

COC205 Business Statistics & Econometrics for Managers [4 Credits]

Learning Objective: This course is designed to develop the skills of statistical analysis of students. During the course of study, students will be familiarized with the statistical software used for data analysis. Every student should be able to understand the reasons for not resorting to plagiarism while preparing research reports.

UNIT 1: Statistical Analysis of Data - I (12 Hours)

Time Series Analysis – Components of time series – analysis of time series – measurement of trend – measurement of seasonal variation *(Includes Practical Problems)*

Hypothesis Testing: measures used for analyzing the relation, estimation and prediction of data –Power of a test, Large sample tests for proportions, means and standard deviations - Small sample tests – t and F tests *(Includes Practical Problems)*

UNIT 2: Statistical Analysis of Data – II (12 Hours)

Parametric tests – Tests of Significance Based on t, F and Z Distributions – ANOVA – one way and two way classification *(Includes Practical Problems)*

Uni/Bi/Multi Variate Analysis - Factor Analysis - Discriminant Analysis – Cluster Analysis – Conjoint Analysis - Use of Computer software in data analysis *(Using Excel, SPSS, Gretl) (Results Interpretation)*

UNIT 3: Statistical Analysis of Data – III (12 Hours)

Non – Parametric tests – Chi-square test – Test of Goodness of Fit – Test for Independence of Attributes Non-Parametric Methods – Sign Tests – Wilcoxon Signed Rank Test – Kruskal Wallis Test - Significance of reliability - Parametric Vs non-parametric tests *(Includes Practical Problems)*

UNIT 4: Introduction to Econometrics (12 Hours)

What is Econometrics – methodology of econometrics – types of econometrics – role of different software – regression versus causation – regression versus correlation – terminology - nature & sources of data for economic analysis - CLRM –Assumption, properties of OLS estimation, Co- efficient of determination– R^2 and Adjusted R^2 *(Results Interpretation)*

UNIT 5: Introduction to Regression Analysis (12 Hours)

Two –variable regression analysis – Classical linear regression models – Multiple regression analysis - Multicollinearity: consequences of multicollinearity, detection and solution - Heteroscedasticity: Nature and Causes; Consequences; Detection by graphical analysis of residuals; Solution of Heteroscedasticity - Autocorrelation: nature and causes; Consequences; Detection and D-W Test *(Results Interpretation)*

Suggested Readings:

1. Brooks, C., Introductory Econometrics for Finance, 2008, Cambridge University Press
2. Gujarati, D., Basic Econometrics, 2003, Mc Graw-Hill
3. Gujarati, D., Essentials of Econometrics, 2006, Mc Graw- Hill
4. Greene, W., Econometric Analysis, 2003, Prentice Hall
5. Maddala & Lahiri, Introduction to Econometrics, 2009, Wiley India Edition
6. Ramanathan., Introductory Econometrics with applications, 2002, Thomson South-Western
7. Wooldridge J., Introductory Econometrics A modern Approach, 2002, South Western
8. Krishnaswami, O. R and Ranganathan. M. Methodology of Research in Social Sciences. Himalaya Publishing house.
9. Gupta, S.C. Fundamentals of Statistics. Himalaya Publishing House.
10. Aizel, Amir D & Sounderpandian, Jayavel. Complete Business Statistics, Tata McGraw Hill.
11. Sachdeva, J. K., Business Research Methodology, Himalaya Publishing House

