IVEY PhD
Business School
WESTERN UNIVERSITY · CANADA

COURSE SYLLABUS

Business 9714 – Causal Inference and Research Design for Management Research

Winter 2023

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Thursdays 1:00 p.m. – 4:00 p.m.
Location: Ivey 2120
(12 Sessions)

COURSE DESCRIPTION

Causal Inference and Research Design for Management Research introduces advanced econometric and statistical methods used to develop causal inferential models and research designs for applied research questions in management. Topics covered include selection bias, the potential outcome framework, instrumental variables, regression discontinuity designs, limited dependent variable models, statistical inference, matching, difference-in-differences, natural experiments and identification. Students will be introduced to a range of data analysis skills and several software packages. The objective of the course is to prepare PhD students in management to write research papers using observational data.

COURSE OBJECTIVES

Upon completion of this course, doctoral students should understand essential elements in designing statistical studies. The main focus of this course is "identification of causal effects". Students will become familiar with the philosophy, theory and application of modern identification methods. Among many other things, this includes dealing with data and research questions in an applied context, recognizing the various sources of bias due to selection on observables and selection on unobservables, spotting and articulating the sources of variation that are used to pin down the parameter(s) of interest and applying a range of estimation methods.

METHODS OF EVALUATION/COURSE SCHEDULE/ATTENDANCE

Students will be evaluated according to:

Class discussion and referee reports [x3]	30% (10% each)
In-class presentation	10%
Term paper (discussed during class)	60%

Late work will not be accepted unless special permission in granted in advance.

MATERIALS/REQUIRED READING

All notes and readings will be posted on Learn.

TOPICS COVERED IN THE COURSE

The course will cover the following topics:

- Potential outcomes framework and the basics of statistical identification (e.g., fundamental problem of causal inference, directed acyclic graphs, etc.)
- Language of counterfactuals and causal inference
- Selection issues in observational studies (e.g., selection on observables, selection on unobservables)
- Review of regression and panel data estimators
- Issues in "Big Data" and panel data (e.g., estimating models with thousands/millions of fixed effects)
- Difference-in-differences, including staggered adoption and heterogeneous response
- Instrumental variables
- Regression discontinuity/regression kink designs
- Limited dependent variables and/or "funny" dependent variables (e.g., logit, probit and linear probability models; count data; censored data and selection correction, tobit)
- Inference, standard errors and bootstrapping
- Other topics (as time permits): quantile regression, bunching estimators , synthetic control, measurement error, choice experiments, maximum likelihood

If students wish to cover a specific topic that is not included in the above list, this may be accommodated.

ENROLLMENT RESTRICTIONS

Enrollment in this course is restricted to graduate students in the Ivey PhD Program, as well as any student that has obtained special permission to enroll from the course instructor as well as the Graduate Chair (or equivalent) from the student's home program.

ACADEMIC OFFENCES: PLAGIARISM AND ACADEMIC INTEGRITY

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at https://grad.uwo.ca/administration/regulations/13.html

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com).

SUPPORT SERVICES: HEALTH AND WELLNESS

Students who are in emotional/mental distress should refer to Health and Wellness at Western University https://www.uwo.ca/health/psych/index.html for a complete list of options about how to obtain help. Additionally, students seeking help regarding mental health concerns are advised to speak to someone

they feel comfortable confiding in, such as their faculty supervisor, their program director (graduate chair), program coordinator or other relevant administrators in their unit.

As part of a successful graduate student experience at Western, we encourage students to make their health and wellness a priority. Western provides several on campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your graduate degree. See https://www.uwo.ca/health.

ACCESSIBLE EDUCATION WESTERN (AEW)

Western is committed to achieving barrier-free accessibility for all its members, including graduate students. As part of this commitment, Western provides a variety of services devoted to promoting, advocating, and accommodating persons with disabilities in their respective graduate program.

Graduate students with disabilities (for example, chronic illnesses, mental health conditions, mobility impairments) are strongly encouraged to register with Accessible Education Western (AEW), a confidential service designed to support graduate and undergraduate students through their academic program. With the appropriate documentation, the student will work with both AEW and their graduate programs (normally their Graduate Chair and/or Course instructor) to ensure that appropriate academic accommodations to program requirements are arranged. These accommodations include individual counselling, alternative formatted literature, accessible campus transportation, learning strategy instruction, writing exams and assistive technology instruction.

A FINAL WELCOME AND REQUEST OF STUDENTS

I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability, and other visible and nonvisible differences. I consider this classroom to be a place where you will be treated with respect. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class. If it is appropriate to our learning and you feel comfortable doing so, I ask that you share your unique point of view as we explore the course content.