Faculty of Science Course Syllabus
Department of Mathematics and Statistics
STAT 2060/MATH 2060/ ECON 2260
Introduction to Probability and Statistics I
Fall, 2019

Instructor(s): Jing Zhang jingzhang@dal.ca Chase 353

Lectures: 1035-1125 MWF MCCAIN AUD-1

Tutorials: T01 T 0935-1125 Studley LSC-COMMON AREA C234

T02 R 1235-1425 Studley LSC-COMMON AREA C234

T03 R 0935-1125 Studley LSC-COMMON AREA C234

T04 M 1235-1425 Studley LSC-OCEANOGRAPH O3655

T05 M 1435-1625 Studley LSC-COMMON AREA C234

Office Hours 1430-1600 MW

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Course Description

Rigorous introduction to probability and statistical theory. Topics covered include elementary probability, random variables, distributions, estimation and hypothesis testing. Estimation and testing are introduced using maximum likelihood and the generalized likelihood ratio.

Course Prerequisites

MATH 1000.03 or MATH 1215.03 or MATH 1550 OR MATH 1500X/Y

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

Course Materials
Textbook: Probability and Statistics for Engineering and the Sciences, 9th edition, by J. Devore
Course Websites: Brightspace and CAPA

Course Assessment

There will be one mid-term exam of two hours duration and a final exam of three hours.

Assignments 20%

Tutorials 10%

Midterm 25%

Final 45%

Other course requirements

Tutorials: There will be 10 weekly tutorials starting from week 3. There will be 10-15 minutes quiz at the end of every tutorial.

Assignments

1. There are 9 assignments to be completed online at LON-CAPA website.
2. Each assignment has a specific opening and closing time which is shown on the website. 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.
3. Within the time frame for each assignment, students may open and close the assignment as often as they like. Remember to submit your answers.
4. Assignments will be marked electronically by LON-CAPA after their closing date/time has arrived. Answers will be posted after the assignment closes.
5. Assignments are to be done independently. If we suspect any students of copying assignments from another student or with the help of someone else, we are required to report the incident as an academic integrity offense. For more information, please read

https://www.dal.ca/dept/university_secretariat/academic-integrity.html

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.

Conversion of numerical grades to Final Letter Grades follows the <u>Dalhousie Common Grade Scale</u>

       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

Exams:

1. There will be a total of 2 exams (1 midterm and 1 final exam)
2. The exams will be closed-book with one page (double sided) of notes allowed.
3. The schedules for the exams are:

Midterm: Oct 10th, 2019

Final exam: TBA

Illness:

If a student does not feel well (due to illness) a day before the midterm or on the midterm's day, he/she should contact me and show me a doctor note (not a nurse note).

Failure to do so may result in a grade of zero. A doctor's certificate of your illness must be provided to me.

Course Content

Topics	Chapter
Descriptive Statistics	Ch. 1
Probability	Ch. 2
Discrete Random Variables and Distributions	Ch. 3
Continuous Random Variables and Distributions	Ch. 4
Joint Probability Distributions	Ch. 5
Point Estimation	Ch. 6
Confidence Intervals Based on A single Sample	Ch. 7
Hypothesis Tests Based on A single Sample	Ch. 8
Inference Based on Two Samples	Ch. 9

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

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

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