

## **STAT 251**

### **Statistics for Business & the Behavioral Sciences**

**Instructor:** Stan Carlson, Associate Professor  
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**Office Hrs.:** MW 12:40–1:40pm, 5:30–6:30pm  
TTh 11:15–12:00pm, 3:45–5:00pm

**Text:** Johnson & Kuby, 2007. Elementary Statistics (10/e), Brooks/Cole.

**Class:** MW 6:40–8:20  
Room MH 110  
August 23 to December 14, 2006

**Overview:** STAT 251, statistics for business and the behavioral sciences, is a 3-credit introduction to elementary statistics. The course covers fundamental techniques for describing, analyzing, and interpreting data. Topics include estimation, elementary probability, hypothesis testing, regression and correlation, and basic concepts of statistical inference. A written research project is required. WebCT will be used as an enhancement tool for the course. MS-EXCEL will be used as a learning tool and an optional data analysis tool on selected homework assignments. The extra “practicum” part of the course (1 hour per week) provides students with the opportunity to ask questions and solve problems while the instructor is available.

**Expected Outcome:** The student will recognize the importance of statistics in their field or major and be able to apply and interpret elementary statistical procedures.

**Learning Goals.** The successful student will:

1. Define statistics and discuss why it is needed in fields involving research;
2. Differentiate between descriptive and inferential statistics;
3. Differentiate between quantitative and qualitative data;
4. Define key terms used in elementary statistics;
5. Descriptively analyze and present univariate and bivariate data;
6. Explain statistical hypothesis testing theory and procedures;
7. Solve problems using elementary rules of probability;
8. Describe discrete distributions and the normal probability distribution;
9. Analyze and interpret data using the following inferential statistical methods: single variable test of the mean, comparisons of two means (independent and dependent sampling), and the chi-square test.

**Assessment:** There will be at least one activity designed to assess the effectiveness of classroom techniques (lectures, discussions, tests, homework, videos, etc.) The assessment(s) will not be used for grading purposes but will provide feedback to help in the ongoing development of teaching techniques.

**Students are expected to:**

- Attend all scheduled classes and be on time
- Be well prepared for all activities
- Participate appropriately in classroom activities
- Complete all assignments on time
- Show interest, have fun, and study hard!

**The instructor will:**

- Be on time and well prepared for each class session
- Facilitate activities to enhance each student's understanding and appreciation of statistics
- Provide opportunities inside and outside of class for questions and clarification
- Be available during office hours on a dependable basis
- Be fair and clear in grading practices and the treatment of all students

**Evaluation and Grading:**

Major Tests	50%
Homework	25%
Research Project	20%
<u>Attendance/Participation</u>	<u>5%</u>
TOTAL	100%

A = 90–100%	B = 80–89%	C = 70–79%
D = 60–69%	F = below 60%	

Plus/minus modifiers may be used for final scores within one percentage point of the next closest letter grade.

The 4 major tests will be a mixture of objective questions (e.g., multiple choice), definitions, and word problems. There will be *no* make-up of major tests. Testing will take place in the Student Success Center (room 125) *or* the Math Lab (room 111); tentative testing periods are given in the schedule below.

Homework exercises are usually due at the beginning of the next class after being assigned. Homework *must* be done in pencil on 8½-inch by 11-inch paper; assignments completed using MS-EXCEL are the *only* exception. Homework will be self-graded using a colored pen other than black or red (blue, green, etc.). Homework turned in late will receive a 10% grade reduction. The lowest homework grade will be dropped.

Each student will conduct an original research project, which will involve collecting, analyzing, and interpreting data. The project may involve any subject amenable to statistical analysis; data may be obtained directly or indirectly. Project topics are due (for approval) on or before November 1. More details on the research project will be given early in the semester. The written project is due no later than noon, December 15. Late projects will *not* be accepted.

Students are expected to arrive *on time* and attend all scheduled class meetings. Each *unexcused* absence will result in the loss of one percentage point from your attendance/participation grade. You will also be expected to participate in homework reviews and class discussions; these will provide an opportunity to explore your understanding of the material in an informal setting. Come *prepared* to discuss the assigned material and homework.

## TENTATIVE CLASS SCHEDULE\*

WEEK	DATES	TOPIC/ ASSIGNMENT/ ACTIVITY
1	Aug. 23	Introduction; Chapter 1– Statistics; assign HW #1
2	Aug. 28, 30	Chapter 1; HW #2
3	Sept. 4, 6	Chapter 2– Descriptive Statistics: 1 Variable; HW #3 <i>Labor Day Holiday (Mon.)</i>
4	Sept. 11, 13	Chapter 2; HW #4
5	Sept. 18, 20	Chapter 2; HW #5; HW #6 Chapter 2; HW #7; HW #8
6	Sept. 25, 27	<b>Review: Test #1 (Ch. 1–2): Sept. 21–26</b> Chapter 3– Descriptive Statistics: Bivariate Data; HW #9
7	Oct. 2, 4	Chapter 3; HW #10; HW #11
8	Oct. 9, 11	Chapter 4– Probability; HW #12; HW #13 <i>Fall Break Holiday (Mon.);</i>
9	Oct. 16, 18	Chapter 4; HW #14
10	Oct. 23, 25	Chapter 4; HW #15 Chapter 5– Probability Distributions: Discrete Variables; HW #16
11	Oct. 30; Nov. 1	Chapter 5; HW #17 <b>Review; Test #2 (Ch. 3–5): Oct. 26–31</b> Chapter 6– Normal Probability Distributions
12	Nov. 6, 8	Chapter 6; HW #18 <b>Project topics due (Wed.)</b> Chapter 7– Sample Variability; HW #19
13	Nov. 13, 15	Chapter 8– Intro to Statistical Inference; HW #20; HW #21
14	Nov. 20, 22	<b>Review; Test #3 (Ch. 6–8): Nov. 9–14</b> Chapter 9– Inference: 1 Population; HW #22; HW #23
15	Nov. 27, 29	Chapter 10– Inference: 2 Populations; HW #24 <i>Thanksgiving Holiday (Wed.)</i>
16	Dec. 4, 6	Chapter 10; HW #25; HW #26
17	Dec. 11 (Mon.)	Chapter 11– Chi-Square Tests; HW #27; HW #28 <i>Review (6:30–8:30 PM)</i> <b>TEST #4 (Ch. 9–11): Dec. 11–14</b> <b>Project due noon, Dec. 15</b>

**\*More detailed information on assignments will be provided during class meetings.**

**THE LAST DAY TO DROP A COURSE IS TUESDAY, OCTOBER 17. THE LAST DAY TO WITHDRAW FROM THE COLLEGE IS FRIDAY, NOVEMBER 17. OTHER IMPORTANT DATES ARE LISTED IN THE FALL 2006 SCHEDULE OF CLASSES.**

### **Statement Regarding Academic Misconduct:**

Any student found guilty of academic misconduct shall be subject to disciplinary action. Academic misconduct includes, but is not limited to, the following actions. CHEATING, PLAGIARISM, UNAUTHORIZED POSSESSION OF EXAMINATIONS, RESERVE LIBRARY MATERIALS OR LABORATORY MATERIALS, UNAUTHORIZED CHANGING OF GRADES ON AN EXAMINATION, INSTRUCTOR'S GRADE BOOK OR GRADE REPORT, NONDISCLOSURE OR MISREPRESENTATION IN FILLING OUT APPLICATIONS OR OTHER COLLEGE RECORDS. The following disciplinary actions and sanctions may be imposed for any of the above infractions of regulations, disciplinary probation, disciplinary suspension, dismissal, expulsion.

### **Americans with Disabilities Act (ADA):**

If you have, or believe you have, a disability and would benefit from any accommodation(s), you may wish to register with the Student Services Office on the first floor of Martinez Hall. All medical information will be treated confidentially.

After you have registered, please make sure that your instructors receive a copy of the accommodation memorandum from Student Services within the first two weeks of class. It will be your responsibility to inform your instructors or the office of Student Services (in a timely manner) if the services/accommodations provided are not meeting your needs.

If you have a condition that may affect your ability to exit safely from the premises in an emergency or that may cause an emergency during class, you are encouraged to discuss any concerns with Ms. Irene Lutz, Campus Student Services Officer at 287-6629, or with your instructor(s).

Feel free to call Ms. Lutz at the number above or the NMSU Director of Institutional Equity, at 505/646-3635 with any questions about the Americans with Disabilities Act (ADA), and/or Section 504 of the Rehabilitation Act of 1973.

### **Disclaimer:**

The instructor, at his/her discretion, may modify this syllabus to meet the needs of a particular class of students. Adequate notice will be given should any change to the syllabus be needed.

### **Attendance and Student Performance:**

Students are expected to attend regularly all classes for which they are registered. When the number of absences is excessive and hinders and student's progress – normally, for a standard term, that would mean **more than three consecutive absences or five cumulative absences\*** – the instructor may recommend termination from the class.

Based upon the recommendation of the instructor, and with the concurrence of the Campus Academic Officer and the Campus Student Services Officer, a student will be dropped for persistent absences or for persistent failure to complete class assignments. Similarly, a student may be dropped for behavior that interferes with the educational environment of the class. Any student who has been dropped has the right to appeal through the Student Academic Grievance Policy (see the *Student Handbook*).

**\* The number of absences will be adjusted proportionally to the number of class meetings**