

equilibrium of firm/industry, monopoly: basic features, short run equilibrium, long run equilibrium, comparison with perfect competition, welfare cost of monopoly; price discrimination; monopolistic competition: basic features, demand and cost, short run equilibrium, long run equilibrium, excess capacity; oligopoly kinked demand curve model, dominant price leadership model.

**Essential Readings:**

1. Dominick Salvatore (2009): Principles of Microeconomics (5th edition), Oxford University Press.
2. Pindyck, Rubinfeld and Mehta (2009): Micro Economics (7<sup>th</sup> Edition), Pearson.

**Additional Readings:**

Lipsey and Chrystal (2008): Economics (11th edition), Oxford University. Please Note: Latest edition of the readings to be used.

**Teaching Learning Process:**

Lectures, problems and numerical, term paper, presentations, case studies

**Assessment**

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment of the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**Key Words**

Equilibrium, Rationality, Utility Maximization, Profit Maximization, Market Form.

**DSC 3: STATISTICS FOR BUSINESS DECISIONS**

Course Title	Total Credits	Components			Eligibility Criteria/ Prerequisite	Prerequisite if any
		L	T	P		
Statistics for Business Decisions	4	3	1	0	Class XII Pass	NIL

**Course Objectives:** To familiarize the students with various Statistical Data Analysis tools that can be used for effective decision making. Emphasis will be on the application of the concepts learnt to various financial and managerial situations.

**Learning outcomes:** After the end of the course, students should be able to

- Summarize data sets using Descriptive statistics.
- Analyze the relationship between two variables of various managerial situations.
- Geometrically Interpret Correlation and Regression.

- Develop managerial decision problems using Probability Density Functions and Cumulative Density Functions.

**Critical thinking and problem solving:** The course will help students understand the characteristics of Analytical thinking that rests on Statistical Methods and Data Analysis approaches.

**Course Contents:**

**Unit 1: Data and its Descriptive Analysis (12 hours)**

Quantitative and Qualitative Data, Attributes and variables, Scales of measurement: nominal, ordinal, interval and ratio, Measures of Central Value: Mean, Median, Mode, Measures of Dispersion: Absolute and Relative measures of dispersion – Range, Quartile Deviation, Mean Deviation, Standard Deviation, Moments, Skewness, Kurtosis. Visualization of Data: Histograms, Stem and Leaf Plots, Five Number Summary and Box Plots. Introduction to Big Data: Characteristics and Stages.

**Unit 2: Correlation and Regression Analysis (16 hours)**

Correlation Analysis: Meaning and significance. Correlation and Causation, Types of Correlation, Methods of studying Simple correlation – Scatter diagram, Karl Pearson's coefficient of correlation, Spearman's Rank correlation coefficient.

Regression Analysis: Meaning and significance, Regression vs. Correlation, Simple Regression model: Linear Regression, R-square and MSE in Regression, Geometric Interpretation of Regression.

**Unit 3: Random Variable Analysis (16 hours)**

Probability: Meaning and need, Conditional probability, Bayes' theorem, Random Variable- discrete and continuous. Probability Distribution: Meaning, characteristics (Expectation and variance) of Binomial, Poisson, Exponential and Normal distribution, z-score, Chebyshev and empirical rule, Central limit theorem.

**Unit 4: Introduction to Estimation and Hypothesis Testing (16 hours)**

Estimation: Point and Interval estimation of population mean, Confidence intervals for the parameters of a normal distribution (one sample only), Hypothesis Testing: Null and

Alternate Hypothesis, One Tail and Two tail tests, Level of Significance, Type I and Type II error, Test of hypothesis concerning Mean: z-test & t-test.

**Essential Readings:**

1. Gupta, S.P., Statistical Methods, Sultan Chand & Sons.
2. Levine, D., Stephan, D., & Szabat, K., Statistics for Managers using MS Excel, Pearson India.
3. Miller, I., & Miller, M., John E. Freund's Mathematical Statistics with Applications, Pearson India.

**Suggested Readings:**

1. Keller, G., Statistics for Management and Economics, Cengage Learning, New Delhi.
2. Stine, R. and Foster, D., Statistics for Business (Decision making and Analysis). Pearson India.

3. Levin, R. and Rubin, D., Statistics for Management, Pearson India.
4. Evans, J., Business Analytics, Pearson India.

**Recommendation:**

The students are encouraged to solve real life case studies using Spreadsheet.

**Teaching Learning Process:**

Class room lectures, Case study discussion, Numerical problem solving, Class presentation on the assigned topic by students - individually or in groups, Workshops and Tutorials.

**Assessment**

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment of the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

**Key Words**

Descriptive Statistics, Inferential Statistics, Central Tendency, Measures of Dispersion, Correlation, Regression, Random Variable, Probability Distribution, Testing of Hypothesis.