PSY 202: Design and Analysis II, Fall 2024

Lecture: Mondays and Wednesdays 10:10 a.m. to 11:30 a.m. in Olin 202
Lab A: Thursdays 9:30 a.m. to 11:30 a.m. in Henderson 101A
Lab B: Thursdays 1:30 p.m. to 3:30 p.m. in Henderson 101A
Course Brightspace Site: https://bardcollege.brightspace.com/d2l/home/13966.

Instructor
Tom Hutcheon, Ph.D.
thutcheo@bard.edu
Office: Preston 108
Office hours: Monday 11:30 a.m. – 12:30 p.m., Friday 12:00 p.m. – 2:00 p.m.

Teaching Assistants
Paige Labbe (pl3032@bard.edu), office hours: Friday 2:00 p.m. – 4:00 p.m., Preston 132
Aida Malikova (am6477@bard.edu), office hours: Monday, 4:00 p.m. to 6:00 p.m., Preston 132

COURSE DESCRIPTION

This course explores the study of research designs and data analyses central to psychological science and other related disciplines. (These ideas are introduced in PSY 201, but it is not a prerequisite for this course.) A focus will be on selecting appropriate research designs and analyses for specific research questions. Students will analyze data using the jamovi software package and practice communicating their results to diverse audiences. This course is intended to provide a strong foundation for designing, conducting, analyzing, interpreting, and communicating empirical research in the discipline.

MATERIALS

Required Text

Aron, A., Aron, E., & Coups, E. J. (2012). *Statistics for Psychology*, (5th ed.) Upper Saddle River, NJ: Pearson/Prentice Hall. ISBN 0136010571

Note 1: You may use any edition of this textbook and either the print or e-book version is fine for this course.

Note 2: Additional readings will be available on the course Brightspace site.

Note 3: If purchasing the textbook represents a financial burden, you may request to borrow a copy of the textbook from the Science, Mathematics, & Computing division through the following link: https://forms.gle/NcTgf7HXiap3PgJ97.

Jamovi
During lab we will be using jamovi, an open-source program for data analysis. Jamovi is available on the lab computers, but it is free and you are encouraged to install it on your own personal machine. You can install jamovi here: https://www.jamovi.org/download.html.

COMPONENTS OF THE COURSE GRADE

Attendance (50 points)
In this course, attending lectures and labs is not optional. Of course, legitimate reasons to miss class will occur over the course of the semester. Therefore, you will not be penalized for your first two absences (across lectures and labs). Each additional absence will result in a loss of 2.5 points.

Homework (100 points)
Statistics cannot be learned without practice. To this end, you will complete weekly homework assignments on material covered in class. Homework will be posted Mondays by 1:00 p.m. and will be due that Friday by 5:00 p.m. Completed homework should be emailed to Tom at thutcheo@bard.edu. Homework submitted after 5:00 p.m. on Friday will immediately lose 50% of the total possible points. All homework assignments are worth 10 points and your lowest two scores will be dropped in the calculation of your final grade.

Lab Assignments (100 points)
You will be required to turn in an assignment at the end of each lab period. These assignments are designed to be completed within the time allotted for lab, however, on occasion, the assignment might take longer. In this case, assignments can be handed by Friday (the next day) by 5:00 p.m. and be considered on time. There will be a total of 11 lab assignments and are they all each worth 10 points. Your lowest score will be dropped in the calculation of your final grade.

Exams (200 points)
There will be two exams (one midterm and one final) each worth 100 points. Exam dates are final and are listed on the schedule below. Make up exams will only be permitted with a documented excuse from the Dean of Students. Each exam will have an in-class "closed-book" portion and an in-lab "open-book" portion.

Extra Credit Opportunities
Over the course of the semester there will be four or five psychology-sponsored colloquia. These talks will take place on Thursdays from 4:00 p.m. – 5:00 p.m. in the Preston Theater. You should attend these because they are interesting. However, you will also earn a maximum of **5 points** towards your final grade through attending ONE of these talks. To receive credit, attend a talk and submit one question you would have for the speaker to Tom via email at thutcheo@bard.edu within 48 hours after the talk.

Grading Breakdown

Component	Points
Attendance	50
Homework	100
Labs	100
Midterm Exam	100
Final Exam	100
Total Points	**450**

Final Grade = ((Total Points Earned + Extra Credit)/450) *100

A = 93% and above
A-= 92.9% to 90%
B+= 89.9% to 87 %
B = 86.9% to 83%
B- = 82.9% to 80%
C+= 79.9% to 77%
C = 76.9% to 73%
C-= 72.9% to 70%
D = 69.9% to 60%
F = less than 60%

ADDITIONAL INFORMATION

Academic Integrity
All students are assumed to have read the Bard College Handbook and are familiar with the school's policies regarding Plagiarism and Academic Dishonesty. Violations of these policies are taken extremely seriously and one violation will result in a failing grade for the course and a referral to the Dean of Students for further action.

Group Work
I encourage you to work with your classmates during this course. While exams are to be completed independently, homework and lab assignments can, and sometimes should, be worked on collaboratively. If you are working with others, please make sure that you turn in your own assignment, do the work yourself, and be sure to credit any other students that you worked with.

Academic Accommodations
Your experience in this class is important to me. I am committed to meeting the needs of all students in this course and will work with you to ensure your accommodations are adequately met. If you have already established accommodations, I will receive a letter from the Learning Commons Disability Support Services with additional information. If you have not yet established services through the Learning Commons, but have a temporary health condition or

permanent disability that requires accommodations (conditions include but are not limited to: mental health, attention-related, learning, vision, hearing, physical or health impacts), please see the Student Accessibility Resources website: https://www.bard.edu/accessibility/students/

Respect for Diversity
It is my intent that students from diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions on ways that I can improve the course and incorporate more diversity are encouraged and appreciated.

Important College-wide Dates
Wednesday, September 11th – Drop/Add Period Ends
Wednesday, October 2nd – Late Drop Period Ends, Pass/Fail Grading Deadline
Friday, December 6th – Last Day to Withdraw from Class

BARD LAND ACKNOWLEDGMENT

In the spirit of truth and equity, it is with gratitude and humility that we acknowledge that we are gathered on the sacred homelands of the Munsee and Muhheaconneok people, who are the original stewards of this land. Today, due to forced removal, the community resides in Northeast Wisconsin and is known as the Stockbridge-Munsee Community. We honor and pay respect to their ancestors past and present, as well as to Future generations and we recognize their continuing presence in their homelands. We understand that our acknowledgment requires those of us who are settlers to recognize our own place in and responsibilities toward addressing inequity, and that this ongoing and challenging work requires that we commit to real engagement with the Munsee and Mohican communities to build an inclusive and equitable space for all.

Design and Analysis II Schedule – Fall 2024

All readings, assignments, and lecture topics dates are subject to change. Exam dates are final.
ACA: refers to our textbook, *Statistics for Psychology*, by Aron, Coup, & Aron (2012)

Monday, September 2nd
Lecture: Welcome to Design and Analysis II

Wednesday, September 4th
Lecture: Displaying order in a group of numbers
Read: ACA Chapter 1

Thursday, September 5th
Lab 1: Introduction to spreadsheets and jamovi

Friday, September 6th: HW #1 due by 5:00 p.m.

Monday, September 9th
Lecture: Central Tendency and Variability
Read: ACA Chapter 2

Wednesday, September 11th
Lecture: Z-scores
Read: ACA Chapter 3

Thursday, September 12th
Lab 2: Descriptives in jamovi

Friday, September 13th: HW #2 due by 5:00 p.m.

Monday, September 16th
Lecture: Introduction to Hypothesis Testing
Read: ACA Chapter 4

Wednesday, September 18th
Lecture: Hypothesis Tests in Research Articles
Read: Forrin et al. (2021) (available on Brightspace)

Thursday, September 19th
Lab 3: Hypothesis Testing

Friday, September 20th: HW #3 due by 5:00 p.m.

Monday, September 23rd
Lecture: Hypothesis Testing with Means of Samples
Read: ACA Chapter 5

Wednesday, September 25th
Lecture: Decision errors effect size, and statistical power
Read: ACA Chapter 6

Thursday, September 26th
Lab 4: Power and sample size calculations

Friday, September 27th: HW #4 due by 5:00 p.m.

Monday, September 30th
Lecture: T-tests for a single sample
Read: ACA Chapter 7 (up to "The *t* test for Dependent Means")

Wednesday, October 2nd
Lecture: T-test for dependent means
Read: ACA Chapter 7 (starting at "The *t* test for Dependent Means")

Thursday, October 3rd
Lab 5: T-tests for a single sample

Friday, October 4th: HW #5 due by 5:00 p.m.

Monday, October 7th
Lecture: Review for Exam

Wednesday, October 9th – In Class Portion of Exam 1

Thursday, October 10th – Lab Portion of Exam 1

Monday, October 14th: No Class, Fall Break

Wednesday, October 16th:
Lecture: T-test for independent means
Read: ACA Chapter 8

Thursday, October 17th
Lab 6: T-tests for independent means

Friday, October 18th: HW #6 due by 5:00 p.m.

Monday, October 21st
Lecture: One-Way ANOVA - part 1
Read: ACA Chapter 9 (up to "Planned Contrasts").

Wednesday, October 23rd
Lecture: One-way ANOVA - part 2
Read: ACA Chapter 9 (starting at "Planned Contrasts")

Thursday, October 24th
Lab 7: One-Way ANOVA

Friday, October 25th: HW #7 due by 5:00 p.m.

Monday, October 28th
Lecture: Factorial ANOVA - part 1
Read: ACA Chapter 10 (up to "Basic Logic of the Two-Way Analysis of Variance").

Wednesday, October 30th
Lecture: Factorial ANOVA - part 2
Read: ACA Chapter 10 (starting at "Basic Logic of the Two-Way Analysis of Variance")

Thursday, October 31st
Lab 8: Factorial ANOVAs

Friday, November 1st: HW #8 due by 5:00 p.m.

Monday, November 4th
Lecture: Repeated Measures ANOVA
Read: ACA Web Chapter W3 (available on Brightspace)

Wednesday, November 6th
Lecture: Correlation
Read: ACA Chapter 11

Thursday, November 7th
Lab 9: Repeated measures ANOVA

Friday, November 8th: HW #9 due by 5:00 p.m.

Monday, November 11th
Lecture: Regression
Read: ACA Chapter 12 (up to "Multiple Regression")

Wednesday, November 13th
Lecture: Multiple Regression
Read: ACA Chapter 12 (starting at "Multiple Regression")

Thursday, November 14th
Lab 10: Correlation and Regression

Friday, November 15th: HW #10 due by 5:00 p.m.

Monday, November 18th
Lecture: Chi-Square Tests
Read: ACA Chapter 13

Wednesday, November 20th
Lecture: Causal Modeling
Read: ACA Chapter 15 (starting at "Causal Modeling").

Thursday, November 21st – No Lab, Tom at Psychonomics

Friday, November 22nd: HW #11 due by 5:00 p.m.

Monday, November 25th
Lecture: Bayesian Statistics

Wednesday, November 27th – No Lecture, Thanksgiving Break

Thursday, November 28th: No Lab, Thanksgiving Break

Monday, December 2nd
Lecture: Data Collection and Analysis

Wednesday, December 4th
Lecture: Data Collection and Analysis

Thursday, December 5th: No Lab, Psychology Program Boards

Friday, December 6th: HW #12 due by 5:00 p.m.

Monday, December 9th
Lecture: Review for Final Exam

Wednesday, December 11th: No Class, Advising Day

Thursday, December 12th
Lab 11: Review for Final Exam

Monday, December 16th: In Class Final

Wednesday, December 18th: In Lab Final