



COURSE OUTLINE		
TERM: Fall 2024	COURSE NO: SCI 400	
INSTRUCTOR:	COURSE TITLE: Research Project	
OFFICE: LOCAL: E-MAIL: @capilanou.ca	SECTION NO(S):	CREDITS: 3.0
OFFICE HOURS:		
COURSE WEBSITE:		

Capilano University acknowledges with respect the Lil'wat7úl (Lil'wat), x^wməθk^wəyəm (Musqueam), shíshálh (Sechelt), Skwxwú7mesh (Squamish), and Səlílwətaʔ/Selilwitulh (Tseil-Waututh) people on whose territories our campuses are located.

COURSE FORMAT

Six lab hours per week for a 15-week semester, which includes two weeks for final exams.

COURSE PREREQUISITES

12 credits of 300-level or higher coursework in designated Science courses from the Faculty of Arts and Sciences, including STAT 310 (C-) and one of BIOL 300 (C-), BIOL 408 (C-), CHEM 311 (C-), CHEM 404 (C-), PHYS 310 (C-), COMP 320 (C-) or COMP 330 (C-)

CALENDAR DESCRIPTION

Students will complete a scientific research project relevant to their chosen concentration. Seminar meetings throughout the term address each stage of the research process and will involve faculty-led discussions, student presentations and opportunities for students to receive peer feedback and guidance from faculty advisors.

COURSE NOTE

SCI 400 is an approved Science and Technology course for Cap Core requirements.

SCI 400 is an approved Experiential course for Cap Core requirements.

SCI 400 is an approved Science course.

SCI 400 is an approved Laboratory Science course.

SCI 400 is an approved Quantitative/Analytical course for baccalaureate degrees.

REQUIRED TEXTS AND/OR RESOURCES

Textbook: Valiela, I. (2019). *Doing Science: Design, Analysis, and Communication of Scientific Research*. (2nd ed.) New York NY: Oxford University Press.

COURSE STUDENT LEARNING OUTCOMES

On successful completion of this course, students will be able to do the following:

- Collaborate with instructors and peers, demonstrating effective communication, self-motivation, leadership, and problem-solving skills to navigate the challenges that arise in the research process.
- Demonstrate responsible research conduct reflecting an understanding of the ethical issues associated with scientific research.
- Apply scientific reasoning and the scientific method to conduct a research project which includes formulation of a research question, articulation of a testable hypothesis, identification and utilization of appropriate methodologies, analysis of data, and synthesis of logical conclusions.
- Demonstrate giving and receiving constructive peer feedback for each stage of a research project.

Students who complete this Science and Technology course will be able to do the following:

- Apply numerical and computational strategies to solve problems.
- Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information).
- Demonstrate how a problem, concept, or process can be modelled numerically, graphically, or algorithmically.
- Explain how scientific inquiry is based on investigation of evidence and evolves based on new findings.
- Participate in scientific inquiry and communicate the elements of the process, including making careful and systematic observations, developing and testing a hypothesis, analyzing evidence, and interpreting results.

Students who complete this Experiential course will be able to do the following:

- Critically reflect on their progress and development in the context of the course and assess the utility of the acquired knowledge, skills, and values in the learner's personal, academic, or professional trajectory.
- Apply the skills and knowledge of a given discipline or professional context, including working collaboratively in both leadership and team roles.

COURSE CONTENT

Weekly seminars will address the following topics.

Weeks	Topics	Chapter
1	Introduction	1
2-3	Research Question Development & Literature Review	2
4-5	Study Design & Ethics Review	4
6	Data Collection, "Troubleshooting", & Refining Methods	

Weeks	Topics	Chapter
7-8	Data Analysis	3
9-10	Presenting Results	8 - 10
11-12	Drawing Conclusions, Reflection & Synthesis	11-12
13	Communicating Science	5-7
14-15	Final Exam Period	

EVALUATION PROFILE

Final grades for the course will be computed based on the following schedule:

Literature Review & Research Proposal*	40%
Presentations & Assignments*	40%
Participation & Professionalism	20%
TOTAL	100%

*No single assignment will be worth more than 35% of the final grade.

A graded assessment will be returned to students prior to the withdrawal date.

Participation and professionalism will be graded based on faculty, peer and self-assessment. The grade for this component will reflect each student's attendance and contributions to weekly seminars and their contributions and performance as a research team member.

GRADING PROFILE

A+ = 90-100	B+ = 77-79	C+ = 67-69	D = 50-59
A = 85-89	B = 73-76	C = 63-66	F = 0-49
A- = 80-84	B- = 70-72	C- = 60-62	

Incomplete Grades

Grades of Incomplete "I" are assigned only in exceptional circumstances when a student requests extra time to complete their coursework. Such agreements are made only at the request of the student, who is responsible to determine from the instructor the outstanding requirements of the course.

Late Assignments

Assignments are due at the beginning of the class on the due date listed. If you anticipate handing in an assignment late, please consult with your instructor beforehand.

Missed Exams/Quizzes/Labs etc.

Make-up opportunities for missed seminars and presentations are given at the discretion of the instructor. They are generally given only in medical emergencies or severe personal crises. Make-up opportunities for missed activities may not be possible. Please consult with your instructor.

*** Accommodations can be made to honour community needs and traditional practices.

Attendance

Students are expected to attend all weekly seminars and scheduled group meetings.

English Usage

Students are expected to proofread all written work for any grammatical, spelling and stylistic errors. Instructors may deduct marks for incorrect grammar and spelling in written assignments.

Electronic Devices

Students may use electronic devices during class for note-taking and project work only.

On-line Communication

Outside of the classroom, instructors will (if necessary) communicate with students using either their official Capilano University email or eLearn; please check both regularly. Official communication between Capilano University and students is delivered to students' Capilano University email addresses only.

UNIVERSITY OPERATIONAL DETAILS**Tools for Success**

Many services are available to support student success for Capilano University students. A central navigation point for all services can be found at: <https://www.capilanou.ca/student-services/>

Capilano University Security: download the [CapU Mobile Safety App](#)

Policy Statement (S2009-06)

Capilano University has policies on Academic Appeals (including appeal of final grade), Student Conduct, Academic Integrity, Academic Probation and other educational issues. These and other policies are available on the University website.

Academic Integrity (S2017-05)

Any instance of academic dishonesty or breach of the standards of academic integrity is serious and students will be held accountable for their actions, whether acting alone or in a group. See policy and procedures S2017-05 Academic Integrity for more information:

<https://www.capilanou.ca/about-capu/governance/policies/>

Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances, are prohibited and will be handled in accordance with the Student Academic Integrity Procedures.

Academic dishonesty is any act that breaches one or more of the principles of academic integrity. Acts of academic dishonesty may include but are not limited to the following types:

Cheating: Using or providing unauthorized aids, assistance or materials while preparing or completing assessments, or when completing practical work (in clinical, practicum, or lab settings), including but not limited to the following:

- Copying or attempting to copy the work of another during an assessment;
- Communicating work to another student during an examination;
- Using unauthorized aids, notes, or electronic devices or means during an examination;
- Unauthorized possession of an assessment or answer key; and/or,
- Submitting of a substantially similar assessment by two or more students, except in the case where such submission is specifically authorized by the instructor.

Fraud: Creation or use of falsified documents.

Misuse or misrepresentation of sources: Presenting source material in such a way as to distort its original purpose or implication(s); misattributing words, ideas, etc. to someone other than the original source; misrepresenting or manipulating research findings or data; and/or suppressing aspects of findings or data in order to present conclusions in a light other than the research, taken as a whole, would support.

Plagiarism: Presenting or submitting, as one's own work, the research, words, ideas, artistic imagery, arguments, calculations, illustrations, or diagrams of another person or persons without explicit or accurate citation or credit.

Self-Plagiarism: Submitting one's own work for credit in more than one course without the permission of the instructors, or re-submitting work, in whole or in part, for which credit has already been granted without permission of the instructors.

Prohibited Conduct: The following are examples of other conduct specifically prohibited:

- Taking unauthorized possession of the work of another student (for example, intercepting and removing such work from a photocopier or printer, or collecting the graded work of another student from a stack of papers);
- Falsifying one's own and/or other students' attendance in a course;
- Impersonating or allowing the impersonation of an individual;
- Modifying a graded assessment then submitting it for re-grading; or,
- Assisting or attempting to assist another person to commit any breach of academic integrity.

Sexual Violence and Misconduct

All Members of the University Community have the right to work, teach and study in an environment that is free from all forms of sexual violence and misconduct. Policy B401 defines sexual assault as follows:

Sexual assault is any form of sexual contact that occurs without ongoing and freely given consent, including the threat of sexual contact without consent. Sexual assault can be committed by a stranger, someone known to the survivor or an intimate partner.

Safety and security at the University are a priority and any form of sexual violence and misconduct will not be tolerated or condoned. The University expects all Students and Members of the University Community to abide by all laws and University policies, including B.401 Sexual Violence and Misconduct Policy and B.401.1 Sexual Violence and Misconduct Procedure (found on Policy page <https://www.capilanou.ca/about-capu/governance/policies/>)

Emergencies: Students are expected to familiarise themselves with the emergency policies where appropriate and the emergency procedures posted on the wall of the classroom.