Gujarat University

K. S. School of Business Management and Information Technology

[Five Years' (Full – Time) M.B.A. Integrated Degree Course]

Second Year M.B.A. (Sem – IV)

Code: KS-MBA-DSC-M-244

Business Statistics

Course Credit: 4

Instructions: Most of the decisions, in the fields of Business, Economics and Finance, are made with the help of information gathered about the consumer demand, competition faced, resources required, economic environment involved, financial environment around and many other factors. This information is collected in the form of data and analysed to promote one's business under such circumstances. This course presents the various tools of moving towards risk management and estimation. It is a Minor Course requiring approximately 55 to 60 hours of direct teaching in the Fourth Semester. During the course, minimum two assignments will be given.

Course Objective: Decision making can be enhanced by estimating the risk involved. Data analysis is one of the tools to manage the risk factor. The objective of this course is to help in understanding the different types of probability distributions that one encounters while observing and studying data and their applications in estimating and analyzing a situation. Further, the course introduces the analysis of data concerning two or more variables and their applications.

Program Outcomes: The learnings, at the Second Year of the MBA programme, focus more on practical orientation of the various subjects. For business to grow and flourish, competitive edge is the need of the hour. The application based study of the concepts, introduced in various subject areas, prepares students to face any kind of market competition and make them able to deliver best in any circumstances.

Course Outcomes: The course would help the students to learn and understand different types of data distributions which may occur in various real-life situations. Moreover, the course would help the students to appreciate how different data sets are related and what this relationship infers.

Detailed Syllabus:

Module 1: Discrete Probability Distributions and Continuous Probability Distributions **[25%]**

Discrete Probability Distributions:

Introduction to Binomial, Poisson, Hyper-Geometric Distributions
Their Probability Functions, Properties, Constants
Applications and Related Examples

NOTE: Constants of the Distributions without Proof

Continuous Probability Distributions:

Introduction to Uniform (or Rectangular), Normal and Exponential Distributions
Their Probability Functions, Properties, Constants
Applications and Related Examples

NOTE: Constants of the Distributions without Proof

Module 2: Linear Correlation and Association of Attributes [25%]

Linear Correlation:

Introduction to Linear Correlation Analysis
Meaning, Definition and Uses of Correlation
Types of Correlation
Methods for Studying Correlation:

- Scatter Diagram
- Karl Pearson's Coefficient of Correlation
- Correlation in Bivariate Frequency Table
- Spearman's Rank Correlation Coefficient
- Concurrent Deviations Method

Introduction to Probable Error and Coefficient of Determination
Related Examples

Association of Attributes:

Classification of Data in 2X2 Contingency Table Only
Notations and Terminology
Consistency of Data
Types of Association
Methods of Measuring Association of Attributes:

- Comparison Method
- Proportion Method
- Yule's Method
- Coefficient of Colligation

Related Examples

NOTE: Related Examples of 2X2 Contingency Table Only

Module 3: Linear Regression [25%]

Introduction to Linear Regression Analysis
Different Lines of Regression
Meaning, Definition and Uses of Regression
Principle of Least Squares
Methods of Studying Regression Coefficients
Regression Equations for a Bivariate Frequency Table
Related Examples

Module 4: Multiple-Partial Correlation and Regression Analysis and Modeling [25%]

Introduction
Partial Correlation
Multiple Regression and Correlation Analysis
Methods of Finding the Multiple Regression Equation:

- Equational Approach
- Method of Least Squares

Related Examples

NOTE: For Multiple-Partial Correlation and Regression, More than Three Variables' Problems would not be Considered.

Reference Books:

- Business Statistics for Contemporary Decision Making: Ken Black; Wiley India Edition.
- Business Statistics: Naval Bajpayee; Pearson Education India
- Comprehensive Statistical Methods: Dr. P. N. Arora, Sumeet Arora, S. Arora, Amit Arora; S. Chand
- Statistics for Management: Richard I. Levin, David S. Rubin; Pearson
- Fundamentals of Statistics: S.C. Gupta; Himalaya Publishing House
- Statistics for Management: T.N. Srivastava, Shailaja Rego; Tata McGraw Hill
- Business Statistics: J.K. Sharma; Pearson Education India
- Statistics: D.C. Sancheti, V.K. Kapoor; Sultan Chand and Sons
- Business Statistics: N.D. Vohra; Tata McGraw Hill

Mode of Evaluation:

Continuous Evaluation: 30%
Mid Semester Exam: 20%
End Semester Exam: 50%

Assessment Tools: Test, Quiz, Assignment, Presentation, Project etc.