

Course Type	Course Code	Name of Course	L	T	P	Credit
DE	NMCD531	Design of Experiments	3	0	0	3

Course Objective
<ul style="list-style-type: none"> In statistics, designing of an experiment means to decide about the methods and layout for taking measurements during scientific, agricultural and industrial etc. experiments for appropriate statistical analysis. The objective of this paper is to train the students for such described activities.
Learning Outcomes
<ul style="list-style-type: none"> After completion of this course, students will be equipped with the knowledge of various kinds of designing the experiment and analyzing the data generated from such activities.

Unit No.	Topics to be Covered	Contact Hours	Learning Outcome
1	Analysis of variance one way and two-way (with m observations per cell) classifications	8	Gives the idea about analyzing the variations creep in the data due to various factors for complicated situations.
2	Basic principles of design of experiments, CRD, RBD and LSD and their analysis, estimation of missing observations.	11	Gives the idea about fundamentals of design of experiments and some basic designs.
3	Factorial experiments: 2^2 , 2^3 , 3^2 and 3^3 experiments, confounding in 2^3 factorial experiment.	11	Gives the idea about factorial experiments, where different factors are considered at different levels.
4	Balanced Incomplete Block Design (BIBD), relation between their parameters. Intra and Inter block analysis of BIBD.	7	Gives the idea about incomplete block designs arises in many practical situations.
5	Split plot and simple lattice designs.	5	Gives the idea about split plots and lattice designs when some factors are harder to vary than other factors.
Total		42	

Text Books

1. Das, M. N. & Giri, N. C.: Design and Analysis of experiments, 1986, 2nd Ed. (Wiley Eastern Ltd. New Delhi).
2. Montgomery, D. C.: Design and Analysis of Experiments (1984, 2nd Ed.) (John Wiley & Sons, New York)

Reference Books

1. Gupta, S. C. and Kapoor, V. K.: Fundamentals of Applied Statistics (1993, 3rd Ed.) (Sultan Chand, New Delhi)
 2. Cox, Gertrude M.: Experimental Designs, (1992 2nd Ed.), (Wiley)
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