STA 437H1F/STA2005HF (L0101): Methods for Multivariate Data/Applied Multivariate analysis

Class Time, Location & Office Hour

The lecture takes place on every **Wednesday 2:10pm-5:00pm in SS2118**. Office hour will be held in SS6027B on every **Wednesday 11am-12pm (noon) & 1pm-2pm.**

Course Description

This course covers some important and useful techniques for the analysis of multivariate data: multivariate normal distribution theory, basic estimation and hypothesis testing for multivariate means and variances, multivariate analysis of variance, repeated measurements, classification and linear discriminant analysis, principal components, cannonical correlation and factor analysis (if time permits).

Prerequisites

STA302H1. Recommended preparation: MAT223H1/MAT240H1.

Assumed background is linear algebra, calculus, basic probability theory (including normal, Student's t, Chi-square, and F distributions), and mathematical statistics (including point estimation, maximum likelihood, confidence intervals, hypothesis tests, linear regression, and one-way analysis of variance).

Text and Resources

Textbook: Applied Multivariate Statistical Analysis, **6th Edition**, by R. A. Johnson and D. W. Wichern (Prentice Hall)

There will be a computing component in this course, and the statistical software R will be used throughout the course. You are also allowed to use other software if it has the same capabilities. However, please be advised that I may not be familiar with your software of choice resulting in limited assistance.

Blackboard: Please access the Blackboard for all course and grade information. I will temporaroily post course information and material at **www.utstat.utoronto.ca/fyao/sta437/sta437.html** for students who are not yet enrolled. But this link will be no longer active after Sept 26, 2016.

Test and Exam

All quizzes, term test and final exam will be **CLOSED BOOK**, and **NO aid sheet** is permitted, while I will provide some basic formulas/facts on the quiz/test/exam paper depending on the problems. You can only bring a **NON-PPROGRAMMABLE calculator** for the quiz/test/exam.

Grade Breakdown

Item	% of grade	Comments
Quizzes	25%	One-hour quiz is scheduled during class time. Tentative times: 1st quiz on Oct 5, 2nd quiz on Nov 16.
Term test	30%	Oct 26 (Wed), 2:10-4:10pm
Final exam	45%	TBA

Course Policies

- **Missed quiz/test**: There are **no make-up quiz/test** . Should you miss the quiz / test due to illness, you are required to submit to your instructor, within one week, completed by your doctor, **the "U of T Student Medical Certificate"**. The quiz/test weight will be shifted to the final exam. **If this documentation is not received, your quiz/test mark will be zero.**

- Quiz/test/exam credit: must show the necessary work to receive full credit for any problem, and any work turned in must be your own.

- Quiz/test grading disputes: must be submitted in writing **within one week after work is returned. Disputes will not be considered, should you have used pencil on the quiz/test**. For disputes on final exam, you need to follow the Faculty of Arts and Science policy & procedures to proceed.

- In general, I am not able to answer questions about the course material by email, due to the large class size. Before sending an email, make sure that you are not asking information that is already on the Blackboard, or questions about the course material that are more appropriate to discuss during office hours. If you do not receive my response in a timely manner, this would likely be the reason.

Any form of academic dishonesty will be given the most severe penalty possible. Cheating includes representing the ideas of anybody except yourself as your own ideas. The minimum penalty I am required to enforce by policy is a zero for the homework assignment or examination. The following link contains information for students about how to act with academic integrity, the Code of Behaviour on Academic Matters, and the processes by which allegations of academic misconduct are resolved: ***www.artsci.utoronto.ca/osai/students***