MT-503	Applied Statistics
	Probability Distributions: Uniform, Binomial, Hypergeometric, Poisson, Normal, Exponential, Chi-square, F & T distributions. Sampling and Sampling Distribution: Introduction, Sampling techniques, Sampling distribution of mean, Central limit theorem. Statistical Inference & Hypothesis Testing: Confidence and significance level, Sample size determination, Point & Interval estimates, Interval estimates for Population Mean, Population standard deviation, Population proportion, Type I, Type II Errors, One Tail & Two tail tests, Test concerning means, Proportions & variances, Chi-square test. Regression and Correlation: Properties of Least square, Simple Linear Regression, Non-Linear Regression, Multiple Regression, Estimates of Regression Parameters, Confidence limits & Test of significance, Choice of a Regression model, Correlation, Multiple and Partial correlation, Coefficient of determination, Adequacy of the model. Introduction to Experimental Design: Comparing mean test, ANOVA, Tests for the equality of several variances, Multiple range test. Nonparametric Statistics: Nonparametric test, Signed-Rank test, Wilcoxon test, Kruskal-Wallis test, Rank correlation coefficient. Reference Books: • Walpole, Ronald E and Mayers, Raymond H, *Probability and Statistics for Engineers and Scientist*, 8th Edition, Person Prentice Hall, 2007. • Freund and John E, *Mathematical Statistics*, Prentice Hall International Inc. New Jersey, 1999. • Hogg R.Vand, Tanis E.A, *Probability and Statistical Inference*,4th Edition, Macmillan Publishing Company New York, 1993. • Mood A.M, Graybill F.A and Boes D.C, *Introduction to Theory of Statistics*, 3rd Edition Mcgraw-Hill Book Company New York, 1974.