Subject Code: 1MS2010104	Subject Title: Quantitative Techniques

1. Course Objectives and Outline:

Quantitative Techniques is essential course in virtually all areas and particularly business management that depends on data to make decisions and reach conclusions. This includes the important question of how to obtain suitable data for a given purpose, how best to extract the information and how to treat the available data. This course introduces to:

- Data Presentation
- Analyzing Business Problems using Statistical techniques
- Analyzing Problems in Operations
- Decision Making

2. Teaching Scheme (Hours per week)

Lecture (Hrs.)	Tutorial	Practical	Credit	Evaluation Scheme (Marks)		Total
				University Assessment	Continuous Assessment	
3	1	-	4	60	40	100

3. Syllabus

Module No.	Contents	Total Hours	Weight
1	Application of Statistics in Business, Grouping and Displaying Data Using Tables, Charts and Graphs, Types of Data Measurement Grouped and Ungrouped data, Measures of Central Tendency, Mean Median, Mode, Dispersion in Frequency Distributions, Range, Average Deviation, Mean Absolute Deviation, Standard Deviation, Variance, Co-efficient of Variance, Measure of Shape Skewness and Kurtosis	12	25%
2	Basic Probability Theories, Bayes' Theorem, Expected Value in Decision Making, Probability Distribution: Binomial Distribution, Poisson Distribution, Normal Distribution, Sampling Distributions	12	25%
3	Nonparametric test, Sign test, Mann-Whitney test, Kruskal-Wallis test, Run test, Rank Correlation test, Time Series and Forecasting, Trend Analysis, Cyclical Variation, Seasonal variation, Irregular variation, Time Series Analysis in Forecasting	12	25%
4	Linear Programming Problem- Formulation and Graphical Solution, Duality, Assignment and Travelling Salesman Problem, Simulation, Markov Analysis	12	25%

4. Course Pedagogy

The pedagogy of the quantitative techniques emphasizes on to impart basic understanding and application of statistics in business. The case analysis technique, self-assignment, group assignment, library assignment, tutorial sessions etc. enable the students to understand the subject practical way and develop problem solution skill in different situation using data and statistics. The operation research concepts enrich students with knowledge of managing operations optimally. The MS excel and other software packages of statistics and operations research introduces in tutorial sessions.

(***Students shall be provided necessary Equations and Tables during examinations*.**)

5. Suggested Readings

a. Books

Sr. No.	Books
1	Statistics for Management by Richard Levine and David Rubin, Pearson publication
2	Business Statistics for Cotemporary Decision Making by Ken Black, Willey publication
3	Applied Statistics in Business Economics by David Doane, Tata McGrawhill
4	Business Statistics by J K Sharma, Pearson publication
5	Statistics for Management, T N Srivastava, Tata McGrawhill
6	Statistics for Business and Economics, David Anderson, Cengage learning India

b. Journals/Magazines

- Statistical Methods & Applications, Springer
- Journal of American Statistical Association, American Statistical Association
- Journal of Marketing Research, American Marketing Association
- The Indian Journal of Statistics, Indian Statistical Institute

c. Web-Links

- www.socialresearchmethods.net
- www.Indianjouranls.com
- www.Indiastat.com

6. Evaluation Scheme

Sr. No.	Component	Weight
1	**University Examination**	**60%**
2	**Internal Assessment** -Depending on the need and objectives of the subject, internal assessment should include minimum three of the following sub-components; *Class Test, Quiz, Assignments, Case Presentation, Class Participation, Projects, Team/Individual Assignments.* -The weightage of a sub-component should not exceed 50% of internal assessment component weight. - The bifurcation of sub-components shall be communicated by the instructor before commencement of the academic sessions.	**40%**