COURSE OUTLINE
STA 6247: DATA ANALYSIS II
Spring 2007

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Class Time: Monday & Wednesday, 3:30 PM to 4:45 PM
Class Room: GL 263
Office Hours: Monday & Wednesday, 2:00 PM to 3:15 PM or by appointment (305-348-1419).
Prerequisites: STA 6244 or equivalent course.
References:

Course Description:
This course is a continuation of Data Analysis I. Some of statistical theories may be necessary for this course. Statistical Software S-Plus and R will be used for this course. The syllabus for Data Analysis II are as follows:

Review Chapter 7, 8, 9 and 10: Inferences on Mean(s), Proportion(s), Goodness of fit test, Simple Linear Regression.

Multiple Linear Regression (Ch. 11): Fitting the Multiple Linear Regression Model, Goodness of fit of the Model, Statistical Inference for Multiple Regression, ANOVA table for Regression, Testing subset of Parameters, Regression Diagnostics, Multicollinearity, Polynomial Regression, Variable Selection Methods, Best Subset Regression.

Analysis of Single Factor Experiments (Ch. 12): Completely Randomized Design, Multiple Comparisons of means, Randomized Block Design, Model Diagnostics using Residual Plots.

Two-Factor Experiments with fixed crossed factors (Ch 13.1, 13.2): Model and Estimates of its Parameters, Model Diagnostics using Residual Plots, Multiple Comparison Between Rows and Columns, Unbalanced Two-Way Layouts. 2^k factorial experiment.

Analysis of Covariance: Analysis of covariance of Regression (ANOVAR), Analysis of Covariance Model with one covariate, Adjusted Means, Testing Homogeneity of Regression Slopes, Analysis of Covariance with Multiple Covariates.

Nonparametric Statistical Method (Ch. 14): Sign test, Wilcoxon Signed Rank test, Wilcoxon-Mann-Whitney Test, Kruskal-Wallis Test, Rank Correlation Methods, Bootstrap Methods, Jackknife Method.

Time Series Analysis: Modeling trend by Polynomial functions, Detecting Autocorrelation, The Durbin-Watson Test for Autocorrelation, Modeling Seasonal Variation by using Dummy and Trigonometric Functions.
Poisson Regression, Logistic Regression and Simulation Study (Optional)

Course Evaluations: The tentative course evaluation is as follows:

<table>
<thead>
<tr>
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<th>Percentage</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>15%</td>
</tr>
<tr>
<td>Exam I</td>
<td>25%</td>
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<tr>
<td>Exam II</td>
<td>25%</td>
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<tr>
<td>Project and Presentation</td>
<td>35%</td>
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Grading Scale: The weighted average of the above scores will be converted to a percentage. The following scale will then be used to assign letter grades for the course.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>(90% and +)</td>
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<tr>
<td>A-</td>
<td>(87% to 89%)</td>
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<tr>
<td>B+</td>
<td>(84% to 86%)</td>
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<tr>
<td>B</td>
<td>(80% to 83%)</td>
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<tr>
<td>B-</td>
<td>(77% to 79%)</td>
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<tr>
<td>C+</td>
<td>(74% to 76%)</td>
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<tr>
<td>C</td>
<td>(70% to 73%)</td>
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<tr>
<td>C-</td>
<td>(67% to 69%)</td>
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<tr>
<td>D+</td>
<td>(64% to 66%)</td>
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<tr>
<td>D</td>
<td>(60% to 63%)</td>
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<tr>
<td>D-</td>
<td>(57% to 59%)</td>
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<tr>
<td>F</td>
<td>(0% to 56%)</td>
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Assignments: There will be 3-5 assignments (S-Plus and R intensive) for this course.

The first exam will be held on February 14 (Wednesday), 2007 and exam covers the materials until February 12 (Monday), 2007.

The second exam will be held on April 2 (Monday), 2007 and exam covers the materials until March 28 (Wednesday), 2007.

The final project submission: On or before April 16 (Monday) 2007.

The project presentation: April 16 (Monday) and April 18 (Wednesday), 2007.

Note: Any complain about the gradings of midterm or assignment has to be done within two weeks after the corresponding midterm or assignment.

Academic Misconduct: Students guilty of academic misconduct are subject to a variety of disciplinary actions ranging from a zero on an exam/assignment and F in the course to dismissal from the University.

Some Important Dates:
1. January 15 (Monday), 2007: Martin Luther King Holiday (University Closed).
2. January 16 (Tuesday), 2007: Last day to complete late registration, change grading option, drop/withdraw courses without incurring a financial liability.
3. February 6 (Tuesday), 2007: Last day to withdraw from the University with a 25% refund of tuition.
4. March 12 (Monday) 2007: Deadline to droop a course with DR grade and to withdraw from the University with a WI grade.
6. Classes end on April 19 (Thursday) 2007.

Note: The instructor is not responsible about the exact date or time or adding/ dropping the course etc.

Makeup’s: No make-up exam will be given, however, if an extenuating circumstance exists, please contact the instructor prior to the exam. No extra work will be given to improve the grade. A grade F0 will be given if a student attend 1 midterm exam and submit partial assignments only.

Incomplete: The incomplete (I) grade will be given ONLY to a student who has completed the bulk of the course works and is unable to complete the course due to a serious interruption not caused by the student’s own negligence.

Attendance: Students are expected to attend the classes regularly. If a student misses (or fails to attend) a class, it is his/her sole responsibility to obtain the missing information (for examples change of exam date, change of exam location, add/ omit some sections, class notes, new home works etc). Students are encouraged to seek the instructors help during office hours.

Notice: The course outline provides a general plan/guide for the course only, however, deviation or some changes may be necessary. The instructor will assume the sole authority in all matters related to course content, students gradings, and classroom procedures. No active beeper or cellular phones are allowed in classes. You should not register in this class if your final exam conflicts with other course.