M.Sc. Statistics  
S 3.1(17)

SYLLABUS::SEMESTER-III (w.e.f. 2017-2018 Academic Year admitted batch)  
[This Syllabus is also applicable for all admitted batches of M.Sc. Statistics w.e.f. 2011-12 academic year]  
(EIGHT Questions are to be set TWO on each of Units I-IV with the choice of ONE question from each unit)

PAPER- 3.1 :: DESIGN OF EXPERIMENTS

UNIT-I
General factorial experiments, factorial effects, best estimates and testing the significance of factorial effects, estimation of main effects, interaction and analysis of $2^n$ factorial experiments in general with particular reference to $n=2,3, 3^2$ and $3^3$ factorial experiments. Total and partial confounding in case of $2^n$ (for $n=2,3$), $3^2$ and $3^3$ factorial designs.

UNIT-II
Incomplete block designs; balanced Incomplete block designs (BIBD), parametric relations, intra block analysis, simple methods of constructions of BIBD, resolvable and affine resolvable designs, Partially Balanced Incomplete Block Designs (PBIBD) with two associate classes, parametric relations, intra block analysis.

UNIT-III
Youden square design, simple lattice design, split plot design, strip plot design and their analysis, Gracco latin square design.

UNIT-IV
Concept of response surface methodology (RSM), response surface designs, linear response surface designs, second order response surface designs, variance of estimated second order response surface, Rotatable designs; conditions for second order rotatable designs, construction of second order rotatable designs using central composite designs, Balanced incomplete block designs.

Books for Study:

Books for References:
4. R.H. Myers. (1976), Response Surface Methodology, Allyn and Bacon, Boston