School of Mathematics and Statistics

Business Statistics I

STAT2606 B

(Online) FAll 2020

Instructor Info

Ehssan Ghashim

Office Hrs: Tuesdays 10:30am-12:00pm or by appointment

Location : CUlearn BBB or Zoom

ehssan.ghashim@carleton.ca

Course Info

Learning Modality:Pre-recorded lectures

Posted weekly

www.carleton.ca/cuLearn

Lab Info

Live via CUlearn BBB

Starting from Sept 18, 2020

B1 Thu 14:35 - 15:25

B2 Mon 13:35 - 14:25

B3 Mon 15:35 - 16:25

B4 Mon 16:35 - 17:25

B5 Mon 11:35 - 12:25

B6 Tue 15:35 - 16:25

Course Description

Introduction to statistical computing; probability concepts; descriptive statistics; estimation and testing of hypotheses. Emphasis on the development of an ability to interpret results of statistical analyses with applications from business.

Precludes: additional credit for BIT 2000, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, and STAT 3502.

Prerequisites: An Ontario Grade 12 university-preparation Mathematics or equivalent, or permission from the School of Mathematics and Statistics.

Software: Minitab will be used for this course.

Required Textbook

Bowerman et al., *Business Statistics and Analytics in Practice*, 9th edition, McGraw-Hill.

Grading Scheme

15%	Five (5) Quizzes
10%	Two (2) Assignments
25%	Midterm Exams
50%	Final Exam

Evaluation Criteria

Quizzes 15%: Each quiz is equally weighted. All quizzes will take place at cuLearn and students need to keep track of the deadline of the quizzes.

- Quiz 1 : Chapters 1- 3 (Due on September 27, 2020)
- Quiz 2 : Chapter 4 (Due on October 11, 2020)
- Quiz 3 : Chapters 6 - 7 (Due on October 25, 2020)
- Quiz 4 : Chapters 8 - 9 (Due on November 15, 2020)
- Quiz 5 : Chapters 10 – 11 (Due on November 29, 2020)

Assignments 10%: There will be two assignments, each counting equally toward the term mark. No late assignments will be accepted. Students may wish to work together on assignments, but each student must write up his/her assignment independently.

- Assignment 1 (5%) : Chapters 1 - 5 (Due on Monday, October 19, 2020)
- Assignment 2 (5%) : Chapters 6 - 10 (Due on Monday, November 30, 2020)

Midterm 25%: Midterm examination will be held at cuLearn on Sunday, November 8, 2020 from 2 p.m. to 4 p.m. There is no deferred midterm. If you miss a midterm exam and provide a valid medical certificate/self-declaration form within one week of the missed exam, the assigned weight (of 25%) will be added to your final exam; otherwise a mark of zero is assigned. Students will need to fill out the form “Consent to Release Information to a Third Party” (which is available at cuLearn) when they submit a medical note.

FAQs

How can I access Minitab ?

You can access Minitab remotely by following the steps: Go to https://cudesktop.carleton.ca/ then select "Vmware Horizon Client HTML Access" and login using your CUlearn account. Select “Mathematics” image then open "Minitab".

What are the important deadlines for this course?

Sep 9 ····· First Class.
Sep 27 ····· Quiz 1.
Sep 30 .....last day to withdraw with a full fee adjustment.
Oct 11 ····· Quiz 2.
Oct 19 ··· Assignment 1 is due.
Oct 25 ····· Quiz 3.
Oct 26-30 ····· Fall Break.
Nov 8 ····· Midterm Exam.
Nov 13 ·· Exam accommodation request.
Nov 15 ····· Quiz 4.
Nov 29 ····· Quiz 5.
Nov 30 ··· Assignment 2 is due.
Dec 11 ··· Last day to withdraw from the course.
Dec 11 ··· Last day of classes.
Dec 12-23 ····· Final Exam.

Important links

Consent to Release Information to a Third Party. https://carleton.ca/privacy/wp-content/uploads/3rd-Party-Authorization_Aug2018.pdf.

The Equity service: https://carleton.ca/equity/focus/discrimination-harassment.

Final Exam 50%: The 3-hour final examination will take place at cuLearn during the official final examination period of December 12 to 23, 2020, and is scheduled by the Registrar’s Office. Please do not make travel plans prior to December 23, 2020. If you miss the final examination, please contact the Registrar’s Office as soon as possible after the missed exam to qualify for a deferred exam next semester.

Academic Accommodations

You may need to request special arrangements to meet your academic obligations. The circumstances and procedures for such requests are :

1. Students with Disabilities : The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities, psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder, Autism Spectrum Disorders, chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or PMC@Carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, contact me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally.
2. Religious Obligations : Students with religious obligations must write to 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.
3. Pregnancy Obligations : Students with pregnancy related obligations must write to 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.
4. Academic Integrity : I have a zero-tolerance policy on plagiarism. Students who are convicted of plagiarism on any piece of work will, at a minimum, automatically receive a zero on that piece of work. Students will also be required to meet with the Associate Dean of Science for further disciplinary action. Also be aware of the academic integrity policy on the registrar website page at https://carleton.ca/registrar/academic-integrity/

Additional Notes

- Any student wishing to review their final examination paper must make an appointment within a two week period following the submission of the final grades. These appointments are solely for educational purposes and are not to be treated as an opportunity to debate your mark.

- Students who fail to achieve a term mark of at least 50% and a final exam mark of at least 50% will automatically receive a letter grade of F in the course.

- MATHEMATICS AND STATISTICS LEARNING ASSISTANCE PROGRAM (MS-LAP): MS-LAP supports first year mathematics and statistics courses. This free-of-charge program helps students in achieving their goals. It provides learning support and solutions to homework questions through assistance videos. These services are available on cuLearn. MS-LAP gives students tools to succeed while explaining step-by-step strategies and associated theories for particular problem. The program is for anyone who wants to deepen their understanding at the own pace, and in the comfort and privacy of their home.

- Importrant deadlines: September 23, 2020 is the last day to register for the course; September 30, 2020 is the last day to withdraw with a full fee adjustment; and December 11, 2020 is the last day to withdraw without academic penalty.

TENTATIVE LECTURE SCHEDULE

Week and Date	Topics	Chapters
Week 1 (Sep 9 - 11)	Introduction, Population and Sample, Levels of Measurement, Survey Sampling	Chapters 1 (1.1 – 1.6)
Week 2 (Sep 14 – 18)	Describing the Shape of a Distribution, Graphs for Quantitative and Qualitative Data, Measures of Central Tendency, Measures of Variation, Percentiles	Chapter 2 (2.1 – 2.4) and Chapter 3 (3.1 – 3.3)
Week 3 (Sep 21 – 25)	Experiments, Sample Spaces, Events: Intersection, Union, and Complement, Elementary Probability Rules, Venn Diagrams	Chapter 4 (4.1 – 4.3)
Week 4 (Sep 28 - Oct 2)	Conditional Probability, Independence, Bayes' Theorem, Counting Rules	Chapter 4 (4.4 – 4.6)
Week 5 (Oct 5 – 9)	Types of Random Variables, Discrete Random Variables: Probability Distribution, Expected Value, and Variance, The Binomial, Poisson, and Hypergeometric Probability Distributions. The Binomial Approximation to the Hypergeometric	Chapter 6 (6.1 – 6.5)
Week 6 (Oct 12 – 16)	Continuous Random Variables, The Uniform Distribution, The Normal Distribution, The Normal Approximation to the Binomial Distribution, The Exponential Distribution	Chapter 7 (7.1 – 7.5)
Week 7 (Oct 19 – 23)	Sampling Distribution of the Sample Means and the Proportions, Central Limit Theorem	Chapter 8 (8.1 – 8.2)
NA (Oct 26 – 30)	Fall Break (No class)	
Week 8 (Nov 2 – 6)	Confidence Intervals for a (i) Population Mean and (ii) Population Proportion, Sample Size Determination and Midterm Exam Review	Chapter 9 (9.1 – 9.4)
Week 9 (Nov 9 – 13)	Confidence Intervals for Comparing Two Population Means (Independent and Dependent Samples), Confidence Intervals for Comparing Two Population Proportions	Chapter 11 (11.1 - 11.3)
Week 10 (Nov 16 – 20)	Introduction to Hypothesis Testing, Type I and Type II Errors, Tests about a Population Mean and Population Proportion	Chapter 10 (10.1 – 10.4)
Week 11 (Nov 23 – 27)	Directional and Non-directional Hypothesis Tests using Rejection Point/p-value/Confidence Interval Approach	Chapter 10 (10.1 – 10.4)
Week 12 (Nov 30 – Dec 4)	Hypothesis Tests for Comparing Two Population Means (Dependent Samples), Hypothesis Tests for Comparing Two Population Proportions	Chapter 11 (11.1 – 11.3)
Week 13 (Dec 7 – 11)	Statistical Inference for a Population Variance, Comparing Two Population Variances, Final Exam Review	Chapters (10.6 – 10.7, 11.4 – 11.5)