MATH 598/782 TOPICS IN STATISTICS
INTRODUCTION TO CAUSAL INFERENCE METHODS
WINTER 2021

Instructor :	David A. Stephens (Burnside 1225)
Email :	david.stephens@mcgill.ca
Lectures :	Monday, Wednesday & Friday 10.35–11.25;
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-2020/
Method of Assessment :	Four projects from six.

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; model selection; Bayesian methods.

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

MCGILL UNIVERSITY POLICY STATEMENTS

The following three statements are included in this course outline, in keeping with Senate resolutions:

1. *McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the* ***Code of Student Conduct and Disciplinary Procedures****. For more information, see*

   `www.mcgill.ca/students/srr/honest/`

   [*Approved by Senate on 29 January 2003*]

2. *In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.*

   [*Approved by Senate on 21 January 2009*]

3. *Instructors who may adopt the use of text-matching software to verify the originality of students' written course work must register for use of the software with Educational Technologies and must inform their students before the drop/add deadline, in writing, of the use of text-matching software in a course.*

   [*Approved by Senate on 1 December 2004*]

If you need special examination arrangements or accommodations, please contact the **Office for Students with Disabilities** at 514–398–6009.

David A. Stephens.
December 2020