



ECON 245 A01

Descriptive Statistics and Probability

Summer Session: 2026 05 – Term 2, CRN 31213, 1.5 Unit Value,

Lecture TWF 12:30 - 2:20 pm MacLaurin D116

Labs MTH B01 1:30 pm BEC 180 (CRN 31214)

UVic Land Acknowledgement

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

Instructor Name:

Instructor Name: Betty Johnson

Office: BEC 324

E-Mail: bettyj@uvic.ca

Office Hours: Zoom by appointment.

<https://uvic.zoom.us/j/89259287012?pwd=ZlVhYzgrNEIBZENZaG5ZaGQ0YVhJUT09>

TA Name: Hossein Korani

Office: N/A

Email: hosseinkorani@uvic.ca

Office Hours: TBA

Teaching and assessment modality statement

This course is face to face and all exams are held in person. Attendance is not mandatory but encouraged. There are no plans to hold any classes online. If illness occurs, I will post an online video in place of regular class.

Course Content

Introduction to statistics and probability theory. Key topics include elementary probability, discrete and continuous random variables, as well as descriptive statistics of univariate and bivariate data.

Introduction to basic programming and data visualization using R and Excel.

The objective of this course is to introduce you to techniques and tools to deal with economic data and economic applications. Probability theory and descriptive statistics are central to modern applied economics. A clear understanding of such ideas is important in the subsequent study of economics.

Economics 245 is the foundation of a series of courses in the teaching of quantitative economics. In particular, it will introduce you to basic statistical concepts and characteristics of economic data. By providing insight into various economic data sets, you will be better equipped to summarize and interpret economic events in a meaningful and efficient fashion.

The course is roughly divided into two components: (i) descriptive economic statistics and (ii) probability and random variables. Part (i) deals essentially with how to **describe** and **summarize** characteristics of economic data. In the process of doing this we will learn about some aspects of data manipulation that are central to the way in which agencies, such as Statistics Canada, publish economic information. Part (ii) provides **applications** of probability, and **insight** into the statistical characteristics of random sampling. Such background material is necessary for us to subsequently learn about statistical inference, a topic that forms the basis for Economics 246.

Course prerequisites/corequisites

Note(s)

- Credit will be granted for only one of ECON 245, ECON 240.
- See "[Credit Limit - Beginning Level Statistics Courses](#)".

Prerequisites

- Complete 1 of:
 - [MATH100](#) - Calculus I (1.5)
 - [MATH102](#) - Calculus for Students in the Social and Biological Sciences (1.5)
 - [MATH109](#) - Introduction to Calculus (1.5)

Pre- or corequisites

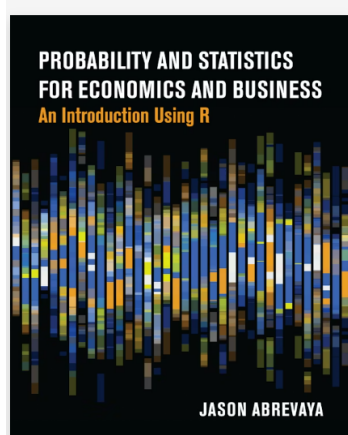
- Complete all of the following
 - Completed or concurrently enrolled in 1 of:
 - [ECON103](#) - Principles of Microeconomics (1.5)

- [ECON103C](#) - Introduction to Principles of Microeconomics and Financial Project Evaluation (1.5)
- [ECON180](#) - Introduction to Economics and Financial Project Evaluation (1.5)
- Completed or concurrently enrolled in all of:
 - [ECON104](#) - Principles of Macroeconomics (1.5)

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 (optional)



Probability and Statistics for Economics and Business

An Introduction Using R

By [Jason Abrevaya](#)

Paperback

eBook

This course follows the structure in Abrevaya (2025) *Probability and Statistics for Economics and Business: An Introduction Using R*. <https://probstats4econ.com/>. I highly recommend that you follow Appendices A, B and C of Wooldridge, J., 2020, *Introductory Econometrics: a Modern Approach*, Cengage (the latest edition is the 7th, past editions are fine) – this is the textbook used in ECON345. You can also use the free e-book *Introduction to Econometrics with R* <https://www.econometrics-with-r.org/index.html> (Hanck, Arnold, Gerber and Schmelzer, 2025) or the free e-book *R for Data Science*. <https://r4ds.had.co.nz/>

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.

Minimum Grade Requirements

*ECON grade requirements for FME, BA and BSc students listed. Students pursuing an Honours degree should consult the academic calendar. ECON203 and 204 have a C as minimum program requirement, can't take ECON313 without a minimum C in 203, **ECON245 has a C+ program requirement**, can't take **ECON345 without a minimum C+ in ECON245**, ECON350 has a C minimum program requirement, ECON313 has a B- minimum grade requirement for ECON435 and ECON454 and for the FME in general. There is no grade requirement on ECON313 for students pursuing the BA or BSc in Economics without the finance option.*

Learning Outcomes

[Provide a summary of expected learning outcomes. You may wish to consult the Learning and Teaching Support and Innovation (LTSI) site for guidance. See <https://www.uvic.ca/learningandteaching/faculty/resources/index.php>]

Course Structure, Assessments, and Grading

Statement about learning components

Learning Outcomes

- *Present and calculate summaries appropriately when describing and analyzing basic data sets using economic data.*
- *Calculate and comprehend simple probability using simple or multivariate models.*
- *Display personal understanding of Canadian data collection agencies.*
- *Demonstrate elementary programming using R and Excel.*

Use of AI

No AI permitted in work that is to be submitted for marks.

Grading Scheme

Lectures and presented live, live-streamed on zoom and recorded and posted on Brightspace.

Assignments are posted on and submitted on Brightspace.

Labs are posted on and submitted on Brightspace.

The course grade is determined as follows:

3 homework assignments, each carrying a weight of 5%.

3 in-person midterm exams, each carrying a weight of 25%.

8-10 lab assignments, each carrying a weight of approximately 1%.

Mandatory/Essential Course Components

All exams are essential course requirements, meaning, they must be attempted in order to pass the course. Note that essential course requirements are deferrable, the midterms are considered essential and thus deferrable by definition. Failure to complete the three tests will result in a grade of “N” regardless of the cumulative percentage on the course. N is a failing grade and factors into GPA as a value of 0.”

Dates of Assessments, Due Dates of Assignments

Assignment(s): Assignments are posted on Brightspace. Please upload your assignment by midnight on the due date:

Assignment #1 -- due May 24

Assignment #2 -- due June 7

Assignment #3 -- due June 21

Midterms: The midterm exams are scheduled for:

Midterm #1 – May 29

Midterm #2 – June 12

Midterm #3 – June 26

Information and coverage will be available one week before the exam.

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

Should students encounter a situation where they miss an exam or cannot submit an assignment at its due date, they may qualify for an academic concession. Students are required to indicate the specific grounds on which they are requesting an academic concession and provide a justification outlining the impact of the circumstances on their ability to complete course requirements. For in-course extensions,

please [fill in the form and follow the instructions on the form](#). In case you miss the final exam, fill in a [request for a deferral](#). I will not respond to informal requests of academic concessions. There are no *automatic academic concessions such as putting the weight of a missed midterm for a legitimate reason on the final, dropping the two worst grades of quizzes etc.*

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 2 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 requires commitment to the values of honesty, trust, fairness, respect, and responsibility. Students are expected to observe the same standards of scholarly integrity as their academic and professional counterparts. A student who is found to have engaged in unethical academic behaviour, including the practices described in the [Policy on Academic Integrity](#) in the University Calendar, is subject to penalty by the University.

The University reserves the right to use a plagiarism software to detect violations of academic integrity.

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](#)."

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

<i>Week</i>	<i>Topic</i>	<i>Chapter (TBA)</i>	<i>Assessment</i>
1	Topic 1: Introduction Topic 2: Descriptive Statistics	1, 2	
2	Topic 2: Descriptive Statistics	1, 2	Due Dates: Assignment #1 May 24

			Exam Info: Midterm #1 May 29 Labs start: May 21
3	Topic 3: Probability	3	<i>Labs due May 25 and May 28 at midnight</i> <i>Midterm #1 May 29</i>
4	Topic 4: More Probability	3	<i>Labs due June 1 and June 4 at midnight</i> Due Dates: Assignment #2 due June 6 <i>Exam Info: June 12</i>
5	Topic 5: Discrete Random Variables	4	<i>Labs due June 9 and June 12 at midnight</i> <i>Midterm #2 June 12</i>
6	Topic 6: Continuous Random Variables	5	Due Dates: Assignment 3 due June 21 <i>Labs due June 15 and June 18 at midnight</i> Exam Info: June 26
7	Topic 7: Normal Distribution	6	<i>Exam Midterm #3 June 26</i> <i>Labs due June 24 at midnight</i>

E-mail Correspondence

Emails should be limited to critical matters, such as inability to attend class, an exam, or prolonged illness, and should include the course name and number in the subject line. Questions on course material should be asked during office hours or in class. 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.

Electronic Devices

Non-programmable calculators are permitted during exams.

Educational Technology involving storage outside Canada

N/A