

Social Sciences 2J03

Introduction to Statistics

Fall 2021 (Online)

Instructor: Rizwan Tahir

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Office Hours:

This is an online course and therefore there will be no in-person office hours. Students are encouraged to contact instructor/TA by email. But please note that I may not be able to respond to your emails during weekends. Students are encouraged to log in once a day to the A2L, preferably every evening.

Virtual office hours through Zoom:

Tuesdays: 11 am to 1230 pm

Wednesdays: 1pm to 230 pm

Teaching Assistant(s):

Information will be available on the avenue by September 7th.

Course Description:

This course introduces the basic concepts of statistics and inference. Students will: compute basic statistics; consider the principles used in data collection; consider the key properties and logic underlying significance tests and confidence intervals; apply some of the most used inference methods.

Course material

Text:

Introductory Statistics, 9th edition by Prem S. Mann, Wiley, 2016

Wiley-plus includes a complete online version of the book, videos, hundreds of practice questions, and auto-graded homework assignments.

Wiley-plus is mandatory for this course. Please see the instruction slides posted on the avenue to buy the code for Wiley-Plus and to register.

LEARNING OUTCOMES

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

1. Distinguish between different types of data and present the data using graphs and summary measures
2. Distinguish between probability/random and non-probability/non-random sampling methods
3. Basic and related concepts of probability
4. Understand discrete and continuous probability distributions
5. Understand sampling distribution of mean and proportion
6. Understand hypothesis testing

CLASS FORMAT

The course contents are delivered online. Weekly modules are designed based on each chapter of the textbook. Each module includes lecture slides, lecture video, Wiley assignment and a quiz. You will have the flexibility to review the slides and watch the lecture video at your own pace during the week.

Live Sessions:

There will be weekly live sessions through Zoom to review weekly material and practice questions.

Tuesdays from 7 pm to 8 pm (Section C02)

Thursday from 1230 pm to 120 pm (section C01)

Note: Overview session is scheduled for Tuesday, September 7th from 7 pm to 730 pm for section C02 & Thursday, September 9th from 1230 pm to 1 pm for section C01

COURSE Evaluation-OVERVIEW

Component	Weight
Quizzes (6 best out of 8)	15%
Assignments (7 best out of 9)	20%
Term Test-1	15%
Term Test-2	15%
Final Exam	35%

COURSE Evaluation-DETAILS

Assignments:

Available through WileyPlus. It is an online learning and assessment tool. It provides ample opportunity to practice concepts and problems consistent with the textbook readings. There is a total of nine (9) assignments. **Each assignment is based on one chapter.** Seven (7) best assignments will be counted.

Quizzes

These quizzes will be administered through Avenue to Learn and will **prepare you for the term tests and final exam.** All Quizzes will consist on Multiple-Choice questions. **Each Quiz is based on one chapter** (except for first quiz which is based on first two chapters). There *is* a total of eight (8) quizzes. Six (6) best quizzes will be counted.

Term Tests

Both term tests would be available on the avenue on **Fridays from 7 pm to 9 pm.** Each test would be of 90 minutes duration and include 30 multiple choice questions. The material for each test is outlined below

Final Exam

The final exam will be of 140 minutes duration and would include 40 multiple choice questions. The final exam will be **cumulative** and based on the entire course and will be available on the avenue.

Your final grades will be released by the Registrar's office. Please click [here](#) for details. The Deferred Exam Policy can be found [here](#).

IMPORTANT GUIDELINES FOR exams (QUIZZES, TERM TESTS & FINAL EXAM)

Because you are taking these exams on your own, we cannot invigilate the same way that we invigilate in-person exams. So, you can use your notes and textbook during the exam. However, the short time frame means that you should prepare (study) ahead of time. You are expected to complete each exam without the aid of other students.

Please pay attention to the following guidelines for taking the exams.

- Turn off all unnecessary programs, especially anything that might be downloading or streaming;
- Coordinate household internet and technology use so that you are not competing with for bandwidth or devices;
- If possible, connect to the internet via a wired connection;
- Move close to the WiFi hub;
- Restart your computer one to two hours before the exam.
- Use the latest version of either Chrome or Firefox.
- Close all other apps/programs/browser windows.
- Carefully read all instructions before beginning the exam. The time of the exam does not begin until you click "start quiz".
- You will see up to three questions per page and you cannot move back, once you leave the page and go to the next page.
- Once you have chosen your answers click "next page". Do ***not*** click "next page" more than once. Clicking more than once may result in the pop-up getting stuck and impeding your ability to read future questions. You will not be given any consideration should you make this mistake.
- When you have answered all questions, click "submit". You must submit the exam for it to be graded.
- In the rare event that you should experience a technical problem, exit the exam and relaunch it. The clock will continue to run.

Missing Quizzes and/or tests

- There will be no makeup quizzes or makeup tests
- If you miss a test or quiz you will get a grade of zero unless you complete and submit a McMaster Student Absence Form (MSAF) which can be found at <https://www.mcmaster.ca/msaf/>
- With approved MASF, weight of the missed quiz or test will be shifted towards final exam.

University Policies

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behavior in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behavior can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](#).

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

AUTHENTICITY / PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software.

All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, usernames for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

ONLINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all our living, learning and working communities. These expectations are described in the [Code of Student Rights & Responsibilities](#) (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, whether in person or online.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviors that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students’ access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements. Academic accommodations must be arranged before classes or academic work begins, and for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University’s Policy for [Academic Accommodation of Students with Disabilities](#).

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS AND SPIRITUAL OBSERVANCES

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO](#) policy. Students should submit their request to their Faculty Office *normally within 10 working days* of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

FACULTY OF SOCIAL SCIENCES E-MAIL COMMUNICATION POLICY

Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including TAs), and from students to staff, must originate from the student's own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student's responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.

COURSE MODIFICATION

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check his/her McMaster email and course websites weekly during the term and to note any changes.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email

Detailed Course Schedule

Week	Dates	Contents	Assessment
1	Sep. 7 to Sep. 10	Overview	
2	Sep. 13 to Sep. 17	Introduction Chapter 1	Assignment-1 Coverage: Chapter-1 Availability: Tuesday Sep. 7 to Sunday, Sep. 19
3	Sep. 20 to Sep. 24	Organizing and Graphing Data Chapter 2	Assignment-2 Coverage: Chapter-2 Availability: Monday, Sep. 20 to Sunday, Sep. 26 Quiz-1 Coverage: Chapter-1 & 2 Availability: Monday, Sep. 27 th
4	Sep. 27 to Oct. 01	Numerical Descriptive Measures Chapter 3	Assignment-3 Coverage: Chapter-3 Availability: Monday, Sep. 27 to Sunday, Oct. 3 rd Quiz-2 Coverage: Chapter-3 Availability: Monday, Oct. 4 th
5	Oct. 4 to Oct. 8	Probability Chapter 4	Assignment-4 Coverage: Chapter-4 Availability: Monday, Oct. 4 th to Sunday, Oct. 10 th Quiz-3 Coverage: Chapter-4 Availability: Monday, Oct. 18 th
6	Oct. 11 to Oct. 15	Midterm Recess	

7	Oct. 18 to Oct. 22	Test # 1 Coverage: chapters 1,2,3 & 4 Availability: Friday, October 22nd from 7 pm to 9 pm	Practice-Quiz-1 Coverage: Chapters 1,2,3, &4 Availability: Tuesday, Oct. 19 th to Friday, Oct. 22
8	Oct. 25 to Oct. 29	Discrete Random Variables and Their Probability Distributions Chapter 5	Assignment-5 Coverage: Chapter-5 Availability: Monday, Oct. 25 th to Sunday, Oct. 31 st Quiz-4 Coverage: Chapter-5 Availability: Monday, Nov. 1 st
9	Nov. 01 to Nov. 5	Continuous Random Variables and The Normal Distribution Chapter 6	Assignment-6 Coverage: Chapter-6 Availability: Monday, Nov. 1 st to Sunday, Nov. 7 th Quiz-5 Coverage: Chapter-6 Availability: Monday, Nov. 8 th
10	Nov. 8 to Nov. 12	Sampling Distributions Chapter 7	Assignment-7 Coverage: Chapter-7 Availability: Monday, Nov. 8 th to Sunday, Nov. 14 th Quiz-6: Coverage: Chapter-7 Availability: Monday, Nov. 15 th
11	Nov. 15 to Nov. 19	Test # 2 Coverage: chapters 5, 6 & 7 Availability: Friday, November 19th from 7 pm to 9 pm	Practice-Quiz-2 Coverage: Chapters 5,6 & 7 Availability: Tuesday, Nov. 16 th to Friday, Nov. 19 th
12	Nov. 22 to Nov. 26	Estimation of the Mean and Proportion Chapter 8	Assignment-8 Coverage: Chapter-8 Availability: Monday Nov. 22 nd to Sunday, Nov. 28 th Quiz-7 Coverage: Chapter-8 Availability: Monday, Nov. 29 th
13	Nov. 29 to Dec. 3	Hypothesis Tests About the Mean and Proportion Chapter 9	Assignment-9 Coverage: Chapter-9 Availability: Monday, Nov. 29 th to Sunday, Dec. 8 th

14	Dec. 6 to Dec. 8	Review	Quiz-8 Coverage: Chapter-9 Availability: Wednesday, Dec. 8 th
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Note: The instructor reserves the right to modify elements of the course and will notify students accordingly