Stat-314 Econometrics I

100 Marks: 03 Credits

Number of Class: 35-40

Concept: Meaning, economics and econometrics, types of Econometrics, nature, scope and sources of econometric data.

Multicollinearity: Concept of multicollinearity, estimation in presence of multicollinearity, theoretical and different consequences of multicollinearity, detection of multicollinearity, remedial measures of multicollinearity.

Heterosedasticity: Meaning of heteroscedasticity, OLS and GLS estimation in presence of heteroscedasticity, consequences of using ordinary least squares in presence of heteroscedasticity, detection of heteroscedasticity by both informal and formal methods, Park, Glejser, Spearman's rank correlation, Goldfield-Quandt, and Breusch-Pagan-Godfrey test of heteroscedasticityt, remedial measures of heteroscedasticity.

Autocorrelation: Concept of autocorrelation, Ordinary Least Squares estimators and best linear unbiased estimators, estimation in presence of autocorrelation, consequences of using ordinary least squares in presence of autocorrelation, detection of autocorrelation by graphical methods, run test, Durbin-Watson D-test, H-test asymptotic autocorrelation, remedial measures of autocorrelation for both known and unknown p, Ceohrance-Orcutt Iterative, Durbin's two step and EGLS methods of estimating p, concept of autoregressive conditional heteroscedasticity (ARCH) model, generalized ARCH (GARCH) model.

Econometric Modeling and Model Selection: Average economic regression, methodology and specification errors, types of specification error, nature, consequences and remedies of specification errors, test of specification error, errors of measurement in dependent and explanatory variables, Monte-Carlo experiment of specification error, Different model selection criteria.

Dummy Variables: Meaning nature of dummy variables, regression on different combination of quantitative and qualitative variables, testing structural stability of regression model, comparing two regression by dummy variables, comparison with chow test, use of dummy variables in seasonal and piece-wise linear regression and combing time and cross sectional data, dummy variable trap, method of avoiding dummy variable trap.

Text

1. Gujrati,D. (2003): *Basic Econometrics* 4th edition, McGraw-Hill, New York.
2. Johnston, J. (1977): *Econometric Methods*, 4th edition, McGraw-Hill, New York.
3. Desai, M. (1976): *Applied Econometrics*, Oxford Publication.

References

1. Greene, W.H. (2003): *Econometric Analysis***,** 5th Ed, Pearson Education
2. Kleim & Miller: An Introduction to Econometrics
3. Klein, L.R. (1974): *A Text Book of Econometrics,* Evanston, Ill., Row, Peterson.
4. Koutsoyiannis, A. (1977): *Theory of Econometrics*, 2nd Edition, Palgrave Macmillan Ltd,India.
5. Malinvand,E: *Statistical Methods of Econometrics*.
6. Thiel, H.: *Principal of Econometrics*.
7. Wooldridge, J. (2005): *Introductory Econometrics: A Modern Approach*, South-western College Pub.