

<b>PROGRAM</b>	<b>Master of Business Administration</b>
<b>SEMESTER</b>	<b>I</b>
<b>COURSE TITLE</b>	<b>Statistics for Management</b>
<b>COURSE CODE</b>	<b>04MB0103</b>
<b>COURSE CREDITS</b>	<b>3</b>
<b>COURSE DURATION</b>	<b>42 Hrs (42 sessions of 60 minutes each)</b>

**COURSE OUTCOMES:**

- ❖ Apply various Probability Distributions in analyzing Data and solving Decision Making Problems.
- ❖ Apply appropriate Sampling Technique in Choosing a Representative Sample from a Population and Examine the Population Parameters using Estimation Techniques.
- ❖ Interpret about the Population under study by applying various Hypothesis Testing Tools and arrive at conclusions about the Business Problem in hand.
- ❖ Analyze business data using correlation and regression analysis techniques.
- ❖ Apply forecasting techniques using time-series analysis.

**COURSE CONTENTS:**

<b>Unit No</b>	<b>Unit / Sub Unit</b>	<b>Sessions</b>
<b>I</b>	<p><b>Probability:</b> Introduction to probability, different approaches to probability- Classical, Relative frequency and Subjective, Laws of probability – addition, multiplication; conditional probability, Bayes' theorem.</p> <p><b>Probability distributions:</b> The concept of a random variable, Discrete Vs Continuous random variable, Probability Distribution of a Single Random Variable, Binomial, Poisson, Exponential and Normal probability distributions.</p> <p><b>Practical using MS-Excel:</b> Application of BINOMDIST, POISSON, EXPONDIST, NORMDIST, NORMINV, NORMSDIST, NORMSINV in calculation of probability in MS-Excel.</p>	<b>12</b>
<b>II</b>	<p><b>Sampling Theory:</b> Concepts of <b>Population, Sample, Parameter, Statistic</b>, Sampling distribution of Mean from Finite and Infinite Populations, Central Limit Theorem</p> <p><b>Hypothesis Testing:</b> Introduction to Hypothesis Testing, Null and Alternative Hypotheses, One-Tailed Versus Two-Tailed Tests, Types of Errors, Significance Level and Rejection Region, Concept of P-value</p> <p><b>Single Sample Tests (Parametric):</b> Z test for Population Proportion, Z-test for Population Mean, t-test for single mean</p> <p><b>Practical using MS-Excel:</b> t-test for single sample</p>	<b>7</b>
<b>III</b>	<p><b>Two-sample Tests (Parametric):</b> Z-test for means, t-test for means for independent samples, t-test for means for paired samples, Multiple Comparison: One-Way ANOVA</p> <p><b>Practical using MS-Excel:</b></p> <ul style="list-style-type: none"> <li>➤ t-test for two means of independent samples</li> <li>➤ paired t-test</li> </ul>	<b>7</b>

	➤ One-Way ANOVA	
<b>IV</b>	<b>Correlation and Regression:</b> The concept of correlation, Scatter plot, Pearson's correlation coefficient. Introduction to simple linear regression, Y on X line and X on Y line, prediction using regression line, Standard Error and Coefficient of Determination, Multiple Regression Analysis using MS Excel/spreadsheet only. <b>Practical using MS-Excel:</b> Illustration of simple linear regression and multiple linear regression in MS-Excel	8
<b>V</b>	<b>Time Series Analysis:</b> Introduction to time series, Components of time series, additive and multiplicative model of time-series (concepts). <b>Trend Analysis:</b> Introduction, Method of least square-Straight Line Trend, Second-Degree Polynomial Trend, Exponential Trend (numerical in software only). <b>Seasonal Variations:</b> Introduction, Calculation of seasonal index using Method Of Simple Averages, Ratio To Moving Average Method, depersonalization of additive and multiplicative time-series data. <b>Practical using MS-Excel:</b> fitting of linear trend, 2 <sup>nd</sup> degree polynomial, exponential trend	8
<b>NOTE: -</b>	<b>Instructors are advised to teach numerical using MS Excel in each module.</b>	

**EVALUATION:**

The students will be evaluated on a continuous basis and broadly follow the scheme given below:

	<b>Component</b>	<b>Weightage</b>
A	Continuous Evaluation Component (10% using Software, 10% Assignments / Quizzes / Class Participation)	20% (C.E.C.)
B	Internal Assessment	30% (I.A.)
C	End-Semester Examination	50% (External Assessment)

**SUGGESTED READINGS:**
**Text Books:**

Sr. No	Author/s	Name of the Book	Publisher	Edition & Year
T-01	Richard I. Levin and David S. Rubin	Statistics for Management	Pearson	Latest Edition
T-02	Naval Bajpai	Business Statistics	Pearson	Latest Edition

**Reference Books:**

Sr. No	Author(s)	Title	Publisher	Edition & Year
R-01	J K Sharma	Business Statistics	Vikas Publishing House	Latest Edition



R-02	T N Srivastava and Shailaja Rego	Statistics for Management	TMH	Latest Edition
R-03	Joseph Francis	Business Statistics	CENGAGE	Latest Edition
R-04	D P Apte	M.S. Excel Tools for Managers	Excel	Latest Edition
R-05	K. B. Akhilesh & S. B. Balasubrahmanyam	Mathematics and Statistics for Management	Vikas	Latest Edition
R-06	Sanjiv Jaggia, Alison Kelly	Business Statistics	McGraw Hill	Latest Edition