SEMESTER I

Course No.	Course Name	L-T-S-P/D	Credits	Year of introduction
MA 103	MATHEMATICS	2-0-0-0	2	2016

Course Objectives

To understand and analyze Architecture, one needs the basic knowledge of the statistical methods available for calculating the Correlation coefficient and Probability distributions and their application along with various statistical methods of hypothesis testing. Mathematics and its application is required as a fundamental basis for equipping Architecture students with analytical, logical and practical skills required to be acquired by them to excel in design. Data and mathematical analysis works as essential tools to make the right decision in many practical situations.

Syllabus

Application of Measures of central tendency, Dispersion in statistics - Correlation coefficient-Probability distributions - important probability distributions and statistical tests for analysis of hypothesis.

Expected Outcome

By the end of the course the student is expected to built up the ability to

(i) learn about important statistical measures of central tendency and dispersion essential for data analysis.

(ii) learn about important probability distributions and important statistical tests of hypothesis based on it.

Reference Books

- B S Grewal, Higher Engineering Mathematics, Khanna Publishers (42nd edition), 2012

- Richard A Johnson, Probability and Statistics for Engineers(Miller and Freunds)-Prentice Hall of India, 8th Edition.

- S C Gupta and V K Kapoor , Fundamentals of Mathematical Statistics , S Chand Publications

		Course Plan		
Module		**Contents**	**Hours**	**Sem Exam Marks**
I		Statistics: Measures of central tendency- Mean-median-mode, Measures of Dispersion- Mean deviation-standard deviation-variance.	4	15%
II		Correlation coefficient- Regression lines- Method of least squares- Fitting of straight line and parabola.	4	15%
FIRST INTERNAL EXAM				
III		Probability distributions: Random variable- probability density function- probability distribution function- properties- Expectation of a random variable- Mean and variance.	5	15%
IV		Probability distributions: Binomial- Poisson- Normal.	5	15%
SECOND INTERNAL EXAM				
V		Testing of hypothesis: Sampling distribution- Standard error- Testing a hypothesis- Type I and Type II errors- Level of significance. Large sample tests: Test of significance for a single mean- Test of significance for difference of means.	6	20%
VI		Small sample tests: Student's t-distribution-Test of significance of a sample mean-Test of significance of difference between sample means.	6	20%
END SEMESTER EXAM				