Code	Subject Title		Cr. Hrs	Semester
STAT-307	Probability Theory (Theory)		3	V
Year	Discipline			
3	Statistics-I,II,III			

Code	Subject Title		Cr. Hrs	Semester
STAT-308	Probability Theory (Lab)		1	V
Year	Discipline			
3	Statistics-I,II,III			

Probability Theory
Course Outline

Probability. Kinds of probability. Conditional probability and independence. Total probability and Bayes theorem. Random variables. Distribution function, probability function and probability density function. Moments, factorial moments and cumulants. Probability generating function. Moments generating function. Cumulant generating function. Chebyshev inequality, Univariate distributions: Discrete uniform, binomial, hyper-geometric, multinomial, Poisson, geometric, negative binomial distributions.

Books Recommended

1. Hogg. R.V. and Craig, A.T., "Introduction to Mathematical Statistics" Prentice-Hall International, Inc. Engle Wood Cliffs, N.T., Fifth Edition, 1995.
2. Mood, A.M., Graybill, F.A. and Bloes, D.C. "Introduction to the Theory of Statistics "McGraw-Hill Book Company, New York, Third Edition, 1974.

Reference Books

1. J. Susan Milton and Jesse C. Arnold, "Introduction to probability and statistics", McGraw Hill, 2003.
2. Sheldon, M. Ross, "Introduction to probability modes", Academic press, 2003.
3. Dudewicz, E.J. and Misra, S.N. "Modern Mathematical Statistics" John Wiley and Sons, New York, 1988.
4. Hogg. R.V. and Tanis, E.A. "Probability and Statistical Inference" McMillan Publishing Company, New York, Forth Edition, 1993.
5. Stuart, A. and Ord, J.K. "Kendall's Advanced Theory of Statistics Vol.-I" Edward Arnold, London, Sixth Edition, 1994.