



**STAT 404, Design and Analysis of Experiments
2019-2020, Term 1
Instructor: Professor Jiahua Chen**

Time and Place: Tuesday/Thursday 3:30-5:00 PM, ESB 1012

Course description: An introduction to the most commonly used statistical methods for planning (designing) and analyzing experiments. Theory and application of analysis of variance for standard experimental designs, including blocked, nested, factorial and split plot designs. Fixed and random effects, multiple comparisons, analysis of covariance.

Prerequisites: Stat 305; co-requisite Stat 306 (mandatory)

Textbook/course materials:

Tentatively: “Statistical Analysis of Designed Experiments: Theory and Applications”,
by Ajit C. Tamhane; Wiley 2012.

available electronically at UBC through Wiley Online Library

<https://onlinelibrary.wiley.com/>

Assessment: Labs, WeBWorK for homework, project, midterm exam, final exam.

Computing: Likely introduction to R and SAS for the statistical methods of this course.

Topics: Comparative experiments, single factor experiments (ANOVA and multiple comparisons), randomized block designs and extensions, factorial designs, analysis of covariance, regression and unbalanced designs, two-level factorial, fractional factorial, random and mixed effects.

Policy on missed final exams: Students who miss the final exam must report to their Faculty advising office within 72 hours of the missed exam, and must supply supporting documentation. Only your Faculty Advising office can grant deferred standing in a course. You must also notify your instructor prior to (if possible) or immediately after the exam. Your instructor will let you know when you are expected to write your deferred exam. Deferred exams will ONLY be provided to students who have applied for and received deferred standing from their Faculty.