DALHOUSIE UNIVERSITY

Course Syllabus
Department of Mathematics & Statistics
Introductory Statistics for Science and Health Sciences (Online)
STAT 1060/MATH 1060   -   FALL 2020

Instructor: Vishal Sood   vishal.sood@dal.ca   Chase 007
Lectures: Asynchronous
Laboratories: N/A
Tutorials: Asynchronous

TA's Information

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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 package.

- Delivery of the course and tutorials will be **asynchronous**, meaning material can be read and viewed at any time. It is highly recommended to stay on track of the weekly material since the assignments/tutorial assessments have specific due dates.

Course Prerequisites

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

Course Objectives

- Discuss basic statistical vocabulary and concepts

- Identify and distinguish the contexts that can be analyzed using the statistical methods

- Distinguish contexts that call for techniques beyond the scope of the course

- Write clear statements (inference) supporting your interpretations of data analysis

- Test one population proportion

- Test one population mean

- Compare two populations means

- Test linear regression of two quantitative variables

Course Materials

- The course text is STATS: Data and Models, 3rd Canadian Ed. by Richard D. De Veaux *et. al.* and is available for purchase at the Dal book store. Older editions of the textbook may be used as well.

- The statistical software R will be used for tutorials. Instructions of downloading R/RStudio is provided on Brightspace. The course notes may also contain Minitab output, however, we will not discuss how to use Minitab in the tutorials or course videos.

- You will also need a scientific calculator with natural log and exponential functions.

Course Assessment

Marking Scheme		Total grade	Letter grade
Tutorials	15 %	90 to 100	A+
Assignments	25 %	85 to 89	A
Exam 1	30%	80 to 84	A-
Exam 2	30%	77 to 79	B+
		73 to 76	B
		70 to 72	B-
		65 to 69	C+
		60 to 64	C
		55 to 59	C-
		50 to 54	D
		<50	F

Bonus points: Students will have the opportunity to receive bonus points. 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. A maximum of 5% can be earned by bonus points towards the overall mark.

Exam 1

- Where: **LON-CAPA**

- Time: **Tuesday, October 27**. The exam will be opened for 12 hours (12 PM to 12 AM) and you will have 2.5 hours to complete it. You may choose any 2.5 hour time slot at your convenience.

- Topics: The exam will include material up until the section on Probability Model (Normal and Binomial).

Exam 2

- Where: **LON-CAPA**

- Time: To be determined by the register's office.

- Topics: The exam will **NOT** be cumulative and will cover all material after Exam 1.

NOTE: The exams are Atlantic time, so please determine the time for your location in advance. The online exams will be open book, however, it will be helpful to use the formula sheet and statistical tables provided on Brightspace.

Tutorials

- There are 9 weekly tutorials and associated assessments. The tutorial portion of your course grade is determined from scores on the 9 weekly assessments. The tutorial schedule is:

Tutorial	Open-Close Dates	Tutorial	Open-Close Dates
1	Sept 21 - Sept 25	6	Nov 2 - Nov 6
2	Sept 28 - Oct 2	7	Nov 16 - Nov 20
3	Oct 5 - Oct 9	8	Nov 23 - Nov 27
4	Oct 12 - Oct 16	9	Nov 30 - Dec 4
5	Oct 26 - Oct 30		

- All tutorial assessments can be completed on LON-CAPA.

- You are responsible for knowing due dates associated with this course, so deadline extensions will not be granted.

Assignments

- There are 9 weekly assignments to be completed online at the course LON-CAPA website.

- 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 time frame. 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 Schedule

Assignment	Open-Close Dates	Assignment	Open-Close Dates
1	Sept 21 - Sept 27	6	Nov 2 - Nov 8
2	Sept 28 - Oct 4	7	Nov 16 - Nov 22
3	Oct 5 - Oct 11	8	Nov 23 - Nov 29
4	Oct 12 - Oct 18	9	Nov 30 - Dec 8
5	Oct 19 - Oct 25		

How to Login to LON-CAPA

1. In your web browser, go to http://capa.mathstat.dal.ca.

2. You will be prompted to enter a username and password. By default, your username is your Dalhousie NetID and your password is your banner number (your Dalhousie student number that starts with B00). Your full banner number must be entered, that is: the upper-case letter B, followed by two zeros, then followed by 6 digits.

3. You then have to select a role for the course you wish to enter. Most likely, you will have only one choice: a student user role for the course titled "Stat 1060". Click on the Select button next to that choice.

4. You will be directed to the home page of the course. Navigation is easiest by using the tabs in the top blue bar. The Contents tab is where the assignments will be posted.

5. For increased security and convenience, you should change the default password. Click on the Main Menu tab in the top blue bar, then click on Set my user preferences and then click on Password. Enter the current (default) password and enter (twice) your new password.

Course Policy

- Students are responsible to determine all due dates for assignments and tutorial assessments. No deadline extensions will be granted. For this reason, please determine the deadline times for your time-zone in advance.

- Your eight best assignment scores will be used to compute the assignment portion of your course grade.

- Exams will be opened for a 12 hour period and students may choose any time slot within the period.

- 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.

- Students must fill out a Student Declaration of Absence if they require a make-up date for Exam 1 or Exam 2.

Course Outline

Week	Date	Topic	Chapter 2nd	3rd
1	Sept 8 - 11	Displaying and Summarizing Quantitative Data	4	3
2	Sept 14 - 18	Understanding and Comparing Distributions	5	4
3	Sept 21 - 25	The Standard Deviation as a Ruler	6	5
		Understanding Randomness	11	9
4	Sept 28 - Oct 2	Sample Surveys	12	10
		Experiments and Observational Studies	13	11
5	Oct 5 - 9	From Randomness to Probability	14	12
		Probability Rules	15	13
6	**Oct 12**	**Thanksgiving Day - University Closed**		
6	Oct 13 - 16	Random Variables	16	14
		Probability Model (Normal and Binomial)	17	14
7	Oct 19 - 23	Sampling Distribution Models	18	15
		Confidence Intervals for Proportions	19	16
8	Oct 26 - 30	Testing Hypotheses About Proportions	20	17
8	**Oct 27**	**EXAM 1**		
9	Nov 2 - 6	More About Tests	21	18
		Inferences About Means	23	20
10	**Nov 9 - 13**	**Study Break**		
11	Nov 16 - 20	Comparing Means	24	21
		Paired Samples	25	22
12	Nov 23 - 27	Scatterplots, Association, and Correlation	7	6
13 & 14	Nov 30 - Dec 8	Linear Regression	8	7
		Regression Wisdom	9	8
		Inferences for Regression	27	24
	Dec 10 - 20	**Final Exam Period**		

University Policies and Statements

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

Missed or Late Academic Requirements due to Student Absence

As per Senate decision instructors may not require medical notes of students who must miss an academic requirement, including the final exam, for courses offered during fall or winter 2020-21 (until April 30, 2021). Information on regular policy, including the use of the Student Declaration of Absence can be found here: `https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html`.

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`

Diversion 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.htmlScience
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 Support

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-responsibiliti
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