STA 2014
PRINCIPLES OF STATISTICS
SPRING 2006

INSTRUCTOR: Dr. Xiaogang Su

OFFICE: Room 102, Computer Center II (phone: 407-823-2940)

OFFICE HOURS: Wednesday – 2:00 to 4:00 pm
Thursday – 1:00 to 2:00 pm

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HOMEPAGE: http://pegasus.cc.ucf.edu/~xsu/STA2014/

REQUIRED TEXT: *Elementary Statistics* by M.K. Pelosi & T.M. Sandifer (2003)

CREDIT HOURS: 3 (2 lecture, 1 lab), 3:00-4:15pm TR, COMM Room #110
01/09/2005 Monday – 4/24/2005 Monday

PREREQUISITE: None.

COURSE GOALS: – increased quantitative literacy
– recognition of the value of statistical concepts and reasoning
– increased skepticism of all numerical or graphical information

EXAMS: There will be 4 exams during the semester and an optional cumulative final exam during final exam week. There will be no make-up exams for any reasons. If you miss an exam you will receive a grade of zero on that exam and you must take the final. If you are not satisfied with your 4 exam scores you may take the final and the best 4 out of 5 exams will contribute toward your total score. The exams are closed book and closed notes. Two 8.5"×11" cheat sheets using front and back sides (made by you) will be allowed. You will need a calculator for the exams (a TI-30Xa will suffice). Sharing of calculators and formula sheets will not be allowed. Turn off cell phones and keep them off your desk during exams. You will need a raspberry scantron with the UCF logo (50 questions on front page) to take an exam. You will not be allowed to take an exam if you do not have a scantron sheet and you will receive a grade of zero. You will need a picture ID card (driver's license or UCF card) to turn in your exam. Your exam will not be accepted if you do not have a picture ID card and you will receive a grade of zero. You must remove hats and sunglasses while taking an exam. The exams will not be returned to you but you may review them with your teaching assistant during their office hours for a period of 2 weeks after posting of grades. Any grade discrepancies must be presented to them in writing during that 2 week period.

Exam 1:	Thursday, February 9	100 points
Exam 2:	Thursday, March 2	100 points
Exam 3:	Thursday, March 23	100 points
Exam 4:	Thursday, April 13	100 points
Final Exam:	Thursday, April 27 @ 1:00 pm to 3:50 pm	100 points

QUIZZES: There will be 5 quizzes (each counting 25 points) during the semester to be given near the end of lab discussions. The specific schedules of these quizzes are to be announced during the semester.

There will be no make-up quizzes for any reasons. If you miss a quiz you will receive a grade of zero on that quiz. The best 4 out of 5 quizzes will contribute toward your total score. The quizzes are open book and closed notes. You will need a calculator for the quizzes. Sharing of calculators and books will not be allowed. Turn off cell phones and keep them off your desk during quizzes. You will need a raspberry scantron with the UCF logo (50 questions on front page) to take the quizzes. You will not be allowed to take a quiz if you do not have a scantron sheet and you will receive a grade of zero. You must take a quiz in the section in which you registered. The quizzes will not be returned to you but you may review them with your teaching assistant during their office hours for a period of 2 weeks after posting of grades. Any grade discrepancies must be presented to them in writing during that 2 week period.

MINUTE PAPERS: I retain the right on any lecture day to ask for a "minute paper". There will be no advanced warning of a minute paper, they will be given near the end of a lecture and they will cover a topic discussed that day. You will need a 4.25″×5.5″ plain sheet of white paper (take a 8.5″×11″ sheet, fold it in half, fold it in half again and then cut along the folds). A minute paper is extra credit worth 3 points each. Consequently, it is recommended that you attend every lecture.

GRADING POLICY: Your final grade will be based on a 500 point total. The grading scale I will use this semester is as follows:

Grade	**A**	**A-**	**B+**	**B**	**B-**	**C+**	**C**	**NC**	**NC/F**
Range	500-465	464-450	449-435	434-420	419-400	399-385	384-370	369-300	< 300

Your exam and quiz scores will be posted on the class webpage.

COURSE OUTLINE: I expect to cover selected sections from Chapters 1, 2, 3, 5, 6, 7, 8, 9 and 14. The following is the list of chapters, sections and assigned problems. The problems listed below are only a minimum number of problems. If you are having trouble in the class, I would suggest that you do more problems. The assigned problems will not be collected or graded but it is strongly recommended that you do these problems as we cover the sections during the term.

● **Chapter 1:** The Language of Statistics

Section	**Title**	**Assigned Problems**
1.2	The difference between the population and a sample of a population	1.1, 1.2
1.3	The difference between a parameter and a statistic	1.11, 1.13
1.4	Factors that influence sample size: some sampling and sample size considerations	
1.5	Selecting the sample	1.17, 1.20
1.6	Types of data	1.22, 1.24, 1.26
1.7	The difference between descriptive statistics and inferential statistics	

● **Chapter 2:** Graphical Displays of Data

Section	**Title**	**Assigned Problems**
2.2	Organizing data	2.3, 2.5, 2.9
2.3	Graphical displays of data	2.15, 2.16, 2.19
2.4	Describing and comparing data	2.25

● **Chapter 3:** Numerical Descriptors of Data

Section	Title	Assigned Problems
3.2	Describing data numerically	
3.3	Measures of central tendency	3.4, 3.6
3.4	Measures of dispersion or spread	3.11, 3.13
3.5	Measures of relative standing	3.19, 3.22(a)
	End of chapter	3.31, 3.34, 3.40, 3.43

● **Chapter 5:** Probability

Section	Title	Assigned Problems
5.2	The language of probability	5.3, 5.4
5.3	Laws of probability: OR and AND	5.7, 5.8
	End of chapter	5.21, 5.22

● **Chapter 6:** Random Variables and Probability Distributions

Section	Title	Assigned Problems
6.2	Random variables	6.3, 6.5
6.3	The binomial probability distribution	6.6, 6.7, 6.9
6.4	Continuous random variables	
6.5	The Normal Probability Distribution	6.11, 6.13, 6.14
	End of chapter	6.16, 6.18, 6.21, 6.24

● **Chapter 7:** Sampling Distributions and Confidence Intervals

Section	Title	Assigned Problems
7.5	Distribution of the sample mean, $\overline{X}$: the Central Limit Theorem	
7.6	The Central Limit Theorem – a more detailed look	
7.7	Drawing inferences by using the Central Limit Theorem	7.6, 7.9
7.8	Large-sample confidence intervals for the mean	7.11, 7.13(a), 7.16
7.9	Distribution of the sample mean: small sample and unknown σ	
7.10	Small-sample confidence intervals for the mean	7.21
7.11	Confidence intervals for qualitative data	7.28, 7.29
7.12	Sample size calculations	7.31, 7.35
	End of chapter	7.37, 7.39, 7.40, 7.42-7.44, 7.49

● **Chapter 8:** Hypothesis Testing: An Introduction

Section	Title	Assigned Problems
8.4	The steps in a hypothesis test	
8.6	Large-sample test of the mean: two-tailed tests	8.2, 8.5
8.7	What error could you be making?	8.10, 8.15
8.8	Which theory should go into the null hypothesis?	8.19, 8.24
8.9	One-tailed tests of the mean: large sample	8.28
	End of chapter	8.33, 8.34, 8.36, 8.37

● **Chapter 9:** Inferences: More One-Population Tests

Section	Title	Assigned Problems
9.2	Hypothesis test of the mean: small sample	9.5
9.4	Hypothesis test of a single proportion	9.10, 9.13
	End of chapter	9.16

● **Chapter 14:** The Analysis of Qualitative Data

Section	Title	Assigned Problems
14.2	Test for goodness of fit	14.1, 14.2
14.4	Chi-square test for independence	14.10
	Appendix exercises page E92	1
	Appendix exercises page E94	2

ONLINE COURSE INFORMATION: The class webpage will contain an up-to-date syllabus, a class schedule, special graphics used during lecture and any special announcements. Check this homepage at least once a week.

SUGGESTIONS FOR SUCCESS IN THIS COURSE: To master this subject (and most any other academic subject) you must be involved continuously, attend lecture and lab regularly, read the textbook before each lecture, review lecture notes daily and, at a minimum, work the assigned problems. Use the textbook to supplement and reinforce lecture notes. True understanding of the course material is demonstrated by successfully working problems without the aid of the textbook, solutions manual or lecture notes. If you rely heavily on the notes, solutions manual and textbook when working problems you have not sufficiently mastered the material. Stop, study further, and then return to the problems. You must understand the concepts involved in the presented material. Many of the exam and quiz questions will look nothing like the homework at first glance. If you learn to recognize concepts then it will not matter what the problem looks like, you can still solve it.

FINAL MESSAGE: The instructor reserves the right to modify the course content, the testing procedure and the test and quiz dates if, in the professional judgment of the instructor, such modification is in the best interest of fulfilling the course goals and assuring the academic integrity of the course and the institution.