

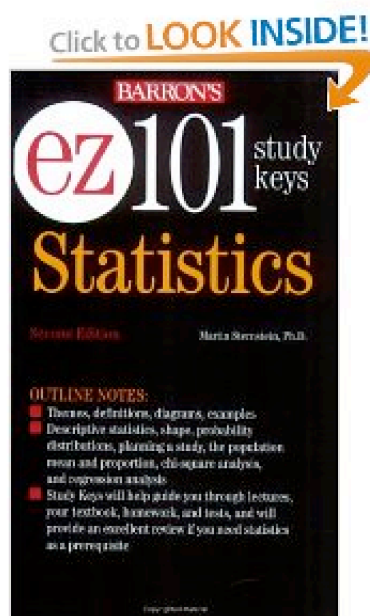


STT 200 - 201 and STT 200 - 202
Summer 2010 (revised 6-18-10)

STT 200		Statistical Methods						
Section	Credits	Hours Arranged	Days	Times	Room	Building / Location	Instructor	
 201	3	2	M W F	12:40 PM - 2:30 PM	C210	Wells Hall	R. Lepage	
7/6/2010 - 8/19/2010								
 202	3	2	M W F	8:00 AM - 9:50 AM	C111	Wells Hall	R. Lepage	
7/6/2010 - 8/19/2010								

Professor Raoul LePage, A 428 Wells Hall, lepage@msu.edu
 Office Hours during 7-7-10 to 8-19-10 are 10:30-11:30 MWF or by appointment.

Textbook: Statistics second edition, by Martin Sternstein, Ph.D., Barron's ez101 Study Keys, ISBN 0-7641-2915-5, \$8.99, paper, handy size, black cover. **NOTE: all other sections of STT200 use a different textbook but the STT200 course description and content is the same for all sections including our sections STT200-201 and STT200-202.**



Classes Begin	Tue, 7/6
Martin Luther King Day University open, classes cancelled	
Holiday-University Closed	
End of Tuition Refund	
Holiday-University Closed	
Middle of Semester	Wed, 7/28
Spring Break	
Holiday-University Closed	
Classes End	Thu, 8/19
Final Exams	Last Class Day

Help Room. For summer 2010 undergraduate courses our Help Room in C100 Wells Hall will open on Tuesday from M-F 9:00-12:00, 1:00-4:00 and M-Th 5:00-7:00.

Catalog course description for STT 200 (all sections):

Course: STT 200 Statistical Methods
Semester: Fall of every year, Spring of every year, Summer of every year
Credits: Total Credits: 3 Lecture/Recitation/Discussion Hours: 4
 3(4-0)
Prerequisite: (MTH 103 or MTH 110 or MTH 116 or MTH 124 or MTH 132 or LB 118) or designated score on Mathematics Placement test
Not open to students with credit in: STT 201 or STT 421
Description: Data analysis, probability models, random variables, estimation, tests of hypotheses, confidence intervals, and simple linear regression.

Calculator: I present the material in such a way that any calculator capable of x^y will suffice. However, I am sure that most of you will want to have a calculator such as TI-83 (or later) which has built-in routines for σ , s, confidence intervals, z-scores, t-scores, chi-square, and regression. The book often refers to the TI-83.

About the pace of this course. We plan to cover 51 of the book's 73 short "Keys."

- 1, 2, 3, 5, 6
- 10, 13, 14
- 18, 19, 21, 22, 23, 24, 25, 20
- 27, 29, 30, 31, 33 (plus normal approximation of Poisson)
- 35, 36, 37, 38
- 40, 41, 42, 43, 44, 45, 46
- 49, 50, 51, 52, 53, 54, 55, 56
- 59, 61, 62, 63, 64
- 67, 68, 69, 70, 71, 72

These 51 keys are spread over $18-2 = 16$ class periods (excluding the in-class **7-28-10 mid-term** and **8-18-10 final exam** periods). That works out to around 3 Keys per period.

In addition to the exercises posted below there will be others announced in class.

Date	Keys Assigned	HW keys
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W July 7	1, 2, 3	8
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Submit solutions to the first three and the last from key 8 with all data modified to drop the first value. For example, data {2, 8, 33, 2, 20} becomes {8, 33, 2, 20}. Learn to use your calculator to obtain the answers.

F July 9 5, 6, 10, 13, 14 8, 17

Submit solutions (from key 8) to the fifth (but delete all students earning 15,000) and sixth (but instead for IQ, whose mean is 100 and standard deviation is 15, giving the z-score for IQ 111 and the IQ for z-score -1.20). Also, submit the solution to the second from key 17, except employ only three intervals instead of the original nine, grouping the data into raw score intervals -0.25 to 5.62, 5.62 to 11.48, 11.48 to 17.34. Data falling on a boundary such as 5.62 are ordinarily dealt with according to some "endpoint convention." That is not an issue for this data.

M July 12 18, 19, 21 26

Submit solutions to the first three. Except suppose that in the first the probability of defective is 0.2 not 0.1; in the second calculate the probability of fewer than 6 if the probability is 0.4 (not 0.35) that any particular customer uses the coupon; in the third calculate the probability that a fair coin produces exactly 50 heads in 100 tosses and also the probability the coin produces exactly 5000 heads in 10000 tosses (you need the calculator for this).

W July 14 22, 23, 24, 25 26

Submit solutions to the fourth and fifth except that for the fourth determine the mean and standard deviation of the number thrown by a six-sided die (equal probability on each of one through six); for the fifth calculate the mean and standard deviation of the number of heads thrown in 100 tosses of a coin (and also for the number of heads thrown in 10000 tosses of a coin). Additionally (simulation), toss a die 100 times and calculate the average of the 100 numbers thrown uppermost. Does this sample average come close to the mean you calculated from the probability model?

F July 16 20, 27, 29, 30 34

Submit all, except for the first assume the player has probability 0.18 of getting a hit at each at-bat and there are 8 at-bats; for the second suppose the mean number of lightning strikes in a particular marina in Florida is 3.7 per season; for the third suppose that the average resistance is 220 ohms and the standard deviation is 4.7 ohms; for the fourth suppose a 5% rate of no-shows instead of 4%.

M July 19 Review. Prepare solutions to the posted assignment. These are due at the conclusion of the first hour of class. A short bonus quiz on this material will be given during the second part of the period.

W July 21 Review. Prepare solutions to the posted assignment. These are due at the conclusion of the first hour of class. A short bonus quiz on this material will be given during the second part of the period.

F July 23 Review. Prepare solutions to the posted assignment. These are due at the conclusion of the first hour of class. A short bonus quiz on this material will be given during the second part of the period.

Class website. Handouts and other materials will be posted to
www.stt.msu.edu/~lepage
Click on "STT200 Sections 200-201 and 200-202, Summer 2010."

How the book will impact this course: Before class, read and re-read all assignments posted for that period. Identify the parts you have trouble with, attempt all of the exercises and read their solutions. Once in class have the book and your notes before you. I may call on you for credit (or debit). I like to use graded in-class activities that certify to your understanding and afford you the opportunity to interact with classmates.

Reasons to choose this book.

- a. The author understands how to approach thinking about statistics.
- b. Explanations are for the most part carefully framed.
- c. Overly windy "explanations" are avoided.
- d. Assumptions are emphasized, not just highlighted and then ignored.
- e. It is a good value, quick reference and "a keeper."
- f. You should be able to read it well enough on your own to come to class prepared to have your questions answered.
- g. Because it is small and handy, and contains all the needed tables, you can carry it about and especially bring it to class so we are always "on the same page."

Grading. Your course grade will be determined from graded work as follows

70% average GRADE on mid-term and final exams
30% average HW GRADE
Bonuses may add to the above GPA

3.8 or above goes to 4.0
3.3 or above, but below 3.8, goes to 3.5 etc.