

STATISTICS FOR MANAGEMENT

I Semester: MBA									
Course Code	Category	Hours / Week			Credits	Maximum Marks			
CMBC05	Core	L	T	P	C	CIA	SEE	Total	
		4	-	-	4	30	70	100	
Contact Classes: 45		Tutorial Classes: Nil		Practical Classes: Nil			Total Classes: 45		
<p>I. COURSE OVERVIEW: This course helps to improve their ability to make effective managerial decisions, including application of statistics and developing statistical strategies and measurement of central tendency, which provide with the relevant mathematical tools required in the analysis of problems in engineering and scientific professions. The course includes tabulation of uni-variate, small sample test and regression analysis, selection random variables, probability distributions, correlation, regression, sampling distribution, testing of hypothesis and analysis of variance. The mathematical skills derived from this course form a necessary base to analytical and design concepts encountered in the program.</p> <p>II. COURSE OBJECTIVES: The students will try to learn:</p> <ol style="list-style-type: none"> I. The various statistical techniques and solve problems effectively in the statistics. II. Different types of skewness and know about the coefficient variations of skewness. III. The application of statistical measures of central tendency and also statistical measures of dispersion. IV. Application of ANOVA, other non-parametric test and analyze the recent trends. V. Time series analysis and also trend analysis of data and its importance for solving the problems. <p>III. COURSE OUTCOMES: After successful completion of the course, students will be able to:</p> <ul style="list-style-type: none"> CO 1: Recognize the significance, limitations, origin and development of statistics for better managerial analysis. CO 2: Summarize the knowledge about different branches of statistics and its application to improve technology based analysis. CO 3: Discuss various types of measures of central tendency and measures of dispersion to solve the identified business problems. CO 4: Analyze the different types of coefficient of skewness and the coefficient of variation for solving of direct and indirect problems. CO 5: Narrate the tabulation and classification of data to draw effective solutions for solving problems. CO 6: Demonstrate the diagrammatical and graphical representation for analysis of data by using different dimensional diagrams. CO 7: Examine the various T-distribution applications to test the dependent and independent variables. CO 8: Apply different types of small sample tests, techniques of ANOVA and correlation analysis for testing the samples. CO 9: Evaluate regression analysis and different types of time series for testing goodness of attributes fitness. CO 10: Describe the index numbers and trend analysis to test the adequacy and consumer indexes. <p>IV. SYLLABUS:</p>									
UNIT-I	INTRODUCTION TO STATISTICS						Classes:08		
Functions of Statistics and Managerial Applications of Statistics, Relationship with other subjects. Measures of central Tendency- Mean, Median, Mode, Geometric Mean and Harmonic Mean. Range, Quartile deviation, Mean Deviation, Standard deviation and co-efficient of variation. Skewness: Karl Pearson's co-efficient of skewness, Bowley's co-efficient of skewness, Kelleys co-efficient of skewness, Kurtosis.									

UNIT-II	TABULATION OF UNIVARIATE	Classes:09
Bi variate and multi variate data, data classification and tabulation, diagrammatic and graphical representation of data. One dimensional, two dimensional and three dimensional diagrams and graphs.		
UNIT-III	SMALL SAMPLE TESTS	Classes:08
Analysis of Variance: One Way and Two Way ANOVA (with and without Interaction). Chi-Square distribution: Test for a specified Population variance, Test for Goodness of fit, Test for Independence of Attributes.		
UNIT-IV	CORRELATION ANALYSIS	Classes:10
Correlation Analysis: Scatter diagram, Positive and Negative correlation, limits for coefficient of Correlation, Karl Pearson's coefficient of correlation, Spearman's Rank correlation, concept of Multiple and partial Correlation, Regression Analysis-Concept, least square fit of a linear regression, two lines of regression, Properties of regression coefficients.		
UNIT-V	TIME SERIES ANALYSIS	Classes: 10
Components, Models of Time Series–Additive, Multiplicative and Mixed models, Trend analysis-Free hand curve, Semi averages, moving averages, Least Square methods and Index numbers – introduction, Characteristics and uses of index numbers, types of index numbers, un weighted price indexes, weighted price indexes, Tests of adequacy and consumer price indexes.		
Text Books:		
<ol style="list-style-type: none"> 1. Gerald Keller, "Statistics for Management and Economics", Cengage Learning, 11thEdition, 2018. 2. Levin Richard (Author), H. Siddiqui Masood (Author), S. Rubin David (Author), Rastogi Sanjay (Author), "Statistics for Management", Pearson Education, 8thEdition, 2017. 3. P.C. Tulsian, Bharat Jhunjhuwala, "Business Statistics", S. Chand, 2016. 4. Levin R.I., Rubin S. David, "Statistics for Management", Pearson, 7thEdition, 2015. 5. Anderson, Sweeney, Williams, Cam, Cochran, "Statistics for Business Economics", Cengage 12thEdition, 2014. 6. J. K Sharma, "Business Statistics", Vikas Publishing House, 4thEdition, 2015. 7. Beri, "Business Statistics", Tata McGraw Hill, 1stEdition, 2015. 8. Gupta S.C., "Fundamentals of Statistics", Himalaya Publishing House, 6thEdition, 2015. 9. Barry Render and Ralph M. Stair, "Quantitative Analysis for Management", Prentice Hall of India, 12thEdition, 2012. 10. P N Arora & S Arora, "Statistics and Management", Sulthan Chand & Son's Publishing, 5thEdition, 2003. 		
Reference Books:		
<ol style="list-style-type: none"> 1. Levine, Stephan, krehbiel, Berenson, "Statistics for Managers using Microsoft Excel", PHI, 1stEdition, 2015. 2. J. K Sharma, "Business Statistics", Pearson Publications, 2ndEdition, 2015. 		
Web References:		
<ol style="list-style-type: none"> 1. https://aditya30702.files.wordpress.com/2012/07/statistics-for-managers-using-microsoft-excel-gnv64.pdf 2. http://www.nprcet.org/mba/document/First%20Semester/BA7102%20STATISTICS%20FOR%20MANAGEMENT%20LT%20P%20C%203%201%200%204%20ODD.pdf 		
E-Text Books:		
<ol style="list-style-type: none"> 1. http://bookboon.com/en/statistics-and-mathematics-ebooks 2. http://www.ebay.com/bhp/statistics-for-managers-using-microsoft-excel 3. https://www.sapnaonline.com/books/statistics-management-levin-richard-8177585843-9788177585841-academic 4. https://link.springer.com/book/10.1007/b101868 		