Applied Econometrics
ECON 6050
WINTER 2025
0.5 Credits

General Course Information

Instructor: Louise Grogan

Email lgrogan@uoguelph.ca
Office Location …
Office Hours …
Department/School

Class Schedule:

PRELIMINARY AND INCOMPLETE. UNOFFICIAL
Classes are now scheduled for Tues Thurs 8:30am-9:50am.
These times can be changed by agreement of the class to more convenient Times.

Course Description

This is a graduate course in which applied data science skills are taught using examples on topics from firms, labour markets and public policy. The course will cover core empirical methods for data cleaning, visualisation and applied microeconomic analysis using Python software. The applied econometrics techniques discussed include those presented in *Mostly Harmless Econometrics* (2009) by Joshua Angrist and JS Pischke and in *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy* (2019 reissue) by Angus Deaton. Students should have basic knowledge of coding and be able to learn PYTHON in class and with self-directed labs.

Topics to be discussed include: the empirical analysis of internal labour markets of firms, labour supply and economic development, training, social insurance and labour supply, firms and wages (regulation of mergers, layoffs), decomposition analysis of wage differentials, technology diffusion, immigration, intergenerational mobility, and cross-sectional inequality.

Students will be expected to attend all live sessions, and to read the materials of the syllabus. Students will receive a class participation mark worth 30% of their final course mark. Students will work in groups to make presentations of new economic journal articles that they have selected themselves.

Course Learning Outcomes

Upon successfully completing this course, you will:

Knowledge and Understanding:

1) Gain experience in testing key microeconomics economic concepts using data. Students will learn to employ microeconometric analyses to answer labour economics and other public policy questions.
2) Gain understanding of coding using PYTHON and other statistical software.
3) Gain knowledge of the field of labour economics in the historical and global context. All written assessments will require students to understand the context in which their data was collected. This will be very important to the interpretation of results.
4) Gain an understanding of economic policy and regulation, and of how to measure causal impacts.

Discipline/Professional and Transferable Skills:

5.) Written communication: The two written assignments will give the students the opportunity to practise the skill of developing their scientific writing skills and factual arguments. They will gain skills in writing an abstract, employing citations and ordering bibliographic references. Students will be expected to learn how to format an empirical paper in economics. Students will learn how to integrate Latex, Scientific Word and other editing software with computational software.

6.) Numerical problem solving: All assignments and assessments will give students the opportunity to demonstrate basic software and computation skills. Students will learn to make computational software compatible across different data formats, learn data entry techniques.

7.) Problem solving in a real-world context: Students will apply the content of the course to current policy questions in when they write their assignments. The marking of this work will reward normative arguments with empirical substantiation from hypothesis testing.

8.) Students will develop their comprehension and discussion skills through one asynchronous and one synchronous aural presentation.

Attitudes and Values

9.) Students will complete each of the assignments themselves. Students will submit their code and data sets for all individual research projects. Students will practise using proper citation of works and incorporation of bibliographical references into their own work.

Summary of Course Content and Materials

Course content will be delivered in-person. An additional ZOOM discussion forum/group office hour will be held at a time to be determined.

Students will need to obtain access to PYTHON (any version) for the full semester. Ideally, students should obtain the free software LATEX.

Within the first two weeks of the course, students will have the opportunity to meet the instructor virtually and to ask questions about course content.

Course Assessment

			Associated Learning Outcomes	Due Date/ location
Assessment 1:	20%	Individual Research Project #1	LO 1 – 9	*Feb 11th 2025*
Assessment 2:	10%	Midterm exam	LO 1-9	*Feb25th 2025*
Assessment 3:	20%	Individual Research Project #2	LO 1-9	*March 25th 2025*
Assessment 4:	20%	Final in-class exam	LO 1-9	*April 3rd 2025*
Assessment 5:	30%	Group in-class presentations, discussion	LO 1 – 9	*During class*

Teaching and Learning Practices

Lectures and readings: Students will be expected to read all of the articles posted in the syllabus. A narrated video/slide discussion of these key ideas discussed in these papers will be provided on Mondays of each week of class.

Data sets suitable for completion of the individual research projects will be posted, along with explanations. Basic code and instructions will also be posted. Students will be able to choose from 2-3 topics for each assignment.

Student aural-video presentations will be submitted on Courselink.

All materials will be posted on the Courselink website.

Course Resources

Essential background texts: *Mostly Harmless Econometrics* (2008), by J Angrist and S Pischke, *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy* (2019 reissue) by Angus Deaton.

Recommended Texts: **Readings, data and assignments will be posted regularly on Courselink.**

Other Resources: PYTHON statistical software package (any edition, any version). This software is available without cost (www.anaconda.com). We will use Spyder IDE. Latex is free.

Course Policies

Grading Policies

Unless you have discussed an extension well ahead of the due date with the instructor, late penalties of 5% of the total grade earned per day (including weekends) will be assigned to any assessment (i.e. deducted from the total mark). Extensions will only be granted on the basis of valid medical or personal reasons, and need to be requested via email to the instructor as soon as possible. Late assignments will not be accepted once graded assignments have been returned officially to the class at large, unless circumstances permit and alternative arrangements have been made.

Students who find themselves unable to meet course requirements by the deadlines or the criteria expected because of medical or personal reasons, should review the regulations on academic consideration in the Academic Calendar and discuss their situation with the instructor, program counselor or other academic counselor as appropriate.

http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-grds.shtml

Missed Assignments:

A grade of zero will be assigned if you fail to submit an assignment, unless you are ill or have other compassionate reasons. Please read your Graduate Calendar for the regulations regarding illness and compassionate grounds. Please note, vacation travel, moving house, or outside work commitments will not be accepted as valid reasons for missing deadlines.

If you have religious observances which conflict with the course schedule or if you are registered with Student Accessibility Services, please contact the course instructor in order to make arrangements for your assessment if appropriate.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for Academic Consideration:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email sas@uoguelph.ca or see the website: https://wellness.uoguelph.ca/accessibility/

Course Evaluation Information

Please refer to the Blue by Explorance system.

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Drop date

The last date to drop one-semester courses, without academic penalty, is **Friday, April 4th 2025.** For regulations and procedures for Dropping Courses, see the Academic Calendar:

https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml