

Module Code: MATH-404  
Module Title: **Mathematical Statistics - I**  
Module Rating: 3 Cr. Hours

**Probability Distributions**

- The postulates of probability
- Some elementary theorems
- Addition and multiplication rules
- Baye's rule and future Baye's theorem
- Random variables and probability functions.

**Discrete Probability Distributions**

- Uniform, Bernoulli and Binomial distribution
- Hypergeometric and geometric distribution
- Negative binomial and Poisson distribution

**Continuous Probability Distributions**

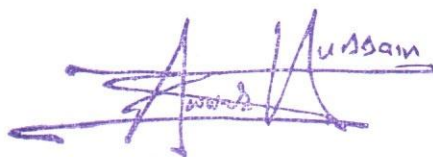
- Uniform and exponential distribution
- Gamma and beta distributions
- Normal distribution

**Mathematical Expectations**

- Moments and moment generating functions
- Moments of binomial, hypergeometric, Poisson, gamma, beta and normal distributions

**Recommended Books**

1. J. E. Freund, *Mathematical Statistics*, (Prentice Hall Inc., 1992)
2. Hogg and Craig, *Introduction to Mathematical Statistics*, (Collier Macmillan, 1958)
3. Mood, Greyill and Boes, *Introduction to the Theory of Statistics*, (McGraw Hill)
4. R. E. Walpole, *Introduction to Statistics*, 3<sup>rd</sup> edition, (Macmillan Publishing Company London, 1982)
5. M. R. Spiegel and L. J. Stephens, *Statistics*, (McGraw Hill Book Company, 1984)



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