# **GENERIC ELECTIVE (GE)-BBA (FIA)**

# **FUNDAMENTALS OF ECONOMETRICS**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre- requisite	Department offering the
		Lecture	Tutorial	Practical/		of the	course
				Practice		course	
FUNDAMENTALS	4	3	0	1	Class XII	NA	Department
OF					Pass		of Finance
<b>ECONOMETRICS</b>							and
(GE-4)							Business
							Economics

# **Learning Objectives**

The Learning Objectives of this course are as follows:

- This course provides a comprehensive introduction to basic econometric concepts and techniques.
- It covers estimation and diagnostic testing of simple, multiple regression models, panel data models, and dummy variable regression with qualitative response regression models.

## **Learning Outcomes**

The Learning Outcomes of this course are as follows:

- Understanding of basic econometrics and its assumptions and the impact of violations of classical assumptions.
- Interpretation of functional forms of regression model.
- Understanding of models using dummy variables and Qualitative Response Regression Models.

### **SYLLABUS OF GE-4**

#### Unit 1

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. Functional forms of regression models.

## Unit 2

Violations of Classical Assumptions: multicollinearity, heteroscedasticity, autocorrelation, and model specification errors, their identification, their impact on parameters; tests related to

parameters and impact on the reliability and the validity of inferences in case of violations of Assumptions; methods to take care of violations of assumptions.

#### Unit 3

Understanding the impact of change in scale of variables on output. Understanding and calculation of information criteria for model selection: AIC, BIC, and HQC. Understanding and calculation of R Square and adjusted R Square. Understanding of outliers and their impact on the model's output.

### Unit 4

Dummy variables: Intercept dummy variables, slope dummy variables, Interactive dummy variables, Use of Dummy Variables to model qualitative/Binary/Structural changes, Other Functional Forms, Qualitative Response Regression Models or Regression Models with Limited Dependent Variables - Use of Logit, and Probit Models.

**Practical component (if any)** – Recommendation Computer Package to be Used: Use of softwares like E-Views, R, and STATA to solve real-life problems and check assumptions, taking care of assumption violations, and test goodness of fit, and for estimation of Logit, and Probit Models is recommended.

### **Essential/Recommended Readings:**

- 1. Christopher Dougherty. Introductory Econometrics. Oxford University Press.
- 2. Gujarati, N. Damodar. Basic Econometrics. New Delhi: McGraw Hill.
- 3. Gujarati, N. Damodar. Econometrics by Examples. New Delhi: McGraw Hill.

### **Suggestive Readings:**

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