

Indian Institute of Engineering Science and Technology, Shibpur
Department of Mathematics
B. Arch. Second Semester Course
Subject : Mathematics-IIA (MA-1202)

Full Paper: 3 – 0 – 0 (L – T – P) Full Marks: 100 Credit: 3 Prerequisite: None

Module No.	Module Name and Topics	No. of Classes
1.	Co-ordinate Geometry – Two dimensions: Transformation of coordinates – Translation, Rotation , Reduction of general equation of second degree.	4
2.	Co-ordinate Geometry – Three dimensions: Coordinates, Direction Cosines, Planes, Straight lines, Spheres, Standard equations of simple surface e.g. cylinders, cones, ellipsoids, Hyperboloids etc.	9
3.	Vector Algebra: Sum and products of vectors, Application in Geometry.	4
4.	Linear Programming: Geometrical ideas of convex sets, feasible solutions and domains etc. Fundamental theorem of LPP (statement only), Graphical methods, Simplex Algorithm.	7
5.	Statistics: Analysis of data (direct and grouped), Frequency Diagrams, Ogive, Histogram, Mean, Median, Mode, Measures of dispersion, Skewness, Kurtosis, Fitting of curves (Least square method), Correlation, Regression.	10
6.	Differential Equations: Second order differential equations with constant co-	8

	efficients, Cauchy-Euler differential equation and Variation of parameters.	
	Total	42

Suggested Reading: (1) Analytical Geometry of Two & Three Dimensions & Vector Analysis – R.M. Khan, (2) Vector Analysis: Schaum's Outline Series – M. Spiegel, (3) Linear Programming & Game Theory – J.G. Chakraborty & P.R. Ghosh, (4) Linear Programming & Theory of Games – P.M. Karak, (5) Statistical Methods – N.G. Das, (6) Fundamentals of Statistics – A.M. Gun, M.K. Gupta, B. Dasgupta, (7) An Introduction to Differential Equations – Ghosh, Maity, (8) Ordinary and Partial Differential Equations – M.D Raisinghania