

PSY 2223: Psychological Methods and Statistics I
McDaniel College Budapest Campus

Instructor: Dr. Anna Babarczy
E-mail: babarczy@cogsci.bme.hu
Office hours: After class and by appointment
Class meeting times & place: Lecture: Thursday
Class website: Blackboard

Overview and course format: This course is designed to give you a detailed understanding of how statistics and scientific methods can be used to help answer questions in psychological research. We will cover the empirical research process from designing and implementing data collection through data analysis using statistical software packages to interpreting and reporting the results of the analysis. The course is divided into two semesters: the first semester focuses on research design, simple descriptive statistics and graphical data presentation while the second semester covers more advanced inferential statistical methods. Much of the class will be lecture, but discussion and questions are strongly encouraged. In a typical class, we will review material from the previous class, discuss new concepts, and work through examples, sample problems, and exercises to illustrate the new concepts. Reading assignments will be given to allow you to go over material at your own pace, homework assignments will be given to reinforce material covered in the text, and exams will be used to test your mastery of the material.

Main Course Goals:

1. To understand the basic principles of statistics
2. To see how these basic principles are used in everyday life
3. To gain a deeper understanding of scientific practices.
4. To improve your writing, speaking, critical thinking, and time-management skills.
5. To experience the use of scholarly journals and an understanding of APA format.
6. To develop data collection and analysis skills.
7. To improve your ability to work and communicate with others.

The acquisition of these skills will allow you to understand, plan, and critically evaluate scientific research in the field of Psychology.

Pre-requisites: For this course, students must have satisfactorily completed PSY-1106 and passed the math proficiency tests.

Required Texts: Coolican, *Research Methods and Statistics in Psychology*. Routledge 2009.

Publication manual of the American Psychological Association (6th ed.). American Psychological Association. (2010). Washington, DC.

*****You will also need a basic scientific calculator and Google Sheets or similar software.*****

How this Course Meets the General Education Outcomes at McDaniel College

Outcome 1. Critical Thinking. Students successfully frame questions, gather and evaluate information from experience and appropriate sources, and support their own conclusions.

- We will continue the discussion of research methods and statistical analyses used in the field of psychology, focusing predominantly on experimental methodologies and descriptive statistical procedures.
- We will discuss and evaluate theories of psychology both in class and through assignments through the lens of newly discussed methodologies.
- Additionally, in both the class and lab periods we will evaluate the rigor of specific experimental methodologies used in the field of psychology and learn to apply these findings appropriately.

Outcome 2. Creative Expression and Problem-Solving. Students are creative thinkers and problem-solvers; they express themselves creatively and have the ability to interpret creative products.

- Students will continue to learn how to critically evaluate previous research, both inside and outside the field of psychology.
- Student will learn new methodologies for use in answering empirical questions, with a special focus on experimental methodologies. Furthermore, students will learn which of these methods is most appropriate in any given set of circumstances.

Outcome 3. Communication. Students express themselves in writing and speech at a level appropriate to their class standing and their major field(s) of study.

- You will have the opportunity to critically evaluate many topics this semester in both written and oral form.
- Through multiple writing, homework, and classroom assignments students will learn a variety of ways to present and discuss research methods and findings in a manner appropriate to the field of psychology. There will be a special focus on APA style.

Lecture: A majority of the lecture periods will be spent introducing the core material for the class. However, these lecture periods will not be a simple restatement of the material found in the text. The lectures will serve to expand on the material from the text and provide activities to cement your understanding of the material.

Assignments:

Two Exams. The two major exams are worth a possible semester total of 200 possible points. These tests will include all course material (i.e., texts, lectures, activities and homework) covered since the previous test. You will need to study, understand, and be able to apply the material to various situations in order to succeed on the tests. Each test will consist of questions of varying format (e.g., multiple choice, short answer, stats problems) from the course material. Each student will be responsible for bringing a calculator and writing instrument to class on the test date. Please be respectful of your fellow students and arrive on time for the test.

Attendance and Participation. Attendance, homework and in-class activities will contribute a possible 100 points. Each scheduled day of lecture (except on test days), an attendance sheet will be passed around the classroom. It is your daily responsibility to sign the roll sheet in order to indicate your attendance.

Homework. Problem sets will be posted on the class website. Homework will be assigned and is due AT THE SPECIFIED TIME on the due date. Assignments turned in after the specified time will be considered late.

Research Project. You will conduct a comprehensive research project described in a separate handout. For this project you will prepare a written report of a study you will conduct during the semester. For the research project, you will turn in a progress report of your work. The purpose of this progress report is to keep you on track for the research project; points earned for this report will count toward the final paper grade. You must turn in your research project manuscript at the *beginning* of class. If a paper is turned in at the end of class or later that day, it is counted as 1 day late. You will receive a 5-point deduction for each day (including non-class days and weekend days) that your assignment is late. Papers will not be accepted via email.

Grading Policy: Your final grade will be based on your grades on the two exams (200 pts.), your grades on your homework assignments and class participation (100 points) and your grade on the project paper (200 pts.). A total of 500 points will be available for this class. Grades will be assigned according to the following "total points earned" cutoffs:

481-500 = A+ 421-440 = B+ 361-380 = C+ 301-320 = D+ 260 & below = F
 461-480 = A 401-421 = B 341-360 = C 281-300 = D
 441-460 = A- 381-400 = B- 321-340 = C- 261-280 = D-

<u>Components</u>	<u>Max Points</u>	<u>Your Points</u>
2 Exams (100 points each)		
Exam #1	100	___
Exam #2	100	___
Research Project (200 points)	200	___
Participation and Homework Assignments	100	___

Total	500	___

Academic Honesty: You are expected to adhere to McDaniel College's Honor Code and to report any known violations of this code. Violations of the Honor Code, in any form, will not be tolerated.

Tentative Schedule of Events

Date	Topics	Reading
7-Sep	Syllabus & Introduction Variables and operational definitions	Chapters 1, 2
14-Sep	Measurement scales, reliability, validity Frequencies and displaying data	Chapters 4, 12, 13
21-Sep	Frequencies and displaying data cont. Central Tendency and variability	Chapter 11

28-Sep	Sampling and probability – confidence intervals, effect size and power	
5-Oct	The Normal Curve, Standardization and z Scores	Chapter 13
12-Oct	Exam revision	
19-Oct MIDTERM	Exam 1 Project discussion	
26-Oct	Writing a psychology research paper Field Research , Quasi experiments and non-experiments	Chapters 5, 24
2-Nov	Experiments and experimental designs PROPOSAL DUE	Chapter 3
9-Nov	Psychological tests and measurement scales	Chapter 8
16-Nov	Introduction to hypothesis testing The z-test	Chapters 13, 14
23-Nov	THANKSGIVING - NO CLASS	
30-Nov	Effect size and power, OR Correlation PROGRESS REPORT DUE	
7-Dec	Exam revision REPORT DUE	
14-Dec	EXAM 2	

Project Draft Due Dates

2-Nov Proposal

30-Nov Progress Report (including literature review and raw data)

14-Dec Final Paper