ED PSY 724: Educational Statistical Methods II

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- I do my very best to respond to email within a day during regular business hours. If you do not get a response from me within a couple of work days, please feel free to follow up with a reminder. Note that I may not check and respond to email in the evenings or on weekends.
- Please do check the Canvas course page before emailing to see if the information is posted there. For example, if I already received some questions about a homework problem, I may have posted clarifications on Canvas. If you cannot find the information, feel free to send me an email.

Office Hours: Please **contact me by e-mail to set up a time** to meet, as necessary.

- We can meet in person, online, or speak by phone.
- Please let me know at least a couple of days in advance of when you would like to meet so we can set up a mutually convenient meeting time and modality.

Course Objectives: The course aims to expose students to statistical methods and analyses that they may need to use in their own research or encounter in reading research articles. The main objective of the course is to enable students to answer research questions by properly analyzing and interpreting quantitative data. At the end of the course, students are expected to be able to:

- Identify what research questions can be answered with a given data set, and what types of data are needed to answer specific research questions;
- Identify the appropriate statistical analysis required to answer a specific research question with a given data set;
- Use statistical software to perform the appropriate statistical analysis;
- Interpret the output from statistical software and clearly communicate the statistical results as they pertain to the research questions.

Pre-requisites: ED PSY 624 (or an equivalent introductory statistics course).

Textbook: *Statistical Methods for Psychology, 8th Edition*, by David C. Howell, published by Wadsworth Publishing (Cengage), 2012.

- There may be a newer edition of the book available but I will use the **eighth edition** for the course.
- We may also discuss journal articles or other readings of relevance throughout the course. If so, these will be posted on Canvas.

Computing: students will be required to use common statistical software packages (namely SAS and SPSS). Instruction will be provided for using the software packages.

- UWM provides access to software at campus computer labs and remote access through UWM's Remote Lab Access. Further software access information and instructions can be found on the course Canvas site under "**General Computing Resources**".
- Note that you will receive instruction for both SAS and SPSS in the course, and you are encouraged to learn both (even if you prefer one over the other). It is highly recommended that you take this opportunity to learn SAS, especially if you plan to take any advanced ED PSY statistics courses.

Course Web Site and Delivery: This course will make extensive use of its **Canvas** site.

- The Canvas site can be accessed at UWM Canvas Home and instructions/support for using Canvas are available at Student Canvas support.
- Students are expected to **check the site on a regular basis** for announcements, notes, assignments, discussions, and any other course information.
  - You can specify your preferred notification settings in Canvas. I recommend that you enable the notifications for the Announcements, at least.

- I will plan to post the materials, including **notes** with and without a voice-over recording, no later than Thursday of each week. The notes documents will be up to date and may differ slightly from the notes in the recordings (if updates or corrections were needed since the recordings were made).
  - You are expected to review the materials and attempt the provided **learning checks** (*not* counted towards the course grade) **prior** to the class meetings and before starting the homework assignments (which *will* count towards the course grade).
- We will meet on **Tuesdays at 5 pm, in person** (in the computer lab in Enderis Hall, room 740). I will try to make it possible for you to join remotely if you are sick or absolutely cannot make it to campus, but I highly encourage you to attend class meetings in person.
  - In the class meetings I will summarize the notes and students will have the opportunity to ask questions about any of the material (e.g., software programs, assignments, learning checks), seek clarifications, and discuss any course information.

Course structure and student evaluation:

- ***Homework*:**
  - Homework problem sets will generally be **assigned every week** (based on that week's material) and will be submitted on Canvas every few weeks. The assignments will generally be due on Tuesdays, approximately every 2-3 weeks. Specific due dates will be posted on Canvas. (Note that assignment points may show up as 0 on Canvas but this will be updated once assignments are posted/graded.)
  - Late homework assignments will be accepted with a **10% point-deduction** for each day they are late (in other words, you will lose 10% of the total number of points for the assignment for each day it is late, including weekend days). This penalty may be reduced or exempted if the reason for late submission is acceptable to the instructor, so *please communicate with me (the instructor) if there are extenuating circumstances and/or your homework will be late*. It is preferable that you submit an assignment that reflects **your best work** and is a bit late than one that does not reflect your best work but is on time.
  - Homework assignments will consist of problems that are intended to give you some hands-on practice with the material. You are expected to clearly communicate your understanding in your answers (see also the **Homework Guidelines** document posted on Canvas).
  - Each problem (or major component) will be graded on a three-point scale to indicate the level of accuracy and understanding reflected in it:

Points	Description
3	Complete, clear and correct.
2	Some mistakes and/or misconceptions, somewhat unclear or incomplete.
1	Many mistakes and/or major misconceptions, very unclear or incomplete.
0	Not done or barely attempted.

  - Homework grades and comments are designed to provide you with feedback on the level of understanding conveyed in your submitted assignment. If you find the feedback insufficient, it is **your responsibility** to make sure that you ask and understand it. Do not put off getting help if you don't know how to do a problem or do not understand the feedback you received. Better yet, if you are unsure how to do a problem, ask *before* the assignment is submitted. (Note that I will not "pre-grade" your answers but will be happy to clarify anything that is unclear to you.)
  - Please feel free to post any questions (or helpful information for other students) in the Discussions area on Canvas.
  - A note on working with others (or AI): The goal of the homework assignments is to make sure you are learning and understanding the material, so it would defeat the purpose if you get the right answer without really understanding why. Thus, while you are allowed to discuss the concepts on homework assignments with others, it is recommended that you complete the assignments on your own (before discussing them with others). In addition, **the work you submit must be your own**, and it is considered academic misconduct to submit anyone else's work (or words) as your own.

- ***Exams*:**
  - There will be a midterm exam as well as a final exam. The format of both exams will most likely be "take-home", with a strict due date.
  - The midterm exam will be due around the middle of the course (date will be clearly posted on Canvas) and the final exam will be due during finals week.
  - The exams must be completed **entirely on your own** and with the utmost regard for academic integrity (i.e., they should be treated as if they are in-class). Students will **not** be allowed to collaborate or discuss the exam with anyone (other than the instructor) and violations of this will be treated as academic misconduct.

The weights assigned to each of these components will be:

Homework	**25%**
Mid-term exam	**35%**
Final exam	**40%**

There will be NO extra credit option in this course.

Using these weights (the homework assignments will be weighted by the number of points each assignment is worth), final scores (out of 100) will be computed and converted to letter grades as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90-100	85-89	80-84	75-79	70-74	67-69	63-66	60-62	57-59	53-56	50-52	below 50

Academic Integrity:

- It is better to receive an honest grade on your own work than to risk committing plagiarism or academic misconduct. If you are unsure as to what is acceptable, or need help, please ask.
  - At this point and for this course, submitting work as your own that was generated by AI will be considered plagiarism.
- Excerpts from UWM's Academic Integrity Online page:
  - Ask your instructor if you are unsure about how to complete an assignment or course requirement appropriately.
  - When collaborating with other students, collaborate for a better understanding of the material, not for answers. *Note that no collaboration of any kind is allowed on the exams in this course.*
  - If you are unable to complete assignments, the instructor may be flexible with the deadlines, and receiving a late penalty is far better than academic dishonesty.
- There is additional information and resources for avoiding plagiarism at Plagiarism.org

University Policies: Policies regarding participation of students with disabilities, accommodations for religious observances, academic misconduct, student complaints, grade appeals, sexual harassment, attendance, assignment of a grade of "incomplete", etc., are available at this Syllabus Links document. ***Students should review these policies at the start of the course***.

Time Investment: This will vary by student and by week, but my expectation is that students will spend a total of about 200 hours on the course (as would be the case for an in-person 4-credit course). This document provides a more detailed breakdown for a 3-credit course, which can be adjusted for a 4-credit course. This is an estimated workload and students will be assessed on their performance (as indicated in the syllabus), not on the time put into the course.

A note about cell phones: As a courtesy to the instructor and your fellow students, ***please turn OFF your cell phone ringer*** during class.

TENTATIVE SCHEDULE

Week	Date	Topic	Reading
1	Sept. 5	Review: Descriptive statistics	Chapters 1-3
2	Sept. 12	Inferential statistics review: Sampling distributions, Hypothesis testing, CI's	Chapter 4 (Chapter 5 optional)
3	Sept. 19	Hypothesis tests applied to one mean or two dependent means	Chapter 7
4	Sept. 26	Hypothesis tests applied to two independent means	Chapter 7
5	Oct. 3	Power and effect size	Chapter 8
6	Oct. 10	Analysis of Variance (one-way ANOVA)	Chapter 11
7	Oct. 17	Multiple Comparisons	Chapter 12
8	Oct. 24	Review class ➢ ***Midterm exam due this week***	
9	Oct. 31	Factorial ANOVA (two-way designs)	Chapter 13
10	Nov. 7	Factorial ANOVA (continued)	Chapter 13
11	Nov. 14	Correlation: tests, confidence intervals	Chapter 9
12	Nov. 21	Simple Regression	Chapter 9
13	Nov. 28	Multiple Regression	Chapter 15
14	Dec. 5	Multiple Regression (continued)	Chapter 15
15	Dec. 12	Review class	
Finals week		➢ ***Final exam due on Dec. 19, 2023***	