

## SEC: MS 407: BASIC ECONOMETRICS USING SOFTWARE

### Course Objective:

This course provides basic econometric concepts, understanding through software. It covers estimation and diagnostic testing of simple and multiple regression models.

### Learning Objective:

After studying this course, you will be able to

1. Understanding of basic econometrics and its assumptions and impact of violations of classical assumptions
2. Interpretation of regression model
3. Interpretation of functional forms of regression model.

### Course Contents:

#### Unit I

(3 Weeks)

Introduction to Econometrics and an overview of its applications; Simple Regression with Classical Assumptions; Least Square Estimation And BLUE, Properties of estimators, Multiple Regression Model and Hypothesis Testing Related to Parameters – Simple and Joint.

#### References:

Gujarati, N. Damodar. Basic Econometrics. New Delhi: McGraw Hill. [ Chapter 1-9]

Gujarati, N. Damodar. Econometrics by Examples. New Delhi: McGraw Hill. [Chapter1-3]

#### Unit II

(3 Weeks)

Assumptions Violations; understanding of assumptions, what is the consequences if violated, their identification, how to take care.

- **Zero Mean of error**
- **Homoscedasticity**
- **Autocorrelation**
- **Uncorrelatedness of regressor and disturbance**
- **Normality**
- **Non-Stochastic Regressor**

#### References:

Gujarati, N. Damodar. Basic Econometrics. New Delhi: McGraw Hill. [Chapter 10-13]

Gujarati, N. Damodar. Econometrics by Examples. New Delhi: McGraw Hill. [Chapter 4-7]

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### **Unit III**

**(3 Weeks)**

Outliers & Influential Points; understanding, deduction and how to take care. goodness of fit.

#### **References:**

Gujarati, N. Damodar. Basic Econometrics. New Delhi: McGraw Hill. [Chapter 3 and 4]

### **Unit IV**

**(3 Weeks)**

How to report results of the Regression?

How to decide which Regression Model provides a better fit?

Interpretation of functional forms of regression model.

Scaling effect in Regression ...

Point and Interval Estimation of parameters of the Regression Model

#### **References:**

Gujarati, N. Damodar. Basic Econometrics. New Delhi: McGraw Hill. [Chapter 5]

**Recommendation Computer Package to be Used: such as R, Stata.**

#### **Text Books:**

1. Christopher Dougherty (2007). Introductory Econometrics (3rd ed.). Oxford University Press.
2. Gujarati, Damodar Basic Econometrics (4th ed.). New Delhi: McGraw Hill.

#### **Additional Readings:**

1. Pindyck, Robert S. and Daniel L. Rubinfeld (1997) Econometric Models and Economic Forecasts. (3rd ed.). Singapore: McGraw Hill.
2. Ramanathan, Ramu (2002). Introductory Econometrics with Applications (5th ed.). Thomson South Western

#### **Teaching Learning Process:**

This course will be taught using a mix of the following tools:

1. Relevant Case studies
2. Hands on practice on stata and R
3. Relevant and important articles from academic linked journals in the domain of Management such as Harvard Business Review,

## **BASIC ECONOMETRICS USING SOFTWARE**

### **Assessment Method:**

Practical + Internal assessment - 50 marks

Written exam - 50 marks

### **Keywords:**

Prowess, R- software, Stata, Multiple Regression and Classical Assumptions