STAT 653, SECTIONS 600,700,720

SYLLABUS

COURSE DESCRIPTION

PREREQUISITES: Stat 652 or any other equivalent.

COURSE OUTCOMES:
✓ Be able to distinguish between common experimental designs such as Completely Randomized, Randomized Block, Completely Randomized Factorial, Latin Square, Confounded Block Designs, Fractional Factorial Designs, Repeated Measures Designs, SplitPlot and related designs, and Analysis of Covariance Designs.
✓ Understand the issues involved in choosing between common experimental designs.
✓ Be able to analyze data arising from common experimental designs.
✓ Be able to implement the research question since the outputs may not have the answers in default.
✓ Be able to understand and interpret the statistical outputs to answer the research questions.

COURSE OUTLINE

Topic

Chapter 1: JMP Design0
 JMP Design1 CRD
 JMP Design2 RCBD
 JMP Design3 BIB
 JMP Design4 Full Factorial
 JMP Design5 $2^k$ Factorial
 JMP Design6 Split Plot
 JMP Design7 Other Interesting Designs

Chapter 2: SAS Design1 Mixed Models -Introduction
 SAS Design2 Mixed Models –Examples
 SAS Design3 Mixed Models –With covariates
 SAS Design4 BLUP (Best Linear Unbiased Prediction)
 SAS Design5 Repeated Measures
 SAS Design6 Diagnostics Troubles
 SAS Design7 Linear Mixed Models
 SAS Design8 Nonlinear Mixed Models

Chapter 3: SAS GLIMMIX1 – Introduction to Generalized Linear Mixed Models
 PROC GENMOND, PROC GLIMMIX, SGPLOT, ODDS GRAPHICS, LSMESTIMATE
 SAS GLIMMIX2 – Applications Poisson Regression, Splines, Repeated measures, Covariance structures including AR(1) time series
 SAS GLIMMIX3 – Additional Topics, PROC GLIMMIX, PROC GENMOD

*** Additional Material will be added or deleted at the discretion of the instructor. The order or name of the documents may be changed when it is seen necessary.