

Instructor: Bill Stine

Class Time: TTH 9:40-11:00

Room:

Office Hours (Conant 107): M 2:10-3:00, W 10:10-11:00

Graduate Teaching Assistant:

Office Hours (Conant 325):

Psychology 402, *Statistics in Psychology*, serves as an introduction to statistical decision-making. The student will learn how to form empirical questions and to use data to answer those questions. Empirical questions may be posed in a variety of contexts, ranging from, for example, personal consumer behavior to formal experimentation. Answers to empirical questions may be sought using techniques ranging from relatively simple graphs or quantitative descriptions to formalized hypothesis testing. Each student will learn the abstract process of making decisions in an uncertain context using data, as well as how to manipulate data in order to arrive at a decision in particular contexts. Data will be analyzed using hand techniques as well as computers. So, as the course unfolds, the student will be learn to think about empirical questions and their answers graphically, symbolically, and numerically.

Texts:

De Veaux, R. D., Velleman, P. F., & Bock, D. E. (2005). *Stats: Data and models*. Boston, MA: Pearson/Addison-Wesley.

Stine, W. W. (2006). *Psychology 402 computer modules for SPSS V14.0 on Windows XP*.

Requirements: There will be three quizzes, one comprehensive final exam, eleven homework assignments (H1 – H11), and nine SPSS problems, or modules (M1-3, M5-10), in this course. The quizzes will be worth 45% of the total grade, the final will be worth 25%, the best 10 homework grades together will be worth 20% (i.e., the lowest homework grade will be dropped), and all nine of the SPSS modules will be worth a total of 10%.

Each quiz will last for 70 minutes. A quiz will consist of a compare and contrast section (closed book, 30 min) and a problem section (open book, 40 min).

Homework assignments will be from the text. Please note that a statistically oriented calculator (i.e., one with a summation key) will be required for the course.

Final grades will be assigned as follows:

A	> 92	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	< 60

Policy Concerning Absence from Tests and Late Work: Do not miss a test (no shows for a test receive 0 points). Only written excuses from doctors or deans will be accepted as valid if you miss a test.

No late homework assignments will be accepted.

Computer Assignments: During the semester you will gain a working knowledge of a statistical computer package called *SPSS*.

You will also work some of the problems from De Veaux et al. (2005) using *SPSS*.

There is a \$15.00 laboratory fee associated with this course.

You are expected to work independently on all assignments.

Departmental Statement on Plagiarism

"Plagiarism is a form of cheating, punishable ... by failure in the course and possibly ... by suspension or dismissal from the university." (See the *Caboodle*, p. 60.)

Plagiarism can take a number of forms, including the re-use of your own written work without appropriate modifications and/or without the permission of your instructor.

Plagiarism most commonly occurs when material is taken from a source without proper citation. Whenever material is directly quoted it must appear in quotation marks and be properly cited either in the text or in a footnote. A citation without quotation marks is not adequate since it implies that the material quoted is your wording. It is even less acceptable to simply put the source of material in a bibliography at the end of your paper, with neither quotation marks nor references made in the text or notes.

Indirect quotations--that is, points taken from some source but restated in your own words--should not appear in quotation marks, but the source from which they came should be cited in the text or in a footnote, depending on the reference style ... [use APA].

If necessary, ask me for further clarification. Remember that a course grade or even your undergraduate career could be jeopardized by ignorance in this matter. Ignorance does not constitute an excuse for plagiarism.' (Department of Psychology, *Statement on Plagiarism*, Jan 1989)

<i>Date</i>		<i>Reading</i>
	I. Describing Samples	
	A. Univariate Relationships	
29 Aug	1. Data	1-2
31	2. Displaying Data	3-4
5 Sep	3. Describing Data Numerically	5
7	4. The Standard Deviation	6
	B. Bivariate Relationships	
12	1. Scatterplots & Correlation	7-p.124
14	2. Straightening, τ , and ρ .	pp. 124-132
19	3. Linear Regression	8
21	4. Regression Usage	9
	II. Gathering Data	
26	A. Random Samples & Surveys	11-12
28	B. Experiments	13
3 Oct	QUIZ I	(Ch. 1-8)
	III. Randomness and Probability	
5	A. Probability	14
12	B. Probability Models	15
17	C. Random Variables	16
	IV. Inference	
	A. Inferential Theory and Proportions.	
19	1. Sampling Distributions & Proportions	18-19
24	2. Hypothesis Testing for Proportions	20
26	3. Interpretations and Power	21-22
31	QUIZ II	(Ch. 9, 11-16)
	B. Inferences about Means and Counts.	
2 Nov	1. Inferences about Means	23
7	2. Comparing Means	24
9	3. Paired Samples and Blocks	25
14	4. Comparing Counts	26
	C. Inferences about Linear Models	
16	1. Inferences for Regression	27-p.571
21	QUIZ III	(Ch. 18-24)
28	2. Confidence Intervals for Regression	pp. 571-582
30	3. Analysis of Variance	28-p. 606
5 Dec	4. Comparisons in the ANOVA	pp. 606-616
7	V. Review for Final	
14	FINAL QUIZ	(Ch. 1-9, 11-16, 18-28)

Homework assignments are listed below. These assignments will be due at the beginning of class, usually every Tuesday. The problems from De Veaux et al. (2005) are those from the Exercises sections at the end of each chapter. So, assignment 3.10 is problem #10 from Chapter 3 (p. 28). Please be certain to show all of your work and to provide reasons for the answers that you give. *SPSS* problems are listed in bold as modules (e.g. **M1**).

- 5 Sep H1: 2.4, 2.6, 2.8, 2.10, 2.12, 2.16, 2.18, 2.20, 3.10, 3.18, 3.24, 3.28, 4.10, 4.18, 4.26, 4.34.
- 12 H2: 5.10, 5.30, 5.36, 6.12, 6.18, 6.24, 6.28, **M1**.
- 19 H3: 7.16, 7.24, 7.32, **M2**.
- 26 H4: 8.16, 8.32, 8.36, **M3**, 9.10, 9.16.
- 3 Oct Quiz I: No Homework.
- 12 H5: 11.12, 11.24, 12.14, 12.24, 13.26, 13.34, 14.2, 14.6.
- 17 H6: 14.16, 14.25, 15.8, 15.14, 15.24, 15.30.
- 24 H7: 16.16, 16.22, 16.34, 16.38, 18.8, 18.22, 18.30, 18.34, 19.6, 19.18, 19.32.
- 31 Quiz II: No Homework.
- 7 Nov H8: 20.10, 20.16, 20.24, 21.6, 21.12, 21.22, 22.2, 22.8, 22.14, 22.20.
- 14 H9: 23.8, 23.28, **M5**, 24.6, 24.12, 24.18, **M6**, 25.2, 25.10, 25.18, **M7**.
- 21 Quiz III: No Homework.
- 28 H10: 26.6, 26.16, 26.26, **M9**, **M10**.
- 7 Dec H11: 27.8, 27.22 (*SPSS*), 28.6, 28.22, **M8**.