



**COURSE OUTLINE**

1. **Course:** STAT 213, Introduction to Statistics I - Fall 2018

Lecture 01: MWF 09:00 - 09:50 in ST 140

Instructor	Email	Phone	Office	Hours
Scott Robison	Sarobiso@UCalgary.ca	403 220-7346	MS 590	Mondays and Wednesdays 11am-1pm, Office hours are not held during reading week nor on holidays.

Lecture 02: MWF 08:00 - 08:50 in ST 143

Instructor	Email	Phone	Office	Hours
Thuntida Ngamkham	thuntida.ngamkham@ucalgary.ca	403 220-6305	MS 550	Tuesday/Thursday 15:30-16:30

Lecture 03: TR 09:30 - 10:45 in ST 148

Instructor	Email	Phone	Office	Hours
Claudia Mahler	claudia.mahler@ucalgary.ca	403 220-3936	MS 564	Wednesdays 16:00 - 17:00, Thursdays 8:30 - 9:15

Lecture 04: TR 12:30 - 13:45 in ICT 102

Instructor	Email	Phone	Office	Hours
Claudia Mahler	claudia.mahler@ucalgary.ca	403 220-3936	MS 564	Wednesdays 16:00 - 17:00, Thursdays 8:30 - 9:15

Lecture 05: MWF 14:00 - 14:50 in EDC 179

Instructor	Email	Phone	Office	Hours
Kris Vasudevan	TBA	TBA	TBA	TBA

**Coordinator(s)**

Name	Email	Phone	Office	Hours
Scott Robison	Sarobiso@UCalgary.ca	403 220-7346	MS 590	Mondays and Wednesdays 11am-1pm, Office hours are not held during reading week nor on holidays.

**Course Site:**

D2L: STAT 213 L01-(Fall 2018)-Introduction to Statistics I

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

2. **Requisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

**Prerequisite(s):**

Mathematics 30-1 or Mathematics II (offered by Continuing Education).

**Antirequisite(s):**

Credit for Statistics 213 and any one of Statistics 205, Statistics 327, Political Science 399, Psychology 300, 301, 312, or Sociology 311 will not be allowed. Not available to students who have previous credit for one of Statistics 321 or Engineering 319 or are concurrently enrolled in Statistics 321 or 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:

Component(s)	Weighting %	Date
Assignments (8)	15%	Assignment 1: Sep. 30
		Assignment 2: Oct. 7
		Assignment 3: Oct. 21
		Assignment 4: Oct. 28
		Assignment 5: Nov. 11
		Assignment 6: Nov. 25
		Assignment 7: Dec. 2
		Assignment 8: Dec. 9
Lab Quizzes (best 8 of 10)	10%	written weekly during regular scheduled lab time
Midterms (2)	35% (17.5% each)	written during regular scheduled lab time
		Midterm 1: week of Oct. 15-19
		Midterm 2: week of Nov. 5 - 9
Final Examination	45%	to be scheduled by the Registrar

Note: there is a 5% bonus opportunity, since the weightings add to 105%

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
<b>Minimum % Required</b>	95 %	90 %	85 %	80%	75%	70 %	65 %	60%	55%	54.99 %	50 %

This course has a registrar scheduled final exam.

#### Supplemental Information or Grade Limiting Statement(s):

- In the unlikely event that a student has not been able to write the midterm (because of an appropriate [see deferred final exam reasons <https://www.ucalgary.ca/registrar/exams/deferred-exams>] excused absence), the instructor may grant an alternative time to write the exam prior (not after) the scheduled time.
- If at most one midterm is written, the student will have to have a pre-final grade of at least 50% in order to be permitted to write the final exam.
- Students who have not obtained an excused absence for a midterm will receive 0% on the missed midterm.
- If no midterms are written, regardless of the reason, the student will not be permitted to write the final exam.
- A passing mark on the final exam, at least 50%, is required to earn a minimum grade of C-.
- If a student possesses accessibility accommodations, and wishes to use them, they must set an appointment with the Student Accessibility Centre to write the assessment the same day as scheduled otherwise. They must also inform the instructor at least one week in advance to adjust settings etc.

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

The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize themselves with these regulations. See also [Section E.3](#) of the University Calendar.

Supporting documentation as outlined in [Section N.1](#) of the University Calendar will be required for any missed components.

Regardless of the reason for missing lab quizzes, 8 out of 10 will be counted. Providing a physician's note for missing a lab quiz will not exempt a lab score.

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

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

## 6. **Course Materials:**

Required Textbook(s):

James McClave & Terry Sincich, *Statistics with Custom Chapter MyStatLab & Minitab RVP*: Pearson.

Course Notes may be downloaded from D2L course web page.

Note: course notes will only be available for download for 14 days after they are discussed in class.

## 7. **Examination Policy:**

Non-programmable/non-graphing calculators and Minitab are allowed in your quizzes and your midterm exams. Formula sheets are not permitted on your quizzes but will be provided for midterm exams and final exam.

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 **15 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 immediately submit the Reappraisal of Graded Term work form to the department in which the course is offered. The department will arrange for a re-assessment of the work if, and only if, the student has sufficient academic grounds. 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.

### **In-term Grade Appeal Process**

If you would like to have a midterm re-graded you will have to submit the original copy of the assignment to be re-graded along with a document explaining what questions are affected and the reason for the re-grade. If this is not done or the reason given is not appropriate no re-grade will be given. The exam will not be discussed prior to the re-grade and the re-grade will not take place in the presence of the student.

In the event your re-assessment is accepted there is no timetable for its completion, other than the end of term. You may want to make a copy of your assessment before handing the original in as you may not be given it back.

**Note: the grade could go remain unchanged, increase, or decrease.**

## 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 Center:** The Students Union Wellness Centre provides health and wellness support for students including information and counselling on physical health, mental health and nutrition. For more information, see [www.ucalgary.ca/wellnesscentre](http://www.ucalgary.ca/wellnesscentre) or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The University of Calgary is committed to fostering a safe, productive learning environment. The Sexual Violence Policy (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>) is a fundamental element in creating and sustaining a safer campus environment for all community members. We understand that sexual violence can undermine students' academic success and we encourage students who have experienced some form of sexual misconduct to talk to someone about their experience, so they can get the support they need. 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](mailto:svsa@ucalgary.ca)) or phone at [403-220-2208](tel:403-220-2208).
- d. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. **These are only examples.**
- e. **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- f. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at [procedure-for-accommodations-for-students-with-disabilities.pdf](#).
- Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head of the Department of Mathematics & Statistics, Jim Stallard by email [jbstall@ucalgary.ca](mailto:jbstall@ucalgary.ca) or phone 403-220-3953. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See [Section E.4](#) of the University Calendar.
- g. **Safewalk:** Campus Security will escort individuals day or night (See the [Campus Safewalk](#) website). Call [403-220-5333](tel:403-220-5333) for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- h. **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.
- i. **Student Union Information:** [VP Academic](#), Phone: [403-220-3911](tel:403-220-3911) Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca). SU Faculty Rep., Phone: [403-220-3913](tel:403-220-3913) Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca). Student Ombudsman, Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca).
- j. **Internet and Electronic Device Information:** Unless instructed otherwise, cell phones should be turned off during class. All communication with other individuals via laptop, tablet, smart phone or other device is prohibited during class unless specifically permitted by the instructor. Students that violate this policy may be asked to leave the classroom. Repeated violations may result in a charge of misconduct.

k. **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.

Department Approval:

Electronically Approved

Date: 2018-10-10 12:44

## Course Outcomes

- Identify the population of interest, or the target population. Differentiate between the population and the sample; differentiate between a parameter and a statistic.
- Make the distinction between a quantitative and qualitative variable. Explain the three different properties of any population variable: the distribution shape, the center of the distribution, and the spread of the distribution. Construct various graphical techniques to make conclusions of the shape of the underlying distribution, the different measures of center and dispersion. Compare the concepts of percentiles and quartiles, and what they mean with regards to the population of interest.
- Compute the probabilities of simple and compound events. Give examples of the concepts of mutually exclusive events, independent events, and conditional events. Illustrate how an event can be transformed into a real number through the use of random variables; show that a random variable has a distribution, with a measure of center and a measure of dispersion.
- Compute the expected value, the variance and the standard deviation of a generic discrete and continuous random variable. Compute the expected total and its standard deviation of a linear function of certain random variables.
- Illustrate that certain random events can be described by probability models. Differentiate between the probability models (the Binomial, Poisson, Uniform/Exponential, Hypergeometric and Normal distributions) and apply each to find probabilities. Find a percentile under the Normal distribution. A knowledge of each distribution -shape, measure of center, and measure of dispersion -is also expected.
- Describe the Central Limit and apply to both the sample mean and sample proportion to determine how likely they are to fall within a given range of values
- Take a bivariate data set and (i) determine the strength of a linear relationship between the two variables of interest based on a scatter plot and the correlation coefficient, (ii) build a simple linear regression line and interpret the meaning of the slope and intercept parameter estimates, (iii) outline and check assumptions behind the simple linear model, and (iv) find the coefficient of determination and explain its meaning.
- Construct and interpret the confidence interval for a population mean and a population proportion. Confidence interval estimation of the population mean will emphasize the use of the Student's T -distribution.
- Compute the required sample size for a given confidence level and tolerable amount of sampling error when the statistical investigation involves estimation of either a population mean or a population proportion.
- Execute statistical hypothesis testing for a population mean and a population proportion. This includes (i) set up the statistical null and alternative hypotheses (ii) identify the appropriate version of the test statistic and compute the value of this test statistic, (iii) state the rejection region, calculate the P -value, (iv) tell whether the data supports the null hypothesis or not, and (v) interpret the meaning of the P -value in the context of the data. That is, describe the event that the P -value finds the probability of