



COURSE OUTLINE

1. **Course:** STAT 205, Introduction to Statistical Inquiry - Winter 2024

Lecture 01 : MWF 11:00 - 11:50 in ICT 102

Instructor	Email	Phone	Office	Hours
Dr. Sang Kang	sangjin.kang@ucalgary.ca	403 210-8697	MS 364/VIA ZOOM	TBA

Lecture 02 : MWF 11:00 - 11:50 in ICT 102

Instructor	Email	Phone	Office	Hours
Dr. Sang Kang	sangjin.kang@ucalgary.ca	403 210-8697	MS 364/VIA ZOOM	TBA

Lecture 03 : MWF 13:00 - 13:50 in SB 103

Instructor	Email	Phone	Office	Hours
Dr. Sang Kang	sangjin.kang@ucalgary.ca	403 210-8697	MS 364/VIA ZOOM	TBA

Lecture 04 : MWF 11:00 - 11:50 - Online

Instructor	Email	Phone	Office	Hours
	TBA	TBA	TBA	TBA

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:

- In-person class is for students in LEC 01, 02, and 03.
- In-person lectures are held on Monday, Wednesday, and Friday.
 - LEC 01 and 02: 11:00 am~11:50 am
 - LEC 03: 1 pm~1:50 pm
- Students are free to join either in the classroom or in Zoom.
- The recording through Zoom is at work simultaneously.
- TopHat participation is for enhancing the problem-solving skills. For every week, the TopHat questions are assigned asynchronously. For the review of last week material, one or two questions are assigned for the live assessment on Monday lecture.
- Lab session is used for Statcrunch practice instructed by the assigned TA and taking 5 lab quizzes and two mid-term exams.

Online Delivery Details:

This course is being offered online in real-time via scheduled meeting times, you are required to be online at the same time.

To help ensure Zoom sessions are private, do not share the Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor's permission.

This course has a registrar scheduled, asynchronous final exam. The writing time is 1.5 hours + 50% buffer time, but the exam can be written any time in a 24-hour window.

- Students in LEC 04 can join the live lecture held on Monday, Wednesday, and Friday at 11:00 am~11:50 am in Zoom.
- The recording through Zoom is at work simultaneously.
- TopHat participation is for enhancing the problem-solving skills. For every week, the TopHat questions are assigned asynchronously. For the review of last week material, one or two questions are assigned for the live assessment on Monday lecture.
- Lab session is used for Statcrunch demonstration videos provided by the instructor and taking 5 lab quizzes and two mid-term exams.

Course Site:

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, 30-2, 212 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
Assignments (5 best out of 6) ¹	7.5%	Ongoing		
Lab quizzes ²	17.5%	Ongoing		
Flexible grading ³	9%	Ongoing		
TopHat participation ⁴	3%	Ongoing		
Mid-term exam 1 ⁵	16.5%	Feb 12 2024 at 12:00 pm (45 Minutes)	in-person	Assigned computer lab
Mid-term exam 2 ⁶	16.5%	Mar 18 2024 at 12:00 pm (45 Minutes)	in-person	Assigned computer lab
Registrar Scheduled Final Exam ⁷	30%	Will be available when the final exam schedule is released by the Registrar	online	Will be available when the final exam schedule is released by the Registrar

¹ Assignments are done through Pearson MyStatLab. Tentative due date: Jan 21, Feb 4, Feb 25, Mar 10, Mar 24, and Apr 9

² Quiz dates: Jan 22, Feb 5, Feb 26, Mar 11, Mar 25 The quiz will be held during the assigned lab session for each student. And each quiz will be administered through WebWork. During the first 20 minutes, students may have the opportunity for the self-exercise on StatCrunch environment. Then students will write 20-minute quiz. Students who are in LEC 01, 02, and 03 should take the quiz during the assigned computer lab. Students who are in LEC 04 should take the quiz through the online.

³ Out of three term exams (2 mid-term exams and one final exam), 6% is assigned for the highest-scoring term exam with the proportion of the actual grade. And 3% is assigned for the second highest-scoring term exam with the proportion of the actual grade.

⁴ Weekly asynchronous series of questions are assigned through TopHat application and are due by 11:59 pm on every Sunday. Also one or two lively TopHat assessment questions as the review of the last week material will be given during Monday class.

⁵ Combination of multiple choice & written answer. Students can use StatCrunch (an online statistical software by Pearson) during the time of taking the exam. The mid-term exam 1 will be held during the assigned lab session for each student. Students who are in LEC 01, 02, and 03 should take the paper-based exam at the assigned computer lab. The marking of the exam will be administered through the Gradescope. Students who are in LEC 04 should take the exam through the Gradescope.

⁶ Combination of multiple choice & written answer. Students can use StatCrunch (an online statistical software by Pearson) during the time of taking the exam. The mid-term exam 2 will be held during the assigned lab session for each student. Students who are in LEC 01, 02, and 03 should take the paper-based exam at the assigned computer lab. The marking of the exam will be administered through the Gradescope. Students who are in LEC 04 should take the exam through the Gradescope.

⁷ Administered through Gradescope. Students can use StatCrunch (an online statistical software by Pearson) during the time of taking the 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%	54.99 %	45 %

This course will have a Registrar Scheduled Final exam that will be delivered on-line. [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 1.5 hours.

Per section [G.5](#) of the online Academic Calendar, timed final exams administered using an on-line platform, such as D2L, will be available on the platform. Due to the scheduling of the final exams, the additional time will be added to **the end** of the registrar scheduled **synchronous** exam to support students. This way, your exam schedule accurately reflects the **start time** of the exam for any **synchronous** exams. E.g. If a **synchronous** exam is designed for 2 hours and the final exam is scheduled from 9-11am in your student centre, the additional time will be added to the **end** time of the **synchronous** exam. This means that if the exam has a 1 hour buffer time, a synchronous exam would start at 9 am and finish at 12pm.

- the latest you should start an asynchronous exam would be 8 am in order to be able to submit the exam at 11am and have the full 3 hours.

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.

(Exception: If students fail to submit at least 3 assignments and fail to take lab quiz at least 3 times, even if they obtain the mark of at least 50% in the final exam, the minimum grade of C- is not guaranteed.)

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:**

In the event that a student legitimately fails to submit any online or in-person assessment on time (e.g. due to illness, domestic affliction, 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, or possible exemption and reweighing of components. Absences not reported within 48 hours will not be accommodated. Students may be asked to provide supporting documentation ([Section M.1](#)) for an excused absence, See [FAQ](#).

If an excused absence is approved, options for how the missed assessment is dealt with is at the discretion of the coordinator or course instructor. Some options such as an exemption and pro-rating among the components of the course 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):

Introductory Statistics: Exploring the World through Data, *Gould, Ryan, Stallard, Boue*: Pearson.

Please refer to the following website for the e-book:

<https://www.pearson.com/en-ca/subject-catalog/p/introductory-statistics-exploring-the-world-through-data-canadian-edition/P200000002618>

The following website is to access StatCrunch:

<https://www.statcrunch.com/>

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:

Non-programable calculator is permitted.

In addition, students can make use of StatCrunch during the time of writing the exam.

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.

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](#) to 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. **Student Ombuds Office:** A safe place for all students of the University of Calgary to discuss student related issues, interpersonal conflict, academic and non-academic concerns, and many other problems.

e. **Student Union Information:** [SU contact](#), Email your SU Science Reps: science1@su.ucalgary.ca, science2@su.ucalgary.ca, science3@su.ucalgary.ca.

f. 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 Jerrod Smith by email jerrod.smith@ucalgary.ca preferably 10 business days before the due date of an assessment or scheduled absence.

- g. **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](#)

- h. **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.
- i. **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.
- j. **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.

Course Outcomes:

- o Define a random variable; conceptualize its sample space, and calculate the likelihood of various events that random variable(s) could produce.
- o Identify a targeted population and its corresponding target parameter. Display how various sampling methods can target a population, with minimal bias.
- o 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
- o 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.
- o Explain the correlation between bivariate data, again, for both qualitative and quantitative samples. Constructing the least-squares estimate when applicable.
- o Demonstrate how to use critical thinking, formulae, and statistical software to provide solutions for both theoretical and practical applications of course material.

Electronically Approved - Jan 02 2024 13:27

Department Approval

Electronically Approved - Jan 03 2024 09:36

Associate Dean's Approval