

MATH 598/782 TOPICS IN STATISTICS
INTRODUCTION TO CAUSAL INFERENCE METHODS
WINTER 2024

Instructor : David A. Stephens (Burnside 1225)
Email : david.stephens@mcgill.ca
Lectures : Tuesday & Thursday 1.05pm–2.25pm;
Office Hours : TBA
Textbooks : *Semiparametric Theory and Missing Data*, A A Tsiatis
Causal Inference in Statistics: A Primer, J Pearl, M Glymour, N P Jewell.
Web Site : <http://www.math.mcgill.ca/dstephens/598-Causal-2024/>

SYLLABUS: Principles of causal inference; experimental and observational studies; confounding; statistical representation of causal mechanisms; counterfactual notation; graphical representations; introduction to semiparametric statistical theory; g-computation; adjustment methods; the propensity score; inverse probability weighting; g-estimation; continuous and longitudinal exposures; general causal estimands; Bayesian methods.

EVALUATION : Evaluation for this class will be on the basis of five projects; students will be graded on four projects from five, counting 25 % each.

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change. If you need special assessment arrangements or accommodations, please contact [Student Accessibility and Achievement](#).

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January 2, 2024