



**Carleton
University**

Department
of Economics

Fall 2024

ECON 2210 A

Introductory Statistics for Economics

Course Outline

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Welcome to Introductory Statistics for Economics!

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Course Description

This course presents basic statistical methods for the study of economics. Topics include descriptive statistics, elementary probability theory, sampling distributions, estimation and hypothesis testing for one and two population parameters.

Learning Outcomes

By the end of this course, students will:

- 1) be conversant with and be able to define a range of basic statistical terminology
- 2) have a general understanding of how data are collected and organized for statistical purposes
- 3) understand the fundamentals of data visualization, including the construction and interpretation of elementary graphs, charts, and tables
- 4) be able to describe data using standard numerical measures of central tendency and variation
- 5) have a grounding in elementary probability theory and the basic rules of probability
- 6) understand the concept of a probability distribution and be acquainted with some leading examples of both discrete and continuous probability distributions
- 7) have a clear idea of what is meant by a sampling distribution
- 8) be familiar with the basics of estimation and hypothesis testing, with particular reference to applications involving the population mean and the population variance
- 9) understand the key elements of modern spreadsheet software and have had some experience in using this software for statistical purposes

Prerequisites and Preclusions

The prerequisites for this course are ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. NOTE: ECON 2210 may be taken concurrently with ECON 1402/MATH 1402. Students who believe that they have taken a similar background course or courses from another university must provide appropriate documentation to the Department of Economics Undergraduate Administrator, Sean Hall seanhall3@cunet.carleton.ca

Please note that a grade of C- or higher in ECON 2210 is required to qualify for ECON 2220. Also, please note that a grade of C- or higher in ECON 2210 is required to qualify for ECON 3900 and ECON 3920, and that a grade of C+ or higher is required to qualify for ECON 2708, ECON 4002 and ECON 4706. DEF(erred final grade) status at the end of this course precludes (continued) registration in any other course for which the former is a prerequisite.

Also, please note that this course precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2200 (no longer offered), ECON 2201 (no longer offered), ENST 2006, GEOG 2006, STAT 2507, STAT 2601, STAT 2606 (no longer offered), and STAT 3502.

Organization

This is an in-person course and is NOT suitable for online students. The class will meet once a week at 2:35 p.m. on Mondays for a 2 hour and 50 minute session with a short intermission. In addition, an 80-minute tutorial session will be held at 2:35 p.m. on Tuesdays. The tutorial sessions will be used for additional coverage of important course material, together with assignment-related activities.

There will be four (4) required assignments and an in-person final exam.

Please note that Brightspace and the Carleton email system will be used extensively as a means of communication with students. Therefore, students are strongly advised to access Brightspace and to check their Carleton email at regular intervals in order to check for new information. To access Brightspace and the Carleton email system, students require a MyCarletonOne account. For questions about MyCarletonOne accounts, students should access carleton.ca/its/get-started/ (and then click on either New Students or New Grad Students, as appropriate) or contact the ITS Service Desk.

Attendance

If you plan to succeed in this course, then I cannot overstress the critical importance of regular class and tutorial attendance, together with the allocation of regular and consistent study time outside the classroom. Due to the nature of the course material, many students find that it is very difficult to catch up, should they fall behind.

Academic Integrity and Plagiarism

Please ensure that you are familiar with and comply with the [Academic Integrity Policy](#)

And, more specifically, with regard to the written work required for this course, please be sure to avoid any form of plagiarism:

The Academic Integrity Policy defines plagiarism as “*presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.*” This includes reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn include but are not limited to: books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, artworks, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, material on the internet and/or conversations.

Examples of plagiarism include, but are not limited to:

- any submission prepared in whole or in part, by someone else, including the unauthorized use of generative AI tools (e.g., ChatGPT);
- using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another’s data or research findings without appropriate acknowledgement;
- submitting a computer program developed in whole or in part by someone else, with or without modifications, as one’s own; and

- failing to acknowledge sources through the use of proper citations when using another's work and/or failing to use quotation marks.

Plagiarism is a serious offence that cannot be resolved directly by the course's instructor. The Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They can include a final grade of "F" for the course.

Assignments

Assignments will be posted on Brightspace and will be submitted through Brightspace according to the following schedule:

	<u>Posted</u>	<u>Due</u>
Assignment 1	September 23	October 7
Assignment 2	October 28	November 11
Assignment 3	November 11	November 25
Assignment 4	November 25	December 6

Evaluation

The final % grade for this course will be calculated as follows:

Assignments	40%	(4 assignments each worth 10%)
Final Examination	60%	

This % grade will then be converted into the alphabetical grade system using the standard equivalences, as outlined in Section 5.4 of the Academic Regulations of the University in the 2024-2025 Undergraduate Calendar.

In the event that one or more components of the term work are not completed, the weight of the incomplete component(s) will not be transferred to the final examination without a documented and compelling reason.

If you require academic consideration for one or more components of the term work, then you should contact the instructor as soon as possible. The instructor may then require you to complete the appropriate Academic Consideration for Coursework Form, as per the [Academic Consideration Policy](#)

Students who do not write the final examination because of illness or other circumstances beyond their control may apply to write a deferred final examination. In order to write a deferred final examination, students must contact the Registrar's Office. (For further details, see Section 4.3 of the Academic Regulations of the University in the 2024-2025 Undergraduate Calendar.) In the event that a student writes a deferred examination, the deferred examination will carry the

same weight as the final examination in determining the course grade. Needless to say, any deferred examination will not be identical to the original final examination.

Finally, please note that: “Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by an instructor may be subject to revision. No grades are final until they have been approved by the Dean.”

Required Textbook

The required textbook for this course is:

Groebner, David F., Shannon, Patrick W., and Fry, Phillip C. (2024), Business Statistics: A Decision-Making Approach (11th Edition), Pearson.

NOTE: You do NOT need MyLab access for this section of the course, although you may find MyLab useful as a supplement to the textbook (MyLab includes the etext).

Please note that one fairly inexpensive option for obtaining access to an electronic version of the textbook is to purchase it directly from the publisher at: <https://www.pearson.com/en-ca/subject-catalog/p/business-statistics-a-decision-making-approach/P200000009783/9780137835393>

The textbook can also be obtained through the Carleton University bookstore <https://www.bkstr.com/carletonstore/shop/textbooks-and-course-materials>

Course Content

I: Descriptive Statistics and Basic Probability

- Chapter 1: The Where, Why, and How of Data Collection
- Chapter 2: Graphs, Charts, and Tables-Describing Your Data
- Chapter 3: Describing Data Using Numerical Measures
- Chapter 4: Using Probability and Probability Distributions

II: Important Probability Distributions

- Chapter 5: Discrete Probability Distributions (except for the discussion of the Hypergeometric Distribution in Section 5.3)
- Chapter 6: Introduction to Continuous Probability Distributions

III: Statistical Inference

- Chapter 7: Introduction to Sampling Distributions - Sections 7.1 and 7.2
- Chapter 8: Estimating Single Population Parameters - Sections 8.1 and 8.2
- Chapter 9: Introduction to Hypothesis Testing - Sections 9.1 and 9.3
- Chapter 10: Estimation and Hypothesis Testing for Two Population Parameters - Sections 10.1, 10.2, and 10.3
- Chapter 11: Hypothesis Testing for One and Two Population Variances - Section 11.1

IF YOU HAVE PROBLEMS WITH THIS COURSE, PLEASE LET ME KNOW!

IF I DON'T KNOW THAT YOU HAVE PROBLEMS, I CAN'T FIX THEM!