**PAPER NO - 8**

# INTRODUCTORY ECONOMETRICS

## Course Description

This course provides a comprehensive introduction to basic econometric concepts and techniques. It covers estimation and diagnostic testing of simple and multiple regression models. The course also covers the consequences of and tests for misspecification of regression models.

## Course Outline

**1. Nature and Scope of Econometrics**

**2. Review of Statistical Concepts**
Normal distribution, chi-square, t- and F-distributions, estimation of parameters, properties of estimators; testing of hypotheses.

**3. Simple Linear Regression Model: Two Variable Case**
Estimation of model by method of ordinary least squares, properties of estimators, goodness of fit; tests of hypotheses, scaling and units of measurement, confidence intervals, Gauss-Markov theorem, forecasting.

**4. Multiple Linear Regression Model**
Estimation of parameters; properties of OLS estimators, goodness of fit, partial regression coefficients, testing hypotheses,functional forms of regression models, qualitative (dummy) independent variables.

**5. Violations of Classical Assumptions: Consequences, Detection and Remedies**
Multicollinearity, heteroscedasticity, serial correlation.

**6. Specification Analysis**
Omission of a relevant variable, inclusion of irrelevant variable, tests of specification errors.

## Readings

1. D. N. Gujarati and D.C. Porter, *Essentials of Econometrics*, McGraw Hill, 4th Edition, International Edition, 2010.
2. Christopher Dougherty, *Introduction to Econometrics*, Oxford University Press, 3rd Edition, Indian Edition, 2007.
3. Jan Kmenta, *Elements of Econometrics, Indian Reprint*, Khosla Publishing House, 2nd edition, 2008.