

## 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. The purpose of this course is to provide you with the basic tools you will need to decipher the truth from "little statistical lies". In addition, this course will help you succeed in the behavioral sciences. 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 and important.

This section is a hybrid section, which means most of the class will be online. You'll be watching several short videos each week, and doing a number of online exercises. Please see the "Technology 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. Describe the conceptual logic behind hypothesis testing and identify the appropriate statistical test for various research designs
4. Evaluate statistics in popular media reports to identify potentially misleading conclusions
5. Read graphs in popular media reports, and identify if they are misleading

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: Graviter, 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.

Note: check if MindTap includes the text

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 (including but not limited to: cut & paste) and web-browsing skills

Ability to navigate Sakai

Required equipment

Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection. **If you do not have access to these on a daily basis, please sign up for an in-person section.**

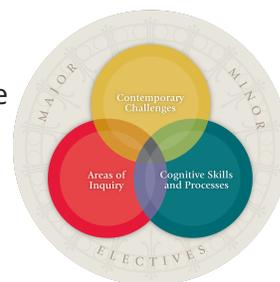
Simple calculator capable of computing square roots. You will not be allowed to use an internet-enabled device during quizzes or the final exam.

## 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:

- Formulate, evaluate, and communicate conclusions and inferences from quantitative information (QQ)
- Apply effective and efficient mathematical or other formal processes to reason and to solve problems (QR)



## Student Participation Expectations

Rutgers University expects the median student will be spending 160 minutes per week per credit on every course, including class time. As this course is four credits, this means the median student is expected to be spending 10 hours per week on this course. We meet in person for a maximum of three hours; thus, the assumption is that the median student will be spending 7 hours outside of the classroom on this course.

As you may recall from high school math, the median is the item in the exact middle. Thus, many students in every one of your classes will be spending more than 160 minutes/credit, and many will be spending less. **You should plan your schedule as if you will be one of the people who is spending more until your experience tells you otherwise.**

Class will meet in-person once a week, on Wednesdays periods 2 & 3. This meeting is the equivalent of the Recitation meeting for the in-person class, and will only focus on the one or two issues that the majority of students are currently having. Therefore, you must come prepared. That means watching the available videos, reading the assignment, and doing all homework.

Attendance to in-person periods is mandatory, and will be an active class period, not a lecture. It is your responsibility to show up to class on time and ready to participate, as important information, quizzes, and activities will be delivered from

the start of each class period.

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 the in-person session. 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.

## Homework

Homework will be almost exclusively through Cengage MindTap. You will usually have a chapter a week to complete. It's a very useful program as it offers you several opportunities to do each problem. However, it does take time, so make sure to not leave it until the last minute!

Cengage has four assessments per chapter: Mastery Training (MT), End-of-Chapter Problems (EOC), Problem Set (PS), and Exam. MT is 30 points for every chapter; the exam is 20 points for every chapter; the EOC and PS have a different number of points for each chapter. The total percentage correct will be determined by taking the sum of the points for EOC and PS as the denominator, and the total number of points you have earned across all four assessments as a numerator.

Each week of homework is worth two percentage points of your course grade, and will be earned as follows. If you earn under 40% (as explained in the previous paragraph), you earn a zero for that week. If you earn between 40% and 60%, you earn one point for the week. If you earn between 60% and 85%, you earn 1.5 points. If you earn between 85% and 95% for the week, you earn two points. If you earn over 95%, you earn an extra credit of half point - that is, you earn 2.5 points

All the homework is open now. I urge you to start working on Mastery Training for each chapter as soon as you feel comfortable, as there is a deliberate "cooling off period" built into the system. The program does this because - as you may remember from General Psychology - all evidence supports that small chunks of repeated practice over days is the best way to learn something.

## Classwork

Classwork will be a combination of work done during the in-person meetings (and does not include quizzes) and interactions in the Sakai Site Forum thread

The forum each week opens when the previous week's forum closes. Fora close at Tuesday at 5 pm. There will be a prompt for the forum each week.

Classwork done during in-person meetings will be handed in through Assignments on Sakai. This classwork is always group work, because learning to work in groups is becoming an increasingly important skill in the current economic environment. You will be graded on the work you hand in, not on the work your group mates hand in! The assignments are set to open about halfway through the class period, and stay open until 5 pm. Late assignments are accepted until 9 pm the day of class. If you hand in classwork and you did not attend class, you will not get any credit.

I post substantial feedback on your "classwork". Be sure to look at it, as it helps you pinpoint what you need to focus on when studying.

Each week's total classwork is worth 2 percentage points of your course grade each week.

- You can earn up to 1 points weekly on your classwork done in class.
- You can earn up to 1 points weekly in the forum.
  - You may get extra credit by responding to others' postings; note that you will not be able to read others' posts until you have posted something yourself. Extra credit will be given only for a substantial response: for example, if you elaborate some details of a question someone has, or you answer someone else's question correctly
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## Quizzes

We will have quizzes during the in-class meetings, approximately every other week. There are six total. The quizzes are short answer, and test your conceptual understanding of the material since the last quiz. The quizzes are independent work. Each quiz is worth 5% of your course grade

Since there exists a good deal of evidence that we learn best from mistakes, you will go over your quizzes the week after you take them. This will be part of the classwork (see the "Classwork" section), in that you will be working in groups. The questions you answer will be determined by which questions you do poorly on, either as a class or individually. Each quiz review is worth 1% of your course grade.

## Policies

### Late Work

No late work will be accepted

### Make-up Quizzes

There will be no make ups offered for quizzes. As stated under "Assessment," I automatically replace your lowest quiz grade with the grade you get on the equivalent section on the final; if you miss a quiz, that is the grade that will be replaced

### Feedback

If you have a technical problem with Sakai, email [sakai@rutgers.edu](mailto:sakai@rutgers.edu) or call 848-445-8721

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

For in-class assignments, I make substantial comments on the work you submit. You can generally expect this feedback before the next in-class meeting.

If you have questions, you can post them to the chat room on Sakai; in addition to having your own 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 you would in the chat room (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 two full business day to get back to you

## Assessment

Course grades will be calculated from the grades you earn on homework, classwork, quizzes, and a 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	13	2	26%
Classwork	14	~2	27%
Quizzes	6	5	30%
Quiz Review	5	1	5%
Final Exam	1	12	12%
			100%

The Final Exam will be cumulative, and consist of 7 sections. Six of the sections will each cover the same material as each of the quizzes; the seventh part is cumulative. As the six sections line up with the quizzes, I will replace your lowest quiz grade with the grade you earn on that part of the exam if it improves your score. If you miss a quiz, this will be your make-up.

Course grades will be assigned using the following percentage system:

A: 86-100%.

B+: 81-85.9999%.

B: 75-80.9999%.

C+: 70-74.9999%.

C: 65-69.9999%.

D: 55-64.9999%.

F: <55%

## Final Exam

The Final Exam is **May 12 from 4-7** as scheduled by the University (<https://finalexams.rutgers.edu/>). **Make sure you confirm that with the University page.** The final will be in our regular classroom.

If you have a conflict as defined here (<https://sasundergrad.rutgers.edu/degree-requirements/policies/final-exam>), and you plan on rescheduling this exam, please get in contact with me as soon as possible. If you contact me about the conflict after April 15, it may be hard to schedule you at your favorite time.

## Schedule of Topics

*Schedule is subject to change*

CLASS MEETS IN TIL 230 EVERY WEDNESDAY

Date	Topic	Chapter	Assignment	Other
22-Jan	Types of Measurement and Frequency Distributions	1 & 2	In-class meeting	syllabus "quiz"; math "quiz"
27-Jan			Cengage	

28-Jan			Forum	
29-Jan			In-class meeting	
3-Feb			Cengage	
4-Feb	Central Tendency and Variability	3 & 4	Forum	
5-Feb			In-class meeting	
10-Feb			Cengage	
11-Feb	$z$ -Scores and Standardized Distributions	5	Forum	
12-Feb			In-class meeting	Quiz 1
17-Feb			Cengage	
18-Feb	Probability	6	Forum	
19-Feb			In-class meeting	Quiz 1 review
24-Feb			Cengage	
25-Feb	Distribution of Sample Means	7	Forum	
26-Feb			In-class meeting	Quiz 2
2-Mar			Cengage	
3-Mar	Introduction to Hypothesis Testing	8	Forum	
4-Mar			In-class meeting	Quiz 2 review
9-Mar			Cengage	
10-Mar	Introduction to the $t$ Statistic	9	Forum	
11-Mar			In-class meeting	Quiz 3
<b>3/16 - 3/20 NO CLASS - SPRING BREAK</b>				
23-Mar			Cengage	
24-Mar	Independent $t$ test and Dependent $t$ test	10 & 11	Forum	
25-Mar			In-class meeting	Quiz 3 review
30-Mar			Cengage	
31-Mar	Introduction to ANOVA	12	Forum	
1-Apr			In-class meeting	Quiz 4
6-Apr			Cengage	
7-Apr	Repeated-measures ANOVA	13	Forum	
8-Apr			In-class meeting	Quiz 4 review
13-Apr			Cengage	
14-Apr	Two-Factor ANOVA	14	Forum	
15-Apr			In-class meeting	Quiz 5
20-Apr			Cengage	
21-Apr	Correlation	15	Forum	
22-Apr			In-class meeting	Quiz 5 review
27-Apr			Cengage	
28-Apr	The Chi-Square	17	Forum	
29-Apr			In-class meeting	Quiz 6

## Professor Information

Cordelia Aitkin, PhD

Office Hours: Monday 2:30-3:30, Tillett 241. I also make appointments; please send me 5 specific times you are available on Busch or Livingston campus in the week following your email and we'll find a time that works for both of us

Contact Information: cdaitkin@psych.rutgers.edu

## 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.

I can be reached directly via email: cdaitkin@psych.rutgers.edu. As professors 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.

You can send your email at any time! However, 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 two full business days (i.e. not weekend days) to respond. If I haven't responded after three full business days, your email may have been misdirected by the email program, so please send it again.

## Extra Credit

As noted in the section on Homework, you can earn extra credit by doing excellent work on the homework.

Extra credit can also be earned by interacting with your fellow students in the forums for Classwork (see the section on Classwork.)

There are extra credit questions in several of the videos.

Extra credit will be on all quizzes.

Any extra credit not listed in the syllabus 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 but is not limited to not asking others for answers on homework questions and not 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

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 unless explicitly stated.

## 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.

## Student Wellness Services

Just In Case Web App <http://codu.co/cee05e>

911 contact through an app.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 || 17 Senior Street, New Brunswick, NJ 08901 || <http://health.rutgers.edu/medical-counseling-services/counseling/>

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

### Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 || 3 Bartlett Street, New Brunswick, NJ 08901 || [www.vpva.rutgers.edu](http://www.vpva.rutgers.edu)

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

### Disability Services

(848) 445-6800 || Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 || <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.