

MANGALORE UNIVERSITY
Department of Statistics

STH 454:ECONOMETRICS

Hours/Week:4
Credits : 4

I.A.Marks:30
Exam. Marks: 70

Course Outcomes:

- CO1: A broad knowledge of regression analysis relevant for analysing economic data.
- CO2: Learn estimation of model parameters ,inference problems in case of simple and multiple linear regression model
- CO3: estimate the model parameters of regression model when some of the basic ideal conditions are violated
- CO4: regression model adapted to cross section and time-series data
- CO5: Learn to select the best subsets of regressors for the model.
- CO6: Learn how to use estimated regression models for prediction.
- CO7: Understand the estimation techniques and inference procedure in case of simultaneous equations model

UNIT-I

12 Hrs.

Introduction to Econometrics. Nature of econometric study. Simple linear regression,multiple linear regression, basic assumptions. Ordinary Least Squares (OLS) estimation and their properties. Use of prior information. Restricted least squares estimators Tests of hypothesis about regression coefficients and ANOVA. Mixed regression estimator.

UNIT-II

10 Hrs.

Prediction – best linear unbiased predictor. Regression diagnostics and specification tests: Residual analysis for identifying influential observations, recursive residuals and their applications. Subset selection of explanatory variables, Mallows Cp-statistic. Introduction to Logistic regression model. Estimation and testing the significance of the coefficients.

UNIT-III

12Hrs.

Violation of basic ideal conditions: Disturbance with non-zero mean; asymptotically unco-operative regressors. Multicollinearity – its consequences and testing. Ridge estimator and its properties. Ridge regression. Stochastic regressors, autoregressive models, Instrumental variables, Errorsinvariables.

	UNIT-IV	10 Hrs.
Heteroscedasticity, tests for heteroscedasticity. Generalised Least Squares (GLS) estimators and its properties. Feasible generalized least squares estimators. Grouping of observations. Sets of Regression Equations. Auto correlation, its consequences and testing for autocorrelation. Estimation.		
	UNIT-V	10Hrs
Simultaneous equation models. Identification problem. Identification using linear homogeneous restrictions on structural parameters, rank and order conditions.		
Estimation in simultaneous equation models – Indirect Least Squares (ILS) estimators, Two State Least Squares (2SLS) and their properties. Three stage least squares estimation.		
REFERENCE BOOKS: 1. Badi H. Battagi (2002): Econometrics, 3rd Ed., Springer. 2. B. Abraham and Ledotter, J. (1983) Statistical Methods for Forecasting, John Wiley & Sons 3. Draper N.R. and Smith H. (1998): Applied Regression Analysis, 3rd Ed., John Wiley and Sons, Inc. 4. Dilip M. Nachane (2006): Econometrics-Theoretical Foundations and Empirical Perspective, Oxford University Press, New Delhi. 5. Fomby T.B., Hill R.C. and Johnson S.R. (1988) <i>Advanced Econometric Methods</i>, Springer-Verlag. 6. Greene W.H. (1993): Econometric Analysis, Macmillan, New York. 7. Johnston J. (1984): Econometric Methods, 3rd Ed., McGraw Hill. 8. Johnston J. and Dinardo J. (1997): Econometric Methods, 4th Ed., McGraw-Hill Companies. 9. G.S. Maddala (1977): Econometrics, McGraw-Hill Inc. 10. Peter Schmidt (1976): Econometrics, Marcel Dekker.		