

Biostatistics (HS 167)

Fall 2007

Department of Health Science
San Jose State University

Website: www.sjsu.edu/biostat → click “hs167” (the homepage is part of this syllabus by reference)

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Office hours: Tu 10:30–11:45; Th 10:30 – 1:15; and by appt.

Pre-requisite: Undergraduate students must complete their Entry Level Math and a GE statistics class (e.g., SJSU HS 67, Evergreen Math 10, etc.) before enrolling in HS 167.

Course Organization: The class consists of weekly lecture and lab activities. All students attend lecture on Tuesdays in DH 135. In addition, you must attend your lab section weekly. Lab sections are as follows: HS167-2 meets Tuesdays from 4:30 to 5:45. HS167-3 meets Wednesdays from noon to 1:30. HS167-4 meets Thursdays from 3:00 to 4:14. HS167-5 meets Mondays from 3:00 to 4:15. Labs meet in the College of Applied Sciences and Arts in MH 321. It is important that you attend lecture and lab each week. “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because [attendance is] essential to ensure maximum benefit” (SJSU policy).

Required Materials

1. **Textbook.** Gerstman, B.B. (2008). *Basic Biostatistics: Statistics for Public Health Practice*. Boston: Jones & Bartlett. 557 pp.
2. **Lab Workbook.** HS 167 Lab Manual (Revised 2nd edition). San Jose: Spartan.
3. **Statistical Calculator.** You must have either a TI-30XIIS or TI-8x calculator for use in this course.

Optional Software. All software required for the course is already loaded on the computers in the College Computer Labs (MH 321). Some students prefer to have software loaded on their home compute as well. If you wish to do this you will need a copy of SPSS. You can purchase various student versions of SPSS from the campus store. SPSS can also be purchased online at www.journeyed.com. It can be leased through the Web site www.e-academy.com. There are also two freeware programs, StaTable and WinPepi that can be downloaded for free from the text’s Web site.

Academic Integrity (from the Office of Student Conduct & Ethical Development): Your own commitment to learning, as evidenced by your enrollment at San Jose State University, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty are required to report all infractions to the Office of Student Conduct & Ethical Development (S04-12).

Disability: If you need course adaptations or accommodations because of disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with DRC to establish a record of their disability.

University Drop Policy: Please see the Schedule of Classes for details about drop procedures.

Homework Policies: Homework is due at the beginning of class. Late assignments will not be accepted. You may *not* collaborate on graded homework problems unless otherwise specified. Plagiarism will be reported to Office of Student Conduct and Ethical Development. You may ask questions about homework in lab, during my office hours, or online via the email discussion group. Graded assignments are returned within the week. Work neatly and accurately. Apply reasoned judgment.

Learning objectives by lab unit:

1. Measurement and sampling—To define “measurement”; identify measurement scales; understand the importance of measurement integrity and select a simple random sample from an enumerated population.
2. Frequency Distributions—To construct and interpret stemplots; to construct and interpret frequency tables, histograms, and bar charts.
3. Summary Statistics—To calculate and interpret means, median, standard deviations, quartiles, and boxplots.
4. Probability Concepts and the Binomial Distribution—To understand various conceptions of probability; to calculate binomial probabilities; to use binomial probabilities to make help make judgments about data
5. Normal Probability Distributions—To calculate binomial probabilities; to use binomial probabilities to make help make judgments about data.
6. Introduction to Inference—To simulate a sampling distribution of a mean; to calculate and interpret a confidence interval for μ ; to determine sample size requirements to limit the margins of error when estimating μ ; To understand the logic of hypothesis testing; to perform and interpret a hypothesis test for a mean when σ is known.
7. Inference about Mean—To discern between paired and independent samples; to explore and describe a quantitative response based and calculate confidence intervals and hypothesis tests for means based on single and paired samples.
8. Comparing Two means—To explore and describe a quantitative response from two groups; to calculate and interpret confidence intervals and significance tests for means from two groups; [to determine the sample size requirements for a t test].
9. Inference about a proportion—To calculate and interpret confidence intervals for a proportion; to determine the sample size requirements to estimate a proportion with given margin of error.
10. Two proportions—To compare independent proportions; to test independent proportions for a difference.

Grade Component	Description	% Course Grade
Homework exercises	Homework is assigned each Tuesday and due the following Tuesday. Late papers will not be accepted. Graded for accuracy.	20%
Lab Workbooks	Graded for completeness each week.	10%
Exams	Two midterms and a final (closed-book, with formulas sheets provided)	20% each midterm 30% final exam

COMPONENT	% EARNED	×	weight	=	contribution
HW score	90	×	0.20	=	18
Lab notebook	85	×	0.10	=	8.5
Midterm #1	100	×	0.20	=	20
Midterm #2	82	×	0.20	=	16.4
Final	85	×	0.30	=	25.5
Weighted average =					88.4
					Grade: B+

Grade cutoffs:

100-97%	A+	89-87%	B+	79-77%	C+	69-67%	D+	Below 60%	F
96-93%	A	86-83%	B	76-73%	C	66-63%	D		
92-90%	A-	82-80%	B-	72-70%	C-	62-60%	D-		

The course Web site lists the schedule, assignments, and test dates.