Module Code: MATH-419
Module Title: **Mathematical Statistics - II**
Module Rating: 3 Cr. Hours
Pre-Requisite: Mathematical Statistics - I

Functions of Random Variables
- Distribution function technique
- Transformation technique: One variable, several variables
- Moment-generating function technique

Sampling Distributions
- The distribution of the mean
- The distribution of the mean: Finite populations
- The Chi-Square distribution.
- The t distribution
- The F distribution

Regression and Correlation
- Linear regression
- The methods of least squares
- Normal regression analysis
- Normal correlation analysis
- Multiple linear regression
- Multiple linear regression (matrix notation)

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*, 3rd edition, (Macmillan Publishing Company London, 1982)
5. M. R. Spiegel, L. J. Stephens, *Statistics*, (McGraw Hill Book Company, 1984)