SCHOOL OF MATHEMATICS AND STATISTICS
CARLETON UNIVERSITY

STAT 2606 A – BUSINESS STATISTICS I

2020 FALL

CLASS SCHEDULE AND MODALITY (BLENDED)	**Lectures:** Tuesdays (Synchronous/Live at Zoom) and Thursdays (Asynchronous/Pre-recorded) (4:05 to 5:25 p.m.) **Labs:** A1 - Thursdays (8:35 to 9:25 a.m.) A2 – Tuesdays (2:35 to 3:25 p.m.) A3 – Mondays (10:35 to 11:25 a.m.) A4 – Tuesdays (1:35 to 2:25 p.m.) A5 – Tuesdays (8:35 to 9:25 a.m.) A6 – Tuesdays (12:35 to 1:25 p.m.) (Synchronous/Asynchronous)
INSTRUCTOR	**Tanvir Quadir** E-mail: tanvir.quadir@carleton.ca cuLearn at www.carleton.ca/cuLearn
OFFICE HOURS	Tuesdays (at the beginning of the class) (Availability: during office hours or via e-mail)
TEACHING ASSISTANTS	**Julia Ferri (A1, A4)** (juliaferri@cmail.carleton.ca) **Muzeyyen Kabasakal (A2, A3)** (nuraykabasakal@cmail.carleton.ca) **Emma Fox (A5, A6)** (emmagfox@cmail.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.

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.

The course consists of lectures 3 hours a week, and labs 1 hour a week. The tutorial sessions will give students hands-on experience of solving problems based on the topics covered in the classes. The meeting links of lectures and tutorials (Zoom/BigBlueButton) will be available at the course website at cuLearn. Attendance at the first class on Thursday, September 10 is mandatory.

DATA ANALYSIS AND MINITAB: Students are required to use statistical software MINITAB for their assignments. Data used for assignment/examples are provided at cuLearn. You need to use

MINITAB by connecting to VDI (Virtual Desktop Interface) through VMWare Horizon Client or HTML.
https://cudesktop.carleton.ca

EVALUATION ITEM AND DATES:

Item	Chapters and Deadlines	Weight
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 (Weeks of 9 and 10) (Due on November 29, 2020)	15%
Assignments	**Assignment 1**: Weeks of 1 - 5 (Due on Tuesday, October 20, 2020) **Assignment 2**: Weeks of 6 - 10 (Due on Tuesday, December 1, 2020)	10%
Midterm Examination	**Midterm**: Sunday, November 8, 2020 (2 - 4 pm) (Chapters 1 – 7)	25%
Final Examination	Between December 12 - 23, 2020 (TBA by the Registrar's Office)	50%

REQUIRED TEXTBOOK:

Business Statistics and Analytics in Practice by Bowerman et al., Ninth edition, McGraw-Hill.

EVALUATION CRITERIA:
QUIZZES (15%) - DUE AT CULEARN ON ASSIGNED DATES: The five quizzes will be counted towards the course total where each quiz is equally weighted. All quizzes will take place at cuLearn.

*MIDTERM EXAMINATION (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 self-declaration form (https://carleton.ca/registrar/wp-content/uploads/self-declaration.pdf) 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.

*ASSIGNMENT (10%) – DUE AT CULEARN ON ASSIGNED DATES***:** 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.

FINAL EXAMINATION (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.

TENTATIVE COURSE SCHEDULE (MAY BE ADJUSTED AS COURSE UNFOLDS):

Week	Date	Topics	Chapters
1	Sept. 9 – 11	Introduction, Population and Sample, Levels of Measurement, Survey Sampling.	Chapters 1 (1.1 – 1.6)
2	Sept. 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)
3	Sept. 21 – 25	Experiments, Sample Spaces, Events: Intersection, Union, and Complement, Elementary Probability Rules, Venn Diagrams.	Chapter 4 (4.1 – 4.3)
4	Sept. 28 – Oct. 2	Conditional Probability, Independence, Bayes' Theorem, Counting Rules.	Chapter 4 (4.4 – 4.6)
5	Oct. 5 – Oct. 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)
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)
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)	
8	Nov. 2 – Nov. 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)
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)
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)
11	Nov. 23 – 27	Directional and Non-directional Hypothesis Tests using Rejection Point/p-value/Confidence Interval Approach.	Chapter 10 (10.1 – 10.4)
12	Nov. 30 – Dec.	Hypothesis Tests for Comparing Two Population	Chapter 11

	4	Means (Dependent Samples), Hypothesis Tests for Comparing Two Population Proportions.	(11.1 – 11.3)
13	Dec. 7 – 11	Statistical Inference for a Population Variance, Comparing Two Population Variances, Final Exam Review (Chapters 7 – 11)	Chapters (10.6 – 10.7, 11.4 – 11.5)

ADDITIONAL INFORMATION:

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.

COURSE STANDING: 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.

ACADEMIC INTEGRITY: Students should familiarize themselves with the Carleton University policy on Academic Integrity. This policy details those behaviours considered to be violations of academic integrity (e.g. cheating, plagiarism) and provides guidelines as to the imposition of various sanctions, including a reduction in grade, suspension, and expulsion. Also be aware of the academic integrity policy on the registrar website page at https://carleton.ca/registrar/academic-integrity/

IMPORTANT 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.

STUDENTS REQUIRING SPECIAL ACCOMMODATION:

FOR STUDENTS WITH DISABILITIES: Students with disabilities requiring academic accommodations are encouraged to contact a coordinator at the Paul Menton Centre for Students with Disabilities (613-520-6608) or pmc@carleton.ca to complete the necessary *letters of accommodation*. After registering with the Centre, please set up an appointment with the instructor to discuss your needs at least two weeks prior to the in-class mid-term examination.

FOR RELIGIOUS OBSERVANCE: Students requesting academic accommodation on the basis of religious observance should make a formal, written request to their instructor for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory academic event.

Students who have questions or want to confirm accommodation eligibility of a religious event or practice may refer to the Equity Services website for a list of holidays and Carleton's Academic

Accommodation policies or may contact an Equity Services Advisor in the Equity Services Department for assistance (ext. 5622).

FOR PREGNANCY: Pregnant students requiring academic accommodations are encouraged to contact an Equity Advisor in Equity Services (ext. 5622) to complete a letter of accommodation. The student must then make an appointment to discuss her needs with the instructor at least two weeks prior to the first academic event in which it is anticipated the accommodation will be required.

FOR STUDENTS WITH DISABILITIES	Contact Paul Menton Centre (ext. 6608) to obtain letters of accommodations
FOR RELIGIOUS OBLIGATIONS	To be worked out on individual basis with instructor. Consult Equity Services Website or an Equity Advisor (ext. 5622) for Policy and list of holidays (www.carleton.ca/equity)
FOR PREGNANCY	Contact Equity Services (ext. 5622) to obtain letters of accommodations

ADDITIONAL STUDENT SUPPORT INFORMATION:

Carleton University offers additional support at the Writing Tutorial Service (215PA), Student Life Services (501 Unicentre), and the Student Academic Success Centre (302 Tory).