AEC 597 – APPLIED REGRESSION ANALYSIS
Texas A&M University- Commerce
Department of Agricultural Sciences
Spring 2013

**Instructor:** Dr. Jose Lopez
Office: Agricultural Science Building, Room 143
Phone: (903) 886-5623
Email: Jose.Lopez@tamuc.edu

**Class Time:** TR 11:00 a.m. - 12:15 p.m., AGIT Room 255

**Office Hours:** For immediate consultation I will be available Tuesdays and Thursdays from 2:00 p.m. – 4:30 p.m. or by appointment. You are also welcome to stop by my office at any other time. If I am unable to meet with you at that time we will schedule an appointment.


**Prerequisites:** Elementary Statistics (such as AEC 380, BA 302, or MATH 453) and Elementary Mathematics (such as MATH 1314 or higher MATH).

**Teaching Philosophy:**
1. A course must deliver information, concepts and methods that will be useful in the student’s professional life. However, learning analytical reasoning skills and improving the ability to process and use information efficiently is more important than memorizing facts and formulas and performing procedures repeatedly.
2. Students learn best when theories, concepts and procedures are explained in plain language as well as formally, and are complemented with examples or applications that are relevant to the students.

**Character Formation:** It is important during your college education to learn the values and rewards of hard work, responsibility, and honesty. The professor will promote character formation while teaching the course.

**Student Learning Outcomes:** Upon satisfactory completion of the course the students will be able to:

1. To consolidate knowledge and understanding of basic statistical terms and concepts.
2. To review the most basic and to learn more advanced econometric techniques, in a highly empirical but theoretically rigorous context.
3. To learn how to properly formulate and estimate the econometric models that arise in the most common applied research situations, and how to interpret and use the results for economic analysis.
Topics:

1. Basic Statistical Terms and Concepts:
   - Elementary Statistics: A Review
     - Desirable properties of estimators
     - Probability distributions

2. The Single-Equation Multiple Regression Model:
   - Simple Regression Theory: A Review
     - Specification
     - Estimation
     - Interpretation
     - Measures of Fit
     - Effects of Linear Transformation
   - The Multiple Regression Model
     - The model
     - Regression statistics
     - F test
     - $R^2$ and corrected $R^2$
     - Multicollinearity
     - Least-square parameter estimation
     - Regression coefficients
     - The model in matrix form
   - Using the Multiple Regression Model
     - The general linear model
     - Use of dummy variables
     - Use of t and F tests for hypothesis involving more than one parameter
     - The multiple regression model with stochastic explanatory variables
     - Tests involving dummy-variable coefficients
   - Serial (auto) Correlation and Heteroscedasticity
     - Heteroscedasticity
     - Serial correlation
     - Generalized least-square estimation

Grading:

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<th>Component</th>
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<tr>
<td>Exam 1</td>
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<td>Exam 2</td>
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<td>Final Comprehensive Exam</td>
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<td>Homework Assignments</td>
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<td>Term Project</td>
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<td><strong>Total</strong></td>
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**Grading Scale:**

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<tr>
<th>Range</th>
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<tr>
<td>90-100.00</td>
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<td>80-89.99</td>
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<td>70-79.99</td>
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<td>60-69.99</td>
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<td>Less than 60</td>
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**Exams:** No makeup exams will be offered. A grade of zero will be assigned to any missed exams. Make sure you arrive in time.

**Homework Assignments:** Homework will be graded and discussed in class. Homework should be considered very important material for exams. Students are welcome to ask questions during office hours.

**Term Paper:** Students will work individually during the semester on a term paper. The term paper will allow students to integrate concepts and ideas from the course and combine them with their academic training, to solve a particular problem of their choice. The instructor will provide guidance and instructions to the students about the term paper during the semester.

**Class Participation:** Students should come to class prepared by reading and completing course assignments prior to class. It is the students’ responsibility to be familiar with and understand all previously covered material prior to each new lecture.

**Students with Disabilities:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

**Office of Student Disability Resources and Services**  
Texas A&M University-Commerce  
Gee Library  
Room 132  
Phone (903) 886-5150 or (903) 886-5835  
Fax (903) 468-8148  
StudentDisabilityServices@tamuc.edu

**Counseling Center:** A student that faces a crisis or a serious and unforeseeable event that affects his/her class performance must contact the Counseling Center, Student Services Building, Room 204, Phone (903) 886-5145. If important class material or course assignments are missed because of such crisis or event, the student must contact the instructor as soon as possible.
**Academic Integrity:** Students must follow the *Code of Student Conduct* in the *Student Guidebook* ([http://web.tamu-commerce.edu/admissions/studentGuidebook.aspx](http://web.tamu-commerce.edu/admissions/studentGuidebook.aspx)). Any form of plagiarism or academic dishonesty will not be tolerated. Academic honesty is defined on *Chapter 13 Students (Academic)* of the *TAMUC Rules and Procedures* ([http://web.tamu-commerce.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/](http://web.tamu-commerce.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/)):

“Academic dishonesty” includes, but is not limited to, plagiarism (the appropriation or stealing of the ideas or words of another and passing them off as one’s own), cheating, collusion (the unauthorized collaboration with others), and abuse (destruction, defacing, or removal) of resource material.

**Bibliography (Not Required):**


**Important Dates:**
- January 15\(^{th}\), Tuesday: First day of this class.
- January 30\(^{th}\), Wednesday: Last day to drop a class with refund, if remaining enrolled.
- March 29\(^{th}\), Friday: Last day to drop while still enrolled.
- May 2\(^{nd}\), Thursday: Last day of this class.
- May 7th, Tuesday: Final Exam, 10:30 a.m. – 12:30 p.m.

*The instructor reserves the right to make modifications to this syllabus during the semester.*