

STAT 468 (MAST 679A)
Design of Experiments
Fall 2015

- Instructor:** Dr. Y.P. Chaubey, Office: LB-921-25 (SGW), Phone: (514) 848-2424, Ext. 3258
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- Office Hours:** Tuesdays, Thursdays, 14:30-15:30 and by appointment.
- Prerequisite:** STAT 360 previously or concurrently.
- Text:** *Design and Analysis of Experiments*, 8th Edition, by Douglas C. Montgomery (John Wiley, 2013).
- Reference:** *Linear Models* by S.R. Searle (John Wiley, 1971).
- Objective:** Design of experiments deals with efficient allocation of ‘treatments’ to experimental units so as to reduce error variance and improve inference about the former. This course is an introduction to the basic principles and analysis of the commonly used, linear model-based designs. We shall first review the classical statistical theory of linear models and then study statistical inference as well as model-validation of the standard designs. There will be theoretical as well as numerical problems in the assignments and exams. *Graduate students will be assigned additional reading material, assignment as well as exam problems.*
- Final Grade:**
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| Assignments (4 approx.) | 20% |
| Mid-term (<i>Thu. 22 October 2015</i>) | 30% |
| Final | 50% |
- IMPORTANT:** PLEASE NOTE THAT THERE IS NO “100% FINAL EXAM” OPTION IN THIS COURSE.
- Topics:** *Selected sections from the following chapters:* Experiments with a single factor: the analysis of variance (Ch.3); randomized blocks, Latin squares and related designs (Ch.4); introduction to factorial designs (Ch.5); the 2^k factorial design (Ch.6); blocking and confounding in the 2^k factorial design (Ch.7); response surface methods and designs (Ch.11).