STAT4503A/STAT5509F: Applied Multivariate Analysis
Course Information
Fall 2020
Lectures: Tues & Thurs 1:05 pm – 2:25 pm

NOTE: Lectures will be given live using Zoom during lecture times. The meeting ID will be posted on cuLearn course folder under *Announcements*. When setting up your Zoom account, please make sure your account displays both first and last names (as shown on the course list), so that I can recognize you when admitting to the Zoom meeting. Students who miss a Zoom class for unavoidable reasons can go over my slides, which will be posted on cuLearn.

Instructor: Dr. Sanjoy Sinha
Office hours: Zoom meeting (by appointments only)
Email: sinha@math.carleton.ca

Marking scheme:
Assignments: 60%
Final Exam (Take-home): 40%

Textbook:
Title: Applied Multivariate Statistical Analysis, 6th Edition
Authors: Richard A. Johnson and Dean W. Wichern
Publisher: Pearson Prentice Hall 2007.

Statistical software: The statistical package **R** will mostly be used for data analysis. We shall also explore the use of SAS for multivariate analysis.

Prerequisite: Students are expected to have good background in statistical inference. It will be assumed that they are familiar with the basic concepts of point and interval estimation, hypothesis testing using model based likelihood methods.

Course outline:
We shall discuss methodologies for analyzing various types of multivariate data. Topics will include:

1. The multivariate normal distribution
2. Inferences about a multivariate mean vector
3. Comparison of several multivariate means
4. Multivariate regression models
5. Principal components analysis
6. Factor analysis
7. Discrimination and classification

REMARK: As this is a cross-listed course, students in STAT4503A will be assessed slightly differently than graduate students in STAT5509F when evaluating the overall course performance. However, both groups will be given the same set of assignments.