RMET-410-M01, Introduction to Inferential Statistics, Fall 2009

Course Information.
Course name: Introduction to Inferential Statistics
Course Number: RMET-410
Course section: MO-1
Meeting times: MW, 2:30-3:45pm
Semester: Fall 2009
Credit hours: 3
Prerequisite(s):   MATH-120 (or equivalent)

Instructor Information
Name: Ana Granados
Office hours: MTWF 11:00-12:00 and by appointment.
                    Math Office, Padre Arrupe Hall, 2nd fl.
Contact: agranado@slu.edu
Biography: Terminal Degree: Ph.D.Mathematics (Universidad Autónoma de Madrid)

Course Objectives
To understand the difference between descriptive and inferential statistics. To understand the differences in levels of measurement. To understand the meaning of specified statistics. To understand the appropriate applications for statistical techniques. To manipulate data within statistical techniques. To utilize the computer for the analysis of data. To be able to interpret and present statistical results.

Course description:
To quote from a statistics textbook, this course is going to "mangle your means, torture your t distribution, dangle your data, violate your variables and corrupt your correlations." In short, this course will hopefully teach you how, when and why to apply "sadistic statistics" to real problems. It will be an introductory course in understanding, applying and interpreting statistics.

Text books
Elementary Statistics, 7th Edition, by Neil Weiss, Addison Wesley.

Required work
1) There will be three in-class exams. Each exam will be worth 100 points towards the final grade in the course. The exams will consist of two parts: a set of objective items and a set of problems (all open book). You may use your textbook, notes, cue cards, etc. You will not be expected to memorize complex formulas. The problems will stress interpretation as well as calculation and solutions

2) There will be a common comprehensive final exam, which will be worth 100 points towards the final grade in the course. It will stress problem solving and interpretation and will be completely open book. The exam is cumulative. It will cover the **entire semester's material**, and will be a two hours exam.

3) You will need to complete a lot of homework prior to each class in order for you to understand the material. There is no possible way to cover all relevant material in depth during class time; thus, an extensive amount of your learning will be in completing problems independently. You will be asked to complete a set number of problems for each section in the chapter and your homework grade will be based on success with these problems. This will include computer problems.

Late work:
Make up exams are not given. Exams that are missed illegitimately result in a score of F. Missing more than one exam results in an F grade for the entire course.

Excused Absences:
Legitimate conflicts and excuses require written documentation and are limited to death or near death instances in the immediate family, a student's illness that requires immediate doctor's care, a University sponsored event (not club sports) and regularly scheduled religious obligations. Excuses that will NOT be considered include personal travel arrangements, non-University sponsored events, a conflicting appointment, or an illness that does not prevent you from coming to the exam.

Attendance and punctuality:
Although not mandatory, I strongly urge you to attend all classes. On the other hand, <u>you will be responsible</u> for any announcements, information, problems or course changes that are made in all lectures. Students are expected to arrive on time to the lectures. Repeated lateness will not be tolerated.

Grading system

Exams I, II and III: 100 pts each. Final Exam: 100 pts. Homework: 100 pts. Total possible: 500 points

Course calendar:

- September:
  - o 3 Th: first day of classes.
  - o 16 Wed.: last day to DROP without a grade of "W"
  - o 30 wed: exam I. Problem section I Due.
- November:
  - o 2 Mon: Last day to drop a class and receive a "W".

- o 2 Mon: exam II. Problem section II Due.
- o
- December
  - o 2 Wed: exam III. Problem section III Due.
  - o 14 Mon: Last day of classes
  - o 19 Sat: Final Exam (noon-2:00). Problem section IV Due.

Academic Honesty:

Students are expected to be honest in their academic work. The University reserves the right to penalize any Academic dishonesty, in any form, will not be tolerated. This includes, but is not limited to, submitting another classmate's work as your own, copying a solution to a problem from a solution manual and submitting the work as your own, or using materials on an examination that were not approved.

For more information concerning academic dishonesty, refer to the Code of Student Academic Responsability:

http://academicintegrity.slu.edu/

http://www.slu.edu/provost/Adobe%20Pages/Academic%20Integrity%20Policy.pdf

Students with Disabilities

Any student who qualifies for special accommodations, due to presence of a disability, and feels it necessary to utilize them in order to meet the requirements of this course-as outlined in the syllabus, should contact Counselling/Disability Services. Please phone the office at 91 554-5858 (Ext. 230), or send an e-mail to vandrew1@slu.edu. Students may also stop by the Counselling/Disabilities Services office in the Manresa building. Confidentiality will be observed in all inquiries.

Course outline

Introduction and measurement. Introduction to computers. Presentation techniques. Central Tendency. Variability. Probability. Binomial & Poisson distributions. Normal distribution. Sampling. Confidence intervals. Hypothesis testing, process; 1 sample, mean; 1 sample, proportion; 1 sample, t-test; 2 sample, mean; 2 sample, proportion; 2 sample, t-test; 2 sample, t-test, paired t test. Chi square. Correlation & Regression.

Some important notes:

1) This course will be on a lecture-discussion type system, but it cannot happen unless you are willing to discuss and ask questions.
2) If you are having difficulty with the material, please feel free to see me during office hours or make an appointment. Please bring along your homework notebook so that I can be sure of what it is you do not understand.
3) Try to work daily on your material so that you do not lag behind. While statistics can seem overwhelming at times, constant practice will master it.
4) Bring a calculator to class; it will help you a lot. Try to get one with a statistics function (or at least a square root function).
5) Remember this is not going to be a mathematics course. While you will learn how various statistics are calculated, we will not attempt to know all possible permutations and derivations. What is more important is that you understand the use of statistics and their benefit to you. Do not be afraid of them.

I encourage you to contact me at anytime if you are having difficulties. Please do not wait until one week before the end of the term.