CO802 **APPLIED ECONOMETRICS** **3-0-0-3**

Course Description:

This is a course intended to familiarize the students with the widely used data analysis technique of regression analysis, which is a collection of models/ methods that help in understanding the relationship between quantitative variables to help managers predict the quantities of some future dependent variable. It emphasizes applications to the analysis of business and other data and makes extensive use of computer statistical package. Topics include simple and multiple linear regressions, model diagnostic methods including residual analysis, multicollinearity, heteroscedasticity, autocorrelation, logistic regression, panel data models and time series analysis. All topics are illustrated on real data sets obtained from financial markets, market research studies, and other scientific inquiries. The goal of the course is to introduce the students to the various modeling techniques under regression analysis that would help them in decision making process.

Pedagogy:

The topics will be covered by lecture sessions along with hands on practical training using databases and computer software STATA. The text book recommended has over 100 datasets covering US and India. These datasets (mostly economic theory based) provide students with examples to help apply the techniques studied in class to real business world problems. Apart from these students are required to work on a term paper that involves data analysis.

Learning Objectives:

At the end of this course students will be able to :

1. Conduct independent econometric and statistical analysis of data in an applied research setting
2. Use econometric software for data management and statistical analysis
3. Demonstrate their understanding of applied econometric analysis models/ methods with respect to choice of model, estimation method and interpretation of results.

The highlighted course objectives above support the program level learning goal of "CRITICAL and INTEGRATIVE THINKING".

Sessions Plan:

Session No.	Topics	Chapters
1-2	Introduction to regression analysis	
3-4	Two-variable regression model: Estimation using ordinary least square method- underlying assumptions	
5-7	Two-variable regression model: hypothesis testing, different functional forms	

8-10	Multiple regression analysis: estimation, interpretation, hypothesis testing	
11-13	Dummy variable regression model	
14-17	Violations of CLRM assumption: multi-collinearity,heteroscedascticity, autocorrelation	
18-22	Qualitative response regression models	
23-26	Cross Sectional Econometrics	
27-33	Time series Econometrics	
34-39	Time Series Analysis: Some Basic Concepts	
40-45	Panel data regression model	

Reading Material:
Text book recommended

***Basic Econometrics* (2015),** Damodar N Gujarati, Dawn C Porter and Sangeetha Gunasekar, SIE(Fifth Edition), New Delhi: Tata McGraw-Hill Publishing Company Limited.

Other references:

- *Econometric Methods* (4th edition), Jack Johnston and John DiNardo, McGraw-Hill Publishers, ©1997.
- *Introductory Econometrics with Applications* (5th edition), byRamu Ramanathan, Hartcourt College Publishers, © 2002.
- *AFirst Course in Business Statistics,* by J. T. McClave, P. G. Benson and T. Sincich, Prentice Hall, (8th Edition).
- *Estimation and Inference in Econometrics*, by Russell Davidson and James G. Mackinon, Oxford University Press, 1993.
- *Microeconometrics*, by A.C. Cameron and P.K. Trivedi, Cambridge University Press, 2005.
- *Handbook of Regression Analysis,* by Samprit Chatterjee and Jeffrey S. Simonoff, John Wiley and Sons, 2013.
- *Regression Analysis by Example,* Samprit Chatterjee and Ali S Hadi, John Wiley and Sons, 2012.
- *Applied Linear Statistical Models* by Kutner, Nachtsheim, and Neter (5th edition), The McGraw-Hill.