University of Toronto

Department of Statistical Sciences

STA437/2005 Methods of Multivariate Data

Handout: Course Information Fall 2020

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Teaching Assistants:

> **LEC 5101 & L9101:** Dong, Yixing; Guo, Yang; Liu, Miaoshiqi; Zhang, Kevin
>
> **LEC 5201 & L9201:** Guo, Yang; Khan, Mohammad; Liu, Peng; Yu, Lu

Delivery:

> We will use a mixture of synchronous and asynchronous learning. The slides of the lectures and prerecorded videos will be uploaded on Quercus. Online class meetings on BB colab are scheduled as follows:

> **LEC 5101 & L9101:** Tuesdays, 19:00 − 20:00
>
> **LEC 5201 & L9201:** Wednesdays, 19:00 − 20:00

Evaluation for undergraduate students:

Item	Credit	Description
Tests	$5 \times 16\%$	5 Tests: total credit 80%
Assignments	No credit	Will be posted on Quercus
The final exam	20%	Date/Time will be announced by the department

The assignment will not be graded; but we will discuss them during online class meetings. There will be 2 tests before the reading week (Monday Nov 9), and 3 tests after the reading week. The Final Exam will cover all of the material in the course.

Evaluation for graduate students:

Item	Credit	Description
Tests	$5 \times 14\%$	5 Tests: total credit 70%
Assignments	No credit	Will be posted on Quercus
Two research projects	$2 \times 5\%$	Two projects: total credit 10%
The final exam	20%	Date/Time will be announced by the department

The assignment will not be graded; but we will discuss them during online class meetings. There will be 2 tests before the reading week (Monday Nov 9), and 3 tests after the reading week. The Final Exam will cover all of the material in the course.

Graduate students are required to do two research projects.

- **Prerequisite:**

  STA302H1/STA352Y1/STAC67H3/STA302H5 (MAT224H1/MAT247H1 recommended)

- **Course Reference:**

  Richard Johnson and Dean Wichern, *Multivariate Statistical Analysis*, 6th Edition, Pearson, 2007.

- **Tentative Schedule:**

  - (Brief) Introduction to matrix algebra and random vectors,
  - Sample geometry and random sampling,
  - Multivariate normal distribution,
  - Regression analysis,
  - Principle component analysis, and if time permits,
  - Factor analysis and Classification.

- **Notice:**

  Course materials provided on Quercus are for the use of students currently enrolled in this course only. Providing course materials to anyone outside of the course is unauthorized use.