; Power in mediation analysis;	Mac Ch 12 & Handouts
6	Feb 9	Logistic regression I	Handouts
7	Feb 16	Logistic regression II	Handouts
8	Feb 23	Med: Mediation analysis with categorical variables	Mac Ch 11
9	Mar 2	***Midterm Exam***	
10	Mar 9	**Spring Break**	
11	Mar 16	Mod: Interaction between continuous predictors	A & W Ch 1 – 3
12	Mar 23	Mod: Interaction between categorical and continuous Predictors; Three-way interaction	A & W Ch 4, 7
13	Mar 30	Mod: Probing higher-order interaction; Reliability and statistical power	A & W Ch 5, 6, & 8
14	Apr 6	Combination of Med & Mod	Mac Ch 10
15	Apr 13	Med: Causal mediation & Mediation with complicated research designs	Handouts Mac Ch 7 – 9
16	Apr 20	Presentation of Class Project	

***** Mac: MacKinnon, D. P. (2008). Introduction to Statistical Mediation Analysis.
A & W: Aiken, L. S. & West. S. (1991). Multiple Regression: Testing and Interpreting Interactions.

The final presentation material is due by 5 pm on April 19th.

Students with Special Learning Needs

Students requesting classroom accommodation must first register with the Dean of Students Office. 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.

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. If special needs/circumstances arise, it is your responsibility to notify me immediately, not at the course's end.

Academic Honesty

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and possible sanctions. Students are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor of this class. Violations of the UF Academic Honesty Guidelines will not be tolerated and violators will be treated in accordance with the UF Student Honor Code. This includes **ALL** work! Students violating this policy will be sanctioned according to the Committee on Student Conduct, receive a grade penalty for the course or some other penalty for failure to abide by this standard of conduct.

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.

Attendance

Attendance is not mandatory but students are expected to attend all class sessions and be prepared to actively engage in-class discussion. It is the responsibility of the student to get a copy of any notes or handouts from a classmate should a class session be missed.

Excused Absence Policy

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 course website). Note: Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Online Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course. 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 me during posted office hours, should questions or concerns arise during the semester. If you cannot make office hours, we can schedule an appointment. I am not, however, able to send or discuss grades or any other points via e-mail according to the student privacy policy of the department and the university.

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.

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:

www.dso.ufl.edu/sccr/process/incident-report/
www.dso.ufl.edu/sccr/process/victim-rights/

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.