



Unit No.	Syllabus Contents	Mapped CO
I	<b>Measures of Central Tendency and Probability:</b> <b>Measures of Central Tendency:</b> Mean, Median, Mode. <b>Probability:</b> Probability Axioms, Addition Law and Multiplication Law Of Probability, Conditional Probability , Baye's Theorem (Without Proof).	CO1, CO2, CO4
II	<b>Random Variables and Probability Distributions:</b> Random Variables (Discrete and Continuous), Probability Density Function. Probability Distribution: Binomial, Poisson and Normal Distributions, Their Properties (Without Proof), Mathematical Expectation and Variance.	CO1, CO2, CO4
III	<b>Correlation and Regression:</b> Correlation, Correlation Coefficient, Rank Correlation, Regression, Lines Of Regression, Regression Coefficients, Principle Of Least Squares and Curve Fitting(Straight Line, Parabola and Exponential Curves).	CO1, CO2, CO4
IV	<b>Testing of Hypothesis and Large Sample Tests:</b> Formulation of Null Hypothesis, The Critical Region, Two Types of Errors, Level of Significance. <b>Large Sample Tests:</b> Test for Single Proportion, Difference of Proportions, Test for Single Mean and Difference of Means. Confidence Interval for Parameters in One Sample and Two Sample Problems.	CO1, CO3, CO5
V	<b>Small Sample Tests:</b> Student t-distribution (Test for Single Mean, Two Means and All Paired t-test), Testing of Equality of Variances (F-Test), $\chi^2$ – test for goodness fit, $\chi^2$ – test for Independence of Attributes.	CO1, CO3, CO5

### Learning Resources

#### Text Books

1. Fundamentals of Mathematical Statistics , S.C.Gupta and V.K.Kapoor , 11<sup>th</sup> Edition, Sultan Chand & Sons Publications, 2012.
2. Probability and Statistics for Engineers, Miller and Friends, 7<sup>th</sup> Edition, Pearson, 2008.

#### References

1. A First Course in Probability, S.Ross, Pearson Education India, 2002.
2. Probability and Statistics, Dr.T.K.V.Iyengar, Dr.B.Krishna Gandhi, S.Ranganatham, Dr.M.V.S.S.N. Prasad, S.Chand Publications, 4<sup>th</sup> Revised Edition, 2012.

#### e-Resources and other Digital Material

1. <https://nptel.ac.in/courses/111/106/111106150/>
2. <http://nptel.ac.in/courses/111105035>
3. [https://onlinecourses.nptel.ac.in/noc22\\_mg31/preview](https://onlinecourses.nptel.ac.in/noc22_mg31/preview)