UNIVERSITY OF CALGARY
FACULTY OF SCIENCE

Department of Mathematics & Statistics
MS 476
403 220-5210
math@ucalgary.ca

COURSE OUTLINE

1. **Course:** STAT 205, Introduction to Statistical Inquiry - Fall 2022

   Lecture 01 : MWF 11:00 - 11:50 in ENA 201

Instructor	Email	Phone	Office	Hours
James Stallard	jbstall@ucalgary.ca	403 220-3953	MS 582	TBA

   Lecture 02 : MWF 11:00 - 11:50 in ENA 201

Instructor	Email	Phone	Office	Hours
James Stallard	jbstall@ucalgary.ca	403 220-3953	MS 582	TBA

   Please refer to the Additional Course Information for more detailed Statistics 205 course information, including provisional assignment due dates, lab quiz dates, and midterm exam dates.

   To account for any necessary transition to remote learning for the current semester, courses with in-person lectures, labs, or tutorials may be shifted to remote delivery for a certain period of time. In addition, adjustments may be made to the modality and format of assessments and deadlines, as well as to other course components and/or requirements, so that all coursework tasks are in line with the necessary and evolving health precautions for all involved (students and staff).

   In Person Delivery Details:

   All classes/lectures are to be delivered in person, until further notice (AKA, the University of Calgary has to move to online instruction as a result of another wave of Covid-19).

   Moreover, there will be no recording and posting of live Instructor-Student classes.

   Re-Entry Protocol for Labs and Classrooms:

   To limit the spread of COVID-19 on campus, the University of Calgary has implemented safety measures to ensure the campus is a safe and welcoming space for students, faculty and staff. The most current safety information for campus can be found here.

   Course Site:

   D2L: STAT 205 L01-(Fall 2022)-Introduction to Statistical Inquiry

   Note: Students must use their U of C account for all course correspondence.

   Equity Diversity & Inclusion:

   The University of Calgary is committed to creating an equitable, diverse and inclusive campus, and condemns harm and discrimination of any form. We value all persons regardless of their race, gender, ethnicity, age, LGBTQIA2S+ identity and expression, disability, religion, spirituality, and socioeconomic status. The Faculty of Science strives to extend these values in every aspect of our courses, research, and teachings to better promote academic excellence and foster belonging for all.

2. **Requisites:**

   See section 3.5.C in the Faculty of Science section of the online Calendar.

   Prerequisite(s):
   Mathematics 30-1 or 30-2 or Mathematics 2 (offered by Continuing Education).

   Antirequisite(s):
   Credit for Statistics 205 and any one of Statistics 213, 217, or 327 will not be allowed. Students may not register in, or have credit for, Statistics 205 if they have previous credit for one of Statistics 321, Engineering 319 or Digital Engineering 319 or are concurrently enrolled in Statistics 321, Engineering 319 or Digital Engineering 319.

3. **Grading:**

The University policy on grading and related matters is described in F.1 and F.2 of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

Course Component	Weight	Due Date (duration for exams)	Modality for exams	Location for exams
In Class Top Hat (3% Bonus Mark)	0%	Ongoing		
Lab Quizzes (best 7 of 9)[1]	10%	Ongoing		
Assignments (10)[2]	10%	Ongoing		
Midterm Exam 1[3]	20%	Oct 17 2022 at 01:00 pm (50 Minutes)	in-person	In your weekly lab/tutorial section (T0#)
Midterm Exam 2[4]	20%	Nov 21 2022 at 12:00 am (50 Minutes)	in-person	In your weekly lab/tutorial section (T0#)
Registrar Scheduled Final Exam[5]	40%	Will be available when the final exam schedule is released by the Registrar	in person	Will be available when the final exam schedule is released by the Registrar

[1] A weekly lab quiz will be held in your registered Lab/Tutorial Section. Please refer to your T0# associated with Statistics 205 in your Student Centre. The best 7 of 9 lab quizzes will count towards the Lab Quiz evaluation of course learning component.

[2] Assignment Due dates can be found through the following link:

[3] You will be provided with a formulae relevant to the course material coverage of Midterm Exam 1. Any electronic device that is able to send or receive a wireless signal - meaning all smart phones, tablets, laptops, fitness trackers - are prohibited from the room of writing.

[4] You will be provided with a formulae relevant to the course material coverage of Midterm Exam 2. Any electronic device that is able to send or receive a wireless signal - meaning all smart phones, tablets, laptops, fitness trackers - are prohibited from the room of writing.

[5] As was the case with the midterm exams, you will be provided with a 8.5 by 11 (one-sided) page of course formulae. Any electronic device that is able to send or receive a wireless signal - meaning all smart phones, tablets, laptops, fitness trackers - are prohibited from the yet to be announced location of the Statistics 205 Final Exam.

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

The conversion between a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum % Required	95 %	90 %	85 %	80%	75%	70 %	65 %	60%	55%	55 %	45 %

This course will have a Registrar Scheduled Final exam that will be delivered in-person and on campus. The Final Examination Schedule will be published by the Registrar's Office approximately one month after the start of the term. The final exam for this course will be designed to be completed within 2 hours.

Weekly Lab Quiz Schedule

Weekly Lab Quiz	Date (in your T0# Section)
1	September 12
2	September 19
3	September 26
4	October 3
5	October 24
6	October 31
7	November 14
8	November 28
9	December 5

Assignment Schedule

Assignment	Due Date (Sunday Evenings, Except Ass. 10)

Assignment 1	September 18 @ 11:59pm
Assignment 2	September 25 @ 11:59pm
Assignment 3	October 2 @ 11:59pm
Assignment 4	October 16 @ 11:59pm
Assignment 5	October 23 @ 11:59pm
Assignment 6	October 30 @ 11:59pm
Assignment 7	November 6 @ 11:59pm
Assignment 8	November 20 @ 11:59pm
Assignment 9	November 29 @ 11:59pm
Assignment 10	December 7 @ 11:59pm

A final exam mark of at least 50% is required on the final exam in order to earn a minimum letter grade of C in the course. There are no exceptions.

The University of Calgary offers a flexible grade option, Credit Granted (CG) to support student's breadth of learning and student wellness. Faculty units may have additional requirements or restrictions for the use of the CG grade at the faculty, degree or program level. To see the full list of Faculty of Science courses where CG is not eligible, please visit the following website: https://science.ucalgary.ca/current-students/undergraduate/program-advising/flexible-grading-option-cg-grade

4. **Missed Components Of Term Work:**

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, one possible arrangement is that the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course. This option is at the discretion of the coordinator and may not be a viable option based on the design of this course.

5. **Scheduled Out-of-Class Activities:**

There are no scheduled out of class activities for this course.

6. **Course Materials:**

Required Textbook(s):

Gould, Ryan, Stallard, Boue, *Introductory Statisics: Exploring the World Through Data (e-text)*. Pearson.

Please refer to the e-text link.

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC ELearning online website.

7. **Examination Policy:**

You are not allowed any aids (notes, solutions in whole or in part to exercises and examples covered at any point in the course) nor electronic devices other than the desktop that you are to use to write your lab quizzes and midterm exams. The final exam in this course is on paper and is likely to be written in one of the gymnasiums.

You will be provided with a .pdf document of formulae for (i) your midterm exams and (ii) your final exam. You will be provided with a copy of the .pdf file at least one week prior to the evaluation.

You are allowed to have one browser window open for each of your lab quizzes, those being StatCrunch and WeBWorK, with only the StatCrunch browser for each of the midterm exams . Additional web-browsers are not permitted at anytime during the writing of these course components.

Please make yourself aware of the University of Calgary's definitions of Academic Misconduct at

https://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf

Students should also read the Calendar, Section G, on Examinations.

8. **Approved Mandatory And Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course.

9. **Writing Across The Curriculum Statement:**

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section E.2 of the University Calendar.

10. **Human Studies Statement:**

Students will not participate as subjects or researchers in human studies.

See also Section E.5 of the University Calendar.

11. **Reappraisal Of Grades:**

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See Section I.3 of the University Calendar.

   a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form t o the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections I.1 and I.2 of the University Calendar

   b. **Final Exam:** The student shall submit the request to Enrolment Services. See Section I.3 of the University Calendar.

12. **Other Important Information For Students:**

   a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).

   b. **SU Wellness Services:** For more information, see their website or call 403-210-9355.

   c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at 403-220-2208. The complete University of Calgary policy on sexual violence can be viewed here.

d. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional Code of Conduct and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:

> Student Handbook on Academic Integrity
> Student Academic Misconduct Policy and Procedure
> Faculty of Science Academic Misconduct Process
> Research Integrity Policy

Additional information is available on the Student Success Centre Academic Integrity page

e. **Academic Accommodation Policy:**

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf.

Students needing an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, by filling out the Request for Academic Accommodation Form and sending it to Mark Bauer by email bauerm@ucalgary.ca preferably 10 business days before the due date of an assessment or scheduled absence.

f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see Legal Services website.

g. **Student Union Information:** SU contact, Email SU Science Rep: sciencerep1@su.ucalgary.ca, Student Ombudsman

h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or non-academic misconduct, in addition to any other remedies available at law.

Course Outcomes:

- Define a random variable; conceptualize its sample space, and calculate the likelihood of various events that random variable(s) could produce.
- Identify a targeted population and its corresponding target parameter. Display how various sampling methods can target a population, with minimal bias.
- Describe and analyze a random variable's properties through a visual and numeric examination of its distribution shape, measure of centre, and measure of spread
- Comprehend and display the Central Limit Theorem and its implications on statistical inference via

confidence interval estimation and hypothesis testing. This is to include methodology for both qualitative and quantitative data types as well as for single and multiple population comparisons.

- Explain the correlation between bivariate data, again, for both qualitative and quantitative samples. Constructing the least-squares estimate when applicable.
- Demonstrate how to use critical thinking, formulae, and statistical software to provide solutions for both theoretical and practical applications of course material.

Electronically Approved - Sep 01 2022 15:17

Department Approval