COURSE AND CONTACT INFORMATION
Course: Applied Linear Models, STAT 6214
Semester: FALL 2015
Time: TUESDAY, 6:10-8:40 PM
Location: PHIL 110

INSTRUCTOR
Name: Dr. Tatiyana V. Apanasovich
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COURSE OBJECTIVE
Data arising from both experimental and observational studies and in a range of applications e.g. biomedical, pharmaceutical, social sciences, business, reliability etc. can be typically analyzed using linear models. Applied Linear Models is an applied course aiming to provide the methodological background and computational tools for data analysis and modeling.

COURSE OUTLINE
Introduction to Linear Models: Simple Linear Regression Examples, Assumptions for Linear Models, Ordinary Least Squares (OLS) estimators,
Inference: inference for the slope and the intercept, interpretation of results, prediction, F-tests
Regression Diagnostics: outliers, influential points, graphical diagnostics, remedies, weighted least squares
Multiple regression: estimation, prediction, diagnostics, nested models, multi-collinearity, ridge regression, qualitative predictors, mixture of continuous and categorical variables, model building, variable selection and model validation
ANOVA
Regression models with binary response, simple and multiple logistic regression
Regression with correlated errors (time series)—if time allows

COURSE PREREQUISITE(S)
Basic probability and statistics at the level of Stat 157-158 or Stat 201; Basic linear algebra at the level of Math 124.

TEXTS
GRADING
- homeworks 20%
- in class exam, 40%
- take home exam, 40%

CLASS POLICIES
Homework: There will be approximately 5-6 homework assignments. Late assignments will not be accepted for any reason, medical or otherwise. Homework assignments that are collected and graded should be treated as individual and not collective efforts.
In class exam: Closed-book in-class examination will be given on November, 17th. Make-up exam will be given only in exceptional circumstances (e.g. well-documented medical problems).
Take home exam: Take home exam will test your ability to apply methods learned in class. It will be given on November, 17th with the due date December, 1.

ACADEMIC INTEGRITY
All examinations, papers, and other graded work products and assignments are to be completed in conformance with The George Washington University Code of Academic Integrity. “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

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/

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: 1. crisis and emergency mental health consultations; 2. 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 shelter at a predetermined rendezvous location.