Chapter 1:

PROBABILITY, Sample Space, Events, Complement of an event Intersection, Mutually Exclusive (Disjoint) Events, Union, subset of Events Counting Sampling Points, Permutations, The number of permutations of n distinct objects arranged in a row and circle , Combinations, Probability of an Event, Additive Rule, Conditional Probability, Independent Events, Multiplicative Rules.

Chapter 2:

Discrete Sample Space, Continuous Sample Space, Discrete Probability Distributions, The Cumulative distribution Function, Continuous Probability Distributions, Definition The cumulative distribution of a continuous random variable.

CHAPTER 3:

Definition of the *MATHEMATICAL EXPECTATION*.(Mean and Variance) of a Discrete and Continuous Random Variable And its Properties , Mean and Variance of Linear Combinations of Random Variables:

Chebyshev's Theorem.

CHAPTER 4:

SOME DISCRETE PROBABILITY DISTRIBUTIONS, Discrete Uniform Distribution, The Bernoulli Distribution, Binomial Distribution.

Chapter 5:

SOME CONTINUOUS PROBABILITY DISTRIBUTIONS, Normal Distribution, Standard Normal, Distribution Normal Approximation to the Binomial,

Chapter 6:

Population, Sample, Central Tendency in the Sample, The Mean, The Median, The Mode, Variability in the sample, The Range, The Variance,

The Standard Deviation, Sampling Distributions. Sampling Distributions of Means ,Central Limit Theorem, Sampling Distribution of the sample Proportion, *t* – Distribution

Chapter 7:

Estimating the Mean, Confidence Interval of μ when σ is Known and Unknown .Estimating the Difference between Two Means when σ_1^2 *and* σ_2^2 Known and when σ_1^2 *and* σ_2^2 Unknown but equal variances. Estimating a Proportion:

Large – Sample Confidence Interval for proportion.

Chapter 8*:*

TESTS OF HYPOTHESES, The Null and The Alternative Hypotheses, Type Two Error. Power of the Test.

One – Tailed and Two – Tailed test. The Use of P – Values in Tests Concerning a Single Mean when σ is Known and Unknown. Tests Concerning Proportions