Semester V B.A. (Honours) Economics DSE 2 (Group-I): APPLIED ECONOMETRICS (6 Credits) Full marks: 100 (Mid Term-20 + End Term-80)

Course Description

The aim of this course is to provide a foundation in applied econometric analysis and develop skills required for empirical research in economics. Topics include specification and selection of regression models, dynamic econometric models, advanced methods in regression analysis and panel data models. Since the emphasis is on application of methods, this course requires understanding of econometric software and computing skills.

Units		No of Lecture Hours	No of Practical Hours	Marks
1.	Empirical Econometric Research: Tools and Techniques Sources of data; types of data: cross section, time series and panel; Modelling of economic data; normalisation and outliers; model selection criteria; Hypothesis formulation and inference about the parameters; Importance of stochastic term and error specification bias; Reporting regression results.	15	0	15
2	Dynamic Econometric Models: Autoregressive and Distributed lag models The Role of lags in economics; Reasons of including lags; The Koyck approach to distributed lag models; Rationalisation of Koyck model: Adaptive expectations model and Partial Adjustment model; Almon's polynomial lag models; Autoregressive models; Autocorrelation in autoregressive models: Durbin h-test; estimation of autoregressive models: the method of instrumental variable; Causality in Economics: The Granger causality test.	15	0	20
3	Simultaneous equation models The nature of simultaneous equation models – some illustrative examples; Structural, reduced and final form equations; Simultaneity bias; the Identification problem: underidentification, exact identification and overidentification; Rules of identification: Rank and order conditions; Estimation of simultaneous equation models; Recursive systems and OLS estimation; the Indirect Least Squares; Two Stage Least squares; three stage least squares.	15	0	20
4	Panel Data Models Use and sources of panel data; types of panel data: balanced and unbalanced; Methods of estimation; Pooled regression model; fixed effects model; random effects model; Choice between fixed effects and random effects models: Hausman test.	15	0	15
5	Introduction to Econometric Software Package: Data entry, tabulation of data: frequency, percentages, cross tabulation; outlier detection; Presentation of data: pie-chart, histograms, ACF; data reliability, correlation, Regression.	0	60 (Should be divided evenly throughout the	10

		semester)	
Total		60	80

Reading List:

- 1. Jeffrey M. Wooldridge, *Econometrics*, CENGAGE learning, India Edition, 2009.
- 2. Dimitrios Asteriou and Stephen Hall, Applied Econometrics: A Modern Approach, Palgrave Macmillan, 2007.
- Damodar Gujarati, *Econometrics by Example*, Palgrave Macmillan, 2011.
 Maddala, G.S.: *Introduction to Econometrics*, Wiley India, 3rd Edition 2010.