Stat 145

Spring 2010

Class Website   **http://www.unm.edu/~nlucas**

Instructor: Nick Lucas   Phone: 710 – 0691
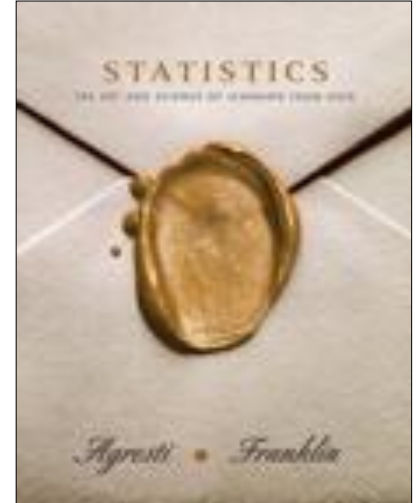
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<mark>Optional Text</mark>

Agresti, A. & Franklin, C. (2007). <u>Statistics. The Art and Science of Learning from Data. (First Edition).</u> New Jersey. Pearson Prentice Hall, Inc.

Course Description

Stat 145 introduces the student to the basic principles and applications of descriptive and inferential statistics. The issues which underlie the methods of statistical design and analysis are presented using various examples with the hope that the student will gain a better understanding of statistics and their applications. Although introductory statistics courses are often thought of as just another math class, this course focuses on the understanding and application of statistics rather than the underlying theoretical and computational aspects which often leave the student with a mindful of formulae but little understanding of their application and interpretation.

Students are encouraged to frequently ask questions and seek help from the instructor or available tutors. Time management is also extremely important. If you don't plan sufficient time outside of class for homework and study, you will always find yourself behind and confused. This class requires dedication, patience, and the motivation to learn. Your attendance to class is your responsibility and the consequence for non-attendance is also your responsibility. **Students requiring a reasonable accommodation are asked to contact the instructor immediately.**

Homework

There will be 8 homework assignments. These assignments will consist of short answer problems and problems to be worked using Microsoft Excel. Computers with MS Excel are available in the Student Learning Center. Each home work assignment is worth 3 to 5 points. Credit is given based on the amount of effort shown in your work and not the number of correct or incorrect answers. In order to obtain full credit, all work **must** be shown, including all work done in Excel. It is also strongly recommended that students make a personal copy of each homework assignment in the event credit is not given for a completed assignment. No homework assignments will be accepted after the corresponding exam.

Review Exercises

From time to time, students will be given exercises to review the material just presented. These exercises will provide students the opportunity to earn extra credit. Although there is no specific number of exercises planned, students can expect to have the opportunity to earn no less than 5 points extra credit.

Exams

There will be three exams. The first two exams are worth 15 points each. Exams will include material from the text and lecture and will consist of short answer, analytical, and identification items. Both exams will be closed book, closed notes. However, if necessary, you may use calculators. The third or final exam will be cumulative and a take-home exam. The final exam will require students to demonstrate their knowledge and skills in applying the information learned over the semester. The final exam is worth 36 points. Make-up exams are only given if you notify the instructor within 24 hours of the missed exam and have a reasonable excuse.

Grades

Your final course grade will be computed from the three test scores as well as homework scores. There are a total of 100 points possible for the course (8 homeworks @ 34 points; two exams @ 30 points; and the final exam @ 36 points; for a total of 100 points possible for the class). The assignment of final letter grades will be contingent on the total class performance. However, students may expect the following grading distribution to be used in lieu of the total class performance: A = > 89, B = > 79, C = > 69; 69 and below → Instructor's Withdrawal (or 'W').

Class Schedule

Week	Chapter	HW	Material Covered
1/18	1	1	Introduction; Why statistics? What is data? Scales of measurement; Populations versus samples
1/25	4		Observational Studies and Experiments; Types of variables; Research Designs; Sampling methods
2/1	2	2	Describing Data with Graphs: Pie Charts, Bar Graphs and Histograms
2/5			**Last day to drop a class(es) with a refund**
2/8	2		Measures of central tendency
2/15	2		Measures of Dispersion; **Review for Exam 1**
2/22			**EXAM1 → Chapters 1, 2, & 4; HWs 1 - 2; Rev Exr 1 – 2**
2/24	3	3	Examining relationships between variables: Correlation between two variables
3/1	3	4	Examining relationships between variables: Testing the statistical significance between two variables; Linear regression between two variables
3/8	6	5	Probability Distributions; The Normal Distribution
3/15	**?**	**?**	**SPRING BREAK ?**
3/22	6		Finding a given area under the normal distribution; Sampling Distributions
3/29	6		Standard error of sampling distributions; Review for Exam 2
4/5			**EXAM 2 → Chapters 3 & 6; HWs 3 - 5; Rev Exr 3 – 5**
4/7	7	6	Confidence intervals to estimate population proportions
4/12	7	7	Confidence Intervals to estimate population means; Using the t – distribution; Selecting a sufficient sample size
4/19	8 & 9	8	Hypothesis testing; Statistical errors; Statistical Power
4/26	9		Significance tests comparing population proportions; Significance tests comparing population means; How are confidence intervals and significance tests linked?
5/3	10		Nonparametric Tests: The Chi-square test; **Review for Exam 3**
5/5			**EXAM 3 DISTRIBUTED → Chapters 1 to 4, 6 to 10; HWs 1 – 8; Review Exercises 1 – 8**
5/12			**EXAM 3 due in Academic Office by 6:00 p.m. on May 13. Exams turned in after the deadline will NOT be accepted.**