

SYLLABUS
Advanced Design of Experiments
Statistics 591, Section 01
Fall 2013
Monday 6:40-9:30
Hill Center 552
Steve Buyske

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Office: Room 559 Hill Center
Office Hours: Monday 5:00-6:00, Wednesday 11:00-11:50,
and by arrangement

Text: *Response Surface Methodology:
Process and Product Optimization Using Designed Experiments*
Myers, Montgomery, & Anderson-Cook
Wiley

Course Goals:

- To be able to determine appropriate experimental designs and statistical analyses for the optimization of processes.
- To develop sufficient sophistication to be able to read research articles in the experimental design literature.

Week Number	Date	Topic
1	9/9	Two level factorial designs
2	9/16	Two level factorial designs, blocking, and fractional factorial designs
3	9/23	Fractional factorial designs and design resolution
4	9/30	More on fractional factorials; Screening designs
5	10/7	Response surface designs: 1st order models
6	10/14	Response surface designs: steepest ascent; 2nd order models
7	10/21	Response surface designs: canonical form; blocking
8	10/28	Response surface designs wrap-up. EVOP
9	11/4	Mixture Experimentation
10	11/11	Design optimality criteria and computer assisted design of experiments
11	11/18	Robust design methods (Taguchi experiments)
12	11/25	Computer Experiments and other topics
13	12/2	Student presentations
14	12/9	Student presentations.

Information about the student presentations and the simulation project will be distributed later in the semester. The simulation project, which takes

the place of a final exam, will be due on the first day of exams, Monday, December 16.

Adverse Weather Conditions: If the University is open we will have class. However, class attendance is not required and no one should attempt to come to class if they do not think they can do so safely. Should I need to cancel class for some unforeseen reason I will broadcast that via Sakai and will post to the Sakai website.

Final Grade Based on the Following

Homework	20%
Presentation and Related Paper	35%
Take Home Final Exam (Simulation)	45%