SAINT CLARET COLLEGE, ZIRO

COMMERCE

SYLLABUS AS PER RGU SEMESTRAL SCHEME

(Subjected to syllabus enrichment by SCCZ for Claretines)

Semester II

BCM 201: Business Mathematics and Statistics

Total Marks: 100 (80- End Semester and 20-Sessional)

Objectives: Having studied this paper, a student will be able to:

a. *Familiarize with basic knowledge of mathematics and statistics, and its application in business*
b. *Grasp the fundamentals of statistics for interpreting business data*
c. *Understand the meaning, types, application and computation of correlation and regression analysis*
d. *To develop the ability to analyze and interpret data to give meaningful information to assist in making managerial decisions.*

Unit 0: **Baseline Analysis:** Introduction of basic concepts, objectives, and goal setting.

Unit I: Matrices and Determinant: Algebra of matrices, Inverse of a matrix, Matrix Operation – Business Application Solution of system of linear equations (having unique solution and involving not more than three variables) using matrix inversion Method.

Unit II: Calculus: Mathematical functions and their types- linear, quadratic, polynomial, exponential, logarithmic and logistic function. Concepts of limit, and continuity of a function, Concept and rules of differentiation, Maxima and Minima involving second order; Integration: Standard forms, Methods of integration – by substitution, by parts and by use of partial fractions, definite integration, finding areas in simple cases.

Unit III: Measures of Central Tendency: Concept, Definition, Characteristics, Utility and Types; Theoretical Base and Computation-Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, and Mode, Range, Quartile, Decile and Percentile.

Unit IV: Measures of Dispersion and Skewness: Concept, Meaning, Features; Theoretical Base and Computation-Mean Deviation (MD) and Standard Deviation (SD), and Variance; Coefficients of MD, SD, and Variance; and Measure of Skewness.

Unit V: Correlation and Regression Analysis: Correlation- Concept, Meaning, Types, Utility, Computation of Correlation-Karl Pearson and Spearman's Rank Difference Method; Regression-Concept, Meaning, Types, Computations, Regression vs. Correlation, Regression Lines, Regression Coefficient.

Unit 100: **Advanced skills:** Revision of concepts, journal/magazine reviews, and assignments/projects.

Recommended Readings:

Gupta, S. P. (2014). *Statistical Methods*. New Delhi: Sultan Chand publication.

Hazarika P. (2013). *Business Statistics*. New Delhi: S. Chand publication.

Hazarika P. (2013). *Business Mathematics*. New Delhi: S. Chand publication.

Zameeruddin Q., Khanna V. K., & Bhambri S. K. (2012). *Business Mathematics*. New Delhi: Vikas Publication.

Goyary R. (2020). *A Textbook of Business Mathematics and Statistics*. Itanagar: SEED publication.

National digital library of India. (n.d). *Correlation and Regression analysis* Retrieved from http://ndl.iitkgp.ac.in/document/Z2RWUHoyS0JXTUdZczNJeE9zVU9ON2VoUlpsWDlIRURTTzBlbDRkdjBMaz0