Course **Title**	**STATISTICS II**
Course Code Number	**MAS 132**
Credit Hours	**3**
Course Objective	
Main Objective	The objective of the course is to provide participants with a clear understanding of the basic inferential statistical concepts and tools on estimation, hypothesis testing, relationship between variables using correlation and regression techniques, and forecasting modelsand to enable them in using the tools for analyzing business decision problems.
Enabling Objectives	After completion of all the learning units and the requirement of the course, students will be able to: • Explain, calculate and interpret the estimation of mean and proportion. • State and setting the null and alternative hypothesis in terms of mean, and proportion and test it using data for one sample using statistical test: t-test, z-test. • State and setting the null and alternative hypothesis in terms of mean and proportion and test it using data for two samples using statistical test: t-test and z-test. • Explain, calculate, and interpret the chi-square test and one way ANOVA. • Explain, calculate and interpret the relationship between and among variables using simple correlation and regression analysis. • Interpret the SPSS output for regression model. • Explain, calculate and analyze the time series data for forecasting.
Learning Unit	
Learning Unit One **Net Contact Hours -5 hrs**	1. **Estimation** Introduction, Point estimates, Interval estimates, Interval estimates and confidence intervals, Calculating interval estimates of the mean from large samples, Calculating interval estimates of the proportion from large samples, Interval estimates using the t-distribution, Determining the sample size in estimation.
Learning Unit Two **Net Contact Hours - 8 hrs**	2. **Testing Hypotheses: One Sample Tests** Introduction, concepts basic to hypothesis testing procedure, testing hypothesis, hypothesis testing of mean when the population standard deviation is known, measuring the power of a hypothesis test, hypothesis testing of proportion of large samples, hypothesis testing of means when the population standard deviation is not known.
Learning Unit Three **Net Contact Hours - 6hrs**	3. **Testing Hypotheses: Two Sample Tests** Hypothesis testing for differences between means and proportions, Tests for differences between means: Large sample sizes, Tests for differences between means: Small sample sizes, Testing differences between means with dependent samples, Tests for differences between proportions :Large sample sizes
Learning Unit Four **Net Contact Hours - 7 hrs**	4. **Chi-Square and Analysis of Variance** Introduction, Chi-square as a test of independence, Chi-square as a test of goodness of fit, Chi square as a test of single population variance. Analysis of variance, F-test as a test of two population variances.
Learning Unit Five **Net Contact Hours – 8 hrs**	5. **Simple regression and correlation** Introduction, correlation analysis, regression equation using least squares method, prediction using regression equation- interpolation versus extrapolation, measures of variation - computing the sum of squares, the coefficient of determination, standard error of the estimate, Inference about the population slope, correlation coefficients, and regression equation using t-test and F-test, confidence interval for the slope, estimation of mean values and prediction of individual values, and Limitations and errors, interpreting SPSS output for regression model.
Learning Unit Six **Net Contact Hours - 7 hrs**	6. **Multiple Regression** Introduction, multiple regression models, interpreting the regression coefficient, prediction using regression model, quadratic model, multiple regressions with dummy variables, Inference about the population slope, and regression equation by t-test and F-test, confidence interval for the slope, estimation of mean values and prediction of individual values, interpreting SPSS output for regression model
Learning Unit Seven **Net Contact Hours - 7hrs**	7. **Time Series and Forecasting** Introduction, Variations in time series, Trend analysis, Cyclic variation, Seasonal variation, Irregular

	variation, Time series analysis in forecasting using trend projection method, moving average method and simple exponential smoothing method. Accuracy measures of forecast values.
Total Contact Hours	48 hrs (excluding assessment and final examination)
Basic Text	Richard I. Levin and David S. Rubin (1997), *Statistics for Management,* 7th Edition, New Delhi: Prentice Hall of India.
Reference Text	David M. Levine, Timothy C. Krehbiel, Mark L. Berenson, and P.K. Viswanathan ((2010), *Business statistics A FIRST COURSE*, 5th Edition, New Delhi: Prentice Hall of India.
Evaluation Scheme	In-Semester evaluation 50% End-Semester evaluation 50% Total 100%

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