Carleton University
School of Mathematics and Statistics
STAT 2606 E – Business Statistics I – WINTER 2021

Lectures: Tue & Thu 1:05 p.m. – 2:25 p.m. **Room:** Zoom meeting

NOTES: Lectures will be given live using Zoom during lecture times. The meeting ID will be posted at cuLearn. When setting up your Zoom account, please make sure the account displays your first and last names, so that I can recognize you when admitting to the Zoom meeting.

Instructor: Dr. S. Sinha, sinha@math.carleton.ca

Office Hours: Zoom meeting (by appointments only)

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

Computer Labs: Times and locations vary depending upon your lab section.

Description: This subject is designed to help students develop foundational statistical skills that are necessary for everyday business analysis. The objectives of this subject are to (a) provide a basic knowledge of the application of mathematics and statistics to business disciplines; (b) develop the ability to analyse and interpret data in a meaningful way to assist in making management decisions; and (c) develop an ability to apply modern tools to data analysis in a business context.

Learning Outcomes:

1. Produce appropriate graphical and numerical descriptive statistics for various types of data.
2. Apply concepts of probability theory relating to discrete and continuous random variables to answer questions within a business context.
3. Demonstrate knowledge of the Central Limit Theorem (CLT) and its applications.
4. Conduct hypothesis tests, construct confidence intervals and interpret the results to aid decision making in a business context.
5. Use a statistical package frequently used by practitioners to analyse the data.

Assignments: There will be **five** assignments, each counting equally toward the term mark.

Final Exam: There will be a **3-hour** final exam scheduled by the university. The exam period runs from April 16 to April 27.

Marking Scheme: Assignments: 50% Final Exam: 50%

Withdrawal: The last day for academic withdrawal is April 14, 2021.

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 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 in-class scheduled test or exam requiring accommodation (if applicable). Requests made within two weeks will be reviewed on a case-by-case basis. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam (if applicable).

NOTES: Any student wishing to review their final exam must make an appointment within two weeks 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 the final exam. Exceptions to this rule may be made at the discretion of the instructor.

TENTATIVE LECTURE SCHEDULE

WEEK	DATES	SECTIONS	TOPICS
1	Jan 11 – 15	1.1 – 1.7	Introduction, Populations and Samples, Levels of Measurement, Survey Sampling
2	Jan 18 – 22	2.1 – 2.4 3.1 – 3.3	Describing the Shape of a Distribution, Graphs for Quantitative and Qualitative Data, Measures of Central Tendency, Measures of Variation, Percentiles
3	Jan 25 – 29	4.1 – 4.3	Sample Spaces, Events, Elementary Probability Rules
4	Feb 1 – 5	4.4 – 4.5	Conditional Probability, Independence, Bayes' Theorem, Counting Rules
5	Feb 8 –12	6.1 – 6.5	Discrete Random Variables, The Binomial Distribution, The Poisson Distribution, The Hypergeometric Distribution
6	Feb 15 – 19	N/A	WINTER BREAK
7	Feb 22 – 26	7.1 – 7.5	Continuous Random Variables, The Uniform Distribution, The Normal Distribution, The Normal Approximation to the Binomial Distribution, The Exponential Distribution
8	Mar 1 – 5	8.1 – 8.2	Sampling Distributions, The Central Limit Theorem
9	Mar 8 – 12	9.1 – 9.4	Confidence Intervals for a Population Mean and Population Proportion, Sample Size Determination
10	Mar 15 – 19	10.1 – 10.4	Hypothesis Testing, Type I and Type II Errors, Tests for a Population Mean, Tests for a Population Proportion
11	Mar 22 – 26	11.1 – 11.2	Tests for Comparing Two Population Means
12	Mar 29 – April 2	11.1 – 11.2	Tests for Comparing Two Population Proportions, Sample Size Determination
13	April 5 – 9	11.2 – 11.3	Confidence Intervals for Comparing Two Populations
14	April 13	N/A	REVIEW