

COURSE OUTLINE		
TERM: Fall 2022	COURSE NO: BIOL 409	
INSTRUCTOR:	COURSE TITLE: Global Change Biology	
OFFICE: LOCAL: E-MAIL: @capilanou.ca	SECTION NO(S):	CREDITS: 3.0
OFFICE HOURS:		
COURSE WEBSITE:		

Capilano University acknowledges with respect the Lilwat7úl (Lil'wat), xʷmə ꞵ 0kʷəyəm (Musqueam), shíshálh (Sechelt), Sḵwxwú7mesh (Squamish), and Səlílwətaʔ/Selilwitulh (Tsleil-Waututh) people on whose territories our campuses are located.

COURSE FORMAT

Each week there are 3 hours of class time plus an additional 1 hour of supplemental activity delivered through on-line or other activities for a 15-week semester, which includes two weeks for final exams.

COURSE PREREQUISITES

BIOL 208 (C-) or GEOG 222 (C-)

CALENDAR DESCRIPTION

Global Change Biology considers interactions between humans and living systems, and the consequences for environmental change, past, present, and future. Major issues are addressed including habitat loss, globalization of biodiversity, ecosystem collapse, agricultural degradation of soil and water, marine resource depletion and climate change. Students practice environmental monitoring skills, consider case studies on global change manifest at the local level and develop strategies for adaptation and mitigation to address future global conditions. Traditional ecological knowledge systems will be introduced in context to their enhancement of western conservation and sustainability initiatives.

COURSE NOTE

BIOL 409 is an approved Science course

BIOL 409 is an approved Science and Technology Course for Cap Core requirements

REQUIRED TEXTS AND/OR RESOURCES

Textbook:

Bree Rosenblum, E. 2021. Global Change Biology. E-Book. Oxford University Press

Students will additionally receive a reading list of selected papers that will be made available.

Technology:

Students require access to an electronic learning device and reliable internet connection for the duration of this course.

COURSE STUDENT LEARNING OUTCOMES**On successful completion of this course, students will be able to do the following:**

- Integrate knowledge of historic and current human-caused global change to predict consequences for the environment.
- Relate activities that cause human impacts to their environmental outcomes and simulate consequences for future human activity.
- Monitor environmental change, model future outcomes and devise management strategy to optimise sustainable human-environment interactions.
- Review, critique and synthesize primary literature on global environment change issues to identify patterns, conclusions and future management strategy.
- Articulate and present comprehensive knowledge of emerging local environmental issues.
- Lead collaborative work with community partners to generate sustainable environmental solutions compatible with diverse stakeholder interests.
- Predict future directions for global change and how this will manifest at a local regional level by relating potential socioeconomic changes to alteration in human impact.
- Acknowledge the historical and practical value of Traditional Ecological Knowledge systems.

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

- Apply numerical and computational strategies to solve problems.
- Assess the cultural, economic, and political effects of technology.
- Assess the impacts of human activity on natural systems and articulate ways in which environmental sustainability may be achieved.
- 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.

COURSE CONTENT

Topics for detailed discussion will be selected from the textbook chapters listed below.

Weeks	Topics	Chapters
1	Global change <ul style="list-style-type: none"> Biosphere; Paleobiology; Causes and consequences of change 	1-2
2	Into the Anthropocene: history of human impacts on global systems <ul style="list-style-type: none"> Pleistocene, Holocene, Global expansion, Industrialisation 	3-4
3-4	Human Impacts: organismal responses to global change <ul style="list-style-type: none"> Move, Adjust adapt or die Adaptation and mitigation 	5-8
5-6	Human Impacts: ecosystem responses global change <ul style="list-style-type: none"> Communities, Ecosystems and Earth System Function Productivity and resource impacts 	9-10
7-9	Special Topics in Global Change Biology <ul style="list-style-type: none"> Habitat loss, natural capital and biodiversity Fishery collapse Globalisation of invasive species Agrochemical Pollution; soil degradation; water depletion Rewilding: integration of agriculture and urbanisation with the environment Atmospheric pollution and Climate change Toxicology: contaminant and pollutant impacts Species and ecosystem adaptation <p>Field Reports and presentations</p>	Selected readings
10-11	Global Change Biology in Practice <ul style="list-style-type: none"> Monitoring and Predicting; Future Planning and Management 	11-12
12-13	Global change manifest locally: managing our future <ul style="list-style-type: none"> Climate Change; Fisheries; Forestry; Agriculture; Mining; Water; Fire <p>Student Community Project</p>	Selected Readings
14-15	Final Exam Period	

EVALUATION PROFILE

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

Term Work (Quizzes, Midterms)	*25%
Comprehensive Final Exam	30%
Field reports	15%
Community Project	15%
Assignments and Presentations	15%
TOTAL	100%

*A graded assessment will be returned to students prior to the withdrawal date. Weighting of grades and dropping of lowest quiz marks will be consistent across all sections of the course.

Specific dates and details regarding the evaluation components will be provided by the instructor.

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 work is given at the discretion of the instructor. Normally, a score of zero will be given for a missed exam, test, quiz, lab, etc. In certain exceptional situations, the student will be permitted to write a make-up test, defer the lab to a later date or to replace the score by other marks (see below). The date and timing of any make-up option is at the discretion of the instructor. It may not be possible to reschedule certain labs, tests or other activities.

A score of zero may be avoided when the student meets all of the following conditions:

1. Circumstances are beyond the control of the student which resulted in the exam, test, quiz, lab, etc. to be missed. Such circumstances include serious illness or injury or severe personal crises. They do not include forgetting about the test, lack of preparation for the test, or work-related or social obligations.

2. The student has notified the instructor (or the School of STEM office staff, if the instructor is not available) about the missed exam, test, quiz, lab, etc. Such notification must occur in advance or, at the latest, on the day of the exam, test, quiz, lab, etc.
3. Evidence of the circumstances may be requested. Proper medical documentation of illness or injury may be required from a doctor.
4. The student has been fully participating in the course up until the circumstances that prevented the writing of the exam, test, quiz, lab, etc. Fully participating means regularly attending labs and lectures and turning in assignments in the course.

Attendance

Students are expected to attend all classes and associated activities.

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 their own electronic devices during class for note-taking 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-life/>

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.

DEPARTMENT OR PROGRAM OPERATIONAL DETAILS:

Professionalism

Students should be able to demonstrate a professional attitude and behaviour: reliability, respect for and cooperation with colleagues, willingness to work calmly and courteously, respect for equipment and systems, and constructive response to criticism. The use of cellphones for non-academic purposes during lecture and lab sessions is prohibited. Students using cell phones inappropriately could be asked to leave the lecture hall or laboratory room by the instructor.

Lab Exemption Policy for Students Repeating Course

If a student repeating the course has received 65% or better for the laboratory component of the course within the past three terms, they may apply for exemption from the lab. Students must obtain an exemption form from the Biology Laboratory Convenor or from the Coordinator of Biology. The exemption form should be completed with appropriate signatures and returned to the Biology Laboratory Convenor within the first week of classes. If students are exempted, their previous lab mark will be carried over in calculating their final mark for the course in the current term.

Expectations of Students

For success in this course, students are expected to attend all lectures and laboratory sessions; come prepared to address topics presented; pre-read laboratory exercises; and complete assigned text book readings. For every one hour of lecture material presented, students should expect to spend at least two hours reviewing material and engaging with the study tools provided.