

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	Multivariate Statistical Analysis
2.	Course Number	MA6109
3.	Status of the Course	Core
4.	Structure of Credits	3-0-0-3
5.	Offered To	PG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Mathematics
8.	To take effect from	July 2019
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective: To introduce multivariate normal distributions along with the estimation of mean and covariance matrix. To study Hotelling T-square and Wishart Distributions. To learn the Multivariate Analysis of Variance, Classifications, Variable reduction, and Copula Methods.	
12.	Course Content: Multivariate Normal Distribution, Transformation of Multivariate Normal Random Variables, Conditional Distributions, Independence, Maximum Likelihood Estimation of Mean and Covariance Matrix, Hotelling T- square and Wishart Distribution, Multivariate Analysis of Variance (MANOVA), Principle Component Analysis, Factor Analysis, Discriminant Analysis, Classification, Copula Methods.	
13.	Text book(s): 1. T. W. Anderson, <i>An Introduction to Multivariate Statistical Analysis</i> , John Wiley, (2003). 2. R. B. Nelsen, <i>An Introduction to Copulas</i> , Springer, (2007).	
14.	Reference(s): 1. R. A. Johnson, D. W. Wichern, <i>Applied Multivariate Statistical Analysis</i> , Prentice Hall India, (2012).	