

Statistical Methods II
15:291:532:01
3 Credits
Mondays; 4:50 PM - 7:30 PM; ED-347

Instructor Name: Chia-Yi Chiu	Email: chia-yi.chiu@gse.rutgers.edu
Phone Number: 848-9320832	10 Seminar Place Rm 326
Office Hours: By appointment	Prerequisites or other limitations: Statistical Method I
Mode of Instruction: <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Hybrid <input type="checkbox"/> Online <input type="checkbox"/> Other	Permission required: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Directions about where to get permission numbers: Please contact the instructor

Learning goals: Upon successful completion of this course, you will be able to complete the following tasks:

1. Understand the probability theory, the foundation of statistical methods.
2. Understand the distributions of random variables as well as their properties.
3. Have a basic understanding of correlation and linear regression.
4. Carry out the statistical analysis using both hand calculation and computer software (SPSS).
5. Test hypotheses applying probability theory.
6. Explain the differences among various statistical techniques and identify an appropriate technique for a given set of variables and research questions.
7. Interpret the outcomes of an analysis and make a decision based on the statistical results.

Course catalog description:

Design of experiments; SPSS statistical package; z, t, chi-square, and F tests; effect size; multiple regression analysis; one-way and two-way analysis of variance; and post-hoc procedures.

Class materials/Textbooks:

Text: Moore, D. S., McCabe, G. P., & Craig, B. (2014). Introduction to the practice of statistics. (8th ed). New York: W. H. Freeman.

Software: SPSS for Windows (Version 19 or newer). New York: Prentice-Hall.

Course Requirements:

1. **Email and eCollege Access:** Emailing and eCollege are the two communication tools used to maximize the teaching and learning effects. You have to make sure you know how to receive information, download files, do homework, and access your grades online.
2. **Participation:** Your participation is expected throughout the semester.

3. **Software & Calculator:** SPSS will be used to run statistical analyses for homework assignments and class exercises. A calculator that performs basic operations is required for everyone.

Grading policy: Final letter grade will be assigned as follows:

Final Score	Letter Grade
90\% and Above	A
80\%-89\%	B+
75\%-79\%	B
65\%-74\%	C+
60\%-64\%	C
Below 60\%	F

Assignments:

1. **Course Notes and Handouts:** Course notes and handouts of each section will be posted by **Monday**. You will have to download and print out the notes before coming to the class.
2. **Exams:** The two in-class exams, midterm and final, are worth 30% and 30% of the final grade, respectively.
3. **Homework assignments:** Approximately 8-10 homework assignments, worth 40% of the final grade, will be given online over the semester. Homework assignments will be assigned every **Tuesday** and due on the following **Monday**. So basically you have a whole week to work on a homework assignment. No late homework assignment is accepted.

Academic Integrity Policy:

The Office of Student Conduct supervises issues related to violations of academic integrity (see <http://academicintegrity.rutgers.edu>). Please familiarize yourself with the university policy on academic integrity at http://academicintegrity.rutgers.edu/files/documents/AI_Policy_2013.pdf

Office of Disability Services:

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>.

Course Schedule

Week	Assignments & Readings
1. 01/26 - 02/01	7.1: Inference for the mean of a population
2. 02/02 - 02/08	7.2: Inference for Two Population Means
3. 02/09 - 02/15	7.3: Inference for Population Variances
4. 02/16 - 02/22	8.1 & 8.2: Inference for Proportions
5. 02/23 - 02/20	9.1 & 9.2: Analysis of Two-Way Tables
6. 03/01 - 03/07	10.1: Simple Linear Regression I
7. 03/08 - 03/14	10.2: Simple Linear Regression II & Review
8. 03/15 - 03/21	No class; Spring break
9. 03/22	MIDTERM EXAM (Sections 7.1 - 10.2)
10. 03/29 - 04/04	11.1 & 11.2: Multiple Regression
11. 04/05 - 04/11	12.1: One-Way ANOVA
12. 04/12 - 04/18	No class; NCME/AERA
13. 04/19 - 04/25	12.2: Contrasts and Multiple Comparisons
14. 04/26 - 05/02	13.1: Two-Way ANOVA
15. 05/03 - 05/09	Review
16. 05/10	FINAL EXAM (11.1 - 13.1)