

**INTERMEDIATE ECONOMETRICS II**  
**ECONOMICS EC2223B-001/002**  
**Department of Economics**  
**Western University**

**January 2025**

**Instructor:** Roy Allen  
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**Office hours:** Mon: 1:30-2:30PM Tu: 10:40-11:40

**Delivery mode:** In person.

**Classroom meeting time(s) & location:**

Section 001 UCC-41: Tu: 1:30-2:30 Th: 1:30-3:30  
Section 002 UCC-41: Tu: 9:30-10:30 Th: 9:30-11:30

**Course website:** <https://owl.uwo.ca/portal>

**Undergraduate inquiries:** 519-661-3507 or SSC Room 4075 or [econugrd@uwo.ca](mailto:econugrd@uwo.ca)

**Registration:**

You are responsible for ensuring you are registered in the correct courses. If you are not registered in this course, the Department will not release any of your marks until your registration is corrected. You may check your timetable by using the Login on the Student Services website at <https://student.uwo.ca>. If you notice a problem, please contact your home Faculty Academic Counsellor immediately.

**Prerequisite/Antirequisite Note:**

The prerequisite for this course is **Economics 2222A/B**.

You are responsible for ensuring that you have successfully completed all course prerequisites, and that you have not taken any anti-requisite courses. Lack of prerequisites may not be used as a basis for appeal. If you are found to be ineligible for a course, you may be removed from it at any time and you will receive no adjustment to your fees. This decision cannot be appealed.

If you find that you do not have the course prerequisites, it is in your best interest to drop the course well before the end of the add/drop period. Your prompt attention to this matter will not only help protect your academic record, but will ensure that spaces become available for students who require the course in question for graduation.

**Course Description:**

This course introduces the linear regression model as a means to estimate and assess economic relationships. We study the interpretation of the ordinary least squares estimator as well as its asymptotic distribution. We will pay particular attention to linking the underlying economic model and the data. Building on concepts in EC2222, we show how to construct confidence

intervals and conduct hypothesis tests for parameters in the linear regression model. We cover basic time series and panel data analysis.

### Course Learning Outcomes:

Upon successful completion of this course, you will be able to:

- Use regression models to analyze economic relationships
- Understand the meaning of regression coefficients
- Conduct hypothesis tests and construct confidence sets for the linear regression model

### Textbook(s) and Course Materials:

Wooldridge, Jeffrey, *Introductory Econometrics: A Modern Approach*, 7<sup>th</sup> edition, South-Western.

Publisher link: <https://www.cengage.ca/c/introductory-econometrics-a-modern-approach-44-7th-edition-7e-wooldridge/9781337558860/>

Note: The 5<sup>th</sup> or 6<sup>th</sup> editions of the textbook may be cheaper and are very similar to the 7<sup>th</sup> edition. The main difference will be that the homework and readings I will assign will be numbered using the 7<sup>th</sup> edition. Note further in January 2025, the new 8<sup>th</sup> edition will be released in print. This course will follow the 7<sup>th</sup> edition, but if you pick up the 8<sup>th</sup> edition I expect it will have similar content.

### Assessments and Grading:

i.	Homework	5 assignments (score from top 4)	12.5%
ii.	Quiz	February 4 <sup>th</sup> in class <b>Note:</b> for the quiz, you must attend the section for which you are registered.	12.5%
iii.	Mid-term Exam	February 27 <sup>th</sup> in class <b>Note:</b> for the mid-term exam, you must attend the section for which you are registered.	32.5%
iv.	Final Exam	To be set by registrar	42.5%

Homework deadlines will be announced in class and on OWL, but will be about every two weeks. If you do not turn in homework, or turn it in late, you will receive a score of 0. Your lowest homework score will be dropped.

There will not be a make-up quiz or exam. If you miss a quiz or exam for a medical reason or non-medical reason and provide appropriate documentation, the weight will be added to the final exam.

### Professionalism, Privacy, and Copyright:

- Students are expected to follow the Student Code of Conduct.

- All lectures and course materials, including slides, presentations, outlines, and similar materials, are protected by copyright. Students may take notes and make copies of course materials for their own educational purposes only.
- Students may not record lectures, reproduce (or allow others to reproduce), post or distribute lecture notes, assessments, or any other course materials publicly and/or for commercial purposes without written consent of the instructor.
- Recordings (audio or video) are not permitted without explicit, written permission of the instructor. Permitted recordings may not be distributed or shared.
- Students are expected to follow online etiquette expectations provided on OWL

### **Communication:**

Announcements and assignments are posted to OWL. Please check the website regularly.

### **Generate AI:**

Generative AI tools including ChatGPT and other large language models are encouraged for this class. If you use such tools for homework, you must attach the prompts you enter that generate content that you submit. If you use ChatGPT for any writing concerning the optional project, you must also attach the prompts you enter that generate the content you submit. If you do not turn in prompts for homework or the optional project, this is plagiarism, which is an academic offense.

### **Optional Self-Sufficient Challenge Project:**

Students may complete an optional empirical project. This will involve analyzing some data using software such as Excel, Stata, R, or a large language model such as ChatGPT, and writing up the analysis into a project. Excel is a “point and click” way to do analysis. Stata is more powerful but harder to learn and expensive. R is designed to run as code and is the hardest to learn, but is free and very powerful. ChatGPT can do data analysis in natural language such as English, and can also generate code to be used in Stata or R. For students who **do not** do the optional project, the grade will be calculated as above. For students who **do** the optional project, the grade will be calculated as follows:

1. If the project grade is below the grade calculated above, your final grade is the grade calculated above. So the project does not help you but does not hurt you.

For example, if your Project Grade is 70 and your Normal Grade calculated above is 80, your Final Grade is the Normal Grade because it is higher than the Project Grade.

2. If the Project Grade is above the Normal Grade calculated above, your final grade is calculated as

$$\text{Final Grade} = .3 * \text{Project Grade} + .7 * \text{Normal Grade}$$

This helps you when the project grade is above the normal grade.

For example, if the Project Grade is 90 and the Normal Grade is 80, then your Final Grade is  $83 = .3*90 + .7*80$ .

(The calculation here assumes you do the project alone.)

3. You may do the project with one other student. You must clearly indicate you are working together. If you do the project with another student, your grade will not change if your project grade is lower than your course grade. If your project grade is higher than your course grade, it will be calculated as

$$\text{Final Grade} = .15 * \text{Project Grade} + .85 * \text{Normal grade}.$$

*Advice:* In the past, only a few students have done this project. The project is designed for students eager to challenge themselves. It generally takes a lot of time, and generally only changes a grade a little (or not at all, as in case 1 above). You will largely be self-sufficient for this project, which is why it is called a “self-sufficient challenge project.”

**PLEASE NOTE**  
**DEPARTMENT & UNIVERSITY POLICIES FOR WINTER 2025**

The University expects all students to take responsibility for their own Academic Programs. Students should also check their registration to ensure they are enrolled in the correct courses.

1. **Guidelines, policies, and your academic rights and responsibilities** are posted online in the current Western Academic Calendar at: <http://westerncalendar.uwo.ca>. Claiming that “you didn’t know what to do” is not an acceptable excuse for not following the stated policies and procedures.
  2. A *[new academic consideration and flexibility in assessment](#)* policy is in effect starting September 2024. Students can miss one assessment per course per term without medical documentation. Faculty can designate one assessment per course for which students **cannot** self-attest.
  3. Students must familiarize themselves with the **“Rules of Conduct for Examinations”** [http://www.uwo.ca/univsec/pdf/academic\\_policies/exam/administration.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/exam/administration.pdf).
  4. **Cheating as an academic offence:** Students are responsible for understanding what it means to “cheat.” The Department of Economics treats cheating incidents very seriously and will investigate any suspect behavior. Students found guilty will incur penalties that could include a failing grade or being barred from future registration in other Economics courses or programs. The University may impose further penalties such as suspension or expulsion.
  5. **Plagiarism:** Students must write their essays and assignments in their own words. When taking an idea/passage from another author, it must be acknowledged with quotation marks where appropriate and referenced with footnotes or citations. Plagiarism is an academic offence (see Scholastic Discipline for Undergraduate Students in the Western Calendar at [http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_20](http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_20)).
- Western University uses software to check for plagiarism and students may be required to electronically submit their work. Those found guilty will be penalized as noted in point 4.
6. It is a Department of Economics policy that **NO** assignments be dated, stamped or accepted by staff. Students must submit assignments to the instructor.
  7. **Appeals:** University policies and procedures for appealing a mark can be found in the Student Academic Appeals section in the current Western Academic Calendar at: [http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_14](http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_14). **Please note the relevant deadlines.**

Department of Economics procedures for appealing a mark can be found here: [https://economics.uwo.ca/undergraduate/program\\_counselling/responsibilities\\_policies.html#appeals](https://economics.uwo.ca/undergraduate/program_counselling/responsibilities_policies.html#appeals). The Department will not consider an appeal unless an attempt has been made to settle the matter with the instructor first. Students who remain dissatisfied with the outcome may proceed to submit an appeal to [econugrd@uwo.ca](mailto:econugrd@uwo.ca). Please follow the instructions and use the appeal form shown in the above link.

8. **Systematic adjustments of a class grade distribution** (either up or down) can occur in Economics courses. The fact that grades have been adjusted is **not** grounds for an appeal.
9. **ADD AND DROP DEADLINES:**

- Deadline to **ADD** second term full or half course: **January 14, 2025**
- Deadline to **DROP** second term full or half course: **March 31, 2025**

### **Policy Regarding Makeup Tests and Final Examinations**

Faculty of Social Science policy states that oversleeping or misreading an exam schedule is NOT grounds for a makeup. This rule applies to midterm and final exams in the Department of Economics.

### **Policies Regarding Academic Accommodation**

- Academic accommodation will not be granted automatically on request. Students must demonstrate by documentation that there are compelling medical or compassionate grounds before academic accommodation will be considered. The Faculty of Social Science's policies on academic accommodation are found at [https://counselling.ssc.uwo.ca/procedures/academic\\_consideration.html](https://counselling.ssc.uwo.ca/procedures/academic_consideration.html)
- **Accommodation for Students with Disabilities:** Students with disabilities or accessibility challenges should work with Accessible Education (formerly SSD, see [http://academicsupport.uwo.ca/accessible\\_education/index.html](http://academicsupport.uwo.ca/accessible_education/index.html)), which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The accommodation policy can be found here: [Academic Accommodation for Students with Disabilities](#).
- **Rewriting Exams and Retroactive Reweighting are NOT Permitted:** Students who proceed to write a test or examination must be prepared to accept the mark. Rewriting tests or examinations, or retroactive reweighting of marks, is **not** permitted. Students must also book travel arrangements AFTER final exam dates have been posted as they must not conflict with test or final exams.
- Unless medically incapable of doing so, students must notify their instructor prior to the test date or at least within **48 hours** when requesting a makeup exam. Failure to follow this procedure may result in denial of academic accommodation and a grade of zero. Students should also set up an appointment as soon as possible to meet with their instructor. If the

instructor is not available, send an email message to the instructor, copying the Undergraduate Coordinator at [econugrd@uwo.ca](mailto:econugrd@uwo.ca). **Notifying instructors of a missed exam does not automatically entitle students to a makeup.**

- For medical illnesses, students may consult Student Health Services and request a Student Medical Certificate from the physician. If assessed by an off-campus doctor, students must obtain a certificate from his/her office at the time of the visit/assessment. Student Medical Certificate (SMC) is available here:  
[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medical\\_certificate.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medical_certificate.pdf)
- **Documentation for Accommodation:** Individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds or for other reasons.
- **Western University policy on Consideration for Student Absence** is available here:  
[https://counselling.ssc.uwo.ca/procedures/academic\\_consideration.html](https://counselling.ssc.uwo.ca/procedures/academic_consideration.html)
- **Religious Accommodation:** Students should consult the University's list of recognized religious holidays and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the 2024 Diversity Calendar available at <https://www.edi.uwo.ca/> (see bottom right of page).

**Policy Regarding Class Attendance and Engagement:** If the instructor deems a student's attendance or engagement in the class to be unsatisfactory, that student may be prohibited from writing the final examination. Examples of unsatisfactory class engagement include frequent absences from an in-person or synchronous online class, lack of assignment submissions, and inadequate use of online course materials. Instructors who intend to make use of this policy will notify the student in advance.

**Statement on Gender-Based and Sexual Violence:** Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who is going through or has gone through these traumatic events. If you are experiencing or have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts at the following website: [Get Help](#). To connect with a case manager or set up an appointment, please contact [support@uwo.ca](mailto:support@uwo.ca).

**Statement on Mental Health and Support Services:** Students who are in emotional/mental distress should refer to Mental Health@Western <http://www.uwo.ca/uwocom/mentalhealth/> for a complete list of options about how to obtain help.

**Statement on Remote Proctoring:** While Western intends to hold most classes, mid-terms and finals in-person, the London-Middlesex Health unity may require western to teach in a remote format. If this occurs, all assessments will be done remotely and may involve the use of remote proctoring software (i.e., Proctorio, ProctorTrack). Instructors will provide information on the details should the need arise.

## Guidelines for Essay Courses

### Essay Courses<sup>1</sup>

An essay course is a course in which the cumulative amount of written work, excluding written work in examinations, is at least 2,500 words (for a half course).

To pass an essay course, students must exhibit a minimal level of competence in essay writing in addition to comprehension of the course content.

### English Language Proficiency for Assignment of Grades<sup>2</sup>

Written work that demonstrates a lack of English proficiency will be failed or, at the discretion of the instructor, returned to the student for revision to an acceptable level.

To foster competence in the English language, *all instructors will take English proficiency into account when marking*. This policy applies to all courses, not only essay courses.

### Recycling of Assignments

Students are prohibited from handing in the same paper for two different courses. Doing so is considered a scholastic offence and will be subjected to academic penalties.

### Plagiarism

Plagiarism is defined as “the act or an instance of copying or stealing another’s words or ideas and attributing them as one’s own.”<sup>3</sup>

Plagiarism applies to ALL assignments including essays, reports, diagrams, statistical tables, and computer projects. Examples of plagiarism include:<sup>4</sup>

- Submitting someone else’s work as your own
- Buying a paper from a mill, website or other source and submitting it as your own
- Copying sentences, phrases, paragraphs, or ideas from someone else’s work, published or unpublished, without citing them
- Replacing selected words from a passage from someone else’s work and using it as your own without citing them
- Copying multimedia (graphics, audio, video, internet streams), computer programs, music compositions, graphs, or charts from someone else’s work without citing them
- Piecing together phrases and ideas from a variety of sources without citing them
- Building on someone else’s ideas or phrases without citing them

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<sup>1</sup>From the UWO Academic Handbook. See

[http://www.uwo.ca/univsec/pdf/academic\\_policies/registration\\_progression\\_grad/coursenummering.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/registration_progression_grad/coursenummering.pdf)

<sup>2</sup> From the UWO Academic Handbook. See [http://www.uwo.ca/univsec/pdf/academic\\_policies/exam/english.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/exam/english.pdf)

<sup>3</sup>Excerpted from HC Black, *Black’s Law Dictionary*, West Publishing Co., 1999, 7th ed., p. 1170.

<sup>4</sup> Adapted from the San José State University Plagiarism Tutorial <https://libguides.sjsu.edu/plagiarism>



Plagiarism is a serious scholastic offence. Possible consequences of plagiarism include a mark of 0% on the assignment, a mark of 0% for the course, and expulsion from the university. Instructors may require students to submit written work electronically to <http://www.turnitin.com>. This is a service that assists instructors in detecting plagiarism.

Students seeking further guidance on avoiding plagiarism should consult their instructor. *Claiming ignorance is not an acceptable excuse.*

The key to avoiding plagiarism is to correctly cite reference sources.

## Referencing and Citation Guidelines

The Economics Department has adopted the citation guidelines used in *The Chicago Manual of Style*, 16<sup>th</sup> edition. Chicago: University of Chicago Press, 2010. You can find an online version on the Western Libraries website. Go to <https://www.lib.uwo.ca/essayhelp/index.html> and click on 'style guides'. For off-campus access, use the *OffCampus Access* sign-in on the Library's homepage.

Economics papers often use the in-text **author-date** style of citations and references. Details and examples of this style are shown in chapter 15 of the *Chicago Manual of Style Online*. See also the handy "Chicago-Style Citation Quick Guide" under Tools on the homepage.

In the body of an essay, in-text citations list the last names of the authors of the piece that are referenced, the year of publication, and, where relevant, page numbers. In-text citations refer the reader to a complete list of bibliographic references at the end of the essay. Papers that cite multiple works by the same author(s) with the same publication year should add a lower case letter after the date in both the in-text citation and References (e.g., 1993a and 1993b). In doing so, the in-text citation points the reader to the relevant work.

Examples of in-text citations:

Diamond (1981, 1982) and Mortensen (1982a, 1982b) find these externalities can cause an inefficient level of search activity...

The "new view of unemployment" which emerged during the 1970s emphasized the importance of turnover in the labour force and the brief duration of many employments spells (Hall 1970, 1972; Perry 1972; Marston 1976).

The primary objectives of the LMAS are "1. To provide measures of the dynamic...the Labour Force Survey" (Statistics Canada 1990, 5).

The list of references at the end of the essay should be titled References or Works Cited. It should provide complete bibliographic information about each source cited. In addition, students should also provide adequate referencing of any data sources. This can be done in a data appendix following the text of the paper and before the References.

Examples of the format and content of references can be found here:

<https://www.lib.uwo.ca/files/styleguides/ChicagoStyleAuthorDate.pdf>

### **Writing an Economics Essay: Starting Points**

To start a written assignment, review your professor's instructions. Read published work written by economists, which will give you examples of the structure and content of economics writing. Examples are readings in the course outline, journals, working papers, etc.

Two helpful sources that give information about how to write for economics are:

McCloskey, Dierdre N. 2000. *Economical Writing*, 2<sup>nd</sup> edition. Prospect Heights, Illinois: Waveland Press.

Greenlaw, Steven A. 2006. *Doing Economics: A Guide to Understanding and Doing Economic Research*. New York: Houghton Mifflin Co.

### **Writing an Economics Essay: Resources**

The **Resources Link** on Western University's Department of Economics website (<http://economics.uwo.ca/resources/index.html>) provides a link to a list of sources for published and unpublished economic papers, articles, books, theses, government publications, data, etc. Western Libraries has a very useful economics resource page <https://guides.lib.uwo.ca/economics>.

**DB Weldon Library** has a collection of bibliographies, indexes, handbooks, and periodicals in economics. Library holdings, the online library catalogue, and other resources are available electronically from the Western Libraries Homepage <http://www.lib.uwo.ca/>. These can be accessed off-campus with the OffCampus Proxy Server on the Library main page.

Students are encouraged to take a library orientation tour to learn about where sources of information are located both physically and online. Consult library staff for questions

*The New Palgrave Dictionary of Economics* is the most comprehensive dictionary of economics in existence today. It is available online through the library catalogue, or in print in the Weldon's Reference section (call # HB 61.N49 2008 v. 1-8).

*EconLit* (*Economic Literature*) is an electronic bibliography of literature from 1969 to the present. It covers journals, collected articles, books, book reviews, dissertations, and working papers. It also provides citations, selected abstracts, and links to Western's full-text resources. Students can also print records by downloading marked records to a text file, sending marked records by email, or exporting them to a citation manager such as *Zotaro*. For a list of citation software, see <https://www.lib.uwo.ca/essayhelp/citationmanagementsoftware.html>.

**CANSIM** (**Canadian Socio-economic Information Management System**) is Statistics Canada's database of time series data covering a variety of economic aspects of Canadian society. Access the database by a Title Search on the Western Library's Catalogue, or from the Library's list of Databases under "Research Tools" on the Library's homepage.

## **Western Undergraduate Economics Review (WUER)**

The Department of Economics encourages students to consider submitting their essays to the *Western Undergraduate Economics Review*, a journal published annually by the Department that showcases student work in economics. For further information, please visit [http://economics.uwo.ca/undergraduate/undergraduate\\_economics\\_review.html](http://economics.uwo.ca/undergraduate/undergraduate_economics_review.html).

### **Essay Prize in Economics**

Two prizes may be awarded at the end of the academic year. One prize is for a student registered in a 2100 level course, and one is for a student registered in a 2200 or higher level course. Each prize is valued at \$500.

Students can only win the Essay Prize in Economics once. Economics 4400E is not eligible for this prize as it has its own essay award.

Instructors will nominate student essays for the prize. The essay should be submitted to the Undergraduate Coordinator for consideration by the Essay Prize Committee, which will decide the winner. The Essay Prize Committee will consist of the Undergraduate Program Director, WUER Faculty Advisor and one other faculty member. The decision of the Committee is final and cannot be appeal.

Papers will be judged on content, originality, use of references, spelling, and grammar.

The grade given to the paper will not influence the decision of the Essay Prize Committee as all comments by the original marker will be removed.

The deadlines for instructor submissions are:

Fall courses: January 1<sup>st</sup>  
Winter courses: May 1<sup>st</sup>

***The winner of the essay prize is encouraged to submit their paper to the Western Undergraduate Economics Review. Other appropriate papers may also be submitted.***