STAT 2606 C: BUSINESS STATISTICS I

Fall 2020

Instructor:	Dr. Fares Said	**Lecture:**	Posted weekly; accessible at any time
Email:	fares.said@carleton.ca	**Place:**	Online via CuLearn
Office:	Zoom, Facetime or other medium	**Office Hours:**	Online Appointment request by email or call 6138751206 after 4pm

Course Pages:

1. https://www.carleton.ca/culearn/

2. https://students.carleton.ca/

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.

Prerequisite(s): An Ontario Grade 12 university-preparation Mathematics or equivalent, or permission from the School of Mathematics and Statistics. If you are not sure about your prerequisites, please see me or the Undergraduate Advisor Mr. Gary Bazdell in 4302C HP.

Precludes: BIT 2000, ECON 2210, ENST 2006, GEOG 2006, STAT 2507, and STAT 3502.

Textbook: *Business Statistics and Analytics in Practice, Ninth edition of the International Student Edition, Bowerman et. al, McGraw-Hill.*

Statistical Software: Minitab. See instructions in CuLearn.

Labs: begin on Sept 18, 2020 live via CuLearn BBB. Switching labs will not be allowed.

Grading Scheme:

- *Term Work (50%)*
  - Quizzes (15%) - 5 quizzes
  - Assignments (10%) - 2 assignments
  - Midterm Exam (25%)
- *Final Examination (50%).*

Assignments: 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:** covers Chapters 1 to 6 (weeks of 1-5) and is due on October 20, 2020
- **Assignment 2:** covers Chapters 7 to 10 (weeks of 6-10) and is due on December 1, 2020

Quizzes: Each quiz is equally weighted. All quizzes will take place on CuLearn and students will need to keep track of the quiz deadlines as follows:

- **Quiz 1:** covers Chapters 1 to 3 and is due on September 27, 2020
- **Quiz 2:** covers Chapter 4 and is due on October 11, 2020
- **Quiz 3:** covers Chapters 6 to 7 and is due on October 25, 2020
- **Quiz 4:** covers Chapters 8 to 9 and is due on November 15, 2020
- **Quiz 5:** covers Chapters 10 to 11 and is due on November 29, 2020

Midterm Exam: The midterm examination will be held on 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 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. If you choose to submit a medical note, make sure to also fill out and submit the form "Consent to Release Information to a Third Party" (available via CuLearn).

NOTE: Concerns about assignments and midterm exam grading must be brought to my attention within one business day of them being available for review. Students who need to miss a lab or the midterm exam must inform me prior to the event and provide the original hard copy of any supporting documentation within five business days.

Final Exam: A 3-hour final exam is scheduled by the university between December 12-23 inclusive.

NOTE: Any student wishing to review their final exam 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 grade. **Students are required to obtain a minimum score of 50% on both the midterm exam and final exam**. Students who fail to meet this minimum score on either exam will automatically be assigned a grade of **F** in the course. Exceptions to this rule may be made at the discretion of the instructor.

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: 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. For more details visit the Equity Services website http://www2.carleton.ca/equity/accommodation/

Religious obligation: 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. For more details visit the Equity Services website http://www2.carleton.ca/equity/accommodation/

Academic Accommodations for Students with Disabilities: The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), 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 +1613-520-6608 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 in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable).

Academic Integrity: Students are required to be familiar with Section 14 of the Academic Regulations of Carleton University. Students who violate the standards of academic integrity relating to an examination or assignment will receive a grade of zero for that piece of work, and will be required to meet with the Associate Dean of Science and/or the Associate Dean of Business for further disciplinary action. For more information, visit:
http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity

Tentative Course Outline: The weekly coverage might change as it depends on the progress of the class. However, you must keep up with the reading assignments.

Week and Date	Chapters	Content
Week 01 Sept 9, 11	1.1 to 1.6	• Populations and Samples, Levels of Measurement, Survey Sampling.
Week 02 Sept 16, 18	2.1 to 2.4 3.1 to 3.3	• Describing the Shape of a Distribution, Graphs for Quantitative and Qualitative Data, Measures of Central Tendency, Measures of Variation, Percentiles
Week 03 Sept 23, 25	4.1 to 4.3	• Experiments. Sample Spaces. Events: Intersection, Union, and Complement. Elementary Probability Rules. Venn Diagrams.
Week 04 Sept 30, Oct 2	4.4 to 4.6	• Fundamental Counting Principle. Combinations. Permutations. Conditional Probability. Multiplication Rule. Independent Events. Law of Total Probability. Probability Trees. Bayes' Rule.
Week 05 Oct 7, 9	6.1 to 6.5	• Discrete Random Variables: Probability Distribution, Expected Value, and Variance. The Binomial, Poisson, and Hypergeometric Probability Distributions. The Binomial Approximation to the Hypergeometric.
Week 06 Oct 14, 16	7.1 to 7.5	• Continuous Random Variables, The Uniform Distribution, The Normal Distribution, The Normal Approximation to the Binomial Distribution, The Exponential Distribution
Week 07 Oct 21, 23	8.1 to 8.2	• Sampling Distributions of (the Sample Mean, $\bar{X}$, and the Sample Proportion , $\hat{p}$), Central Limit Theorem (CLT).
NA Oct 26 to 30		• **FALL BREAK WEEK**
Week 08 Nov 4, 6	9.1 to 9.4	• Confidence Intervals for a Population Mean (σ known and unknown) and Population Proportion. Sample Size Determination for Mean (σ known) and Proportion.

Week 09
Nov 11, 13
	11.1 to 11.3	• Confidence Intervals for Comparing Two Population Means
		   – Independent Samples
		   – Dependent Samples or Paired Difference Experiments
		• Confidence Intervals for Comparing Two Population Proportions

Week 10 Nov 18, 20	10.1 to 10.4	• Introduction to Hypothesis Testing. Type I and Type II Errors. p-values. One-Sided and Two-Sided Tests about a Population Mean and Population Proportion.
Week 11 Nov 25, 27	10.1 to 10.4	• One-Sided and Two-Sided Tests Hypothesis Testing using Rejection Points. Two-Sided Tests Hypothesis Testing using Confidence Intervals.

Week 12
Dec 2, 4
	11.1 to 11.3	• Hypothesis Tests for Comparing Two Population Means
		   – Independent Samples
		   – Dependent Samples or Paired Difference Experiments
		• Hypothesis Tests for Comparing Two Population Proportions

Week 13 Dec 9, 11	10.6 to 10.7 11.4 to 11.5	• Statistical Inference for a Population Variance, Comparing Two Population Variances • Discussing final exam

Important Dates:

September 9 . . . . First class
September 27 . . . . Quiz 1
September 30 . . . . Last day to withdraw from winter term with full fee adjustment
October 11 . . . . Quiz 2
October 12 . . . . Statutory holiday
October 20 . . . . Assignment 1 is due
October 25 . . . . Quiz 3
October 26-30 . . . . Fall break. Classes are suspended
November 8 . . . . Midterm Exam
November 13 . . . . Exam accommodation request
November 15 . . . . Quiz 4
November 29 . . . . Quiz 5
December 1 . . . . Assignment 2 is due
December 11 . . . . Last day to withdraw from the course
December 11 . . . . Last day of classes
December 12-23 . . . . Final Exam

For more information please visit

http://carleton.ca/registrar/registration/dates-and-deadlines/