MATH / STAT 3350
Design of Experiments
2023/2024 Winter

Instructor:	Dr. Lam Ho
Time:	TR 11:35 am-12:55 pm (Jan 08, 2024 - April 09, 2024)
Location:	LSC-COMMON AREA C240
Office hours:	F 10:00 am - 12:00 pm
Office:	CHASE building 301
Email:	Lam.Ho@dal.ca

Course Description: The course aims to develop the fundamental statistical concepts required for designing efficient experiments to answer real questions. The first main subject is unit variation and control. The basic concepts of replication, blocking and randomization are each examined. The second main subject is treatment questions and structure. The ideas of factorial designs, split-plot and incomplete plot designs are presented. We conclude with a look at response surface methodology.

Course Prerequisites: STAT 2080.03, MATH 2030.03 or Math 1030.03, and one of MATH 1010.03, STAT 2060.03 or DISP

Textbook: Design and Analysis of Experiments by Douglas C. Montgomery.

Course Delivery: Lectures are in-person and will not be recorded.

Course Assessment: Your numerical grade is computed from 6 assignments (5% each), a take-home midterm exam (25%), and a final exam (45%).

Component	Weight (% of final grade)	Tentative deadline
Assignments 1	5%	Jan 30, 2024
Assignments 2	5%	Feb 6, 2024
Assignments 3	5%	Feb 13, 2024
Assignments 4	5%	March 12, 2024
Assignments 5	5%	March 19, 2024
Assignments 6	5%	March 26, 2024
Midterm (take-home)	25%	Feb 15, 2024
Final	45%	TBA

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+	(90-100)	**B+**	(77-79)	**C+**	(65-69)	**D**	(50-54)
A	(85-89)	**B**	(73-76)	**C**	(60-64)	**F**	(<50)
A-	(80-84)	**B-**	(70-72)	**C-**	(55-59)		

Course Policies:

- No late assignments will be accepted. Extension for the assignments will only be granted in exceptional circumstances. Please note that assignment due dates may change from the tentative deadlines. Always make sure to check the deadline on the posted assignment on **brightspace**.
- Assignments and the midterm exam can be hand-written (legible) or typed. However, they must be submitted in **PDF format** via **brightspace**. There are free scanning apps for phones (Tiny Scanner) and free online PDF converters (`https://smallpdf.com/pdf-converter`).

- Students **are not allowed to work together** on assignments and exams.
- The students are responsible for making aware of any announcement (in class or on **brightspace**) regarding the course.

Course Content:

Topics
Simple Comparative Experiments (ch 2)
Single Factor ANOVA (ch 3)
Randomized Blocks, Latin Squares (ch 4)
Factorial Designs (ch 5)
2^k Factorial Design (ch 6)
Random Factors (ch 13)
Nested Designs (ch 14)
Additional topics (if time permits)