BSM 401					PROBABILITY					
Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs./Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
3	1	0	4	4	25	50	25	---	---	100

COURSE OBJECTIVES

To understand the basic concept of Probability.
To develop understanding of probability theory to real world problems.
To lay the foundation of computational techniques for research and analysis.
To Analyze the concept of probability distribution in real world problem

UNIT I: Sample Space and Probability **10 Hrs.**

Probabilistic Models, Conditional Probability. IndependenceTotal Probability CountingTheorem and Bayes' Rule.

UNIT II: Discrete Random Variables **10 Hrs.**

Basic Concepts, Probability Mass Functions, Functions of Random variables, Expectation, Mean, and Variance, Joint PMFs of Multiple Random Variables, Conditioning, Independence

UNIT III: General Random Variables **8 Hrs.**

Continuous Random Variables and PDFs , Cumulative Distribution Functions, Normal Random Variables, Conditioning on an Event, Multiple Continuous Random Variables, Derived Distribution

UNIT IV: Special Distributions **11 Hrs.**

Binomial distribution, Bernoulli's, gamma distribution, Poisson distribution, Normal distribution.

TOTAL 39 Hrs.

COURSE OUTCOMES

On completion of the course, student will be able to
CO1 – Understand the basic concept of probability theory.
CO2 – Analyze the concept of random variable and its property to real world problems.
CO3 – Analyze / interpret the graphical presentation of data in probability.
CO4 – Apply non - traditional search concepts to various unsolved problems.
CO5 – Evaluate a sufficiently accurate solution of various physical models of science and engineering.
CO6 – Design / create an appropriate hybrid algorithm for various problems of science and engineering.

Texts and References

1. Milton. J. S. and Arnold. J.C., "Introduction to Probability and Statistics", Tata McGraw Hill, 4 th Edition, 2007.
2.Johnson. R.A. and Gupta. C.B., "Miller and Freund‟s Probability and Statistics for Engineers", Pearson Education, Asia, 7th Edition, 2007.
3.Papoulis. A and Unnikrishnapillai. S., "Probability, Random Variables and Stochastic Processes " McGraw Hill Education India , 4th Edition, New Delhi , 2010.