

<b>Subject Title</b>	<b>Paper MJR 203: DATA ANALYTICS ESSENTIALS</b>		
<b>Class/Group</b>	<b>B. Com (Business Analytics) (CBCS)</b>	<b>Semester</b>	<b>II</b>
<b>Paper: MJR 203</b>		<b>Max. Marks: 70EE+30IE=100</b>	
<b>PPW: 5 Hrs.</b>		<b>Exam Duration: 3Hrs</b>	

<b>COURSE OUTCOMES MJR-203-Data Analytics Essentials-5 Credits</b>	
<b>CO 1</b>	To make students to learn Essentials of data Analytics Types of Variables
<b>CO 2</b>	To understand the Central Tendency of Data, Calculate mean/median/mode
<b>CO 3</b>	To understand concepts Basic Probability sample space, event, independent and dependent - Calculate probability
<b>CO 4</b>	To Analyze distributions, calculate normal distributions - Compare quartiles and normal distributions - Identify Skew
<b>CO 5</b>	Use Poisson distribution function in R, Apply scripts in R - Create reusable, user defined function in R, Use Bayes' Theorem in R

*Objective: To make students to learn Essentials of data Analytics.*

<b>UNITS</b>	<b>CONTENTS</b>
<b>I</b>	<b>VARIABLES FOR DATA ANALYTICS:</b> Types of Variables: Determine the nature of variables in data analysis - Differentiate between numerical and categorical. Variables - Distinguish between nominal and ordinal variables - Differentiate between interval and ratio - Distinguish between continuous and discrete.
<b>II</b>	<b>ESSENTIAL STATISTICS DATA ANALYTICS:</b> Central Tendency of Data: Identify the components of central tendency - Calculate mean/median/mode - Identify the steps in calculating weighted/geometric/harmonic means - Measurement and Variability: Determine core aspects of measurement and variability - Calculate range - Calculate quartiles - Calculate inter quartile range - Calculate variance - Calculate standard deviation - Analyze permutation with repetition - Analyze combinations without repetition.
<b>III</b>	<b>PROBABILITY FOR DATA ANALYTICS:</b> Basic Probability: Uses of probability - Differentiate between sample space, event, independent and dependent - Calculate probability - Probability and Ven Diagramming: Analyze "this" OR "that" diagram - Analyze "this" AND "that" diagram - Analyze exclusive diagram - Joint probability - Conditional probability - Calculating Probability: Calculate P using a contingency table - Calculate P from trees - Calculate Bayes' theorem - Calculate the mean in terms of probabilities - Calculate the variance and standard deviation in terms of probabilities - Calculate conditional probability.
<b>IV</b>	<b>DISTRIBUTIONS:</b> Distributions: Analyze distributions - Discrete distributions - Binomial distributions - Poisson distributions - Continuous Distributions: Identify continuous distributions - Calculate continuous distributions - Identify cumulative distributions - Identify normal distributions - Calculate normal distributions - Compare quartiles and normal distributions - Identify skew.
<b>V</b>	<b>CASE STUDIES USING R:</b> Statistics in R Case Study: Apply Vectors in R - Use Data Frames in R - Use data from an external file in R - Apply mean/median/standard deviation in R - Distributions in R Case Study: Use Normal distribution function in R - Use Poisson distribution function in R - Apply Scatter plot in R - Apply Histogram in R - Apply Box Plot in R - Fraud Detection Case Study: Apply scripts in R - Create reusable, user defined function in R - Use Bayes' Theorem in R - Choose a function flexible to allow for different input parameters.
<b>Reference</b>	<b>Text Books &amp; Reference Books</b> 1. Application of Data Analysis Essentials Certificate; AICPA 2. Fundamentals of Business Analytics, 2nd Edition; R N Prasad, Seema Acharya; Wiley 3. Business Analysis with Microsoft Excel and Power BI, 5th edition; Conrad G. Carlberg; Pearson 4. Data Analytics with R; Bharti Motwani; Wiley.