DEPARTMENT OF MATHEMATICS AND STATISTICS

UNIVERSITY OF MASSACHUSETTS AT AMHERST

STATISTICS 240 – Spring 2010

Website Address -- http://www.math.umass.edu/~jeneral/

Lecture: Section A - TuTh 4:00 – 5:15  Marcus Hall 131
         Section B - Tu, Th 1:00 – 2:15  Marcus Hall 131
Discussion: Section A - Wednesday (starting January 27)
             Section B – every Monday  (starting January 25)

Professor: Joanna Jeneralczuk
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Office Hours:   Tu/Th 9:30-11:00 , Tu/Th 2:30- 3:30 and by appointment
Office Hours for TA: TBA

Prerequisite: Knowledge of high school algebra.


Computing Software: Not required, but you are welcome to experiment with MINITAB or EXCEL.

Grading: Final averages will be weighted as follows:

Homework - 10%
Quizzes - 20%
1st Exam ( March, in class) - 20%
2nd Exam ( April, in class) - 20%
Final Exam (University schedule) - 30%

( Anyone failing the final exam will not receive a grade in excess of C).

Grades will be assigned according to the following scale:
A: 93-100; A-: 88-92; B+: 83-87; B: 80-82; B-: 75-79
C+: 70-74; C: 65-69; C-: 60-64; D+: 55-59; D: 51-54; F below 51.

Attendance: We will be covering a large amount of unfamiliar material in a short period of time.

The course is structured so that each new section builds on the material from the previous sections.

It is important, therefore, that you attend and participate in all lectures and discussion sessions, do
reading assignments, and homeworks. Don't fall behind.

Discussion sections: Basic material will be covered in lectures. The discussion session will provide
opportunity for review, solving additional problems and answering questions on material covered in the lectures and
homeworks.

Homework:
1. Homework will be assigned every week  and collected the following Monday (section A) or Wednesday (section B) at
the start of the discussion section.
2. Late homework will not be accepted.
3. Homework must be done in the prescribed format:
   a) Loose-leaf or letter-size pad paper only. (No spiral bound paper or legal-size paper).
   b) Multiple pages must be stapled together. (Otherwise, you might lose points.)

Quizzes: Quizzes will be given during discussion sections.

Exams: All exams are closed book.

Make-Up Policy:
1. There are no scheduled make-up exams. Make-up exams will be offered to students with legitimate
   conflicts or unanticipated emergencies that can be documented in advance (when possible) or after the fact.
2. Unpreparedness or a heavy work load are not legitimate excuses for requesting a make-up exam.
3. If you have two exams scheduled for the same time period, the University policy will be followed
   (the course with the lowest last digit of the schedule number will have priority).
4. If you cannot make it to an exam, contact me in person or by telephone or send me an e-mail
   as early as possible.
5. On your return, bring documentation regarding the situation.
6. Missing an exam without a legitimate excuse will result in a 15% penalty on the make-up score.
Expectations:
1. Students are expected to be on time for lectures and discussions. When this is not possible, students are expected to enter the classroom as unobtrusively as possible.
2. A student who has to leave a lecture or discussion section early should notify the instructor or TA before the start of class.
3. Common sense rules of etiquette should be observed at all times.
4. Please do not bring food or drinks into the lecture or discussion. Turn off cell phones. No headphones.
5. Newspaper reading is not acceptable during the lecture, nor is any behavior that can be easily construed as disrespectful or disruptive.

Academic Honesty:
1. All work submitted by the student is expected to be his or her own.
2. While students may collaborate on homework assignments, the final version should represent the students' own effort and understanding.
3. Quizzes and exams will be proctored diligently to assure fairness.
4. Any violation of these policies will be addressed according to the procedures laid out in the booklet

Course Schedule:
I plan to cover chapters 1 – 10 from the textbook. Lecture notes will be posted before each lecture, please print and bring them to class. The handouts will show the basic topics, definitions, stated problems but details are missing. These, of course, are filled in during class.

Ch.1 What is statistics: Population and sample, statistical problems, the role of statistics in inference making.
Ch.2 Describing Data: variable types, pie charts, bar charts, histogram, stem and leaf plots, shapes of distributions, measures of center tendency (mode, mean) and variability (standard deviation, variance, inter-quartile range), relative standing (percentiles, quartiles), Box plot.
Ch.3 Bivariate Data: Bivariate data scatter-plots of for two variables, correlation coefficient, best fitting line (to be discussed after Chapter 5).
Ch.4,5 Probability and Probability Distribution: Event, sample space, event composition, calculating probabilities, counting rules, mutually exclusive (or disjoint) events, conditional probabilities and independent events, tree diagram, Binomial distribution.
Ch. 6 Normal Distributions: Normal probability distribution, use of standard normal distribution tables.
Ch. 7 Sampling Distributions: Random sampling, sampling plans and experimental designs, sample mean, the Central Limit Theorem, distribution of sample proportion.
Ch. 8 Inferences from large samples: Point estimation, interval estimation, large sample confidence interval for a population mean and a population proportion, choosing the sample size, testing on a population proportion and mean, the p-value, type I and type II errors, the power of a test.
Ch. 9 Inferences from small samples: the t-distribution, confidence intervals and inferences on mean.
Ch.10 Comparing two treatments: Estimation and testing the difference between two proportions, difference between two population means, paired t-test for two means, comparing two population variances.

[Note: Because this course presupposes knowledge of basic math skills, it will satisfy the R1 requirement upon successful completion and R2]