

## **MT-252 Introduction to Probability & Statistics**

Statistics: introduction, types of data & variables, presentation to data, tabulation, frequency distribution, graphical representation, simple & multiple bar diagrams, pie-diagram, histogram, frequency polygon, frequency curves & their types, measures of central tendency and dispersion: statistical averages, median, mode, percentiles, quartiles, range, moments, skewness & kurtosis, quartile deviation, mean deviation, standard deviation, variance & its coefficient, practical significance in related problems. Probability: basic concepts, permutation & combination, definitions of probability, laws of probability, conditional probability, baye's rule, related problems in practical significance, random variables: introduction, discrete & continuous random variables, random sequences and transformations, probability mass function, probability density function, distribution function, mathematical expectations,

moment generating function (M.G.F.). Probability distributions: introduction, discrete probability distributions, binomial, poison, hyper geometric & negative binomial distributions, continuous probability distribution: uniform, exponential, gamma & normal distributions & their practical significance.

### **Recommended books:**

1. "Probability and Statistics for Engineers and Scientists", Ronald E. Walpole,  
Raymond H. Myers, Sharon L. Myers, Keying, Ye, Prentice Hall, 9<sup>th</sup> Edition, 2012
2. "Elementary Statistics, A Step by a Step Approach", Mc graw Hill, 8<sup>th</sup> Edition, 2011.