

**Carleton University**  
**School of Mathematics and Statistics**  
STAT2509 A – *Introduction to Statistical Modeling II* – Fall 2021

**Instructor: Name:** Ahmed Almaskut  
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**Office:** 4348HP

**Lectures:** Tuesdays and Thursdays from 7:35pm – 8:55 pm through ZOOM.

**Tutorials:**

<b>IN-PERSON in 4385HP</b>			
<b>Section</b>	<b>Time</b>	<b>TA's name</b>	<b>TA's Email</b>
A1	Tuesdays 6:35pm – 7:25pm	Ali Daher	alidaher@gmail.carleton.ca
A2	Tuesdays 5:35pm to 6:25pm	Joshua Miller	joshuamiller@gmail.carleton.ca
A3	Thursdays 6:35pm – 7:25pm	Finn Buffett	finnbuffett@gmail.carleton.ca
A4	Thursdays 5:35pm to 5:25pm	Finn Buffett	finnbuffett@gmail.carleton.ca
<b>Online through BBB</b>			
AW	Thursdays 5:35pm to 5:25pm	Xiayi Zhao	xiyizhao@gmail.carleton.ca

**Office Hours:** Tuesdays and Thursdays 3:00 pm – 4:00 pm through ZOOM  
Tuesdays and Thursdays 4:00 pm – 5:00 pm in 4351HP

**Textbook:** Introduction to Probability and Statistics (4th Canadian Edition by Mendenhall, Beaver, Beaver, and Ahmed).

**Course description:** A data-driven approach to statistical modeling. Basics of experimental design, analysis of variance, simple linear regression and correlation, nonparametric procedures. SAS will be the statistical software package used.

**Prerequisites:** STAT 2507 or STAT 2606 or STAT 3502; or permission of the School.

**Evaluation:** Your final grade will be calculated as:

- Term Mark (50%)
  - Tests (30%)
  - Assignments (20%)
- Final Examination Mark (50%)

### Assignments

There will be 4 assignments, each counting equally toward the term mark. Assignments due dates and times will be posted on Brightspace. No late assignments will be accepted.

#### Tentative Assignments Schedule

Assignment	Available	Due
Assignment 1	Sunday, September 19 <sup>th</sup>	Sunday, October 3 <sup>rd</sup>
Assignment 2	Sunday, October 3 <sup>rd</sup>	Sunday, October 17 <sup>th</sup>
Assignment 3	Sunday, October 31 <sup>st</sup>	Sunday, November 14 <sup>th</sup>
Assignment 4	Sunday, November 21 <sup>st</sup>	Sunday, December 5 <sup>th</sup>

### Tests

There will be two tests worth 15% each on **Sunday, November 7, 9am to 10:30am** and **Sunday, November 21, 9:00am to 10:30am**. Students who need to miss a test submission for a valid reason must complete the [self-declaration form](#) and the weight of their missed assessment will be added to their final exam.

**Final Exam:** The final exam will cover all of the material given during the term and it will be scheduled by the university. The exam period runs from **December 11-23**. It is the responsibility of each student to be available during the exam period. In particular, no travel plans should be made until the examination schedule is released.

**Please note, your tests and final exam will be proctored using e-proctoring.**

**E-Proctoring:** Please note that tests and examinations in this course will use a remote proctoring service provided by Scheduling and Examination Services. You can find more information at <https://carleton.ca/ses/e-proctoring/>. The minimum computing requirements for this service are as follows:

Hardware: Desktop, or Laptop

OS: Windows 10, Mac OS 10.14, Linux Ubuntu 18.04

Internet Browser: Google Chrome, Mozilla Firefox, Apple Safari, or Microsoft Edge

Internet Connection (High-Speed Internet Connection Recommended)

Webcam (HD resolution recommended)

Note: Tablets, Chromebooks and Smartphones are not supported at this time. Windows-based tablets are not supported at this time.

**Calculators:** Only non-programmable, non-graphing calculators are allowed on the tests and the final.

### **Intellectual property notice**

Classroom teaching and learning activities, including lectures, discussions, presentations, tests, exams, by instructors, guest presenters, and students, are copy protected and remain the intellectual property of the instructor or respective author(s). All course materials, including PowerPoint/pdf presentations, outlines, and other materials, are also protected by copyright and remain the intellectual property of their respective author(s).

Students registered in the course may take notes and make copies of course materials for their own educational use only. Students are not permitted to reproduce or distribute lecture notes and course materials publicly for commercial or non-commercial purposes without express written consent from the copyright holder(s). A student who publicly posts or sells an instructor's work, without the instructor's express consent, may be charged with misconduct under Carleton's Academic Integrity Policy and/or Code of Conduct, and may also face adverse legal consequences for infringement of intellectual property rights.

### **Requests for Academic Accommodation**

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

#### **Pregnancy obligation**

Please contact your instructor 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: [carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf](http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf)

#### **Religious obligation**

Please contact your instructor 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: [carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf](http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf)

#### **Academic Accommodations for Students with Disabilities**

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC 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 your instructor as soon as possible to ensure accommodation arrangements are made. [carleton.ca/pmc](http://carleton.ca/pmc)

#### **Survivors of Sexual Violence**

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and its survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: [carleton.ca/sexual-violence-support](http://carleton.ca/sexual-violence-support)

## Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor 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. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

**Academic Integrity:** Students are required to be familiar with the Academic Integrity Policy at Carleton University. The complete policy is available at: [Academic-Integrity-Policy-2021.pdf \(carleton.ca\)](#). Students who violate the standards of academic integrity relating to any coursework will be required to meet with the Associate Dean of Science.

## Course Outline:

- *Simple Linear Regression:* Method of Least Squares, Inference, Analysis of Variance (ANOVA), Correlation, Test for Lack of Fit and Residual Analysis, Data Transformation.
- *Multiple Linear Regression:* Least Squares, Inference, ANOVA, Residual Analysis, Multicollinearity, Variable Selection Procedures.
- *Experimental Design:* Completely Randomized Design (CRD), Randomized Block Design (RBD), Two-Way Experiments, Multiple Comparisons, Non-parametric Tests.
- *Categorical Data:* Pearson's Chi-square Statistic; the Chi-square Test of Independence and Homogeneity.

## Important Dates

- First day of classes: September 8
- Last for registration: September 22
- Last day to withdraw from fall term and fall/winter courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript: September 30
- Statutory Holiday: October 11
- Fall Break (no classes): October 25 - 29
- December 10: Last day of classes, last day for academic withdrawal
- Final Exam period: December 11 -23

## ADDITIONAL COURSE POLICIES:

1. Concerns about grading on assignments or tests must be brought to my attention within one business day of these items being available for review.

2. Students who need to miss a test for a valid reason must inform me prior to the test and must complete [self-declaration form](#) within 3 business days of the test. Students who correctly follow this procedure will have the weight of the missed test added to the weight of the final exam. Failure to follow this procedure will result in a grade of 0% on the missed test.

3. 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.

**4. Students are required to obtain a minimum score of 40% on the final exam.** Students who fail to do so will automatically be assigned a grade of **F** in the course. Exceptions to this rule may be made at the discretion of the instructors.

**5. All dates and times are in Eastern Daylight Zone ETD (Time zone in Ottawa).** This includes, but not limited to, lecture times, tutorial times, office hours times, assignment due dates and times, test dates and times, and final exam date and time.