



Instructors: Dr. Ammar Sarhan and Mr. Vishal Sood ([ammar.sarhan@dal.ca](mailto:ammar.sarhan@dal.ca), [vishal.sood@dal.ca](mailto:vishal.sood@dal.ca))

Lectures: Online - Brightspace

Office Hours: TBA - Brightspace

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### Course Description

This course gives an introduction to the basic concepts of statistics through examples. The topics include descriptive statistics, probability, random variables, correlation between two quantitative variables, simple linear regression and the basics of statistical inference for a single population proportion/mean and of the difference in two population means. Students will use a statistical package.

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### Course Prerequisites

Academic or advanced Grade 12 Mathematics (or pre-calculus) or equivalent.

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### Course Objectives/Learning Outcomes

By the end of the course students will be able to:

1. Discuss basic statistical vocabulary and concepts
  2. Identify and distinguish the contexts that can be analyzed using the statistical methods
  3. Distinguish contexts that call for techniques beyond the scope of the course
  4. Write clear statements (inference) supporting your interpretations of data analysis
  5. Test one population proportion
  6. Test one population mean
  7. Compare two populations means
  8. Test linear regression of two quantitative variables
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### Course Assessment Component

Component	Weight (% of final grade)	Date
Assignments	30%	Weekly
Exam 1	35%	May 28, 12:00 pm – 2:00 pm Atlantic time
Exam 2	35%	June 20, 12:00 pm – 2:00 pm Atlantic time

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+	(90-100)	B+	(77-79)	C+	(65-69)	D	(50-54)
A	(85-89)	B	(73-76)	C	(60-64)	F	(<50)
A-	(80-84)	B-	(70-72)	C-	(55-59)		

**Bonus points:**

There will be 5% bonus points will be added to the overall mark. Here is how students will receive bonus points. On the discussion boards, we encourage students to answer questions that are posted on the discussion boards. Students who correctly answer questions will gain bonus points. The first correct response to another student's inquiry will be marked with a "+1" by one of the TAs.

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**Assignments**

- There are 9 assignments (assignment 2 is optional) to be completed online at LON-CAPA website. Assignments 1-5 will be available on May 4th, and assignments 6-9 will be available on May 27th. Assignments will have different due dates.
- Each assignment has a specific opening and closing time which is shown on the website and in the table below. You may only access an assignment between its opening and closing times, all answers must be entered into LON-CAPA and submitted during that timeframe. Un-submitted answers are not read by LON-CAPA.
- Within the time frame for each assignment, students may open and close the assignment as often as they like. Remember to submit your answers.
- Assignments will be marked electronically by LON-CAPA after their closing date/time has arrived. Answers are posted after the assignment closes.
- Assignments are to be done independently. If we suspect any students of copying assignments from another student, we are required to report the incident to the Senate Discipline Committee.

Assignments Schedule

Assignment	Open-Close dates	Assignment	Open-Close dates
1	May 4 - 10	6	May 27 - June 7
2	May 4 - 10 (Optional)	7	May 27 - June 14
3	May 4 - 17	8	May 27 - June 14
4	May 4 - 17	9	May 27 - June 19
5	May 4 - 24		

- **No extension will be given for assignments after the deadline.**

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**Exams:**

There will be two final exams. Originally both two exams MUST be proctored exams. However, based on the Covid-19 situation, both two exams will be done online. Below is more information on the exams:

**Exam 1:**

When: May 28, from 12:00 PM to 2:00 PM **Atlantic time**. It is a two hours exam.

Where: LON-CAPA

Topics: The exam will include material covered in the course up until Chapter 13 (3rd Edition) or Chapter 14 (2nd Edition).

**Exam 2:**

**When:** June 20, from 12:00 PM to 2:00 PM **Atlantic time**. It is a two hours exam.

**Where:** LON-CAPA

**Topics:** The exam will include material covered in the course after Exam 1, and is not cumulative.

**Note:**

- The exams' time are Atlantic time, so please determine the time for your location in advance, as **no online extensions** will be made if the time slot is missed.
- The online exams will be open-book, however, it will be helpful to use the formula sheet and statistical tables provided on the Brightspace.
- For those who live in completely different time zones, and the exams time will not work well for them, should provide their time zones information on the Brightspace and we will adjust the exams time period for them. More details for how to do this will be posted on Brightspace during the first week of classes.

**Makeup Exams Policy:**

This advisory is for students who find they are sick on the day of the scheduled exam (May 28 or June 20 at noon Atlantic Time) and are therefore unable to write it. There will NOT be an online makeup exam}. Students who need to write a makeup exam will be given the option of having their course status listed as "pending" (PND on transcripts) and writing a proctored makeup exam at Dalhousie University or with a proctor once the Covid-19 is over.

**Course Policies**

1. Missed assignment will be counted as zero.
2. Use the Discussion boards to contact us. However, if your concerns are of a sensitive nature, email us using your Dal email! Otherwise, your message might be redirected to our spam folders. Use the subject heading, "Stat 1060 summer 2020".
3. You can expect a response in 24 hours. This is why, when posting questions on the Discussion boards about assignments, we recommend that you do not post after 3 pm (Atlantic time) on Saturdays and do not post at all on Sundays because we may not be able to respond before the deadline.
4. You are responsible for knowing due dates associated with this course, so **deadline extensions will not be granted**.
5. Course announcements will be posted on the Brightspace so try to login daily.

**Course Materials**

The course has sufficient material (lecture notes, videos, practice questions with answers) on Brightspace. For additional reading, students can use the following text book:

STATS: Data and Models, by Richard D. De Veaux et. al, the 3rd Canadian Edition

### Class Content Outline and Important Dates:

Week	Date	Topic	Chapter	
			2nd Ed	3rd Ed
1	May 4-8	Displaying and Summarizing Quantitative Data	3	3
		Understanding and Comparing Distributions	4	4
2	May 11-15	The Standard Deviation as a Ruler and Normal Model	5	5
		From Randomness to Probability	12	11
3	May 18-22	Probability Rules	13	12
		Random Variables (sections 14.1 - 14.3)	14	13
4	May 25	Random Variables (section 14.4)	14	13
<b>THE END OF EXAM 1 MATERIAL</b>				
	May 26-29	Sampling Distribution Models	15	14
		Confidence Intervals for Proportions	16	15
4	May 28	<b>EXAM 1, 12:00 PM to 2:00 PM Atlantic time</b>		
5	June 1-5	Testing Hypotheses about Proportions	17	16
		More about Tests	18	17
		Inferences About Means	19	18
6	June 8-12	Comparing Means	21	19
		Paired Samples	22	20
		Scatterplots, Association, and Correlation	6	6
7	June 15-19	Linear Regression 7	7	7
		Inference for regression	24	23
7	June 20	<b>EXAM 2, 12:00 PM to 2:00 PM Atlantic time</b>		

**Faculty of Science Course Syllabus (Section B) (revised June-2018)***Course name & number*

Please ensure that the following information on University Policies and Student Resources is available to all students in your course. This document may be posted on your Brightspace course site, or elements may be copied into your **Course Syllabus, Section A**.

**University Policies and Statements**

**This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate**

**Academic Integrity**

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

**Information:** [https://www.dal.ca/dept/university\\_secretariat/academic-integrity.html](https://www.dal.ca/dept/university_secretariat/academic-integrity.html)

**Accessibility**

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

**Information:** [https://www.dal.ca/campus\\_life/academic-support/accessibility.html](https://www.dal.ca/campus_life/academic-support/accessibility.html)

**Student Code of Conduct**

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

**Code:** [https://www.dal.ca/dept/university\\_secretariat/policies/student-life/code-of-student-conduct.html](https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html)

**Diversity and Inclusion – Culture of Respect**

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

**Statement:** <http://www.dal.ca/cultureofrespect.html>

**Recognition of Mi'kmaq Territory**

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) ([elders@dal.ca](mailto:elders@dal.ca)).

**Information:** [https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

**Important Dates in the Academic Year (including add/drop dates)**

[https://www.dal.ca/academics/important\\_dates.html](https://www.dal.ca/academics/important_dates.html)

**University Grading Practices**



**DALHOUSIE  
UNIVERSITY**

[https://www.dal.ca/dept/university\\_secretariat/policies/academic/grading-practices-policy.html](https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html)

**Missed or Late Academic Requirements due to Student Absence (policy)**

[https://www.dal.ca/dept/university\\_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html](https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html)

## **Student Resources and Support**

### **Advising**

**General Advising** [https://www.dal.ca/campus\\_life/academic-support/advising.html](https://www.dal.ca/campus_life/academic-support/advising.html)

**Science Program Advisors:** <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

**Indigenous Student Centre:** [https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

**Black Students Advising Centre:** [https://www.dal.ca/campus\\_life/communities/black-student-advising.html](https://www.dal.ca/campus_life/communities/black-student-advising.html)

**International Centre:** [https://www.dal.ca/campus\\_life/international-centre/current-students.html](https://www.dal.ca/campus_life/international-centre/current-students.html)

### **Academic supports**

**Library:** <https://libraries.dal.ca/>

**Writing Centre:** [https://www.dal.ca/campus\\_life/academic-support/writing-and-study-skills.html](https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html)

**Studying for Success:** [https://www.dal.ca/campus\\_life/academic-support/study-skills-and-tutoring.html](https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html)

**Copyright Office:** <https://libraries.dal.ca/services/copyright-office.html>

**Fair Dealing Guidelines** <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

### **Other supports and services**

**Student Health & Wellness Centre:** [https://www.dal.ca/campus\\_life/health-and-wellness/services-support/student-health-and-wellness.html](https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html)

**Student Advocacy:** <https://dsu.ca/dsas>

**Ombudsperson:** [https://www.dal.ca/campus\\_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html](https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html)

### **Safety**

**Biosafety:** <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

**Chemical Safety:** <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

**Radiation Safety:** <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

**Scent-Free Program:** <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>