

**Psychology 771: Analysis of Variance and Experimental Design****Instructor:**

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Office Hours: T 1:00 - 3:00; TR 3:00 – 5:00  
or By appointment (EP 202)**Meeting time:**

Lecture W 2:10-4:55 EP 207

*Textbooks and Materials*Tabachnick & Fidell. *Experimental design using ANOVA*. (ISBN: 978-0534405144).Kirkpatrick & Feeney. *A Simple Guide to SPSS*, Version 14.0, 8<sup>th</sup> edition; with Discounted SPSS Student Version 15.0 CD  
(**Bundle ISBN 0495487597**)Other Requirements: **Bring a calculator to every class.***Class Goal:*

This course provides both a conceptual and applied introduction to experimental designs and the analysis of such designs. By the end of this semester, you should be able to:

- Understand the underlying concepts beneath basic experimental analyses.
- Choose appropriate statistical analyses for different types of experimental designs.
- Use SPSS as a tool to analyze experimental data.
- Read and assess the experimental literature in your area of research.
- Have improved scientific writing skills.

*Teaching Philosophy*

We believe that students are active participants in the learning process and not just passive recipients of knowledge. Therefore, we place much emphasis on interaction and class participation.

*Course Requirements and Grading*

- (1) Weekly Assignments (30%)
- (2) Midterm (30%)
- (3) Semester-long project (30%)
- (4) Final Presentation of Results (10%)

*Grading Scale (as a percentage):*

93-100. = A	80-82.9 = B-	67-69.9 = D+
90-92.9 = A-	77-79.9 = C+	60-66.9 = D
87-89.9 = B+	73-76.9 = C	00-59.9 = F
83-86.9 = B	70-72.9 = C-	

**Major Campus Dates to keep in mind:**M 9/1 **Labor day**- Campus ClosedT 9/9 **Add deadline** - 1st set of permit numbers issued (8/25-9/9) will expire at midnightT 9/23 **LAST DAY TO ADD** Add deadline- 2nd set of permit numbers issued (9/10-9/23) will expire at midnight.T 9/23 **LAST DAY TO DROP A COURSE** (without a "W" on transcript)W 9/24- **Course Withdrawal period** (a "W" will be appear on transcript, and will count as one course attempt)T 10/21 **CR/NC deadline**- Students can declare this option via MySFSUT 11/11 **Veteran's Day**- Campus ClosedM 11/24-F 11/28 **Fall Recess**

## Class Organization and Policies:

- (1) FAQ: Do I have to come to class / lab?
  - a. Attendance is important; but not mandatory. However not all material is covered in class.
  - b. Material **will be** presented in lecture that **is not covered** in the book (and I may disagree with the book) and **you will be held responsible for that information**.
  - c. Additionally, you will seriously jeopardize your grade if you choose to miss lectures or labs; you will lose valuable experience participating in discussion and group tasks, as well as missing class assignments and exercises.
- (2) Many handouts, PowerPoints, and keys to the HWs and will be posted on Ilearn
  - a. It is expected that ALL student will learn how to access their Ilearn account in order to download these documents before class and during lab.
  - b. To log on use the following URL: <http://ilearn.sfsu.edu>. Log in as a student using your ID and PAC numbers.
- (3) Office hours are first-come first serve.
  - a. It is the student's responsibility to schedule optional appointments by sending me an email with a specified date and time when the student is available to meet. All appointments must be made electronically.
  - b. No appointments are taken during office hours.
- (4) All assignments are due at the beginning of the class.
  - a. All late work will be assigned a grade of "0" – no exceptions to this rule.
  - b. HW is graded for mastery – and thus, each problem is graded as correct or incorrect. No partial credit on HW.
  - c. HW will be posted on Ilearn after the class and will be due the following class.
  - d. Semester-long project: The project will comprise 40% of your grade. The project is divided into four components:
    - Initial plan: You will create a rough initial plan including your research question, a definition of your population, a proposed sampling plan, and the measures you would use (if you are already collecting data, you may use the same data for this class – I will also make available data sets you can use).
    - Literature review: You will turn in your review of your topic.
    - Final Paper: You will analyze your data, and turn in a final paper, including a results and conclusion section. You will be required to perform 4 statistical procedures of your choice.
    - Presentation: You will present your proposal to the class.
- (5) No make-up HWs, exams, or projects are given unless under extreme circumstances (e.g., death of family member, car accident, personal medical emergency requiring hospitalization).
  - a. Evidence through paper documentation of the extreme circumstance is required (e.g., a doctor's note, a copy of a death certificate).
  - b. If a student feels ill during a quiz, test, or final, the student is recommended to leave; but for the absence to be excused a doctor's note is required.
  - c. If a student does not attend a class during which a quiz, test, or final is administered, it is the student's responsibility to demonstrate that they could not attend the class, and to arrange a time to complete the make-up work.
  - d. All make-up work should be completed no later than 14 days after the originally scheduled quiz, exam, etc.
  - e. If make-up work is not completed, the student will receive zero points for that assignment, quiz, exam, or final.
- (6) The midterm will be "open book."
  - a. Each student may recopy notes, handouts, or examples from class into their own book.
  - b. Students are also allowed **10 sheets** of hand-written notes for the **midterm**.
  - c. The notes must be recopied **by hand**, and must be the student's own hand writing. Any Xeroxed pages will be taken from the student is considered a violation of academic honesty resulting in an **F for the midterm** or **final**.
  - d. Sampling, paper-clipping, or binding others' notes (including the handouts and keys from class, and photocopies of other student's notes) to one's book is considered a violation of academic honesty resulting in an **F**.
- (7) Plagiarism is a form of cheating.
  - a. It occurs when someone misrepresents the work of another as his or her own. Plagiarism may consist of using the ideas, sentences, paragraphs, or the whole text of another without appropriate acknowledgment, but it also includes employing or allowing another person to write or alter work that a student then submits as his or her own.
  - b. Plagiarism will not be tolerated in this class. Any student who plagiarizes will receive an "F" for that assignment.
  - c. Furthermore, all instances of plagiarism will be reported to the Department Chair, the Dean of the College, and may be reported to the University Judicial Affairs Officer for further action. Students are responsible for knowing the SFSU regulations concerning cheating and plagiarism, found in the University Bulletin and online at: <http://www.sfsu.edu/~helpdesk/docs/rules/conduct.htm>
- (8) Students with disabilities who need reasonable accommodations should contact the instructor. The Disability Programs and Resource Center (Student Services Building, Room 110) is available to facilitate the reasonable accommodation process.

## Class Schedule

**Tentative Course Outline: Any changes in topics and readings will be announced in class.** “T&F” refers to Tabachnik & Fidell  
*Experimental Design Using ANOVA*

<b>Day</b>	<b>Topic / Task</b>	<b>Chapter(s) &amp; Assignment</b>
8/27	Class Management; Basic experimental design concepts	T & F Ch. 1
9/3	Univariate descriptive, Common bivariate tests	T & F Ch. 2.1 – 2.3; <b>HW 1 Due</b>
9/10	Basic ANOVA vs. regression; 2-group ANOVA with SPSS	T & F Ch. 3.1 – 3.2; <b>Initial Plan outline Due</b>
9/17	Basic ANOVA vs. regression with SPSS; ANOVA assumptions;	T & F Ch. 3.3 – 3.6; <b>HW 2 Due</b>
9/24	Extending to the 3-group case Post-hocs & contrasts;	4.1 – 4.4; <b>HW 3 Due</b>
10/1	<b>Take Home Midterm</b>	
10/8	Power and effect size; trend analysis	T & F 4.5 – 4.6; <b>Literature review Due</b>
10/15	Two-way and three-way ANOVA	T & F 5.1 – 5.6.3; <b>HW 4 Due</b>
10/22	Decomposing interactions	T & F 5.6.4 – 5.6.5; <b>HW 5 Due</b>
10/29	Repeated Measures ANOVA	T & F 6.1 – 6.5; <b>HW 6 Due</b>
11/5	RM assumptions & other issues	T & F 6.6 – 6.8; <b>HW 7 Due</b>
11/12	Randomized-Repeated designs	T & F 7.1 – 7.6; <b>HW 8 Due</b>
11/19	Putting it all together	T & F 7.6 – 7.9
11/26	<b>Fall Recess</b>	
12/3	ANCOVA	T & F 8.1 – 8.6; <b>HW 9 Due</b>
12/10	Random Effects & Mixed Models	T & F 8.6 & 11.1 – 11; <b>HW 10 Due</b>
12/17	In Class Presentation: You will present your proposal to the class	<b>Final Paper Due</b>

\*Chapters are expected to be read before attending each class.