

## MGSC 792

Fall 2007

Instructor: Dr. Kathleen Whitcomb

Class Time and Location: Tuesday and Thursday, 11:00-12:15 in Room 583 BA

Office Hours: Monday—Thursday, 2:00-3:00 and by appointment.

Text: Applied Linear Statistical Models, 5th Ed. by Kutner, Nachtsheim, Neter and Li.

Course Objectives: Students who successfully complete this course will have a thorough understanding of the foundations and applications of linear regression models. It is assumed that students taking this course are not aspiring statisticians, but rather are future business professionals or researchers who intend to use regression models in business settings. Accordingly, emphasis will be placed on business applications of regression analysis using realistic data sets. Students will also acquire a sound working knowledge of SAS for linear models.

<b>Week Beginning:</b>	<b>Topic</b>	<b>Reading Assignment</b>
August 20 <sup>th</sup>	Course Introduction and Review of Probability and Statistics	Appendix A
August 27 <sup>th</sup>	Review of Probability and Statistics and Intro. to SLR	Chapter 1
September 3 <sup>rd</sup>	Properties of Least Squares Estimates; Confidence intervals and Hypothesis tests	Chapter 2
September 10 <sup>th</sup>	Normal correlation models. Checking model assumptions; diagnostics and remedial measures	Chapter 2 Chapter 3
September 17 <sup>th</sup>	Simultaneous Inferences; regression through the origin; non-parametric regression (brief);	Chapter 4
September 24 <sup>th</sup>	Introduction to matrix algebra; the matrix algebra approach to SLR	Chapter 5
October 1 <sup>st</sup>	<b>EXAM I on 10/2;</b> Introduction to multiple Regression	Chapter 6 (6.1-6.5)
October 8 <sup>th</sup>	Multiple Regression (cont.) —statistical tests for model parameters; (estimation and prediction); Fall break 10/11	Chapter 6 (6.6-6.9)
October 15 <sup>th</sup>	Partial correlation; standardized regression model Multicollinearity.	Chapter 7

October 22 <sup>nd</sup>	Polynomial Regression; Interactions; Qualitative Predictors.	Chapter 8.1-8.2 Chapter 8.3-8.7
October 29 <sup>th</sup>	Qualitative Predictors	Chapter 8.3-8.7
November 5 <sup>th</sup>	Model building	Chapter 9
November 12 <sup>th</sup>	<b>EXAM II on November 13<sup>th</sup> ;</b> Diagnostics for the Regression Model.	
November 12 <sup>th</sup>	Diagnostics for the Regression Model	Chapter 10
November 19 <sup>th</sup>	Remedial Measures for the regression model	Chapter 11
November 26 <sup>th</sup>	Remedial Measures for the regression model (continued).	Chapter 11
December 3 <sup>rd</sup>	Autocorrelation in time series data	Chapter 12
December 17 <sup>th</sup>	Final Exam at 9:00 a.m.	

### Course Policies and Procedures

Grading: The first two exams are worth 20% each . The homework assignments are worth 30%. The final exam is worth 30%.

Grading Scale: 90≤100%	A
87 to 89	B+
80 to 86	B
76 to 79	C+
70 to 75	C
64 to 69	D+
57 to 63	D
Below 57	F

Homework: Approximately 8 homework sets will be assigned. They will be collected on the assigned due date, graded, and returned within a week of the collection date. **No late homework assignments are accepted.**

Exams: The exam will consist of problems to be solved and some short answer questions. If any exam is missed due to illness or required participation in a university function, you must present me with a written petition to take the make-up exam on reading day.

Computer: Homework sets and the case study will require the use of statistical software. We will be using SAS. No prior knowledge of SAS is required for the course.

Class Notes: Class notes for the week will be handed out at the start of the week and will be posted on Blackboard.