

21:220:203 Statistics

Fall 2021

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Course Description

In this course, we will cover topics such as descriptive statistics, basics of probability, confidence intervals, hypothesis tests, correlation, and regression analysis.

Grading

Course grades will be based on two equally weighted exams. All exams are closed book. However, each student is allowed to bring one page (one-sided) formula sheet and a calculator.

Homework assignments will be posted on Canvas. Although they will not be graded, homework problems are important practice for the exams.

Textbook

The following textbook is **required**:

- John Freund and Benjamin Perles. 2007. *Modern Elementary Statistics* (12th edition). Prentice Hall.

Course Outline

1 Course Introduction

- Chapter 1.

2 Descriptive Statistics

- Chapters 2–4.

3 Probability, Sample Spaces and Events

- Chapter 5, section 6.1.

4 Rules of Probability

- Sections 6.2-6.6.

5 Expectations, Probability Distributions

- Section 7.1, chapter 8.

6 Midterm Exam

7 Normal Distribution

- Sections 9.1-9.2, 9.4.

8 Sampling, Sampling Distributions

- Sections 10.6-10.8.

9 Estimation

- Sections 11.1-11.2, 11.4.

10 Hypothesis Tests

- Sections 12.1-12.4, 14.1-14.2.

11 Hypothesis Tests: Comparing Two Groups

- Sections 12.5, 14.3.

12 Correlation

- Sections 17.1-17.2.

13 Regression

- Chapter 16.

14 Final Exam

Academic Integrity

As an academic community dedicated to the creation, dissemination, and application of knowledge, Rutgers University is committed to fostering an intellectual and ethical environment based on the principles of academic integrity. Academic integrity is essential to the success of the University's educational and research missions, and violations of academic integrity constitute serious offenses against the entire academic community. The entire Academic Integrity Policy can be found here:

<http://academicintegrity.rutgers.edu/academic-integrity-policy/>

Accommodation and Support Statement

Your health and well-being matter, and Rutgers has put in place a number of resources that are intended to help students through the challenges that might emerge during these times. Information on many of these resources appears below. Please let me know immediately if you are experiencing circumstances that are negatively impacting your academic performance. I also strongly encourage you to contact your academic advisor.

Rutgers University Newark (RU-N) is committed to the creation of an inclusive and safe learning environment for all students. RU-N has identified the following resources to further the mission of access and support:

- Absences: All students are responsible for timely notification of their instructor regarding any expected absences. The Division of Student Affairs can provide assistance for absences related to religious observance, emergency or unavoidable conflict (illness, personal or family emergency, etc.) Students should refer to the University's Course

Attendance policy (10.2.7), for complete expectations and responsibilities. The office can be contacted at: (973) 353-5063 or deanofstudents@newark.rutgers.edu.

- **Disabilities:** The Office of Disability Services (ODS) is responsible for the determination of appropriate accommodations for students who encounter barriers due to disability. Once a student has completed the ODS process (registration, initial appointment, and submitted documentation) and reasonable accommodations are determined to be necessary and appropriate, a Letter of Accommodation (LOA) will be provided. The LOA must be given to each course instructor by the student and follow up with a discussion. This should be completed as early in the semester as possible as accommodations are not retroactive. More information can be found at ods.rutgers.edu. Contact ODS: (973) 353-5375 or ods@newark.rutgers.edu.
- **Temporary Conditions/Injuries:** The Division of Student Affairs can assist students who are experiencing a temporary condition of injury (broken or sprained limbs, concussions, or recovery from surgery). Students experiencing a temporary condition or injury should submit a request for assistance at:
<https://temporaryconditions.rutgers.edu>.
- **Pregnancy:** The Office of Title IX and ADA Compliance is available to assist students with any concerns or potential accommodations related to pregnancy. Students may contact the office at (973) 353-1906 or TitleIX@newark.rutgers.edu.
- **Gender or Sex-Based Discrimination or Harassment:** The Office of Title IX and ADA Compliance can assist students experiencing any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking. Students can reports an incident to the office at: (973) 353-1906 or TitleIX@newark.rutgers.edu. Incidents may also be reported by using the following link: tinyurl.com/RUNReportingForm. For more information, students should refer to the University's Student Policy Prohibiting Sexual Harassment, Sexual Violence, Relationship Violence, Stalking and Related Misconduct located at:
<http://compliance.rutgers.edu/title-ix/about-title-ix/title-ix-policies/>.
- **Interpersonal Violence:** The Office for Violence Prevention and Victim Assistance can provide any student with confidential support. The office is a confidential resource and does not have a reporting obligation to report information to the University's Title IX Coordinator. Students can contact the office at: (973) 353-1918 or run.vpva@rutgers.edu. There is also a confidential, text-based line students can text for support: (973) 339-0734.

- Crisis and Concerns: The Campus Awareness Response and Education (CARE) Team works with students in crisis to develop a support plan to address personal situations that might impact academic performance. Students may contact the CARE Team at: tinyurl.com/RUNCARE or careteam@rutgers.edu.
 - Stress, Worry, or Concerns about Well-Being: The Counseling Center has confidential therapists available to support students. To schedule an appointment: counseling@newark.rutgers.edu or (973) 353-5805. If a student is not quite ready to make an appointment with a therapist but is interested in self-help, check out TAO at Rutgers-Newark for an easy, web-based approach to self-care and support:
<https://tinyurl.com/RUN-TAO>.
 - Emergencies: Call 911 or contact Rutgers University Police Department (RUPD) at (973) 353-5111.
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Learning Resources

- Rutgers Learning Center (tutoring services)
(973) 353-5608
<https://sas.n.rutgers.edu/student-support/tutoring-academic-support/learning-center>
- Writing Center (tutoring and writing workshops)
(973) 353-5847
nwc@rutgers.edu
<https://sas.n.rutgers.edu/student-support/tutoring-academic-support/writing-center>