UNIVERSITY OF CALGARY
FACULTY OF SCIENCE

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

COURSE OUTLINE

1. **Course:** STAT 327, Statistics for the Physical and Environmental Sciences - Winter 2021

   Lecture 01: MWF 15:00 - 15:50 - Online

Instructor	Email	Phone	Office	Hours
Dr. Thuntida Ngamkham	thuntida.ngamkham@ucalgary.ca	TBA	VIA ZOOM	STAT213:Tue/Thu 11:00 am -12:00pm, STAT327:Tue/Wed 3:00pm-4:00pm

   Online Delivery Details:

   This course does not follow a scheduled meeting pattern.

   The core content of this course will be delivered **via pre-recorded video lectures**. Each week, students are expected to watch the videos during their own time. Although, students are not required to be online simultaneously (synchronously), it will be required that students view/complete all scheduled course contents posted in the course calendar.

   Note: Any material that is posted of the D2L website is under copyright protection, students are not permitted to redistribute any of the material they find there to anyone not in this semester's class.

   Course Site:

   D2L: STAT 327 L01-(Winter 2021)-Statistics for the Physical and Environmental Sciences

   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):
   3 units from Mathematics 249, 265 or 275.

   Antirequisite(s):
   Credit for Statistics 327 and any one of Statistics 205, 213 or 217 will not be allowed.

   Note(s):
   a. Statistics 327 is 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(4)	40%	Assignment 1: January 31, by 11:59 pm Assignment 2: February 28, by 11:59 pm Assignment 3: March 21, by 11:59 pm Assignment 4: April 11, by 11:59 pm
Group Project (1)	20%	Project Check Point 1: February 12, by 11:59 pm Project Check Point 2: April 9, by 11:59 pm Project Report: April 15, by 11:59 pm
Term Tests (3)	30%	Test 1: February 10, by 11:59 pm Test 2: March 17, by 11:59 pm Test 3: April 14, by 11:59 pm
Lab Exercises (best 6 out of 8 will count)	10%	Written weekly via WebWork
Flex	5%	2/3 of the 5% from the best of the 3 Term tests 1/3 of the 5% from the second best Term test

*Lab exercises will be available via WebWork the whole week. Please check the course calendar for more details.

**Term tests are set up as a paper-based exam. Students complete the exam within 48 hours and submit a .pdf version to Gradescope for grading.

***If these dates cannot work for a student, please contact thuntida.ngamkham@ucalgary.ca to arrange an alternate time to write the exam. Valid reasons will be accommodated.

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%	50 %	45 %

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, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

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

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

6. **Course Materials:**

   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:**

   No aids are allowed on tests or examinations.

   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 www.ucalgary.ca/wellnesscentre 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 at (https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf)

    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
Research Integrity Policy

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

e. **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, Mark Bauer by email bauerm@ucalgary.ca or phone 403-220-4189. 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.

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:** VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: ombuds@ucalgary.ca.

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:

- explain data collection procedures, use descriptive statistics to summarize data, and construct and interpret graphical representations of data.
- describe basic probability rules and probability models, define random variables in probability models, and calculate mean, variance, standard deviation, covariance, and correlation.
- define and contrast several discrete and continuous distributions, such as Bernoulli, binomial, Poisson, uniform, exponential, normal, t, and chi-squared distributions.
- define study population, population parameters, random samples, statistics, sampling distributions, and identify them in simple real world problems
- construct and contrast basic statistical hypothesis testing methods, such as z tests and t tests for population mean, population proportion, and population difference.
- calculate and interpret level of significance, critical value, p-value, decision rules, type I error, type II error, power, and confidence intervals.
- apply and interpret ANOVA models and linear regression models in simple real world problems.
- construct some nonparametric tests, such as Mann-Whitney test.
- use a standard statistical software, such as R or Minitab, to implement the statistical methods in this course.

Electronically Approved - Dec 19 2020 13:38

Department Approval

Electronically Approved - Jan 04 2021 12:20

Associate Dean's Approval