

Faculty of Science Course Syllabus
Department of *Mathematics and Statistics*
STAT 1060/MATH 1060
Introductory Statistics for Science and Health Sciences
Fall 2021

Instructor(s): Dr. Ammar Sarhan (coordinator) ammar.sarhan@ dal.ca Chase 105
Dr. Jing Zhang jingzhang@ dal.ca Chase 353

Lectures: Section 01: TR 13:05-14:25 McCain Aud-1 Sarhan A. (P) & Zhang J.
Section 02: MWF 11:35-12:25 McCain Aud-1 Sarhan A. (P) & Zhang J.

Laboratories:

Tutorials: 10/ 1hr each

Course Description

This course gives an introduction to the basic concepts of statistics through extensive use of examples. The topics include experimental design, descriptive statistics, simple linear regression and the basics of statistical inference. Students will learn to use the statistical software R and RStudio.

Course Prerequisites

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

Course Objectives/Learning Outcomes

At the end of this course, students should 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 interpretations of data analysis.
5. Test if two or more populations have the same mean.

Course Materials

- *Textbook:* Stats: Data and Models, 4nd Canadian Edition DeVeaux, Velleman, Bock, Vukov and Wong. (Pearson Canada).
- R and RStudio
- A scientific calculator with natural log and exponential functions.
- Course website: Brightspace

Course Assessment

Component	Weight (% of final grade)	Date
<i>Exam 1,</i>	35%,	Oct 27, 7:30-9:30 pm
<i>Exam 2,</i>	35%	(Final exam period - Scheduled by Registrar)
Assignments:	15%	

Assignment	Due date	Assignment	Due date
1	Sept 26	6	Oct 31
2	Oct 3	7	Nov 7
3	Oct 10	8	Nov 21
4	Oct 17	9	Dec 5
5	Oct 24		

Tutorial Assessments: 15%

Assessment	Due date	Assignment	Due date
1	Sept 26	6	Oct 31
2	Oct 3	7	Nov 7
3	Oct 10	8	Nov 21
4	Oct 17	9	Dec 5
5	Oct 24		

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)	

Course Policies

Late work with a good documented excuse may be accepted, provided the solutions have not yet been posted and/or discussed in class.

Non-attendance at the exams 1 and 2, without a valid documented excuse as determined by the professor, will result in a mark of 0.

Course Content

Week	Date	Topic
1	Sept 7-10	Displaying and Summarizing Quantitative Data
2	Sept 13-17	Understanding and Comparing Distributions
3	Sept 20-24	The standard deviation as a ruler Understanding Randomness
4	Sept 27- Oct 1	Sample Surveys Experiments and Observational Studies
5	Oct 4-8	From Randomness to Probability Probability Rules



6	<i>Oct 11-15</i>	<i>Random Variables Probability Model (Normal and Binomial)</i>
7	<i>Oct 18-22</i>	<i>Sampling Distribution Models Confidence intervals for proportions</i>
8	<i>Oct 25-29</i>	<i>Testing Hypotheses about proportions</i>
9	<i>Nov 1-5</i>	<i>Inferences About Means</i>
11	<i>Nov 15-19</i>	<i>Comparing Means Paired Samples</i>
12	<i>Nov 22-26</i>	<i>Scatterplots, Association, and Correlation Linear Regression</i>
13, 14	<i>Nov 29-Dec 6</i>	<i>Inferences for Regression</i>

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

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

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

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).

Information: 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

University Grading Practices

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Student Resources and Support

Advising

General Advising 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

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: 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

Studying for Success: 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

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

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>

Dalhousie COVID-19 information and updates: <https://www.dal.ca/covid-19-information-and-updates.html>