Instructor  Hongmei Jiang, Ph.D.
Department of Statistics
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Office hours: Monday 1pm-2pm and Tuesday 11am-12pm, or by appointment

TA   Pan Wang (PanWang2012@u.northwestern.edu)
Department of Statistics
Room 108, 2006 Sheridan Road
Office hours: Wednesday 12:30pm-2:30pm

Course website on canvas: https://canvas.northwestern.edu/
Lecture notes, homework assignments, SAS codes, and grades will be posted on this website.

Textbook  Design and Analysis of Experiments by Montgomery (8th Edition)
Whether or not the instructor gives you specific reading assignments, it is assumed that you will read the text as a supplement to lectures.

Objectives  To be able to plan and design a variety of experiments: one-way and two-way layouts, incomplete block designs, factorial designs, random effects, split-plot and nested designs.
To be able to perform the proper statistical analysis and draw valid conclusions from a specific experiment.

Prerequisites  Basic probability and statistics courses (e.g., Stat 320-2).
Computing  Statistical software, SAS Studio, will be used to demonstrate the methodologies. Template SAS programs will be posted on Canvas. Other statistical software can be used for homework but SAS output will be presented in lectures, homework, and exams.

We will discuss how to have access to SAS on the first day of class.

(1) http://www.it.northwestern.edu/research/user-services/sscc/sas_studio.html
(2) http://www.ats.ucla.edu/stat/sas/

Computer lab  Date and time: April 7, Tuesday, 2pm-3:30pm
Place: University Library LIBB182, Computer Lab
Homework will be assigned weekly or biweekly (about 7 assignments).

Exams
One midterm exam (Thursday April 30). Close-book, one double-sided sheet of formulas is allowed. Make-up exam will not be given.

One final exam (9am-11am, Friday, June 12). Two double-sided sheets of formulas are allowed. The final exam is mandatory. Students must arrange their schedule to avoid a conflict with the scheduled exam time.

Project
One group project with report due on the last day of class and in-class presentation of 15~20 minutes.

Re-grading
For re-grading, please attach a new piece of paper to the front of the work to be re-graded, and write down a detailed explanation of the suspected error.

Final Grade
Homework assignments (25%), project (10%), midterm exam (30%), and final exam (35%).

A: [94, 100]; A-: [90, 94);
B+: [87, 90); B: [84, 87); B-: [80, 84);
C+: [77, 80); C: [74, 77); C-: [70, 74);
D: [60, 70); F: < 60.

Important notes:

1) Any student requesting accommodations related to a disability or other condition is required to register with AccessibleNU (847-467-5530) and provide professors with an accommodation notification from AccessibleNU, preferably within the first two weeks of class. All information will remain confidential.

2) Suspected violations of academic integrity will be reported to the Dean's Office.

Course Topics

1. Overview and Basin Principles Chapters 1, 2
2. Simple Designs and Analysis of Variance Chapter 3
3. Randomized Block Designs, Latin Squares Chapter 4
4. Factorial Designs Chapters 5, 6, 7,8
5. Mixed Models/Random Effects Chapter 13
6. Nested Designs, Split Plot Chapter 14
7. Repeated Measures Chapter 15