CORE COURSE 4

Course Code	Course Name	L-T-P	Credits
MGT1214	Quantitative Methods	5-1-0	6

Objective: How to use the available information to make evidence-based decision making is very important in today's scenario. This course prepares students to learn to apply commonly used mathematical concepts and statistical methods in business contexts and how to interpret the analysis reports prepared by others.

Module I: Progressions: Arithmetic Progression (A.P) and Geometric Progression (G.P), Permutation and combination, Index number- Meaning and uses of index numbers-construction of index numbers, Aggregative index numbers, Average of Relatives Index Numbers, Simple & weighted; Value Index number, Consumer Price Index Number.

Module II: Statistics: Relevance, Introduction and definition-Phases of statistical study-Scope and limitations-Application of statistics in various areas-Types, sources and collection of data- Presentation of data- charts and graphs- frequency distribution. Measures of Central Tendency: Mean, Median and Mode- Measures of Dispersion: Range, Quartile deviation, Mean deviation, Standard Deviation-Variance and Coefficient of variation - Skewness and Kurtosis.

Module III: Correlation & Regression Analysis: Correlation, Types of Correlation- Scatter diagram- Karl Pearson's Co-efficient of Correlation-Spearman's Rank Correlation Co-efficient- Correlation and causation- Probable error. Regression Analysis - Lines of Regression, Regression Equations and regression co- efficient, Relationship between correlation and regression coefficients, Standard error of estimate-Application of correlation and regression in business data analysis.

Module IV: Probability & Theoretical distribution -Concept of probability –meaning and definition-approaches to probability-Theorems of probability-addition theorem-multiplication theorem (Statement only)- conditional probability-inverse probability- Baye's theorem. Binomial distribution-basic assumptions and characteristics- simple problems-Poisson distribution –characteristics- simple problems-Normal distribution-features and properties-standard normal curve.

Module V: Population and Sample- Sampling Methods-Testing of hypothesis-Procedure-error in testing-two tail tests and one tail tests-Confidence level- nonparametric tests (Chi-square test only). Parametric tests -Z test- test of significance of large samples-test for two sample means- small sample mean tests-Students t test-Analysis of variance-F-test-one-way ANOVA (Theory only).

Readings:

1. Vohra. N.D, Business Mathematics and Statistics. McGraw Hill Education (India) Pvt Ltd.
2. Singh, J.K, Business Mathematics, Himalaya Publishing House
3. S.P. Gupta, Statistical Methods, Sultan Chand & Sons, Educational Publishers, New Delhi.
4. Sharma, J.K, Business Statistics, Pearson Education.
5. Sharma, J.K, Business Mathematics, New Delhi, Amazon Asia-Pacific Holdings Private Limited Books Pvt Ltd.