



ECON 246 A01

Statistical Inference

Winter Session: 202609 – First Term, Fall 2026, CRN 11118, 1.5 Units, 3 weekly lectures (Tuesday, Wednesday, and Friday 12:30-1:20, David Strong Building C118), 1 weekly lab (CRN 11119, Monday 3:30-4:20 Clearihue Building A108, CRN 11120, Monday 4:30-5:20 Clearihue Building A031)

UVic Land Acknowledgement

We acknowledge and respect the Ləkʷəŋən (Songhees and Xʷsepsəm/Esquimalt) Peoples on whose territory the university stands, and the Ləkʷəŋən and W̱SÁNEĆ Peoples whose historical relationships with the land continue to this day.

Instructor Name: Dr Zoey Verdun

Office: BEC 322

Email: zverdun@uvic.ca

Method of contact and availability:

- Emails should be limited to important matters, such as inability to attend an exam or prolonged illness, and should include the course name and number in the subject line;
- Questions regarding course material should be asked during office hours, in class or in the lab;
- I do not respond to emails outside business days

As per department policy, it may take up to two business days for me to respond to your queries.

Email correspondence: The standard format for writing a letter must be used. This means it should begin with a salutation (e.g. Dear...), include full sentences and it must conclude with a signature that includes your full name and V#. Text message lingo should not be used (see [here](#) for a gentle guide on how to email faculty).

Office Hours: Office hours are in person on Tuesdays 11:00-12:00 and Wednesdays 2:00-3:00. If you have questions about the course topics, please prepare beforehand by revising the material. If the times of the office hours do not work for you, please send me an email (see rules above), and I will try to find alternative slots.

TA Name: TBC

Email:

Teaching and assessment modality statement

This course is face to face and all exams are held in person. No classes are planned to be held online. Students are permitted to bring a SHARP EL-510 calculator to the midterm and final exams.

Course Content

Introduction to estimation. Sampling distributions of estimators, confidence intervals, hypothesis tests, as well as correlation and an introduction to linear regression. Statistical programming and data visualization using R.

ECON 246 is the second of a series of courses dealing with statistics and econometrics, following ECON245 and preceding ECON345/365. The course will cover the following:

- Revision of probability theory
- Revision of descriptive statistics
- Sampling
- Estimation and confidence intervals
- Bootstrap
- Hypothesis testing
- Simple linear regression

Course prerequisites/corequisites

You must have earned a minimum grade of C in either ECON245 (Descriptive Statistics and Probability, 1.5 units) or STAT260 (Introduction to Probability and Statistics I, 1.5 units).

Note: Credit will be granted for only one of ECON 246 or ECON 340. The course is not open to students registered in or with credit in STAT 261. STAT 252 cannot be used to satisfy the prerequisites.

Repeating Courses

A student may not attempt a course a third time without the prior approval of the Dean of the Faculty and the Chair of the Department in which the course is offered unless the calendar course entry states that the course may be repeated for additional credit. A student who has not received this approval may be deregistered from the course at any point and may be asked to withdraw from his or her declared or intended program.

Textbook

This course follows the structure in Abrevaya (2025) [Probability and Statistics for Economics and Business: An Introduction Using R](#); however, textbook purchase is optional. It is recommended that you follow Appendices A, B and C of Wooldridge, J., 2025, *Introductory Econometrics: A Modern Approach*, Cengage (the latest edition is the 8th; past editions are fine) – this is the textbook used in ECON345. You can also

use the free e-book [Introduction to Econometrics with R](#) (Hanck, Arnold, Gerber and Schmelzer, 2025) or the free e-book [R for Data Science](#).

Brightspace

Brightspace is used extensively for the course. All students are expected to be fully functional with the system. The lecture notes will be posted in *Brightspace*. Please note that the lecture notes online are only outlines of the actual lectures.

All announcements will be posted in *Brightspace*. Students are advised to check it frequently.

Learning Outcomes

At the end of the course students should:

- Understand how to appropriately deal with describing and analyzing basic data sets using economic data.
- Perform simple hypothesis testing and probability.
- Apply the Standard normal distribution, t-distribution, Chi-square distribution to solve probability-based problems.
- Summarize sample data effectively
- Employ estimation procedures and correctly interpret their results
- Apply OLS regression and correlation analysis to economic data using the package R
- Enhance their personal understanding of Canadian data collection agencies

Course Structure, Assessments, and Grading

Statement about learning components

Lectures

Tuesday, Wednesday and Friday 12:30-1:20 in David Strong Building C118.

While class attendance is highly encouraged, it will not be graded. Please do not ask me what you missed in a particular lecture or if I said something important (I would not teach it if it were not relevant). Instead, at the beginning of the course, please exchange contact information with at least one other student, so you can ask them what you missed. Slides by topic will be available ahead of the lectures on Brightspace; these may get elaborated on during the lecture. The lectures will not be recorded.

Labs

Labs will be held weekly on Mondays in the Clearihue Building from 3:30-4:20 (room A108) and from 4:30-5:20 (A031). Exercises for each lab will be posted on Brightspace. Some labs will involve the use of R, available on computers in the lab. These labs will cover formal class material and will run throughout the term, starting the third week of the term (September 21st). Note that there are no labs on September 30 (Truth and Reconciliation Day) and in the reading break (November 10-12). The TA will be leading these lab classes.

The goal of the lab sessions is twofold: (1) to assist you in learning how to implement the techniques or concepts taught in lectures in empirical applications (for example, in R); (2) to provide an alternative to

take-home assignments, where computational exercises taught in either lectures or labs can be completed for grades.

It is strictly forbidden to use Artificial Intelligence (AI) for these assignments. The purpose is to develop these skills without AI so that, in the future, should you choose to use AI to assist with calculations or coding, you will have sufficient understanding to recognise when it makes mistakes, which it inevitably will.

Anything taught or practised in the lab is fair game for the midterm and final exams, so it is very important you attend these sessions. Lab sessions will not be recorded.

Only your best eight lab sessions will count toward your grade. Therefore, if for any reason you are unable to attend one lab session, no penalty will be incurred. However, you remain responsible for the material covered in that session.

Use of AI

The use of AI is not permitted in this course. As noted above, it is important to build your knowledge and skills without AI, even if you may choose to use it in the future. Since AI use is not permitted in this course, assignments must be completed and submitted through Brightspace during the lab session to help ensure that all work reflects your own understanding and skills. You must be able to explain and justify all submitted work. Unauthorised use of AI will be considered a violation of academic integrity.

Grading Scheme

The course grade is determined as follows:

9 in-lab assignments, best 8 count toward final grade, each carrying a weight of 2% (total, 16%)

3 in-person midterm exams (Midterms 1 and 2: 20% each; Midterm 3: 14%).

Final exam worth 30%

Mandatory/Essential Course Components

The final examination is an essential course requirement and must be completed in order to pass the course. In addition, students must complete at least two of the three midterm examinations. Students who fail to complete the final examination or at least two midterm examinations will receive a grade of N, regardless of their cumulative percentage in the course. See *Missing Assessments* below for policies regarding missed midterm examinations.

Dates of Assessments, Due Dates of Assignments

In-lab Assignments: Each lab will have an assignment. It must be completed in lab and submitted via Brightspace by the end of the lab time. If there are any difficulties with submission, please alert the TA before the end of the lab. The final lab on December 7th will either take the form of a review class with

the TA or be used as a make-up lab should a lab have been cancelled by the instructor due to unforeseen circumstances.

Midterms: The midterm exams are scheduled in-class on Friday Oct 2, Friday Nov 6, and Friday Dec 4 (provisional). The approximate coverage will be: Midterm 1 covers probability review through the Central Limit Theorem; Midterm 2 covers estimator properties, confidence intervals, the bootstrap, and hypothesis testing; Midterm 3 covers ANOVA, simple linear regression, and possibly a brief introduction to multiple regression. Final topic coverage of each midterm will be confirmed closer to the date.

Final exam: In person. The exam will take place during the exam period (Dec 10-23, 2026). Allowed materials: a SHARP EL-510 calculator.

Students are advised not to make work or travel plans until after the examination timetable has been finalized. Students who wish to finalize their travel plans at an earlier date should book flights that depart after the end of the examination period. Students do not qualify for an academic concession if travel plans conflict with the examination.

Grading Scale

A+	90-100%
A	85-89%
A-	80-84%
B+	77-79%
B	73-76%
B-	70-72%
C+	65-69%
C	60-64%
D	50-59%
F or N	0-49%

Students should review the University's more detailed [summary of grading](#).

Missing Assessments

Students who encounter circumstances that prevent them from completing course requirements may qualify for an academic concession under University policy.

Make-up midterm examinations will not be offered. In the event that a student misses one midterm due to illness, family affliction, or other circumstances warranting academic concession, the weight of the missed midterm will be transferred to the final examination.

Students are expected to complete at least two of the three midterm examinations. Students who are unable to do so should consult the University's academic concession procedures to determine the available options.

The lab component includes built-in flexibility, as only the best eight of the nine lab assignments count toward the final grade. Additionally, because lab assignments are not essential course requirements, no make-up lab assignments will normally be provided.

Students who miss the final examination should apply for a deferral through the University's academic concession process.

Waitlist Policies

- Instructors have no discretion to admit waitlisted students or raise the cap on the course.
- Students on the waitlist should discuss with the instructor how to ensure they are not behind with coursework in the event they are admitted.
- Registered students who do not participate as specified in this outline during the first 7 calendar days from the start of the course may be dropped from the course.
- Registered students who decide not to take the course are responsible for dropping the course and are urged to do so promptly out of courtesy toward waitlisted students.
- Waitlist offers cease after the last date for adding courses irrespective of published waitlists.

Academic Integrity

Academic integrity is fundamental to all scholarly work. At the University of Victoria (UVic), students are expected to comply with the university's academic regulations and must not engage in acts of dishonesty, falsification, misrepresentation, or deception in any academic work. Violations of [the University's academic integrity policy](#) may result in academic or disciplinary consequences.

Appeals

Depending on the nature of your concern, the order in which you should normally try to resolve the matter is:

1. Me, the course instructor
2. the Associate Chair: econassoc@uvic.ca
3. the Associate Dean of Academic Advising
4. the Senate.

If you're seeking a formal review of an assigned grade, you should also consult the regulations in the academic calendar regarding [review of an assigned grade](#). I only respond to grading inquiries in writing. You must file your question within 1 week of issuance of your grade and the release of the answer key. Do not approach me after class to discuss grading concerns.

University Policies and Statements

Please note that this course is executed in a manner consistent with these University statements and policies.

- a. University Calendar - Section "[Information for all students](#)"
- b. [Creating a respectful, inclusive and productive learning environment](#)
- c. [Academic Integrity](#)
- d. [Academic Concession Regulations](#), [Academic Concession and Accommodation](#), Academic Accommodation – [Policy AC1205](#)
- e. [Accommodation of Religious Observance](#)
- f. [Student Conduct](#)
- g. [Accessibility](#)
- h. [Diversity / EDI](#)
- i. [Equity statement](#)
- j. [Sexualized Violence Prevention and Response](#)
- k. [Discrimination and Harassment Policy](#)

Resources for students

- a. [Student wellness](#)
- b. [Centre for Accessible Learning](#)
- c. [UVic Learn](#). UVic Learn is the primary learning resource for students that offers many learning workshops and resources to help students with academics and learning strategies.
- d. [Library](#) resources
- e. Academic Skills Centre ([ASC](#))
- f. Learning Assistance Program ([LAP](#))
- g. [Academic Advising](#)
- h. Economics Undergraduate Advising: ecadvice@uvic.ca
- i. [Student Awards and Financial Aid](#)
- j. [International Student Advising](#)
- k. Indigenous student services ([ISS](#))
- l. [Student groups and resources](#) including UVic [Ombudsperson](#)

Student Experience of Learning (SEL) Survey

I value your feedback on this course. Towards the end of term, you will have the opportunity to complete a confidential SEL survey regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future.

Course Structure

Note: The textbook is optional. Chapter references (for Abrevaya, 2025) in the table below are provided for students who wish to use it as a supplementary reference alongside the lecture slides. The timing of the lecture topics is approximate and may be subject to adjustments as the course progresses.

Week	Topic	Chapter	Assessment / notes
1 (9-11 Sept)	Course intro; Probability review begins	Ch. 2-3	
2 (14-18 Sept)	Data & sampling; descriptive statistics	Ch. 5-7	No lab this week
3 (21-25 Sept)	Random variables & distributions (exact)	Ch. 8, 10-12	Mon Sept 21: Lab 1 assignment
4 (28 Sept-2 Oct)	Distributions (asymptotic) / The Central Limit Theorem	Ch. 13	Mon Sept 28: Lab 2 assignment Wed Sept 30: NO lecture (Truth & Reconciliation Day) Fri Oct 2: Midterm 1
5 (5-9 Oct)	Estimation and confidence intervals	Ch. 14	Mon Oct 5: Lab 3 assignment
6 (12-16 Oct)	Estimation and confidence intervals	Ch. 14	Mon Oct 12: NO lab (Thanksgiving)
7 (19-23 Oct)	The delta method; intro to bootstrap	Ch. 14; Ch. 15	Mon Oct 19: Lab 4 assignment
8 (26-30 Oct)	Bootstrap methods; intro to hypothesis testing	Ch. 15; Ch. 16	Mon Oct 26: Lab 5 assignment
9 (2-6 Nov)	Hypothesis testing	Ch. 16	Mon Nov 2: Lab 6 assignment Fri Nov 6: Midterm 2
10 (9-13 Nov)	<i>Reading break</i> ; intro to ANOVA	tbd	<i>Reading break</i> : Mon Nov 9: NO lab Tu/Wed Nov 10-11: NO lecture
11 (16-20 Nov)	ANOVA; intro to simple linear regression	Ch. 17	Mon Nov 16: Lab 7 assignment
12 (23-27 Nov)	Simple linear regression	Ch. 17	Mon Nov 23: Lab 8 assignment
13 (30 Nov-4 Dec)	Simple linear regression; intro to multiple regression	Ch. 17; Ch. 18.1	Mon Nov 30: Lab 9 assignment Fri Dec 4: Midterm 3
14 (7 Dec)	<i>No lecture this week</i>		Mon Dec 7: Final lab session / review

Electronic Devices

Please do not use your phones in class; this is as much for your learning as it is to avoid distracting your classmates. Similarly, laptops may be used for notetaking, but not for other purposes. If your laptop use during lectures becomes a distraction to others, I will ask you to put it away. The labs have computers; please do not use your phone or laptop during the lab sessions. During midterm and final examinations, the only electronic device permitted is an approved calculator. Use of any other electronic device will be considered academic misconduct (i.e. cheating).

Educational Technology involving storage outside Canada

N/A