

**Department of Economics  
Carleton University**

**ECON 2210 A – Introductory Statistics for Economics  
Summer, 2024**

Classes: Tuesdays and Thursdays, 6:05pm – 8:55pm

Location: Online combined synchronous / asynchronous.

Students need to be prepared to meet some of the time online via web conferencing tools at scheduled days and times (see course outline in Section IV). The link to synchronous sessions will be provided on Brightspace and the PowerPoint slides will also be posted before the lecture. Additionally, lecture materials for asynchronous activities will be posted on Brightspace before the scheduled time for the class and are intended to provide flexibility to students. Students are expected to remain up to date with the deadlines and due dates provided by the Instructor.

Tutorials: Tuesdays and Thursdays, 4:05pm – 5:25pm

Location: Online synchronous.

The Teaching Assistant (TA) and students will meet via web conferencing tools at the scheduled days and times.

Instructor: Dr. Michelle G. Laing

Office Hours: Mondays, 6:00pm – 7:30pm

Office: Zoom – please send an email to schedule an appointment

Email: [michelle.laing@carleton.ca](mailto:michelle.laing@carleton.ca)

TA: TBA

Note: Participation in the synchronous sections of the course require students to have a reliable high-speed Internet access and computer (ideally with a webcam) and a headset with a microphone.

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### **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** 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).

## III: Evaluation:

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

Component	Weight
Tutorial Attendance	5%
Quizzes (best 8 of 10)	10%
Assignments	30%
Midterm Exam	15%
Final Exam – 3 hours (To be scheduled by the University.)	40%
<b>Total</b>	<b>100%</b>

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

### *Tutorial Attendance:*

Attendance will be taken at tutorials. Tutorials will typically be split into three sections. For the first part of the tutorial, students will be required to take a short quiz on the material covered in the previous lecture. This will be followed by a discussion of the solutions to the quiz. The second part of the tutorial will review selected material related to the previous lecture. Finally, the remainder of the tutorial will be run on a question-and-answer basis with questions from students covering course material, test preparation and assignment questions. Note that the best 8 grades from the 10 quizzes taken will count towards 10% of the student's final grade. Students are expected to attend the tutorials at the scheduled time as they will not be recorded.

### *Assignments:*

The purpose of the 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 Brightspace. There will be a total of 3 assignments which will count toward 30% of the final grade.

Students are strongly encouraged to submit all assignments on time. However, all assignments (except group presentations for the tutorials) will be eligible for penalty-free and no-questions-

asked extensions, which require students to use 1 or more of their bank of 3 individual “grace days” for the course. (Treat these as a failsafe rather than planning in advance to use them.) Once a student uses all 3 grace days, the grade for the assignment will be reduced by 5% per day, up to a maximum of 25% (5 days); assignments submitted after that time will receive a grade of zero. Special consideration may be given if you are dealing with a protracted medical issue for which you can provide documentation.

Some further details about “Grace Days” (tracked by the Instructor and TA):

- Students will start with 3 grace days.
- Measured in 24-hour units that start at 6:00pm on the due date. Some examples:
  - Jane submits Assignment 1 less than 24 hours after 6:00pm on the due date; she has used 1 grace day.
  - Jack submits Assignment 2 more than 24 hours but less than 48 hours after 6:00pm on the due date; he has used 2 grace days.
  - Julie submits Assignment 3, which was due at 6:00pm on May 7 at 8:00am on May 9; she has used all 3 grace days.

All assignments in this course are to be submitted via Brightspace – email submissions will not be accepted. Students should make sure that their file functions properly prior to upload and submission: file corruption is something that happens at the user’s end before upload to Brightspace. Files that are unreadable are not grounds for an extension and will be deemed late.

#### *Exams:*

The Midterm Exam will last 90 minutes and assess students using a combination of short written response, calculation, and multiple-choice questions. **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. In place of a doctor’s note or medical certificate, students are advised to complete the self-declaration form, which is available on the Registrar’s Office website <https://carleton.ca/registrar/wp-content/uploads/self-declaration.pdf>, to request academic accommodation. 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. As with the midterm exam, the final exam will assess students using a combination of short written response, 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/>

#### IV: Course Outline:

The outline below indicates the schedule for the course:

Date	Topic	Synchronous Sessions, Deadlines and Other Important Dates
<b>Section 1: Descriptive Statistics and Basic Probability</b>		
Tues., May 7	Chapter 1: The Where, Why, and How of Data Collection	<ul style="list-style-type: none"> <li>• Live lecture on Zoom (6:05pm – 8:55pm)</li> </ul>
Thurs., May 9	Chapter 2: Graphs, Charts, and Tables - Describing Your Data	<ul style="list-style-type: none"> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul> <i>*Last day for registration and course changes in early summer courses (May 10)</i>
Tues., May 14	Chapter 3: Describing Data Using Numerical Measures	<ul style="list-style-type: none"> <li>• Live lecture on Zoom (6:05pm – 8:55pm)</li> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul>
Thurs., May 16	Chapter 4: Using Probability and Probability Distributions	<ul style="list-style-type: none"> <li>• <b>Assignment 1 due @ 6:00pm</b></li> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul> <i>*Last day to withdraw from early summer courses with a full fee adjustment. (May 17)</i>
<b>Section 2: Important Probability Distributions</b>		
Tues., May 21	Chapter 5: Discrete Probability Distributions (except for the discussion of the Hypergeometric Distribution in Section 5.3)	<ul style="list-style-type: none"> <li>• Live lecture on Zoom (6:05pm – 8:55pm)</li> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul>
Thurs., May 23	Chapter 6: Introduction to Continuous Probability Distributions	<ul style="list-style-type: none"> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul>
<b>Section 3: Statistical Inferences Based on Single Samples</b>		
Tues., May 28	Chapter 7: Introduction to Sampling Distributions - Sections 7.1 and 7.2 only	<ul style="list-style-type: none"> <li>• <b>Assignment 2 due @ 6:00pm</b></li> <li>• Live lecture on Zoom (6:05pm – 8:55pm)</li> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul>
Thurs., May 30	Chapter 8: Estimating Single Population Parameters - Sections 8.1 and 8.2 only	<ul style="list-style-type: none"> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul> <i>*Last day for academic withdrawal from early summer courses; and last day to submit Formal Examination Accommodation Forms to the PMC for June exams. (June 1)</i>
Tues., June 4	<b>No lecture or tutorial – write the midterm exam between 6:05pm and 7:35pm this day</b>	<ul style="list-style-type: none"> <li>• <b>Midterm Exam on Chapters 1 to 8 (15%) from 6:05pm to 7:35pm</b></li> </ul>

Thurs., June 6	Chapter 9: Introduction to Hypothesis Testing - Sections 9.1 and 9.3 only	<ul style="list-style-type: none"> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul>
Tues., June 11	Chapter 10: Estimation and Hypothesis Testing for Two Population Parameters - Sections 10.1, 10.2, and 10.3 only	<ul style="list-style-type: none"> <li>• Live lecture on Zoom (6:05pm – 8:55pm)</li> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul> <p><i>*Last day of for summative tests or exams worth +15% of course grade. (June 11)</i></p>
Thurs., June 13	Chapter 11: Hypothesis Testing for One and Two Population Variances - Section 11.1 only	<ul style="list-style-type: none"> <li>• <b>Assignment 3 due @ 6:00pm</b></li> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul>
Tues., June 18	<b>No live lecture or recording will be made available – review session will be held this day</b>	<ul style="list-style-type: none"> <li>• Live lecture on Zoom (6:05pm – 8:55pm)</li> <li>• Tutorial from 4:05pm – 5:25pm</li> </ul> <p><i>*Last day of early summer classes. (June 18)</i></p>

\* 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: Communication:**

Students are strongly advised to access Brightspace at regular intervals to check for new information, lecture slides and supplemental materials.

There are many ways to communicate with the Instructor and TA, but it is important that students learn where and how to direct your questions to ensure timely responses. Here is a guide to communicating with the Instructor and peers:

- *“I have questions about course content and policies”*: ask these on the *“Ask the Instructor”* forum on Brightspace. Do NOT send emails about these matters. This is all about equity: everything the Instructor communicates about these matters should be accessible to every student in the course.
- *“I have questions about my assignment”*: book an office hour appointment with the Instructor to discuss or send an email to the TA.
- *“I need to discuss something private”*: book an office hour appointment with the Instructor to discuss. These are not matters that can be handled efficiently over email.

In general, emails should only be used for quick questions of a personal nature or to book an office hour appointment. 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.

Note that 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).

## **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: Course Copyright:**

The Instructor’s recordings, lessons, activities, and all other course materials (including all PowerPoint slides, handouts, and similar materials) are protected by copyright. They are the exclusive owner of copyright and intellectual property of all course materials. Students may take notes and make copies of course materials for their own educational use. Students may not, however, allow others to reproduce or distribute lecture notes and course materials publicly for commercial purposes without the Instructor’s express written consent.

## **VIII: Requests for Academic Accommodations:**

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

**Pregnancy Obligation:** 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, visit the Equity Services website: <https://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf>

**Religious Obligation:** 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, visit the Equity Services website: <https://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf>

**Students with Disabilities:** If students have a documented disability requiring academic accommodations in this course, they should please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation or contact their PMC coordinator to send the instructor their Letter of Accommodation at the beginning of the term. Students 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.

#### **IX: 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/>