THE UNIVERSITY OF TEXAS AT EL PASO  
COLLEGE OF SCIENCE  
DEPARTMENT OF Mathematical Sciences  

Course#: **STAT 5328 (It includes STAT 5195-003 CRN 16185)**  
STUDENTS SHOULD REGISTER FOR 5195 AS WELL  

Course Title: **Introduction to Statistical Analysis**  

Credit Hours: 3  
Term: Fall 2009  

Course Meetings & Location:  
M 9:30 – 11:20am – Class – Bell Hall 143  
W 9:30 – 10:20am  
W 10:30 – 12:20pm (Register for STAT 5195-003).  
Lab Location:  
Math ACES Computer Lab in BELL HALL  

Instructor: Dr. Panagis Moschopoulos  
Office Location: Bell Hall 224  
Contact Info: 747-5761 Math Office; 747-6764 Office;  
Email: pmoschopoulos@utep.edu  
Emergency Contact: 747-6992 – Stat Consulting Lab  
Office Hours: M,T, 1:30-3:00pm, walk in, and by appointment  

Textbook Required:  
**A Foundation for Analysis in the Health Sciences**, 9th Ed. Wiley  

Suggested:  
Supplementary materials may be used from other texts (photocopies will be provided; books will be placed on reserve at the library if required).  
A calculator is necessary for: numerical computations during exams, homework and class participation in the discussion of certain problems.  
The course will rely heavily on the use of MINITAB, a statistical package installed on ACES Lab computers.  
To a lesser extent, computer outputs of other software packages may be used without actually having to learn the usage of these packages.  
Arrange to get a password from the ACES Lab desk.  
There is no need to buy a manual for MINITAB, as the text contains the instructions you need, and there is a “HELP” facility built-in the package.  
I will also be discussing most of the commands needed in class using an LCD display and projecting on a large screen.  

Course Objectives:  
(Learning Outcomes)  
Students will learn methods for organizing and presenting data as well as methods for making inferences based on samples.  
Homework, quizzes, two mid-term exams, one comprehensive final exam.  

Assessment of Course Objectives:  
Topics to Be Covered (additional topics if time permits)  
Applications and published research in Health, Biology and Medicine, will dominate in illustrations of methods  
Introduction to statistics and MINITAB software.  
Descriptive Statistics: Histograms and frequency distributions.  
Basic Probability Concepts.  
Probability Rules (Addition and Multiplication Rules)
Conditional Probability.  
Bayes Rule  
Biological and Medical Applications.  
(FALSE positive, FALSE negative, sensitivity, specificity)  
Probability Distributions:  
Binomial, Poisson, Geometric, Hypergeometric.  
Normal, t, Chi-Square and F-distributions.  
Sampling Distributions for Means and Proportions and sample quantities.  
Estimation: Z and t-tests. Confidence Intervals and Hypothesis Testing.  
One-and Two-Sample Problems.  
Applications from case studies, published research.  
Type-I and Type-II Errors  
Sample Size Determination, Power of Statistical Tests.  
Confidence Intervals and Tests on Variances (F tests, etc.).  
Simple Linear Regression and Correlation.  
Multiple Linear Regression.  
Fitting, Estimation and Testing.  
Residual Plots. Model Diagnostics.  
Qualitative Variables in Regression.  
Symmetrizing Transformations.  
Analysis of Variance Models:  
The Completely Randomized Design.  
The Randomized Block Design.  
The Repeated Measures Design.  
The Factorial Experiment with or without Interaction.  
Large Data Sets.  
The Analysis of Categorical Data: Chi-Square Tests for:  
Goodness of Fit  
Independence  
Homogeneity.  
Relative Risks, Odds Ratios.  
Non-Parametric Tests.  
Logistic Regression.  

Grading Policy: There will be homework assignments, quizzes, (pop-up or preannounced), two exams during the semester and a final exam as scheduled in the published Fall 2009 schedule.  
The grading will be as follows:  
Homework: 10%  
Quizzes: 10%  
Exam 1: 20% (time TBA)  
Exam 2: 20% (time TBA)  
Final Exam (comprehensive): 40%  

Grades will be assigned with the cut-off points, A: over 90%, B: 80-90%, C: 70-80%, F: below 70% (I may scale slightly downwards depending on the overall class performance).  

Make-up Policy: There will be NO quiz make-ups or late homework accepted. I will
excuse you from an in-class quiz and consider a separate exam for you AFTER the class exam, if you have an emergency or obligation that you informed me about prior to the date of your absence.

Attendance Policy: Attendance is required as quizzes will be unannounced.


Civility Statement: Class participation is strongly encouraged. Calculator should be brought to class everyday.

Disability Statement: If a student has or suspects she/he has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148 or at dss@utep.edu, or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.