Semester	III
Paper Number	HECCR3071T
Paper Title	STATISTICAL METHODS FOR ECONOMICS
No. of Credits	6
Theory/Composite	Theory
No. of periods assigned	5 Theory + 1 Tutorial
Course description/objective	This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It then develops the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data. The course introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. The semester concludes with some topics in statistical inference that include point and interval estimation.
Syllabus	**Module 1 (55 marks)** **1. Descriptive Statistics** Presentation of Data; Frequency Distribution; Measures of central tendency, Dispersion, Moments, Skewness and Kurtosis; Bivariate Frequency Distribution- correlation and regression. **2. Index Number** Price and quantity index number; Different formula; Tests for an ideal index application- Cost of living index; Real GDP **3. Univariate Probability Distribution** Discrete distribution-Binomial, Poisson; Continuous Distributions-Uniform, Normal, Exponential (Properties of each distribution; mean and variance). **4. Jointly Distributed Random Variables** Density function of Bivariate normal distribution and obtaining means, variances, and correlation coefficients **Number of Classes per week: 4** **Module 2 (25 marks)** **5. Sampling** Concept of sampling and random sampling.Principal steps in a sample survey; methods of sampling;-SRSWR, SRSWOR, Stratified sampling. Sampling vs non-sampling error. **Number of Classes per week: 1** **Tutorial Classes per week: 1**
Readings	1.Jay L. Devore, Probability and Statistics for Engineers, Cengage Learning, 2010. 2. John E. Freund, Mathematical Statistics, Prentice Hall, 1992. 3. Richard J. Larsen and Morris L. Marx, An Introduction to Mathematical Statistics and its Applications, Prentice Hall, 2011. 4. William G. Cochran, Sampling Techniques, John Wiley, 2007.

	5. R.V. Hogg . and A.T. Craig , An Introduction to Mathematical Statistics, Third Edition, Amerind, New York, London. 6. Mood, A.M., F.A.Greybill and D.C. Boes: Introduction to The Theory of Statistics, McGraw Hill, 1974.			
Evaluation	Continuous Internal Assessment: 20 marks End- Semester Theory Examination: 80 marks			
Paper Structure for End Sem Theory	Module	No. of Questions to be Answered	No. of Alternatives	Marks
	Module 1	3	4	5 x 3 = 15
		4	5	10 x 4 = 40
	Module 2	1	2	5 x 1 = 5
		2	3	10 x 2 = 20
	Total Marks			80