Statistics 6214, Section 10
Applied Linear Models
Spring 2015

Semester: Spring 2015 (01/12/2014 - 04/29/2014)
Time: Wednesday 6:10-8:40 pm
Location: ROME Room 459
Last class day: 04/29/2014.

Instructor: Dr. Yuanzhang Li
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Office hours: Wednesday 8:40-10:00pm, ROME Room 459
Or by appointment Thursday 2:00-4:00PM 2 Wisconsin Circle, #700,

COURSE DESCRIPTION:
Linear models are statistical methods commonly used in a wide variety of fields
including business, medical research, and social science. In this course, we will cover
simple and multiple linear regressions, including parameter estimation and inference,
model diagnostics and prediction. Additional topics include model building, diagnostics
and selection. ANOVA and logistic regression models with a binary response will also be
covered. Basic SAS k knowledge will be coved.

COURSE PREREQUISITES:
Basic probability and statistics at the level of Stat 157-158 and basic
linear algebra at the level of Math 124.

TEXTBOOK REQUIRED:
Regression Analysis by Example, 5th Edition by Chatterjee and Hadi.
Applied Linear Regression.
Reference: Applied Linear Regression (Wiley Series in Probability and Statistics) by Sanford Weisberg

LEARNING OBJECTIVES:
By the end of this course students should be able to identify and apply appropriate
analysis techniques for a given linear model. This includes implementation of SAS to
build and diagnose models, evaluate model fit and identify outliers.
## Course Outline (subject to change):

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<td>4/27/2014</td>
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<td>Variable selection, Logistic regression, distribute Final</td>
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<td>4/29/2014</td>
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### Grading:
- Homework: 30%
- Midterm: 20%
- Project: 15%
- Comprehensive test: 15%
- Take home Final: 20%

### Computing:
We will use SAS for analysis.

### Homework:
Basically, there will be weekly homework/project assignments, except for the week of April 13th and April 20th. The homework will be collected in two weeks. Late assignments will not be accepted for any reason.

### Class Project:
A data analysis with a 3-5 page write-up will be given as a final project. All students will be grouped of 2 or 3 by youself. Students will be given approximately two weeks to complete this project. Oral presentation is optional with bonus of 5 points (1.6% in total).

### Midterm:
One midterm exam will be given on March 16th. The exam will be given during class time.
**Comprehensive Test:** One hour open note comprehensive test will be given on April 27 to cover all basic knowledge, which you have learned in the linear regression.

**Final Exam:** The take home final will be distributed on the last day of class and due on May 6, 2014. The final exam is mainly used to examine the ability solving the actually problems.

**Incomplete:** Will only be considered when 1) you are passing the course AND 2) cannot complete the course due to illness or other circumstances that beyond your control.

**CLASS POLICIES:**

**Attendance Policy:**
You are expected to attend every lecture. You are responsible for the material covered and the handouts distributed during lecture.

**Late Work:** Will NOT be accepted.

**Exams:**
Exams are closed book and notes. You may have a two-four page of summary for exams.

**Class Project:**
The class project is intended to demonstrate your ability to identify, apply and communicate appropriate analysis techniques. As such, this should be treated as an independent work—students MUST work individually on their projects.

**ACADEMIC INTEGRITY:**
I personally support the GW Code of Academic Integrity. It states: “Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information.” For the remainder of the code, see: [http://www.gwu.edu/~ntegrity/code.html](http://www.gwu.edu/~ntegrity/code.html)

**SUPPORT FOR STUDENTS OUTSIDE THE CLASSROOM:**

**DISABILITY SUPPORT SERVICES (DSS)**
Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Marvin Center, Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: [http://gwired.gwu.edu/dss/](http://gwired.gwu.edu/dss/)

**UNIVERSITY COUNSELING CENTER (UCC) 202-994-5300**
The University Counseling Center (UCC) offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include: crisis and emergency mental health consultations, confidential assessment, counseling services (individual and small group), and referrals.

http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices

**SECURITY:**

In the case of an emergency, if at all possible, the class should shelter in place. If the building that the class is in is affected, follow the evacuation procedures for the building. After evacuation, seek shelters at predetermined rendezvous location.

**BLACKBOARD:**

All students are required to register for the course on Blackboard, the GWU web-based instructional resource. Course information and materials, including homework and grades will be posted periodically. It is the student’s responsibility to check the Blackboard website frequently for up-to-date information.