Mathematics 107-Introduction to Probability and Statistics
Fall, 2003-John Iskra

Text: <u>Elementary Statistics 9th ed. Mario F. Triola with computer disc and formula sheet</u>.

Materials : Calculator (TI-83) and Math 107 Notebook

Course Content : Visual displays of data, measures of central tendency and of variability, classification of data, counting, probability, Chebyshev's Theorem, normal distribution, binomial distribution, Central Limit Theorem, hypergeometric distribution, Poisson distribution, Confidence Intervals, Hypothesis testing (means, proportions, variances), Simple linear Regression and correlation, Analysis of Variance (one way), Contingency Tables, nonparametric tests (Wilcox Rank-Sum and Kruskal-Wallis Tests). Emphasis is on inference.

Goals: At the end of this course students should be able to: categorize a data set; work various simple probability problems; understand the role of functions in statistics; describe major misuses of statistics, recognize several distributions and characterize them; analyze interval data for which statistical tests involving means, proportions, medians, rankings, and variances are the parameters; interpret relationships in bivariate data; know the difference between parametric and nonparametric statistics in relation to inherent assumptions of the general statistical model; recognize the limitations of statistics; understand the role of statistics in analyzing data and in inference; use a computer and /or a calculator to find measures of central tendency, measures of variability, basic test statistics; interpret statistical findings in relation to the situation from which the data was drawn, describe the experimental nature of mathematical statistics, draw inferences using the vocabulary of statistics. The goal is for students to begin to be good consumers of information.

Grading: Your final grade will be determined by three weighted averages: Homework, which will count 10%; four exams which will count 12% each (48% all together); three experiments which will count 4% each (12% all together), and the cumulative final which will count 30%. Your grades in each of these four will be weighted and averaged like honor points are in your GPA. For example, say your HW average is a B+, your exam average is a C, your experiment average is an A-, and you earn a B on the final. Your course grade would then be: .10(3.3) + .48(2.0) + .12(3.7) + .3(.3) = 2.63, which, rounded up, translates into a B-.

Homework: Starting on September 4, I will be collecting some, or all, or maybe none of the homework problems assigned on the syllabus. The answers to many of these problems are in the back of the book. Thus, I won't be overly impressed if you simply hand in the answers to the problems. What I will be looking for is a series of steps or explanation of the reasoning you used to arrive at those answers. (This doesn't include writing: "Step 1. Get book. Step 2: Look up answer in the back of the book. Step 3. Copy answer from back of book onto paper.) Depending on many things I anticipate that most class periods will include some time during which you may witness *me* trying to

solve these problems. Of course, I will also be available outside of class to assist you. There is also tutoring available, as described below, and I encourage you to work together on the problems. Homework may not be turned in outside of class. You may, however, drop your two lowest homework grades.

Attendance: If you fail to attend you *will* be missed. If you are not in class to turn in your homework, you may not turn it in. In this sense, attendance may have a significant impact on your grade.

Tutors: Student tutors are scheduled for a limited amount of time per week, in the evenings, in the Gregory Study room. If you have difficulty with homework problems, you may want to discuss these problems with tutors. A listing of tutors for mathematics courses, with times and places, may be found posted outside the mathematics offices after the first week of classes.

Other Resources:
(1): The library has on reserve a set of videos with topics from the text and presented by Triola (the author). These may be checked out for one hour at a time (as far as I know)
(2): A web site is available and offers other resources for the course (recourses?): It can be found at http://www.awlonline.com/triola

Office Hours: I will be in my office between about 8:30 am and 4 pm Monday thru Friday except when I am teaching class which I do Tuesday Thursday 10-11:15, 1-2:15 and on Monday, Wednesday and Friday from 11:45-12:35. Or, by appointment.

Office Location: My office is located in Seney Hall 115A. My office phone number is 784-8398. My email - I think - is jiskra@learnlink.emory.edu.

Syllabus: I hope to follow the below schedule closely, but hope is really all I have in this regard. I reserve the right to speed up, slow down, cut, add, and otherwise completely ignore what is written below, depending on the needs of the students.

8/28: 1-1,1-2. HW: 1-20 all, 22

9/2: 1-3,1-4. HW: 1.3: 1-26 all, 1.4: 1-31

9/4: 2-1,2-2,2-3 HW: 2.2 : 1,5,9,21 2.3: 1-10, 11, 22

9/9: 2-4,2-5. HW: 2.4: 1, 2, 5, 11, 14 2.5: 1, 2, 5, 11, 14

9/11: 2-6,2-7. HW: 2.6: 1-4, 37-40 2.7: 1-5

9/16: 3-1,3-2,3-3. HW: 3.2: 1-8, 12-18 even. 3.3: 1-28 even.

9/18: Review for exam

9/19: Exam 1

9/23: 3-4, 3-5, 4-1, 4-2. HW: 3-4:1-11, 26 3-5: 1-24 even 4-2: 1-12

9/25: 4-3, 4-4. HW: 4-3:1-8,11,18, 22 4-4: 1-12 even

9/30: 5-1, 5-2. HW: 5-2: 1-42 even

10/2: 5-3, 5-4. HW: 5-3: 1-8, 10, 12, 13 5-4: 1-12 even

10/7: 5-5. HW: 1-20

10/9: Review for exam 2

10/10: Exam 2

10/14: Fall Break

10/16: 6-1, 6-2. HW: 6-2: 1-28 even

10/21: 6-3, 6-4. HW: 6-3: 1-8, 10-24 even 6-4: 1-8, 10-18 even

10/23: 6-5 HW: 6-5: 1-18 even.

10/28: 7-2, 7-3. HW: 7-2: 2-40 even. 7-3: 1-8,17,18

10/30: Review for Exam 3

10/31: Happy Halloween! Oh, and Exam 3. (*Very Scary*….)

11/4: 7-4, 7-5. HW: 7-4: 2-16 even. 7-5: 1-12, 16-22 even

11/6: 7-6, 8-1, 8-2. HW: 7-6: 2-12 even. 8-2: 2-10, 15-18.

11/11: 8-3, 8-4. HW: 8-3: 1-10, 17-20. 8-4: 1-8, 13-16.

11/13: 9-1,9-2. HW: 9-2: 1-12, 25-28.

11/18: 9-3, 9-4. HW: 9-3: 1-12, 19. 9-4: 1-10, 17-20

11/20: 10-1, 10-2. HW: 10-2: 2-20 even.

11/25: 10-3. HW: 10-3:1-4, 9, 10, 20.

11/27: Thanksgiving.

12/2: 12-1, 12-2. HW: 12-2: 1-6, 9, 10, 12, 13.

12/4: Review for Exam 4

12/5: Exam 4

12/9: Review for Final

Final Exam: