

Carleton University – School of Mathematics and Statistics

STAT 2601 E – Business Statistics – Winter 2026

Instructor: Dr. Esam Mahdi, EsamMahdi@cunet.carleton.ca, 5240 Herzberg Laboratories

Lectures: Lecture will be posted on Brightspace. The lecture schedule is on the last page of the syllabus.

Day: Wednesday and Friday
Time: 10:05 am - 11:25 am
Classroom: Tory Building 208

Office Hours: TBD.

Prerequisite: MATH 1009.

Grading Scheme: Tutorials 5%, Tests 50%, Final Exam 45%.

Tutorials: Tutorials will make use of [Excel](#). During the tutorials, you will (i) use Excel to generate, summarize, and/or analyze data, and (ii) answer questions based on Excel output. Tutorials will take place during the weeks of **January 19 and 26, February 2 and 23, and March 2, 16, and 23**. Your best five (5) tutorial scores will each be worth 1% of your final grade.

Tests: There will be two 90-minute tests. **Test 1** will take place on either **February 6, 7, or 8**. **Test 2** will take place on either **March 13, 14, or 15**. The exact date and time of each test will be determined by Scheduling and Examination Services by January 30. The highest and lowest test scores will be worth 30% and 20% of your final grade, respectively. **Please note this test weighting will not appear correctly in the Brightspace gradebook but will be computed correctly offline.**

Final Exam: There will be a three-hour **cumulative** final exam worth 45% of your final grade. The final exam will take place during the final exam period, **April 11-23**. It is the responsibility of the student to be available during this period. The final exam schedule is tentatively set to be released February 13.

The two tests and final exam will be written in-person at Carleton University. No online/distance proctoring of tests or the final exam will be permitted under any circumstances.

Permitted Resources: For the tutorials, tests, and the final exam, you are permitted to use (i) the formula sheet and statistical tables provided by the instructor and (ii) a non-programmable, non-graphing calculator. For tutorials, you are also permitted to use anything on the course Brightspace page and, when instructed to do so, Excel. You are **not** permitted to bring your own reference material to the tests.

Academic Integrity: Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in [Academic Carleton University's Academic Integrity Policy](#). A list of standard sanctions in the Faculty of Science can be found [here](#).

Statement on the Use of Generative AI: Students are not permitted to use generative AI to help them answer questions or check their work on tutorials, tests, or the final exam. The use of generative AI for these purposes will be considered a violation of Carleton University's Academic Integrity Policy and reported to the Office of the Dean of Science for disciplinary action.

Student Rights & Responsibilities: Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the [7 Rights and Responsibilities Policy](#) for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.

Requests for Academic Accommodation: You may need special arrangements to meet your academic obligations during the term. For accommodation requests, consult [this link](#). If you are a PMC student requesting one of these accommodations, you must state your PMC status when making the request.

Important Dates: Important dates and deadlines, including statutory holidays, can be found [here](#).

Course Policies:

1. Students are permitted to miss a **maximum of one test** due to extenuating circumstances as defined by the [Academic Consideration Policy](#). These students must complete the [Academic Consideration for Coursework Request Form](#) within three business days of the original test. Students who correctly follow this procedure will have the missing test grade replaced by their grade on the final exam. **Please note these changes will not appear in the Brightspace gradebook and will be handled offline.** Failure to follow this procedure will result in a grade of 0% on the missed test. Students who miss a second test will be required to meet with the instructor to determine whether they will be permitted to remain in the course. To defer a final exam, students must apply [through the Registrar's Office](#).

2. Concerns about grading on assessments must be brought to the instructor's attention within 72 hours of these assessments being available for review. To avoid biased evaluation, you may only request a complete regrade of an entire assessment. You may not request a regrade until you have reviewed the solutions and grading scheme for the assessment under consideration.

3. Any student wishing to review their final exam must make an appointment within a two-week period following the deferred exam period. These appointments are solely for educational purposes and are **not** to be treated as an opportunity to debate your grade.

4. In assigning course letter grades, final numerical grades are not automatically rounded up. A student must definitively earn the lower numerical limit of a letter grade category to receive that letter grade.

5. When sending me an email, please send it to EsamMahdi@cunet.carleton.ca and

- use your Carleton email account.
- tell me you are emailing me about STAT 2601 A.
- ensure you have checked course syllabus and announcements for the answer to any questions.
- keep your emails brief and to the point, and do not use generative AI to write them for you.
- allow up to two business days for a response before resending your email.
- do not email me about a missed test or tutorial.
- do not email requesting a grade change or extra credit work.

6. If the time of a test in this course conflicts with the time of a test in another course, you must inform the instructor of the conflict at least two weeks in advance with a copy of the syllabus for the other course.

Please see next page for tentative lecture schedule.

LECTURE SCHEDULE		
WEEK	START	TOPICS
1	January 5	Descriptive and Inferential Statistics. Population and Sample. Qualitative and Quantitative Data. Levels of Measurement. Graphical Displays.
2	January 12	Measures of Central Tendency. Measures of Variability. Percentiles. Box Plots. Identifying Outliers. Experiment and Sample Space. Assigning Probability to an Outcome.
3	January 19	Events; Intersection, Union, and Complement. Venn Diagrams. Mutually Exclusive Events. Addition Rule. Conditional Probability. Independent Events. Law of Total Probability. Bayes' Theorem. Probability Trees.
4	January 26	Discrete Random Variables: Probability Distributions, Expected Value, and Variance. Binomial Probability Distribution. Poisson Probability Distribution.
5	February 2	Continuous Random Variables. Exponential Probability Distribution. Normal Probability Distribution. Normal Percentiles. Sampling Distribution of the Sample Mean and Sample Proportion. Central Limit Theorem.
6	February 9	Confidence Intervals for a Population Mean (known variance), and Sample Size Determination for a given Margin of Error. Student's t Distribution. Confidence Intervals for a Population Mean (unknown variance). Confidence Intervals for a Population Proportion, and Sample Size Determination for a given Margin of Error.
WINTER BREAK WEEK, FEBRUARY 16 – 20		
7	February 23	Introduction to Hypothesis Testing using p -values. Test about a Population Mean (known variance). Test about a Population Mean (unknown variance). Test about a Population Proportion. Critical Values. Type I and Type II Errors.
8	March 2	Inference for Comparing Two Population Means (known variances). Inference for Comparing Two Population Means (unequal unknown variances, equal unknown variances). Paired Experiments. Inference for Comparing Two Population Proportions.
9	March 9	Categorical Data Analysis. Goodness of Fit Test. Contingency Tables. Test for Independence. Test for Homogeneity.
10	March 16	Correlation. Simple Linear Regression. Least Squares Regression Line. Model Assumptions. Estimating the Error Variance.
11	March 23	Inference for the Slope Parameter. Inference for the Population Correlation Coefficient. Confidence Interval for the Mean Response. Prediction Interval for a New Observation.
12	March 30	The F Test for the Model. Introduction to Multiple Regression. Statistical Inference for Multiple Regression.