Statistics 300	–	Introduction to Probability and Statistics (Course Code – 10944)
Time	–	Summer 2012: MTuWTh 8:00 to 10:45 a.m. [6/11/2012 to 7/20/2012]
Room	–	Library – Room L-110
Instructor	–	Lawrence C. Larsen
Phone	–	(916) 346-6324
Office	–	<no office on campus>
Office Hours	–	After each class from 10:55 to 11:30 a.m.
e-mail:	–	larsenl@crc.losrios.edu
Class Web Site	–	http://web.crc.losrios.edu/~larsenl/ (All letters, no numbers)

PREREQUISITES

Intermediate algebra (Math 120 or Math 125) with a "C" or better. An automated system checks prerequisites taken in the Los Rios District since 2003. Show older Los Rios grade reports to the instructor, but take transcripts from outside the Los Rios Community College District to the Counseling Center (2nd floor of the Library building), and have a counselor certify that the course you took satisfies the prerequisite for this class. Please give the instructor a Los Rios transcript, an assessment test record, or approval from the counseling office by the close of class on 6/14/2012. Instructor can accept math above algebra (trigonometry, pre-calculus, etc.) if the course was taken at a college. High School AP not taken at a college must go to counseling.

TEXTBOOK

Essentials of Statistics, 4th Edition by Mario F. Triola [any 4th edition format, such as paperback, e-book, loose leaf, etc. is OK].

The Texas Instruments Model TI-30X IIS or TI-30X IIB is ***"required"***. This calculator is widely available for less than $20.00 (tax included). A TI-30X will not work. If you are determined to use a graphing calculator, you are on your own and should start a study group immediately.

COURSE OBJECTIVES

1. Develop skills in understanding and applying basic statistical methods.
2. Develop an appreciation for the use of statistics in decision making, and an appreciation of its limitations.
3. Develop an ability to use computers and/or calculators for statistical analysis of data.

COURSE DESCRIPTION

The course covers basic concepts, descriptive statistics, probability, random variables, probability distributions, parameter estimation, hypothesis testing, linear correlation, linear regression, contingency tables, and analysis of variance. Applications are made to business, social sciences, and natural/physical sciences.

GRADING POLICY

Every student has the opportunity to earn an "A" in the class. Students are in competition with the material, not with each other (i.e., not graded on a "curve"). Grades are based on three exams and about 20 quizzes as follows:

Quizzes – 25 % (One quiz will be dropped in each of the three Units)
Unit1 Exam – 25 % (on Thursday, June 30)
Unit2 Exam – 25 % (on Thursday, July 14)
Unit3 Exam – 25 % (on Thursday, July 28)
[no exams will be dropped]

Exams and quizzes are "open notes and open book." Do not plan to look everything up during an exam or quiz. The exams are challenging, and many problems will not "look like" others that you have practiced, though they will involve the same principles. "Open notes and open book" simply means that you will need to be very well organized. If you need to find something in the book or in your notes, you should be able to locate it in 15 seconds or less.

Exercises from the book are assigned for practice in preparation for quizzes and exams. Solutions to these exercises should be collected in a spiral bound binder or in 'blue books." Your work on these exercises will not be handed in or graded, but it is considered part of your notes, so you can refer to them during exams.

Letter grades will be determined by the following schedule:

A -- 90 to 100 %
B -- 80 to 89 %
C -- 70 to 79 %
D -- 60 to 69 %
F -- < 60 %

POLICIES

1. Missed exams are very difficult to make up. Check the schedule and plan for all exams. Talk to the instructor well ahead of time if the schedule for an exam is a problem for you.
2. Attendance is taken every class session for every hour (new policy).
3. If you decide to drop the class, it is your responsibility to follow the prescribed procedures. If you just stop attending, you may end up with an "F" on your transcript.
4. Cell phones must be silenced in the classroom. Other noise-makers (pagers, laptops, etc.) must be quiet. Attention must be toward the class, so outside communications (texting, ect.) are not acceptable.
5. Honesty (doing your own work as assigned) is required. Students may collaborate on all practice problems and "take home" quizzes, but you should try them before accepting any help from others. The instructor will follow campus policies on academic integrity. Please take this seriously, get the benefit of doing all your own work, and expect to be caught and reported if you "cheat". To reduce temptations to cheat, exams may be copied before they are returned, and multiple versions of exams may be prepared so the answers your neighbor gets may not be the correct answers for you.

RESOURCES

- Math Center (Enroll in ¼ unit to get full access for whole semester)
  - informal tutoring
  - computers special programs for statistical analysis
  - good place to get together and work with others in the class
- MESA (Math/Engineering/Science Achievement) Center
- Instructor
  - Phone or e-mail (call instructor to alert him if you send an e-mail)
  - Phone or e-mail early so we have time to handle your questions in a timely way
  - Desire2Learn (D2L) will be used to report quiz scores, exam scores, and current standing / final grades.

Important Dates from the CRC website.

Summer 1st 6-week Term	Start-End Dates of Terms	Last Day to Drop Class to Qualify for a Refund for Enrollment and Tuition Fee	Last Day to Drop Class Without Notation on Record	Last Day to Drop Class with a "W" Grade	Last Day to Petition for Pass/No Pass
Full Semester	June 11 - July 20 (Last day to enroll, June 30)	06/15/2012	06/15/2012	07/10/2012	06/22/2012

CONTACT NUMBERS

CRC Science/Math/Engineering Department (916-691-7204)

CRC Math Center (916-691-7459)

CRC Bookstore (916-691-7319)

CRC Admissions & Records (916-691-7411)

Student Learning Objectives (SLOs)
Learning Outcomes and Objectives for Statistics 300

Upon completion of this course, the student will be able to:

- SLO 1: ORGANIZE, DISPLAY, DESCRIBE AND COMPARE REAL DATA SETS.
- Organize and display data appropriately by preparing tables and graphs.
- Analyze data by computing measures of central tendency, measures of dispersion, and measures of position.
- Analyze bivariate data for linear trends using the least-squares regression model and the correlation coefficient.
- SLO 2: DISTINGUISH BETWEEN PROBABILITY MODELS APPROPRIATE TO DIFFERENT CHANCE EVENTS AND CALCULATE PROBABILITY ACCORDING TO THESE METHODS.
- Compute probabilities using the laws for sums, products, conditionals, and complements.
- Analyze both discrete and continuous probability distributions by considering areas under the graph of a function or a histogram.
- Use the normal and binomial probability distributions to compute probabilities.
- SLO 3: APPLY INFERENTIAL STATISTICAL METHODS TO MAKE PREDICTIONS, DRAW CONCLUSIONS ABOUT HYPOTHESES AND COMPARE POPULATIONS.
- Select the appropriate hypothesis test, perform the necessary computations and comparisons for the test, and explain the conclusion of the test.
- Test significance of correlation and make predictions based on linear trends using the least-squares regression model.
- Create and interpret confidence interval estimates for population parameters based on appropriate probability models.

Tentative Schedule Unit #1		
Date	**Chapter/Sections**	**Sections in Textbook and Homework Exercises***
06/11/2012	1-1, 1-2, 1-3, 1-4	1-1(study the vocabulary on pages 4 and 5); 1-2(odd problems 1-27); 1-3(odd problems 1-27); 1-4(odd problems 1-29)
06/12/2012	1-4, 2-1, 2-2, 2-3, 2-4, 3-2	2-2(terms,5,7,9,11,13,15,21); 2-3(read only); 2-4(read only)
06/13/2012	**Quiz 1*** 3-2, 3-3, 3-4, 3-5	3-2(1-5,7,9,15,17,25); 3-3(1-5,9,19,31,33,35); 3-4(1-5,7,9,11,13,15,17, 19,20,22,24,27); 3-5(5);
06/14/2012	**Quiz 2; Quiz 3** 4-2, 4-3, 4-4	4-2(7,9,11,13,15,17,21,27, [if you want try this one] 36); 4-3(7,9,13,15, 17,21,23,27); 4-4(7,11,13,15,17,19, [next 2 are optional] 21,23)
06/18/2012	**Quiz 4** 4-5, 4-6, 5-2	4-5(5,7,11,13,15,17,19,27); 4-6(odd problems 5-15,21,23,25,27,31, [hard one] 32,33,37)
06/19/2012	**Quiz 5; Quiz 6** 5-3, 5-4	5-2(3-7,9,11,13,17,19,21); 5-3(odd problems 5-31,34); 5-4(3,5,7,9,11, 15,19)
06/20/2012	**Quiz 7 Review for Unit #1 Exam**	Complete as many problems as you can in the Example Exam Questions for Unit1 (distributed to students and also available on WEB site) before this review session. Solutions will only be shown during class.
06/21/2012	**Unit #1 Exam**	Material from Chapters 1, 2, 3, 4, and 5
* If necessary, the instructor may delay or delete from the schedule one or more quizzes. Homework exercises are only for your practice and will not be turned in to the instructor. Solutions to selected homework problems will be shown during class time, especially when students ask for solutions to particular problems.		

Tentative Schedule Unit #2		
Date	**Chapter/Sections**	**Sections in Textbook and Homework Exercises***
06/25/2012	6-2, 6-3, 6-4	6-2(1,4,odd problems 5-39, 43); 6-3(1,2,4,5,7,9,11,13,15,17,23); 6-4(read only)
06/26/2012	**Quiz 8*** 6-5; 7-2	6-5(1,4,5,7,11,13,15); 7-2(3,4,9,11,21,23,25,27,29,33,35,41,43,45)
06/27/2012	**Quiz 9** 7-3, 7-4; 7-5	7-3(33,35,37); 7-4(3,13,17,19,21,25); 7-5(1,2,5,7,9,11,17,19,21)
06/28/2012	**Quiz 10** 8-2, 8-3; 8-4	8-2(odd problems 3-39, bonus 47); 8-3(1,2,3,5,8,9,11,19,23); 8-4(no problems); Explain 2% extra credit opportunity.
07/02/2012	**Quiz 11** 8-5, 8-6	8-5(1,2,5,7,13,15,17,19,21,27); 8-6(1,5,7,9,11,13)
07/03/2012	**Quiz 12; Quiz 13** 9-4	9-4(5,7,11)
07/04/2012	**Quiz 14; Watch Video Review for Unit #2 Exam**	Complete as many problems as you can in the Example Exam Questions for Unit2 (distributed to students and also available on WEB site) before viewing the video review session for Unit #2.
07/05/2012	**Exam #2**	Material from Chapters 6, 7, 8, and 9-4

* If necessary, the instructor may delay or delete from the schedule one or more quizzes. Homework exercises are only for your practice and will not be turned in to the instructor. Solutions to selected homework problems will be shown during class time, especially when students ask for solutions to particular problems.

Tentative Schedule Unit #3		
Date	**Chapter/Sections**	**Sections in Textbook and Homework Exercises***
07/9/2012	9-2; 9-3	9-2(1,2,3,4,5,7,13,15,17,23)
07/10/2012	9-3	9-3(5,6,7,8,9($\sigma_1=\sigma_2$),13($\sigma_1=\sigma_2$),17($\sigma_1=\sigma_2$),21($\sigma_1<>\sigma_2$),23($\sigma_1<>\sigma_2$))
07/11/2012	**Quiz 15** 10-2, 10-3	10-2(5,9,10,11,13,15); 10-3(5,9,10,13,15,36)
07/12/2012	**Quiz 16** 10-4; 10-5 (rank corr.)	10-4(5,7,13,15,17,19); 10-5(no problems) practice with the p-value method of hypothesis testing
07/16/2012	**Quiz 17** 11-2, 11-3	11-2(1,2,3,5,9,12,21); 11-3(1-4,13,17,21)
07/17/2012	**Quiz 18** 11-4	11-4(1-4,5,9,11)
07/18/2012	**Quiz 19** **Review for Unit #3 Exam**	Complete as many problems as you can in the Example Exam Questions for Unit3 (distributed to students and also available on WEB site) before this review session. Solutions will only be shown during class.
07/19/2012	**Exam #3**	Material from Chapters 9, 10, 11
* If necessary, the instructor may delay or delete from the schedule one or more quizzes. Homework exercises are only for your practice and will not be turned in to the instructor. Solutions to selected homework problems will be shown during class time, especially when students ask for solutions to particular problems.		