STAT6450 – 4 CREDIT HOURS

Term: Spring, 2017
Instructor: Matthew T. Pratola
Email: mpratola@stat.osu.edu
Location: WeFr 3:00-4:50pm in Baker Systems 180
Office Hours: Thursdays, 1:30-2:30pm, CH204D
Text: *Applied Linear Regression Models*, 4th edition, by Kutner, Nachtsheim and Neter.
Course Website: Carmen
Long course title: Applied Regression Analysis
Final Exam: Thursday April 27th, 4:00-5:45pm

Course description:
Topics of Stat 6450 include Simple Linear Regression model (SLR), Methodology for fitting SLR, Inference for SLR, Diagnostics for verification of SLR assumptions and their remedies, SLR using Matrix algebra, Multiple Linear Regression model (MLR), statistical methodology for MLR, Inference for MLR, Indicator and Qualitative predictors, Diagnostic measures for MLR, variable selection and model building in MLR, Generalized Linear Models (GLM), Logistic regression, regression with ordinal and nominal polytomous response.

Prerequisites / Co-requisites:
Statistics 521, 6201 or equivalent

Exclusions:
Not open to students with credit for Stat 645 (Stat 6450 under semesters)

Course Requirements:
You are responsible for all material covered in class; this includes derivation, proofs, computational techniques, etc. This is an applied course and the emphasis will be on applying concepts learned in class to real-world datasets. However, there will be a strong theoretical flavor to the ideas presented which will help you understand better the methodologies which you will employ on datasets. You are expected to be comfortable with multivariable calculus and basic matrix operations from linear algebra. This is not a purely computational course although you will learn how to use software to analyze data and apply concepts learned during the lectures. I will primarily use **JMP** and/or **R** in class to demonstrate ideas and examples.

Homework and Assignments:
You are encouraged to discuss problems with each other in general terms, but you must write your own homework solutions and project reports. Homework and project reports must be submitted in hardcopy. Late submissions will NOT be accepted.

Dates:
HW1 01/27; HW2 02/03; HW3 02/10
HW4 02/17; HW5 02/24;
Midterm 03/03
HW6 03/10; HW7 03/31; HW8 04/07; HW9 04/14; HW10 04/21
Homeworks are due Fridays at the start of class.
Grading scheme: 30%HW, 30%Midterm, 40% Final

Academic Misconduct:
It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term academic misconduct includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct http://studentlife.osu.edu/csc/.

Special Accomodations:
Students with disabilities that have been certified by the Office for Disability Services will be approporiately accommodated and should inform the instruc- tor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue, telephone 292-3307, TDD 292-0901 (or see http://www.ods.ohio-state.edu/).