Welcome!

Welcome to Quantitative Methods!

In this class, we're learning about how research is done in psychology. While we will be doing quite a lot of math in this class, it is all math you've done before - just never in this combination!

Every single day we hear statistics from a variety of sources and, more often than not, they are presented in a misleading manner. The purpose of this course is to provide you with the basic tools you will need to succeed in the behavioral sciences and decipher the truth from "little statistical lies". While I realize that most students do not choose to take this class, but do so reluctantly as a requirement for their major, I hope to convince you that statistics is understandable, important, and (dare I say) fun.

This section is a hybrid section, which means part of the class will be online. You'll be watching short videos each week, and doing a number of online exercises. Please see the "Requirements" to make sure you should be in this class.

Enjoy!

Learning Objectives

During this course, students will:
1. Develop scientific and critical reasoning skills
2. Become acquainted with the most common statistical tests performed by psychological researchers
3. Understand the logic and reasoning behind psychological research plans

By the end of this course, students should successfully be able to:
1. Describe research methods commonly used in behavioral science
2. Apply standard descriptive statistics and probability to characterize a data set and describe individual scores within a sample
3. Evaluate statistics in popular media reports to identify potentially misleading conclusions
4. Read graphs in popular media reports, and identify if they are misleading
5. Describe the conceptual logic behind hypothesis testing and identify the appropriate statistical test for various research designs

Interested students will also be able to:
6. Conduct an analysis to examine the difference between groups and the relationships between variables

Course Materials

Book: Gravitater, FJ and Wallnau LB. (2016) Statistics for The Behavioral Sciences, 10th Edition with Mind Tap Access
You do NOT need both the looseleaf (ISBN: 9781337129015) and hardback (ISBN: 9781305918542) version.
You DO need access to **Mind Tap**. This will comprise most of your homework, which is worth 30% of your course grade

Computer and Internet: This is a hybrid section, and you will be expected to participate in the class in on-line

activities. You MUST have access to a high-speed internet connection and computer in order to pass this class. If you do not have those, please sign up for an in-person section.

Technology Requirements

This course is a hybrid course that has some extra requirements beyond an in-person class. Please note that this is not a class that will teach you how to use a computer or the web.

Baseline skills:
Basic computer and web-browsing skills
Ability to navigate Sakai

Required equipment
Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
Simple calculator capable of computing square roots. You will not be allowed to use your phone or laptop during quizzes or exams.

Student Participation Expectations

As per University and School (SAS) policy, this course assumes that all students will be spending at least 160 minutes per credit hour per week on activities pertaining to the class. As this is a four-credit class, this means you should be expecting to spend at least 10 hours per week on this class.

As a hybrid class, we will not have time to go over all the material in class, so you must come prepared. That means watching the available videos, reading the assignment, and doing any homework on time.

Class will meet once a week on Wednesdays, periods 1 & 2. Attendance to class periods is mandatory. It is your responsibility to show up to class ready to participate, as important information, quizzes, and activities will be delivered from the start of each class period.

In addition, there will be online activities that will be due on a different day during the week. These are also mandatory. Please see "Assessments" for how much these and the in-class activities are worth.

You are responsible for any information that you missed in class. Please make friends with at least one other person in the class so you can exchange notes; I will be available for clarification of specific questions of material; I will not be able to repeat material you missed due to being late.

Policies

Late Work
Work will be considered only under drastic circumstances. A note from the Dean or some other official paperwork that indicates your inability to complete work for any of your courses on time will be required for acceptance of late work

Make-up Quizzes
There will be no make ups offered for quizzes. As stated under "Assessments," you will be allowed to substitute your grade on a portion of the Final Exam for a Quiz grade; if you miss a quiz, that will be your substitution

Feedback

Remember that you can email sakai@ rutgers.edu or call 848-445-8721 if you have a technical problem.

For on-line assignments, the feedback is usually automatic, or the timing is indicated in the assignment.

For in-class assignments, you can generally expect feedback at the next class.

If you have questions, you can post them to the chat room on Sakai; in addition to having your question answered, it is a good opportunity to see what questions other students are having. If you would rather ask your question privately, you can email me at any time, but please note that you may not get as quick a response (as your fellow students may have an idea at the answer). I respond to emails during normal business hours, and it can take me up to a full business day to get back to you.

Core Curriculum

This course has been certified as satisfying both Quantitative and Formal Reasoning Learning Outcome Goals (QQ and QR) of the SAS Core Curriculum.

Specifically, students will be able to:

a) Formulate, evaluate, and communicate conclusions and inferences from quantitative information (QQ)

b) Apply effective and efficient mathematical or other formal processes to reason and to solve problems

Assessment

Course grades will be calculated from the grades you earn on homework, classwork, quizzes, and a final exam. There is weekly work at home, weekly work done in class, 5 quizzes and the final exam. Below is the summary of the value of each assignment type:

	approximate number	approximate value per assignment	total weight of assessment type
Homework	15	2	30%
Classwork	14	2	28%
Quizzes	5	6	30%
Final Exam	1	12	12%
			100%

The Final Exam will be cumulative, and consist of 6 parts, each part covering one section of the course. As these sections line up with the quizzes, you will be allowed to substitute results for one quiz grade from that section of the final exam. If you miss a quiz, this will be your substitution.

Course grades will be assigned using the following percentage system:

A: 86-100%.

B+: 81-85.9999%.

B: 70-80.9999%.

C+: 65-69.9999%.

C: 60-64.9999%.

D: 50-59.9999%.

F: <50%

Final Exam

The Final Exam is **May 8at 8 am** as scheduled by the university (https://scheduling.rutgers.edu/scheduling/exam-scheduling/final-exam-schedule).

If you have a conflict as defined here: https://scheduling.rutgers.edu/scheduling/exam-scheduling/final-exam-policies, item 4 under "Rules for Final Exams, <u>and</u> you plan on rescheduling this exam, please get in contact with Professor Aitkin as soon as possible.

Schedule of Topics

Schedule is subject to change
CLASS MEETS IN SEC 203 EVERY WEDNESDAY

Approximate Date	Topic	Reading	Video?	Activity (note: in class & online merely indicates when activities will be done, not which day we will be meeting)	Other
Jan. 17	Introduction to Quantitative Methods	Chapter 1	Y	Y - in class	
Jan. 22	Types of measurement	Chapter 1	Y	Y - online	
Jan. 24	Displaying data I	Chapter 2 pp 35 - 49	Y	Y - in class	
Jan. 29	Central Tendency	Chapter 3	Y	Y - online/in class	
Jan. 31	Variablility	Chapter 4	Y	Y - online/in class	
Feb. 5	Probability I	Chapter 6, sections 6.1, 6.4, 6.5	Y	Y - online/in class	
Feb. 7	Probability II		Y	Y - online/in class	Quiz 1
Feb. 12	Probability III		Y	Y - online/in class	
Feb. 14	Sampling distribution I	Chapter 7	Y	Y - online/in class	Quiz 1 review
Feb. 19	Sampling distribution II		Y	Y - online	
Feb. 21	Normal distribution	Chapter 6, sections 6.2 6.3; review 6.4 6.5	Y	Y - in class	Quiz2
Feb. 26	Introduction to Hypothesis Testing I	Chapter 8	Y	Y - online	
Feb. 28	Introduction to Hypothesis Testing II		Y	Y - in class	Quiz 2 review
Mar. 5	Power	Chapter 8, pp 254 ff	Y	Y - online/in class	
Mar. 7	Displaying data II	Chapter 2 pp 35 - 49	Y	Y - in class	
Mar. 10 – 18		**NO CLASS; SPRING BREAK**			
Mar. 19	Displaying data III		Y	Y - online/in class	
Mar. 21	z- scores	Chapter 5	Y	Y - in class	Quiz 3
Mar. 26	z-test		Y	Y - online	

Mar. 28	Independent t-test	Chapter 9; chapter 10	Y	Y - in class	Quiz 3 review
Apr. 2	Related t-test	Chapter 11	Y	Y - online	
Apr. 4	Estimation & confidence intervals	Chapter 9, pp 284 ff	Y	Y - in class	
Apr. 9	ANOVA introduction	Chapter 12	Y	Y - online	
Apr. 11	One-way ANOVA	Chapter 13	Y	Y - in class	Quiz 4
Apr. 16	Multivariate ANOVA	Chapter 14	Y	Y - online	
Apr. 18	Correlation	Chapter 15	Y	Y - in class	Quiz 4 review
Apr. 23	Chi-square	Chapter 17	Y	Y - online	
Apr. 25	Review			Y - in class	Quiz 5

Professor Contact

The best way to ask your questions is in the chat room. Not only are you likely to be doing many of your fellow classmates the favor of being the one brave enough to ask the question, you are more likely to get a response from a different classmate who is familiar with that particular material.

The best way to get a hold of me is via email: cdaitkin@psych.rutgers.edu. As I teach multiple subjects and sections, please include the course and section number in the subject, and your full name in the email itself.

Please note that lengthy or complex issues will not be discussed over email. Grades will never be discussed over email, for your own privacy.

Please note that while you may send your email at any time, I am not available at all times, so don't leave things until the last minute! I respond to emails during normal business hours, and it can take me up to a full business day (i.e. not weekend days) to respond. If I haven't responded after two full business days, your email may have been mis-directed by the email program, so please send it again.

Extra Credit

Any extra credit will be offered only at the discretion of the instructor, and only to the entire class. No personal requests for extra credit will be honored; requesting personal extra credit assignments is disrespectful to your classmates.

Academic Integrity

The consequences of scholastic dishonesty are very serious. Please review the Rutgers' academic integrity policy.(http://academicintegrity.rutgers.edu/academic-integrity-policy/)

Academic integrity means, among other things:

- Develop and write all of your own assignments. This includes not asking others for answers on homework questions, or looking at others' exams.
- Show in detail where the materials you use in your papers come from. Create citations whether you are paraphrasing authors or quoting them directly. Be sure always to show source and page number within the assignment and include a bibliography in the back.
- Do not fabricate information or citations in your work.
- Do not facilitate academic dishonesty for another student by allowing your own work to be submitted by others.

If you are in doubt about any issue related to plagiarism or scholastic dishonesty, please discuss it with your instructor.

Other useful sites:
http://academicintegrity.rutgers.edu
http://studentconduct.rutgers.edu
http://www.northwestern.edu/provost/policies/academic-integrity/cardinal-rules.html

Accommodations for Accessibility

Requesting accommodations
If you would like to request academic accommodations based on the impact of a disability qualified under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, please contact the Office for Disability Services (https://ods.rutgers.edu/contact-ods) to register for services and/or to coordinate any accommodations you might need in your courses at Rutgers.

Go to the Student section of the Office of Disability Services website (https://ods.rutgers.edu/students) for more information

Please note that accommodations can not be made retroactively (for example, you cannot retake a quiz if you do poorly). Make sure that you have the Office of Disability Services contact all your professors at the beginning of the semester. Please also note that (a) it is up to you when to use accommodations you are approved for and (b) the ODS **never** tells your professors why you have the accommodations

University Vs. Sakai

Be sure to keep track of information from the University, such as meeting times and exam times. If there is a conflict between our website and the University posting, assume the University posting is correct.

Agreement to Policies

If you decide to stay enrolled in this class after logging onto Sakai, I will assume you have read the entire syllabus and have agreed to all the policies, dates, assignments, etc. outlined.