1. **Course:** SCIE 301, Research Design and Statistical Analysis - Winter 2022

   Lecture 01: TR 11:00 - 12:15 in AD 142

   **Instructor**  
   Dr. Hua Shen  
   **Email**  
   hua.shen@ucalgary.ca  
   **Phone**  
   403 220-6309  
   **Office**  
   MS 526  
   **Hours**  
   3:30PM-4:30PM on Tuesday and 11AM-12PM on Wednesday

To account for any necessary transition to remote learning in the winter 2022 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:**

This course is being offered in-person in real time at the scheduled times, you are required to attend in-person at the same time.

To ensure privacy, please do not share any course materials with others, or on any social media platforms. The course materials including lecture notes, tutorial worksheets, assignments, exams, question banks and their answers are only intended for students registered in the course. They must not be shared, distributed or published without the instructor’s permission.

Lectures - All lectures will be in-person and synchronous. Students are expected to participate regularly. The lectures will not be recorded and posted for subsequent viewing.

Tutorials - All tutorial sessions will be in-person and synchronous. Students are expected to attend regularly to interact with the teaching assistants to learn. No recorded tutorials will be available.

Midterms - Both midterms will be completed synchronously in-person in class. The writing time for each exam is 75 minutes.

Final Exam - This course has a registrar scheduled, synchronous in-person final exam. The writing time is 2 hours.

**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: SCIE 301 L01-(Winter 2022)-Research Design and Statistical Analysis

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

Note: Students must use their U of C email account for all course correspondence and clearly state the course number in the email titles. To ensure privacy, emails from other sources will not be replied.

All course information and updates will be posted regularly on course website. You are responsible for checking the information and updates in a timely manner.

Students are encouraged to use the discussion forums in D2L for technical and scientific questions related to the course. All communications (including non-technical or personal inquiries) with instructor or teaching assistants are welcome, however, they may be shared with the class after the detailed personal information is hidden should they represent questions of interests to others. The instructor and teaching assistant will attempt to reply to student emails within three full business days whenever possible, however, certain inquiries may require additional time.
**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.

3. **Prerequisite(s):**

   24 units (4.0 full-course equivalents) and admission to the Natural Sciences Program.

4. **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:

<table>
<thead>
<tr>
<th>Course Component</th>
<th>Weight</th>
<th>Due Date (duration for exams)</th>
<th>Modality for exams</th>
<th>Location for exams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 4[1]</td>
<td>10%</td>
<td>Ongoing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignment 3[2]</td>
<td>10%</td>
<td>Ongoing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignment 1</td>
<td>10%</td>
<td>Feb 03 2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midterm 1[3]</td>
<td>15%</td>
<td>Feb 17 2022 at 11:00 am (60 Minutes)</td>
<td>online</td>
<td>In class</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>10%</td>
<td>Mar 03 2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midterm 2</td>
<td>15%</td>
<td>Mar 17 2022 at 11:00 am (75 Minutes)</td>
<td>in-person</td>
<td>In Class</td>
</tr>
<tr>
<td>Registrar Scheduled Final Exam</td>
<td>30%</td>
<td>Will be available when the final exam schedule is released by the Registrar</td>
<td>in person</td>
<td>Will be available when the final exam schedule is released by the Registrar</td>
</tr>
</tbody>
</table>

[1] group project, TBD
[2] group reading, TBD
[3] This timed, synchronous assessment will be available on D2L at on February 17 at 11:00AM. The assessment is designed to take you 60 of writing time with 30 minutes of buffer time. It must be completed and submitted by 12:30PM on February 17.

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.

<table>
<thead>
<tr>
<th>A+</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D+</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>95 %</td>
<td>90 %</td>
<td>85 %</td>
<td>80 %</td>
<td>76 %</td>
<td>72 %</td>
<td>68 %</td>
<td>64 %</td>
<td>60 %</td>
<td>55 %</td>
<td>50 %</td>
</tr>
</tbody>
</table>

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.

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](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.

Assignments – Because of the frequency of tests and assignments in this course, late assignments create a big problem for the prompt return of graded work and distribution of answer sheets. Therefore, late assignments will be penalized heavily (50% per day including weekends and holidays or prorated accordingly) to prompt timely submissions. Assignments are deemed late if they are submitted after 11:59PM on the day they are due.

Midterms - Students cannot make up for missed midterms, but the weight can be carried forward to the final exam given legit reasons.

All assigned work should be completed when due. Due dates for all assigned work will be indicated clearly on the handout and/or course website. Arrangements for late submission must be made with the instructor, BEFORE the assigned work is due. Any student who fails to complete the work for legitimate reasons (e.g., illness, religious conviction, technical issues) must discuss with the instructor BEFORE classes end.

5. Scheduled Out-of-Class Activities:

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

6. Course Materials:

The recommended textbooks are


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/legal-services/sites/default/files/teams/1/Policies-Sexual-
and-Gender-Based-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:**

   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-

   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 Dr. Edwin Cey by email
ntscedirector@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:** [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:**

- Identify an area of research, formulate the scientific research questions and design appropriate and feasible research procedures for investigation
- Compare and contrast different research methods and sampling techniques, select the optimal approach for specific research question and provide power calculation to decide the sample size
- Select methods of measurement based on the sources and guide data collection and organization to accurately address the research question
- Develop skills using the statistical software R to manage, prepare and summarize the data using descriptive statistics and graphs
- Construct hypotheses based on the research questions, test them using statistical inferences and software given the samples, draw valid conclusions and interpret the results
- Publicize research procedures and findings in reports, presentations, posters or papers to support programs to decision makers and other clients
- Understand and critically evaluate your own findings and other scientific papers by the commonly used research designs and statistical techniques in natural sciences

Electronically Approved - Jan 18 2022 20:39

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**Department Approval**

Electronically Approved - Jan 18 2022 23:37

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**Associate Dean's Approval**