

Department of Economics
Carleton University

ECON 2210 B – Introductory Statistics for Economics
Fall, 2022

Classes: Fridays, 08:35 – 11:25

Location: online asynchronous (self-paced learning), see Brightspace for lecture material

Tutorials: Fridays, 11:35 – 12:55

Location: online, more information to be announced

Instructor: Dr. Michelle Laing

Office Hours: via Zoom, by appointment (send an email to schedule)

Email: michelle.laing@carleton.ca

TA: TBA

Email:

I: Course Description and Prerequisites

In today's workplace, knowing how to apply statistical analysis skills to real-world decision-making problems can lead to a competitive edge. This course explores 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.

Precludes additional credit for BIT 2000, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2200 (no longer offered), ECON 2201 (no longer offered), STAT 2507, STAT 2606, and STAT 3502.

Prerequisite(s): ECON 1401 (or equivalent) with a grade of C- or higher; ECON 1402 (or equivalent), which may be taken concurrently with ECON 2210.

*A grade of C- or higher is required to qualify for ECON 2220 and 3706; a grade of C+ or higher is required to qualify for ECON 3900, 3920, 4002, and 4706. DEF(erred final grade) status at the end of this course will prevent continued registration in any other course for which the former is a prerequisite.

II: Textbook:

The **required** electronic textbook for this course is *Business Statistics: A Decision-Making Approach* by David F. Groebner, Patrick W. Shannon, and Phillip C. Fry, 10th edition, Pearson (ISBN-10: 0-13-449649-3; ISBN-13: 978-0-13-449649-8). **Note that the etext must be purchased as a bundle together with MyLab.**

Purchasing instructions can be found on the Brightspace page for this course. *The etext and MyLab are only available as a bundle; MyLab is not sold separately.* For this reason, it is NOT cost efficient to buy a used textbook. Students can make use of the 14-day free trial offered by the publisher but must switch to the full version to complete the course.

The MyLab platform associated with the e-textbook will be used for the assignments. The assignments will contribute to the overall grade, as described in detail below. MyLab provides students with invaluable access to a variety of learning tools. Students receive immediate feedback from assignment questions, with the option to attempt questions multiple times (with slightly modified numbers). MyLab keeps track of concepts that you have struggled with in your assignments and populates a personalized set of study questions in your account. MyLab is a great resource for learning statistics!

III: Communication:

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 check their Carleton email at regular intervals to check for new information, lecture slides and supplemental materials. Note that students can contact the instructor directly using the Carleton email given above. Emails must be from valid Carleton University email addresses; and they should be signed with a student's full name and student number.

To access Brightspace and the Carleton email system, students require a MyCarletonOne account. For questions about MyCarletonOne accounts, students should access <http://carleton.ca/ccs/get-started/> (and then click on either New Students or New Grad Students, as appropriate) or contact the ITS Service Desk (4th Floor, MacOdrum Library, telephone: 613-520-3700).

IV: Course Outline:

The outline below lists the topics that will be covered:

1. 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

2. 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

3. Statistical Inferences Based on Single Samples

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

* Please note that the instructor reserves the right to make modifications to the list of topics as the term proceeds. If a modification is made, an advance warning will be provided through Brightspace.

V: Evaluation:

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

| Component | Weight |
|---|-------------|
| Weekly Assignments using MyLab (best 8 of 10) | 30% |
| Two Midterm Exams (delivered using MyLab) | 30% |
| Final Examination – 3 hours (To be scheduled by the University. NOT using MyLab) | 40% |
| Total | 100% |

The purpose of these assignments is to help solidify concepts and test understanding frequently as we move through the course. Each assignment’s due date and time will be available on MyLab. Only the best 8 out of the 10 assignments will count toward your final grade. That means that you can miss up to 2 assignments without providing an explanation. Please note that the portal for submission closes at the time the assignment is due, so **you will not be able to submit late assignments**. Students are strongly encouraged to submit all assignments on time.

The Midterm Exams will last 80 minutes each. **There are no deferred tests**. For students who can document a compelling reason for missing a test within one week of the missed test, the assigned weight of 15% will be added to the weight of the final exam; otherwise, a mark of zero will be assigned. Only ONE test will be treated in this way. A maximum weight of 55% will be given to the final examination if a test is missed and valid documentation is provided.

The final exam covers the entirety of the course material (Chapters 1-11), lasts 3 hours, and will be scheduled by the University to take place during the official final examination period. *The final exam will not be delivered using MyLab*. Instead, the final exam will assess students using a combination of essay, calculation, and multiple-choice questions to examine concepts that have been discussed throughout the course. An appeal to write the deferred final exam must be submitted to the Registrar’s Office. No course grades are final until approved by the Dean of the Faculty of Public Affairs.

Please note that this course may use CoMaS, a remote e-proctoring software provided by Scheduling and Examination Services. Students should make sure that there is no issue in installing and running this software before the final exam. For details, please see the information provided at: <https://carleton.ca/ses/e-proctoring/>

VI: Plagiarism:

The University Senate defines plagiarism as “presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own”. This can include:

- 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;
- submitting a take-home examination, essay, laboratory report or other assignment written, in whole or in part, by someone else;
- using ideas or direct, verbatim quotations, or paraphrased material, concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another's data or research findings;
- failing to acknowledge sources with proper citations when using another's works and/or failing to use quotation marks;
- handing in "substantially the same piece of work for academic credit more than once without prior written permission of the course instructor in which the submission occurs".

Plagiarism is a serious offence that cannot be resolved directly by the course instructor. Any form of cheating and plagiarism is inadmissible and will be dealt with according to university policies & guidelines, see <https://carleton.ca/registrar/academic-integrity/>.

VII: Requests for Academic Accommodations:

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy Obligation: Please contact me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: <https://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf>

Religious Obligation: Please contact me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: <https://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf>

Students with Disabilities: If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send the instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with the instructor as soon as possible to ensure accommodation arrangements are made. For more details see: <https://carleton.ca/pmc/>

Survivors of Sexual Violence: As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and is survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: <https://carleton.ca/sexual-violence-support/>

Accommodation for Student Activities: Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact the instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see: <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

Other: Other requests for accommodation due to, for example, bereavement or stress, will be evaluated on a case-by-case basis.

VIII: Academic Assistance:

The Centre for Student Academic Support (CSAS) offers peer-led learning assistance designed to help students achieve their goals and improve their learning both inside and outside the classroom: <https://carleton.ca/csas/>