

PACIFIC UNION COLLEGE SYLLABUS

STAT 222

INTRODUCTION TO STATISTICS

Spring 2008

COURSE DESCRIPTION: Descriptive statistics, graphical methods, basic concepts of probability, binomial and normal probability distributions, central limit theorem, hypothesis testing involving means, confidence intervals, introduction to correlation and regression. Examples from a wide variety of disciplines, including business, the social sciences, and the life sciences, to prepare students with varying backgrounds and interest to become intelligent consumers and users of statistics.

Prerequisite: MATH 096 or equivalent.

STUDENT LEARNING OUTCOMES: You should obtain a basic understanding of how statistics are used (and misused) in modern society. You should gain understandings of basic probability and statistical distributions that will help you in reading and critiquing the literature in other disciplines. You should acquire an adequate background for further study in statistics.

TEXT AND CALCULATOR: David S. Moore, *The Basic Practice of Statistics*, W. H. Freeman, 2007 (fourth edition). You will need a calculator that does two-variable statistical calculations. The TI-83 graphing calculator is easy to use and costs around \$100. Another good choice is the TI-30X IIs, which is very easy to use and costs less than \$20. Both calculators are available at the college bookstore. Please bring your book and calculator to class.

SOFTWARE: Qwikstat software is available on the computers in the Computer Lab in CSH 232. If you wish to download a free copy to your own Windows Computer, go to www.puc.edu/Faculty/Lloyd_Best and click on the link to download Qwikstat. Once you save and install the program, you will need to supply the proper user name and a registration code **or it will not function correctly**. Please put Student (with a capital S) for the user name. The registration code is bgdm-gdee-dmba-babn-jkgj

INSTRUCTOR: Lloyd Best (Lbest@puc.edu). Phone: office/965-6591; home/942-9680. Fax: office/965-7135.

OFFICE: CSH 238G. **HOURS:** Mon: 10-11 & 2-4; Tues: 10-11 & 1-4; Wed: 10-11; Thurs: 11-12; Fri: 10-11.

CLASS EXPERIENCE AND ATTENDANCE: Each day you can look forward to interactive presentations of the day's lesson. Previous students have discovered that missing three or more class presentations makes it very difficult to pass the course. Some explanations presented in class are not in the text. In addition, announcements made during classes have the same force as statements in this syllabus. Changes to the listed homework assignments may be announced in class.

STUDYING WITH OTHERS: You are encouraged to study with other classmates. Comparing ideas and solutions helps to clarify understandings. Be sure that your written assignments reflect your own understanding and not just what someone else figured out. You probably don't "know" it if you can't write it out yourself.

TUTORING HELP: Tutors from the Teaching and Learning Center conduct evening help sessions to answer questions and give suggestions. Hours and locations for these help sessions will be announced in class. These hours will be posted on the TLC website. I am also happy to help you during my office hours, by appointment, or at other times when I am free.

LEARNING DIFFERENCES: PUC strives to accommodate students with documented learning differences. If you have a learning disability, or think you might have one, please check with the Teaching and Learning Center. The TLC staff will provide a diagnosis and will work with us to accommodate your situation.

GRADING: The final grade will be based on Homework (20%), Quizzes (15%), and Tests (65%). Grades are posted on D2L.

A	A-	B+	B	B-	C+	C	C-	D+	D	D-
92%	88%	84%	80%	75%	70%	65%	60%	57%	53%	50%

HOMEWORK: Assignments are listed on the next page. You are expected to show your work. Before working on the assignment you will need to carefully read the textbook. Pay careful attention to the textbook examples.

Late work is not accepted unless delayed by illness or other emergency. Any late work must be submitted directly to me the day you return to class.

QUIZZES: You should expect a quiz daily. Missed quizzes will not be made up. If you must miss a quiz, you must notify me in advance. (You may leave a voice mail message at 6591.) An excused missed quiz will be averaged with other quiz scores.

TESTS: Tests must be taken at the scheduled time (see schedule). Only tests which are missed due to illness or emergency circumstances may be made up. If you must miss a test, you are required to notify me in advance.

ACADEMIC INTEGRITY: You are encouraged to work with others on assignments, but your work should reflect your own understanding. Homework which matches word-for-word with answers in the back of the book or with another student's work will be given no credit. All quiz and test work must be completely your own. A student involved in cheating (or assisting in cheating) should expect to be dismissed from the course with a failing grade. See PUC's Code of Academic Integrity (page 213 of the *General Catalog*) for details.

Date	Homework To Turn In This Day	Class Lecture/Discussion
Mar 31	None	Introduction to Statistical Thinking & Reasoning
Apr 1	Read "To The Student..." (p. xxiii-xxix)	§1: Picturing Distributions with Graphs
Apr 2	H1: (p6) 1,3,6,9,11,30,32,37	§2A: Mean, Median, Quartiles, Boxplots (p37-47)
Apr 4	H2A: (p41) 2,3,4,5,8,23,29	§2B: The Standard Deviation (p47-55)
Apr 7	H2B: (p50) 9,10,11,31	§3A: Normal Distributions:68-95-99.7 rule (p64-76)
Apr 8	H3A: (p67) 1-9,27,28,32,35	§3B: Normal Distributions: Using Tables (p76-83)
Apr 9	H3B: (p80) 10,11,13,14,37,40,45	§4A: Scatterplots (p90-98)
Apr 11	<i>Teacher gone to Math Conference</i>	<i>No Class</i>
Apr 14	H4A: (p92) 1,2,4,5,6,23	§4B: Correlation (p99-104)
Apr 15	H4B: (p100) 8ac,10,11,24,26,32,34,35	§5A: Regression (p115-125 and 128-131)
Apr 16	H5A: (p118) 1,2,3a,4,6,8,26,33	§5B: Cautions: Correlation, Regression (p132-136)
Apr 18	H5B: (p133) 9-13,34,47	§6: Two-Way Tables
Apr 21	H6: (p152) 1,2,4,5,19-23,31	§8A: Simple Random Sampling (p189-199)
Apr 22	H8A: (p192) 1-5,7,8,10	§8B: Other Sampling Designs (p200-206)
Apr 23	H8B: (p201) 12,14,15,32,37,39,46	§9: Producing Data: Experiments
Apr 25	H9: (p215) 1,2,4,5,8,9,11,12,13,43,47	Review
Apr 28	(Review for the test.)	TEST Chapters 1-9 [100 points]
Apr 29	Read ahead into Chapter 10	§10A: Introducing Probability (p246-254)
Apr 30	H10A: (p249) 1,4-9,30,36,37	§10B: Probability-Discrete, Continuous (p255-263)
May 2	H10B: (p256) 11,12,13,15-18,31,38,51	§12A: General Probability Rules (p302-308)
May 5	Begin H12A (listed below)	§12A: General Probability Rules (p302-308), cont.
May 6	H12A: (p306) 1,2,4,5,6,27,28,29,31	§12B: Conditional Prob & Tree Diag's (p309-316)
May 7	H12B: (p310) 7,8,10,12,13,14,16,37,39	§13A: Binomial Probabilities (p326-331)
May 9	H13A: (p328) 1-4,6,7,25	§11A: Sampling Distributions (p271-279)
May 12	H11A: (p272) 1-3,5,6,8,9,27,28	§11B: The Central Limit Theorem (p280-285)
May 13	H11B: (p285) 10-13,35,42	§14: Confidence Intervals: The Basics
May 14	H14: (p348) 1,2,5,6b,7,8,9,30,37	§15A: Tests of Significance: Basics (p362-371)
May 16	H15A: (p364) 1,3,5-9,12,13,15,17,43	§15B: Tests of Significance, continued (p372-380)
May 19	H15B: (p376) 18,20-23,25,44,47	§16: Cautions & Type I & II Errors
May 20	H16: (p389) 1-5,(6 or 7),8,10,14,15	Review
May 21	(Review for the test.)	TEST Chapters 10-16 [100 points]
May 23	Read ahead into Chapter 18	§18A: Infer. for Pop. Mean: Conf. Inter. (p433-438)
May 26	<i>May Day</i>	<i>No class</i>
May 27	H18A: (p434) 1,3,4,5,6,28,29	§18B: Infer. for Pop. Mean: Hyp. Test (p439-450)
May 28	H18B: (p441) 8,9,11,14,34,41	§19: Two-Sample Problems (p460-475)
May 30	H19: (p461) 1-4,6,7,30,32	§20: Inference for a Population Proportion
June 2	H20: (p492) 1-4,6-9,11,16,17,30	§21: Comparing Two Proportions
June 3	H21: (p517) 1,3,5,17	§23A: 2 Categorical Var's: Chi-Sq Test (p547-560)
June 4	H23A: (p549) 1,5,7,33	§23B: Uses of the Chi-Square Test (p560-570)
June 6	H23B: (p568) 15,16,18	Review
June 10	Tuesday 9:45-11:45	FINAL TEST Chaps 18-23 [100 pts.]