STA 2212S: Mathematical Statistics II
Tuesday, 10.00-13.00 January 7 – April 1 2025

Course description:

This course is a continuation of STA2112H. It is designed for graduate students in statistics and biostatistics. Topics include: Likelihood inference, Bayesian methods, Significance testing, Hypothesis testing, Goodness-of-fit, Robust inference, Causality, Classification.
Prerequisite: STA2112H

Course content

The course Quercus page has

- A regularly updated syllabus
- Lecture notes
- Discussion pages
- Electronic copies of source texts

Grading:

The course grade will be 60% homework, 40% project. There will be ten weekly homework questions assigned each Tuesday, due the following Tuesday. The two lowest homework marks will be dropped. The project will comprise a written report and a class presentation on a relevant research paper.

Academic Integrity:

Discussion about your work with your classmates is encouraged, but the homework solutions you submit must be written, and coded, independently. You may use code provided by by me without attribution, but you must acknowledge code taken from any other source using a proper bibliographic reference. To protect yourself from potential academic integrity offences, do not share your code and written submissions. The University of Toronto's Code of Behaviour on Academic Matters is available at http://academicintegrity.utoronto.ca.

Texts:

**[MS] Knight, K. (1999). *Mathematical Statistics*. Cambridge University Press, Cambridge.

**[AoS] Wasserman, L. (2004). *All of Statistics.* Springer-Verlag, NY. [Chapters 9–12]

[SM] Davison, A.C. (2003). *Statistical Models.* Cambridge University Press, Cambridge. [Chapters 4, 7, 11]

Helpful References

Efron, B. and Hastie, T. (2016). *Computer Age Statistical Inference.* Cambridge University Press, Cambridge.

Casella, G. and Berger, R.L. (2001). *Statistical Inference.* 2nd edition. Springer, New York.

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Office Hours: Monday 7-8 pm (Zoom), and
Tuesday 3-4 pm (Hydro Building 9124)

Teaching Assistant: Junhao Zhu `jh.zhu@mail.utoronto.ca`

Computing:  

I will always refer to the `R` computing package and I highly recommend the `RStudio` environment.

I strongly recommend using R Markdown or LateX to prepare your homework. The Overleaf Editor is an easy way to get started with LateX. Neat homework makes it easier on the grader, and a happy grader is a generous grader.