

Faculty of Science Course Syllabus
Department of Economics
ECON 3338
Intro Econometrics I
Winter 2023

*Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.*

*We acknowledge the histories, contributions, and legacies of the African Nova Scotian people and
communities who have been here for over 400 years.*

Instructor:	Prof. Yulia Kotlyarova yulia.kotlyarova@dal.ca 6220 University Ave, room C32 phone 902-494-8824 Office hours: Thursday 12 – 1:30 pm (in-person) or by appointment
Teaching assistant:	Yaqi Liu
Lectures (in-person)	Tuesday and Thursday 2:35 – 3:55 pm McCain 2184
Tutorials (in-person)	Wednesday 11:35 am – 12:55 pm McCain 2019
Course delivery:	In-person lectures and tutorials will not be recorded. Pre-recorded tutorials will be posted weekly on Brightspace.

Course Description

The theory of the quantitative methods commonly used by economists is discussed in the context of the classical linear model. The topics also include some estimation problems caused by violations of the assumptions of the classical model.

Prerequisites

MATH 1000.03 (or equivalent) and STAT 2060.03/MATH 2060.03, with minimum grades of C.

Learning objectives

The students will acquire knowledge of various econometric techniques designed to ensure reliable quantitative analysis of economic questions and data. They will gain experience working with real-world data, building econometric models, and performing hypothesis testing.

The objectives of the course are that the participants can:

- formulate the simple and multiple linear regression models and their underlying assumptions;
- apply the procedure of Ordinary Least Squares;
- estimate and interpret the parameters of multiple linear regressions;
- describe the statistical properties of the estimated parameters;
- test linear restrictions imposed on the parameters of multiple regression models;
- use the estimated regression model to compute forecasts and to interpret the precision of these forecasts;
- understand the consequences of multicollinearity, omitted variables, functional form misspecification, heteroskedasticity and autocorrelation in multiple regression models;
- evaluate the adequacy of the estimated regression models by performing specification tests.

Online Access

When connecting to online resources, you are responsible for observing any applicable laws of the country you are connecting from. Please establish whether you have access to all course material as soon as the term begins and before the ADD/DROP date (January 20, 2023). If you do not have access to certain course materials, inform the instructor as soon as possible. Alternative access methods are not guaranteed.

Textbooks and software

Required textbook:

Jeffrey M. Wooldridge, "Introductory Econometrics: A Modern Approach", 7th ed., Cengage, 2020 (MindTap access is optional).

[https://bookstore.dal.ca/CourseSearch/?course\[\]=SUB,WINT23,ECON,ECON3338,&](https://bookstore.dal.ca/CourseSearch/?course[]=SUB,WINT23,ECON,ECON3338,&)

Additional reading materials will be posted on Brightspace or distributed in class.

Other useful textbooks:

"Principles of econometrics" by R. Hill, W. Griffiths, G. Lim, 3rd edition.

"Introduction to econometrics" by J. Stock and M. Watson, updated 3rd edition.

"Using Stata for Principles of econometrics", L. Adkins and R. Hill, 4th edition.

Statistical package: STATA. Stata/SE 17 can be downloaded at <https://software.library.dal.ca/>

Course Assessment

Component	Weight (% of final grade)	Date
<i>Midterm</i>	20% (in class, in person)	Thursday, 2 March, 2023 (tentative)
<i>Final exam</i>	35% (2 or 3 hrs, in person)	Scheduled exam period
<i>4 assignments</i>	20%	to be determined
<i>Project proposal</i>	5%	24 February, 2023
<i>Course project</i>	20%	18 April, 2023

Course project

Students will be working on individual course projects, in which they will use the ordinary least squares to analyze cross-sectional economic data. The students will be responsible for determining a research question, formulating a regression model, finding relevant data and papers, performing the regression analysis and discussing the results.

A project proposal must be submitted by February 24th, the first draft is due on April 10th for a format check (not graded), and the final version should be submitted on April 18th. Detailed instructions will be provided in class.

Course Policies

Please check regularly the course Brightspace page for course announcements and assignments.

If a student misses the midterm for a valid reason, the student must notify the instructor by email prior to the date and time of the exam. In this case, the final exam will count for 55% of the final grade.

If a student cannot submit on time an assignment/project proposal/final report, the student must contact the instructor prior to the assignment/project deadline to discuss alternative arrangements.

If a student misses the final exam for a valid reason, the student must notify the instructor immediately and provide the appropriate documentation. The student will have an opportunity to write a make-up final exam.

For the term project, a plagiarism detection software may be used.

The students are not allowed to collaborate on the assignments, course projects, and exams.

The full text of Dalhousie's *Policy on Intellectual Honesty* and *Faculty Discipline Procedures* is available here:

http://www.dal.ca/dept/university_secretariat/academic-integrity/academic-policies.html

Grading scheme:

A+	A	A-	B+	B	B-	C+	C	C-	D	F
90-100	85-89	80-84	77-79	73-76	70-72	65-69	60-64	55-59	50-54	<50

Course Content

1. Review of basic probability and statistics (Appendices A, B, C)
2. Econometrics and economic data (Ch. 1)
3. Simple regression model (Ch. 2)
4. Multiple regression analysis: estimation (Ch. 3)
5. Hypothesis testing in simple and multiple regressions (Ch. 4)
6. Asymptotic properties of Ordinary Least Squares (Ch. 5)
7. Functional forms and dummy variables (Ch. 6, 7)
8. Heteroskedasticity (Ch. 8)
9. Misspecification testing (Ch. 9)