New and Creative Ways to Embed Climate and Sustainability in your Class: Approaches from Five Faculties at UBC

UBC Sustainability Hub

May 31, 2023 – CTLT Spring Institute

Agenda

11:00 am - Welcome, acknowledgments and introductions

11:15 am - Presentations and Q+As

- Certificate in Climate Studies and Action
- Climate Change Education through Immersive Media: Educating for Sustainability in Multimodal Ways
- Sustainability in Engineering Economics

12:05 pm - Open Discussion

12:25 pm - Closing comments and resources

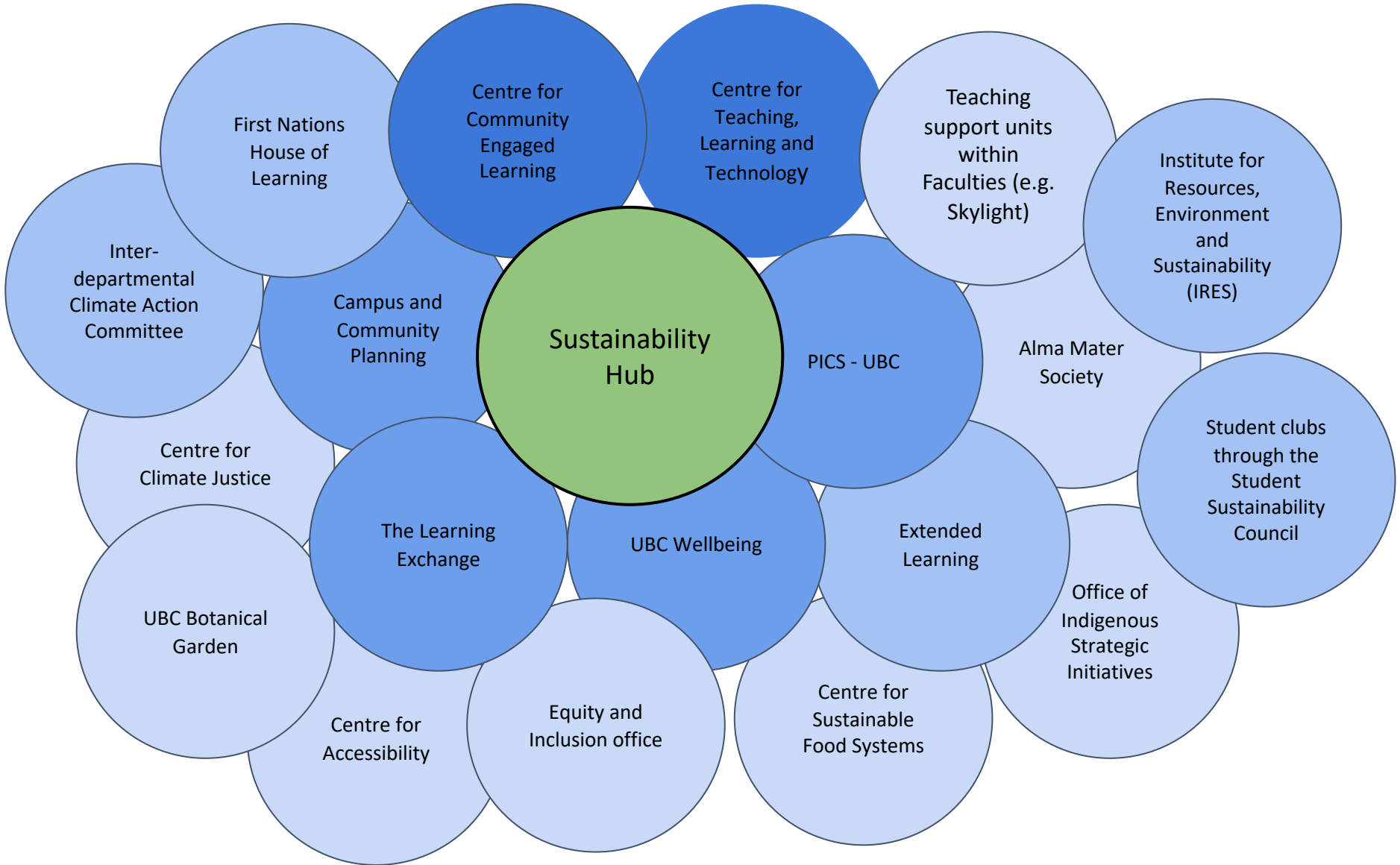
12:30 pm - End of session

The UBC Sustainability Hub

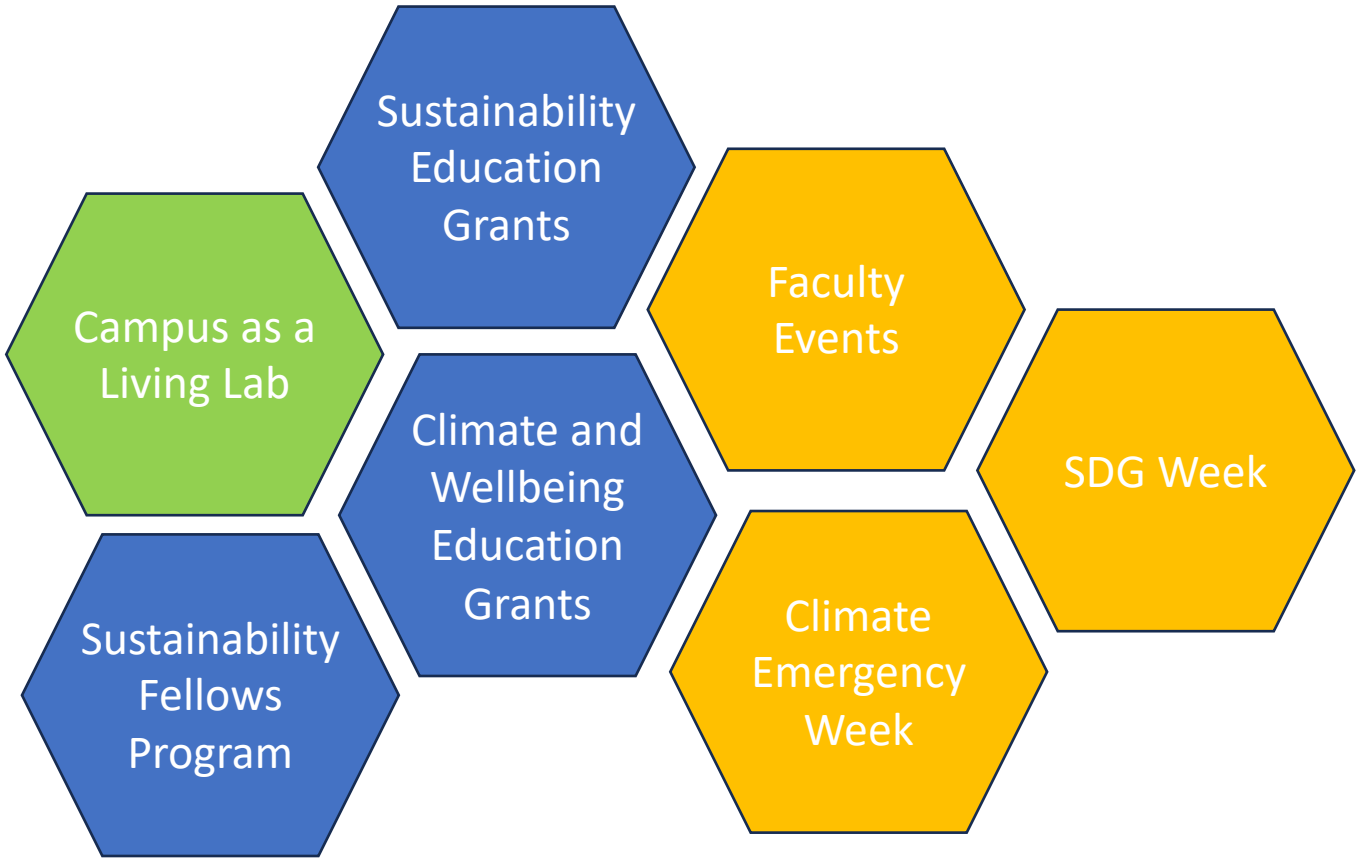
We support and empower students, faculty, staff and the UBC community in general to advance UBC's sustainability and climate action goals.

- **Located in the CIRS building**
- **Curriculum development and research grants**
- **Leadership development opportunities for students**
- **Climate Emergency work on campus**
- **Events**
- **Resources for teaching and learning**

The Sustainability Hub works through collaboration



The Sustainability Hub funds curriculum projects and research, and it creates opportunities for faculty to showcase their work and connect with others from across disciplines



From UBC's 20-Year Sustainability Strategy (2014 - 2034)

TEACHING, LEARNING AND RESEARCH

Sustainability Learning Pathway

A Sustainability Learning Pathway is a collection of sustainability-oriented courses and experiences that students pursue alongside their disciplinary major. Pathways may be integrated within existing programs, or offered as a separate entity such as a minor.

Target

Provide each student, regardless of their degree program, with access to sustainability education.

Description of Success in 2035

Sustainability is integrated throughout UBC teaching, learning and research activities. Students are provided with knowledge, skills and experience enabling them to serve as agents of change, community leaders and responsible global citizens.

As the result of continual improvement and flexible and adaptive learning, UBC is recognized for transformative scholarship of teaching and learning in sustainability.

UBC excels across the spectrum of fundamental and applied sustainability research, addressing issues at multiple scales and in multiple communities. At the campus scale this leads to innovative exchanges that improve UBC's environmental and human wellbeing, and connect UBC's living lab to campus operations and external agent of change activities. UBC researchers are also actively engaged in research contributing to addressing sustainability issues in many other communities and jurisdictions.

Strategic Goals

1. The University's curriculum is transformed, with every undergraduate student able to pursue a pathway in sustainability. UBC is internationally renowned for its many world-class graduate programs, which address the full range of ecological, social and economic dimensions of sustainability.
2. UBC is a preferred destination for undergraduate and graduate

Faculty Teaching Resources

Sustainability and Climate Action

Whether you're already teaching courses related to sustainability and climate change or are interested in incorporating this content into your courses for the first time, there are opportunities and resources at UBC to support you along the way. See what's available to help you empower your students to be agents of change.

Teaching

Sustainability Education Grants
Funding to support the design of new courses, programs, or modules to advance sustainability education.

Climate Education Grants
Funding to update courses to include climate change content.

Climate Teaching Connector
Find an expert to deliver a climate change session to your class for free.

Workshops
Find out about workshops by signing up for our Newsletter.

Support Students

Sustainability Scholars
Apply for a paid internship doing applied climate-related research.

Catalyst
Get recognized for your climate learning and actions.

Sustainability Ambassadors
Develop your leadership competencies for climate action.

Collaboration & Connection

Sustainability Fellowships
Exchange ideas and build your network with colleagues passionate about sustainability education.

SEEDS Sustainability Program
Get your students involved with a campus-based sustainability challenge.

Promote Your Course
Add your sustainability or climate change-related course to our list for students.

Attend Events
Learn, share, and connect with colleagues, staff, and students.

Act on the Climate Emergency
Link your teaching and engagement to the most urgent calls to action on campus.

Campus as a Living Lab
Funding and support for applied research projects that demonstrate solutions to global sustainability challenges.

Resources & Guides

Resources to support sustainability and climate change teaching efforts:

Centre for Teaching, Learning and Technology – Faculty Resources

Centre for Community Engaged Learning – Faculty Resources

UBC Wellbeing Faculty Resources

Centre for Climate Justice

Guiding documents to help design and approach courses in alignment with UBC strategic priorities:

UBC's Strategic Plan

Climate Action Plan 2030

Climate Emergency

Indigenous Strategic Plan

Wellbeing Framework

Zero Waste Action Plan

Green Building Action Plan

Stay up-to-date with our **newsletter.**

And connect anytime at **usi.office@ubc.ca.**

sustain.ubc.ca/faculty

THE UNIVERSITY OF BRITISH COLUMBIA
Sustainability Hub

Resources

www.sustain.ubc.ca/faculty

www.climateemergency.ubc.ca/take-action

Speakers and Projects

- **Certificate in Climate Studies and Action**
  - **Dr. Tara Ivanochko**, Professor of Teaching - Earth, Oceans and Atmospheric Sciences, Faculty of Science, UBCV and Academic Director at the Sustainability Hub
  - **Dr. Nina Hewitt**, Associate Professor of Teaching - Geography, Faculty of Arts, UBCV

Certificate in Climate Studies and Action

2023 CTLT Spring Institute

Tara Ivanochko and Nina Hewitt

THE UNIVERSITY OF BRITISH COLUMBIA

Certificate in Climate Studies and Action

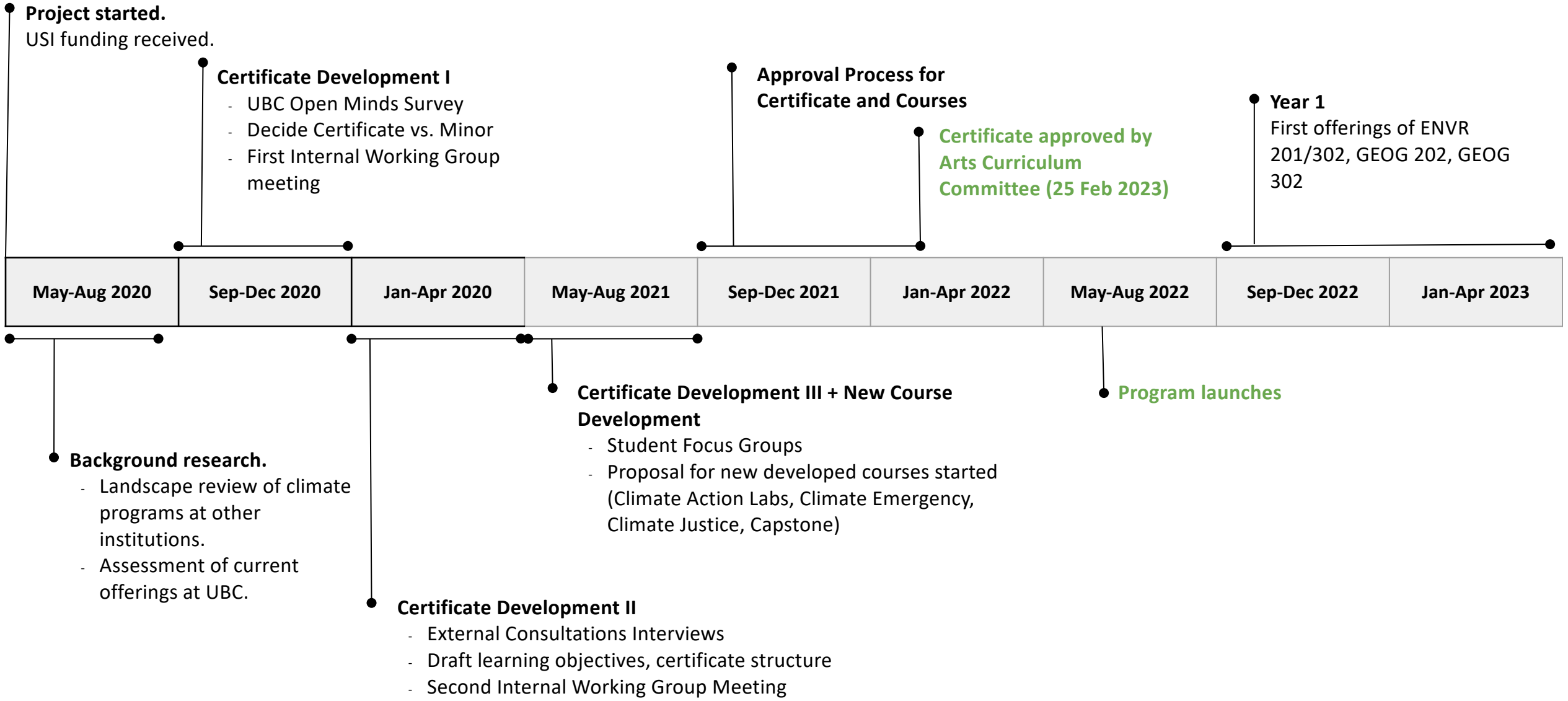
What is a certificate?

- Like a mini-minor (12-18 credits) but without the restrictions on credit overlap. **All of the credits in the certificate can also count towards a primary degree program.**

What are the program objectives?

- To be a climate change option open to ALL undergraduate students at UBC
- To meet the student demand for climate action oriented curriculum
- To train climate action advocates, providing them with skills and a wide range of disciplinary approaches to understanding the problem and the “solutions”

History of the Certificate



Program Learning Objectives

1 Apply Climate Literacy

- Interpret climate change and its disproportionate impacts through an interdisciplinary, intersectional lens that combines climate science and the socio-political, economic, cultural and historical drivers, including racialization, colonialism and capitalism.
- Delineate the scale and scope of decarbonization and energy transitions aligned with a 1.5°C future.

2 Critically Assess Climate Strategies

- Assess the efficacy and equity of various efforts, policies and strategies that have been developed to address climate change
- Engage concepts like climate justice and just transitions and debate their meaning, importance and application to climate change and decarbonization.

3 Develop a Practice For Climate Action

- Acquire an interdisciplinary practice that supports work in climate action including:
  - systems and interdisciplinary thinking
  - value mapping
  - engaging diverse knowledge systems (including Indigenous)
  - relationship building
  - reciprocal research practice
  - climate communications

4 Contribute to Climate Action, Discourse and Activities

- Engage with the climate change community within UBC and beyond
- Make critical and hopeful contributions to dialogue on climate change in public space
- Design and implement interdisciplinary, community-engaged climate action projects.

Certificate Structure

18 credits total, 5 required course sets, 8 individual courses

Climate Science (3 credits)	Climate Emergency (3 credits)	Climate Justice (3 credits)	Options (3 credits)	Climate Action (6 credits)
One of: GEOS 102, EOSC 112, EOSC 340	One of: GEOG 202, GEOG 312, CONS 210	GEOG 302	One of: EOSC 340, ENVR 410, GEOG 312, POLI 351, CONS 425, NURS 290, CONS 310, GEOS 408	Climate Action Labs (ENVR 201, 301, 302, 401) and Capstone (ENVR/GEOG 402)

New courses are in red

Lessons Learned

Building a collaboration with colleagues and students in another Faculty is hugely rewarding

Managing the Marathon

- Students are great partners in these large initiatives. They can:
  - keep you on track
  - help manage the process
  - Provide excellent ideas and feedback
- Regular meetings are key.

Get Help

- There are resources (i.e. Sustainability Education Grants) and people to help you in the Provost office.

Open Communication

- It is key to have a transparent process and to consult widely

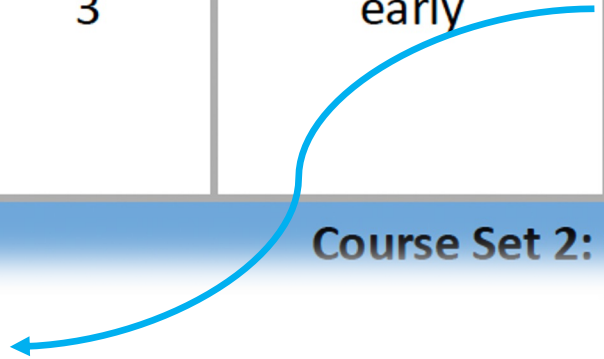
Climate Education is for Everyone:
Tools and funds for inclusive climate studies

Nina Hewitt

Department of Geography and

Climate Certificate Development Team

Course Requirements	Credits (18)	Year Progression	Topics
Course Set 1: Climate Science (3 credits)			
One of: EOSC 112, GEOS 102, EOSC 340, EOSC 3xx	3	early	Climate science basics
Course Set 2: Climate Emergency (3 credits)			



Science Learning Objectives

1.1. Describe the physical science … core concepts: basic global climate models, greenhouse effect, drivers, system interactions and feedbacks, measuring climate change.

1.2. Apply foundational systems concepts, including systems-thinking, tipping points and irreversible change to explain climate change processes.

1.3. Characterize future climate change scenarios and the associated carbon budgets.

1.4. Identify the various impacts of climate change on human and natural systems; relate impacts in forms that value the lived experience and magnitude of loss associated with them.

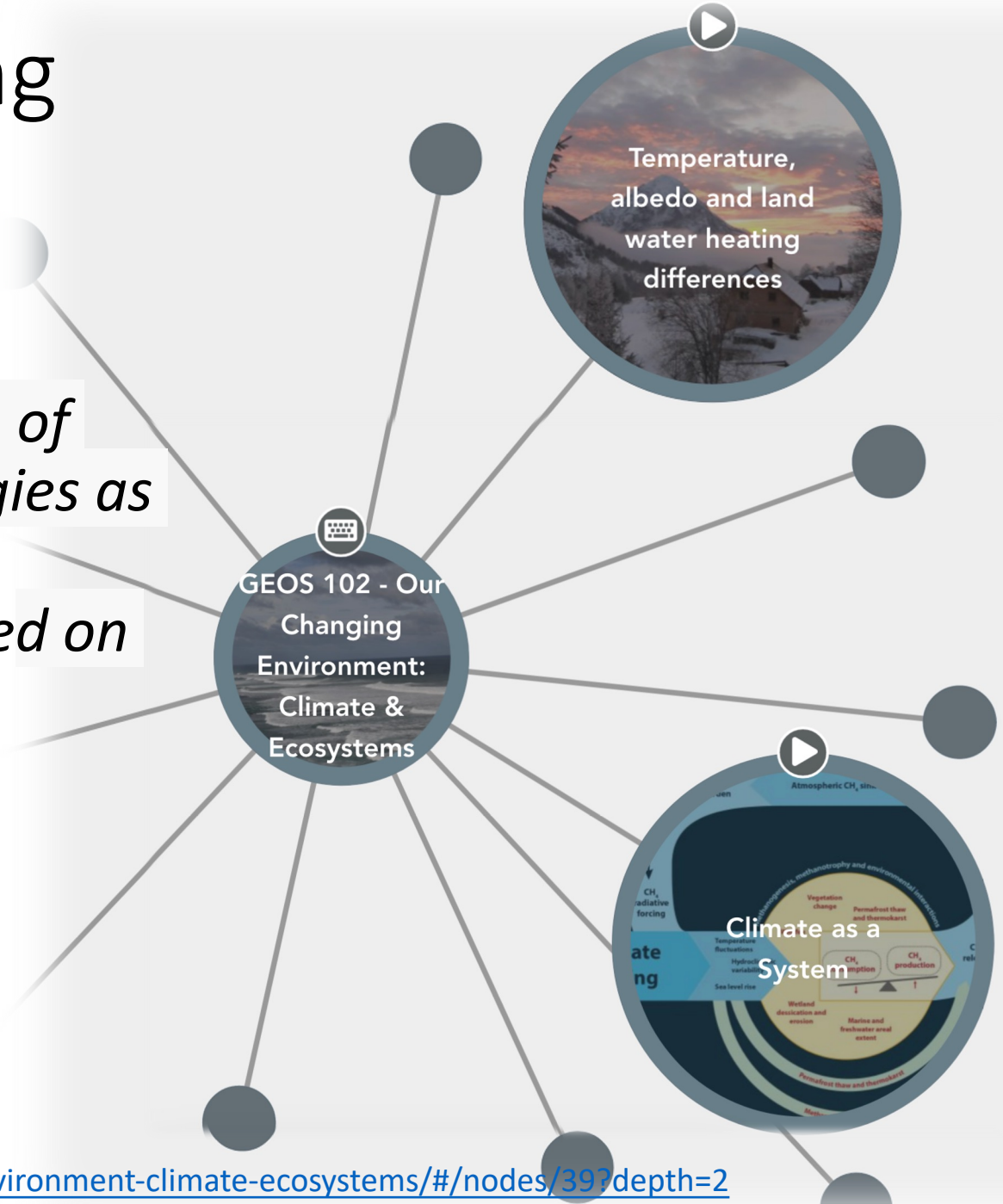
1.5. Apply a foundation in climate science and impacts to (i) participate in public discourse, (ii) compare future climate scenarios against emission trends, and (iii) assess and develop adaptation strategies.

Immersive, Active Learning Approaches

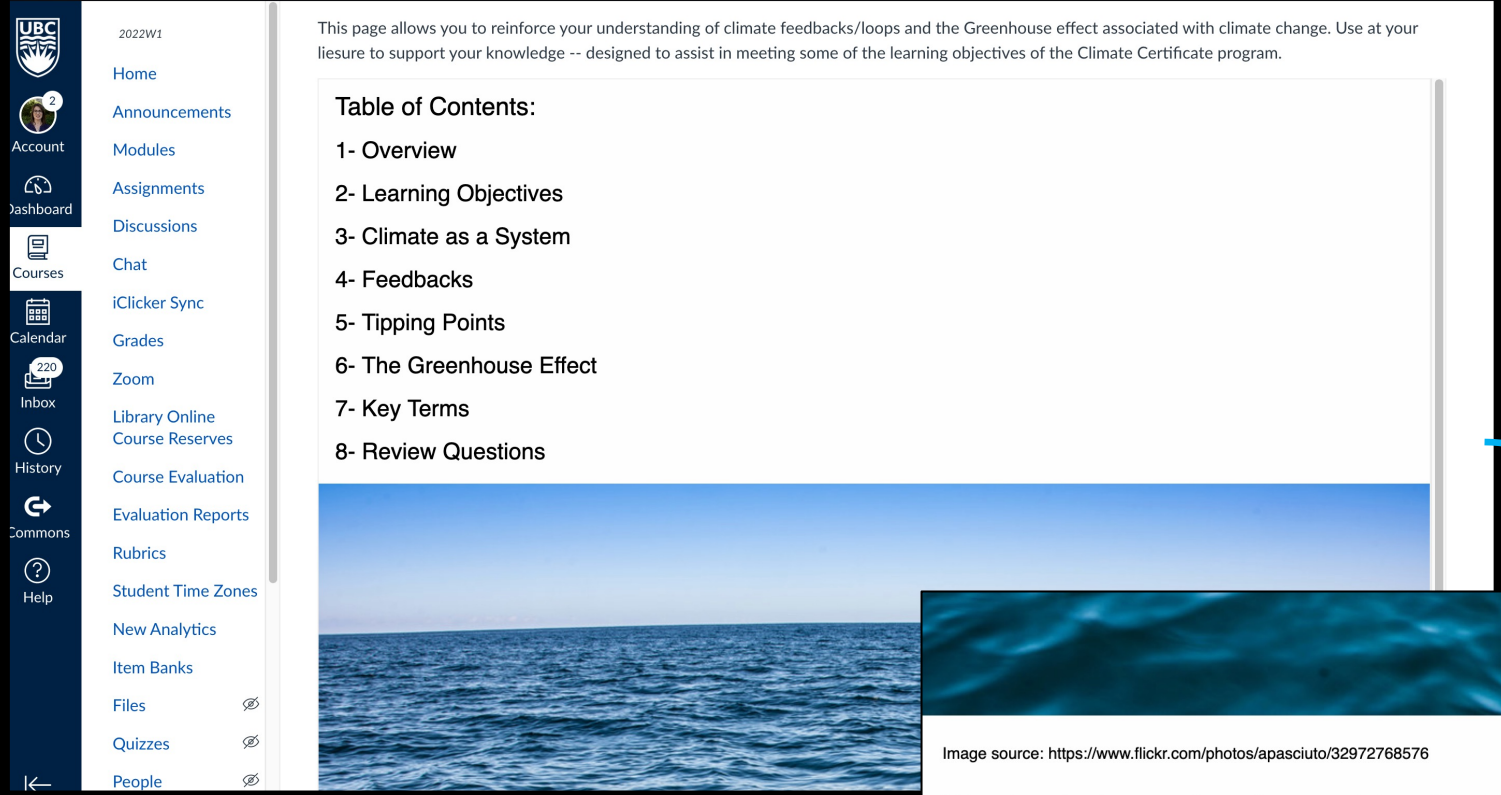
Associated with "*a blended learning pedagogy [that] allows for the inclusion of emerging media and learning technologies as tools in developing a new "space" for teaching and learning … which is focused on active learning*." McPhee 2021

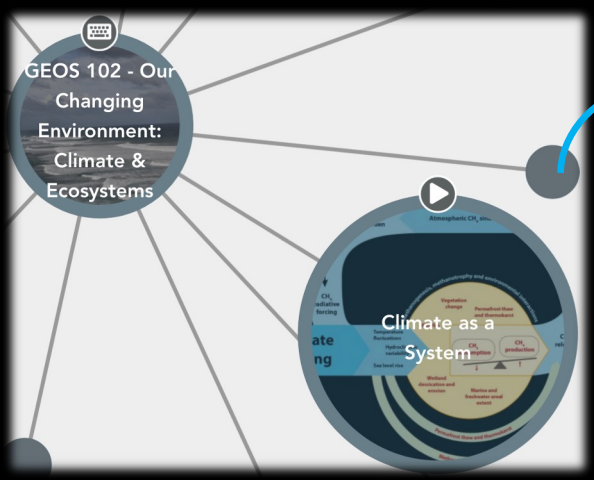
H5P Webpages/Tapestries

ubc.tapestry-tool.com (Stephen Barnes UBC)



https://ubc.tapestry-tool.com/geob102/tapestry/geos-102-our-changing-environment-climate-ecosystems/#/nodes/39?depth=2





Climate as a System H5P page
(Hewitt, Little, Denson-Camp et al. 2022)

Image source: https://www.flickr.com/photos/apasciuto/32972768576

Did you know that the ocean plays an important role in regulating Earth's climate? Like the atmosphere, the ocean helps Earth retain incoming solar radiation by absorbing heat and re-distributing it to the poles. Without the ocean, much of the energy Earth receives from the sun would be reflected back into space. As you move through the rest of this activity, keep in mind how the ocean is just one component in the Earth's system, however, plays a vital role in maintaining livable climate conditions on our planet. Learn more about the ocean here.

1- Overview

To gain a foundational understanding of how our climate system is changing, we've developed a two-part tapestry activity to provide you with the tools necessary to understand key climate science concepts and techniques. This first tapestry is divided in to four sub-topics: Climate as a system, feedbacks, tipping points, and the greenhouse gas effect. Each concept builds on the previous and, just like our climate system, these concepts interact with and influence each other.

2- Learning Objectives

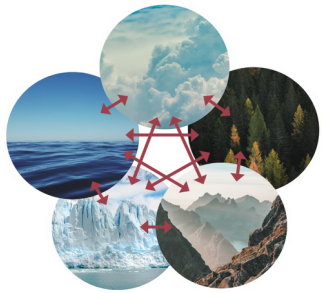
1. Understand feedback mechanisms and how they relate to climate change. Name two examples of positive feedback mechanisms contributing to global warming.

2. Understand climate change from a systems-thinking perspective: feedbacks, tipping points, irreversible change.

3. Be able to explain the greenhouse effect.

- Themed sections
  - narrative text,
  - interactive videos,
  - games and quizzes
- Optional, and bi-weekly

3- Climate as a System



What is a **"system"**?

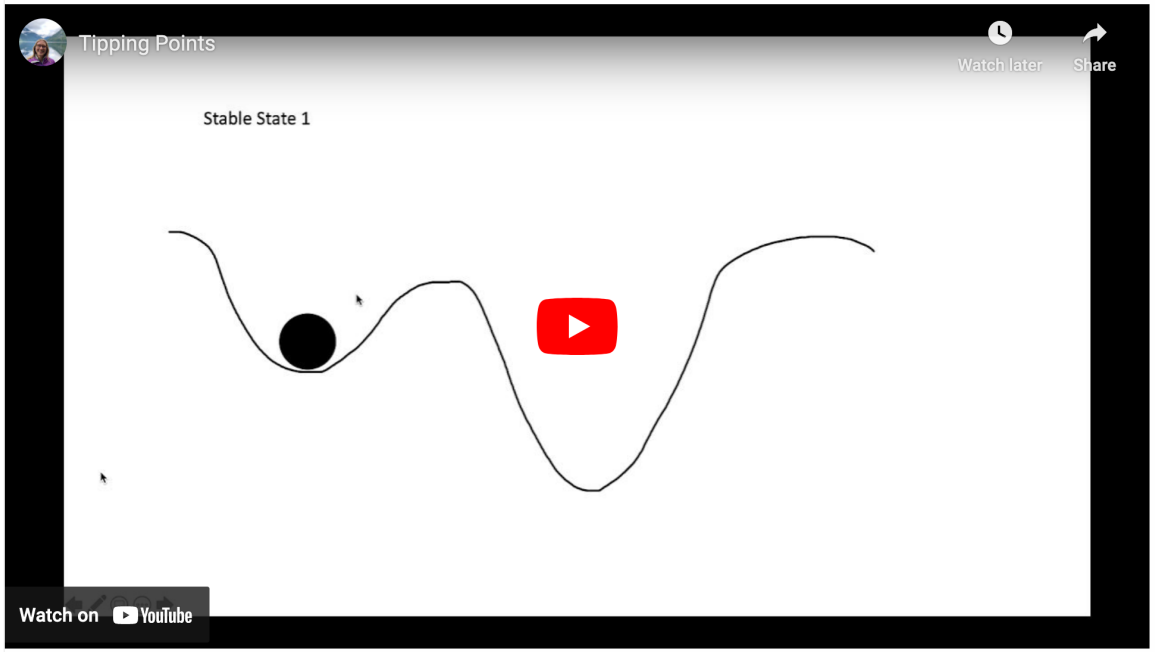
Turn

Card 1 of 1

The Earth's climate acts as a **system.** That means that many parts are interacting with each other and it is their unique interactions that produce the livable climate on Earth. In a moment, you'll be opening a link where you'll learn more about Earth's climate system. You are only required to read the section titled **How Systems Work.** However, the rest of the webpage may be useful to support your in-class learning! Start by clicking this link to learn some key concepts for thinking about the climate as a system.

Now, take a short mini-quiz to test your understanding of important concepts to keep in mind as you learn more about Earth's climate system.

5- Tipping Points



Video recorded by Meghan Little after: Nina Hewitt, GEOS 102 lecture slides, informed by teachings of Dr. Timothy Lenton et al., e.g., here: https://www.pnas.org/doi/full/10.1073/pnas.0705414105 Video: CC BY-NC-SA 4.0, Little and Hewitt.

After watching this video, reflect on why understanding tipping points is important in the context of climate change. What might happen if climate systems cross critical tipping points? How are tipping points related to positive feedback mechanisms in our climate system?

Now, take a short mini-quiz to test your understanding of important concepts to keep in mind as you learn more about Earth's climate system.

What is an example of a threshold?

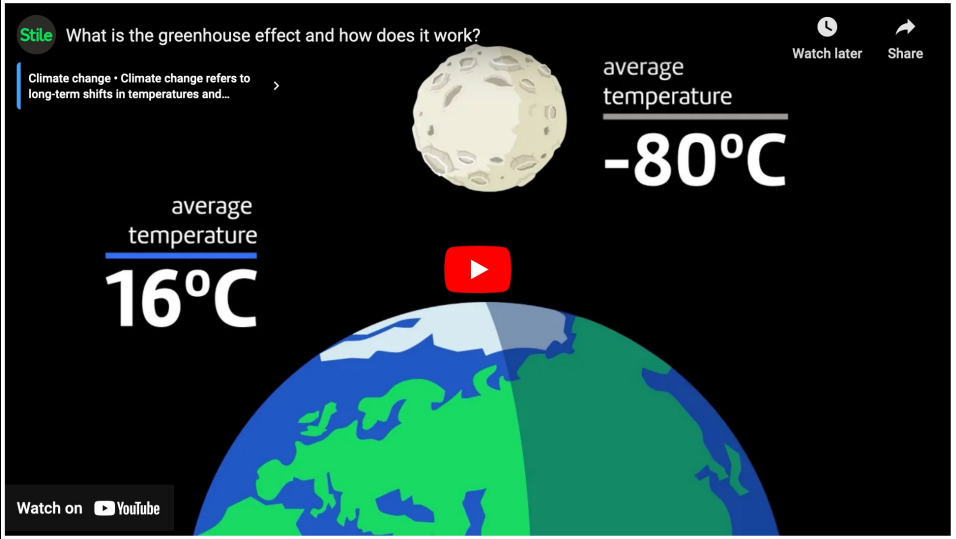
The point at which a positive feedback mechanism results in a dramatic shift

✖ The capacity of a negative feedback mechanism to maintain equilibrium

0/1 Show solution Retry

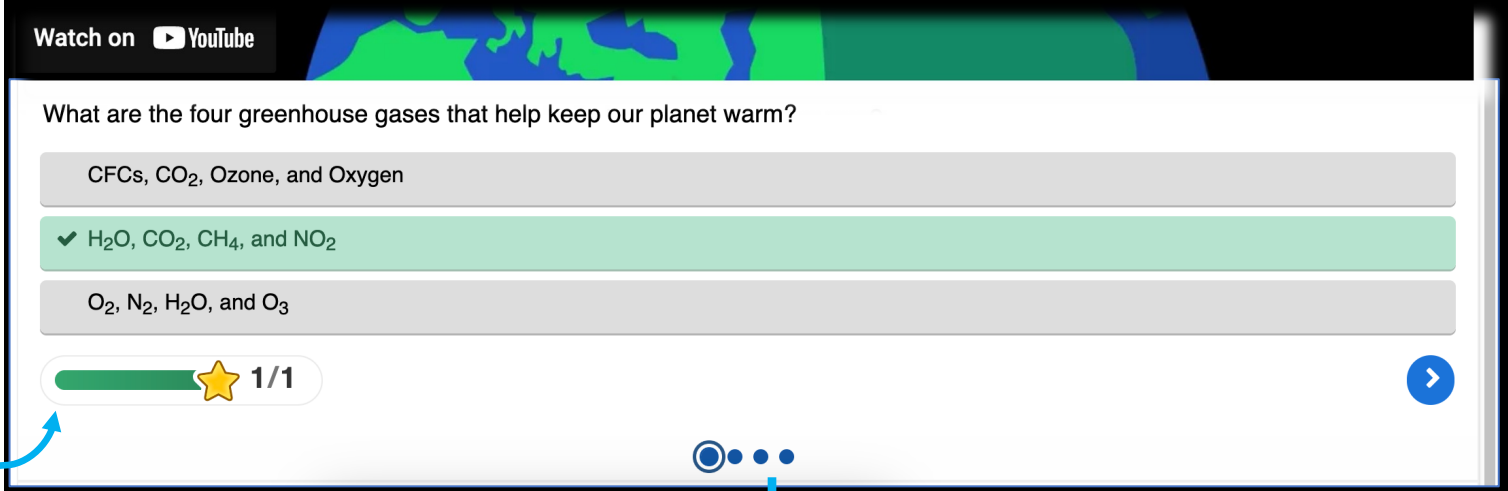
6- The Greenhouse Effect

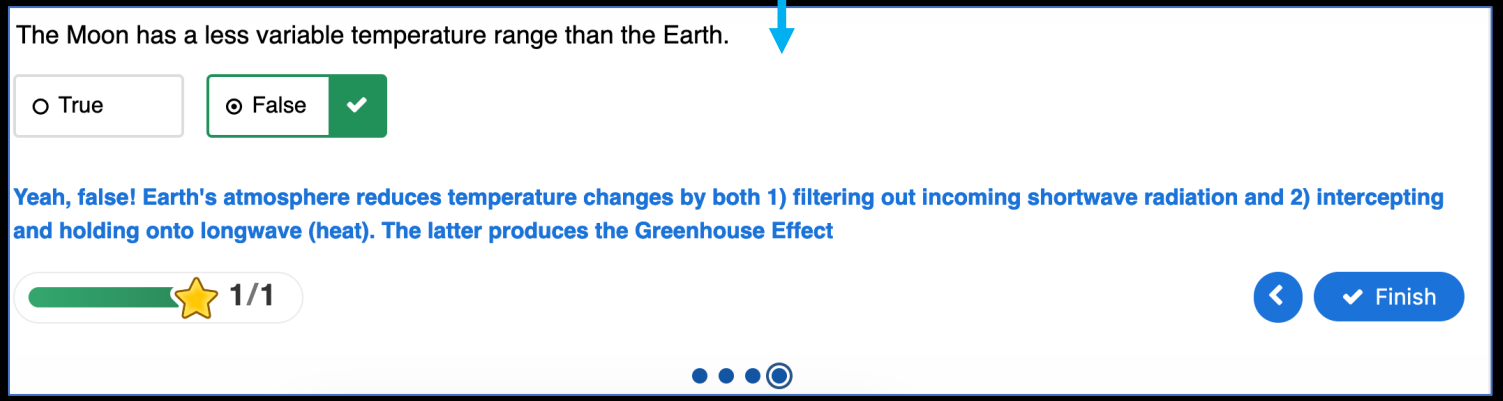
An important part of Earth's climate system are the greenhouse gases in the atmosphere that help Earth retain heat from the Sun. Let's take a look at how this works!



What are the four greenhouse gases that help keep our planet warm?

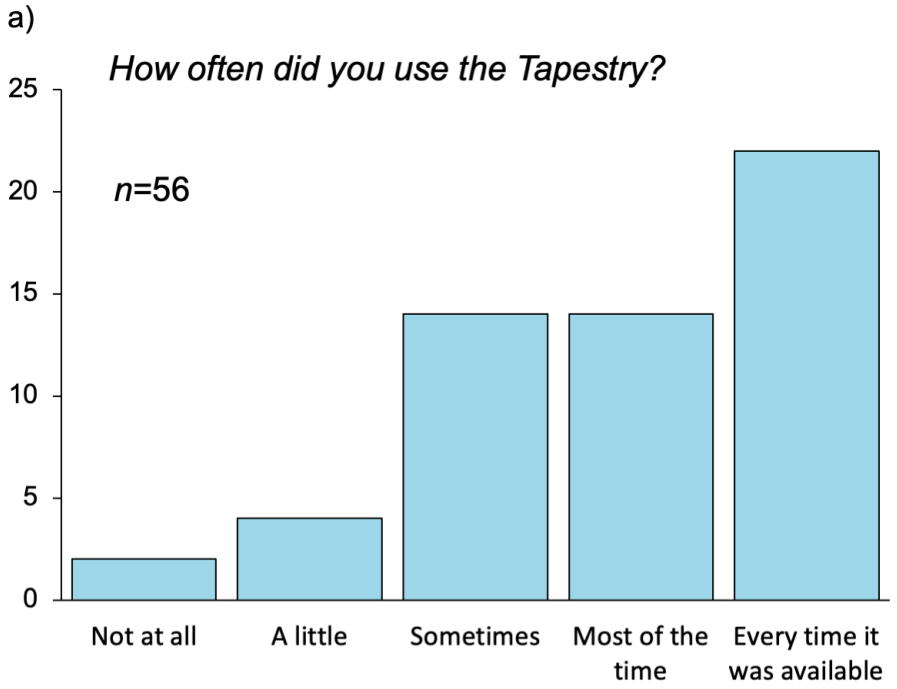
- Themed sections
  - narrative text,
  - interactive videos,
  - games and quizzes
- Optional, and bi-weekly

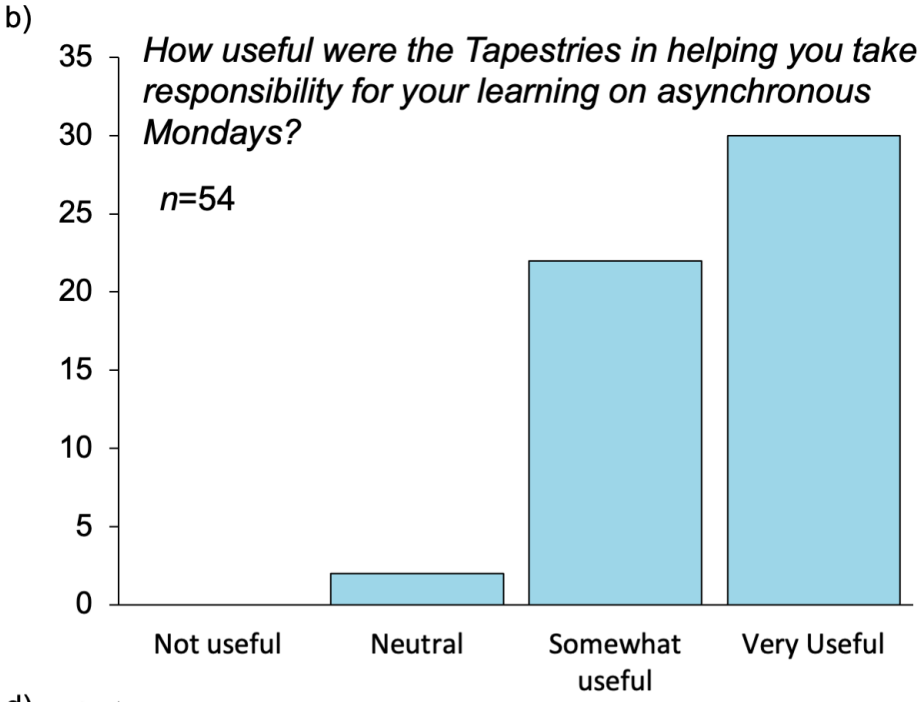


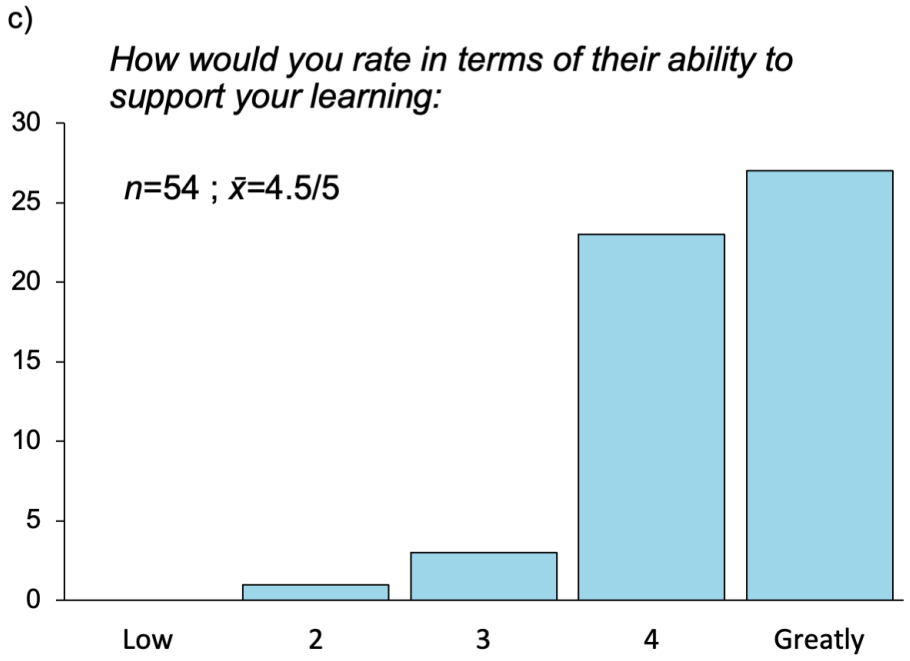


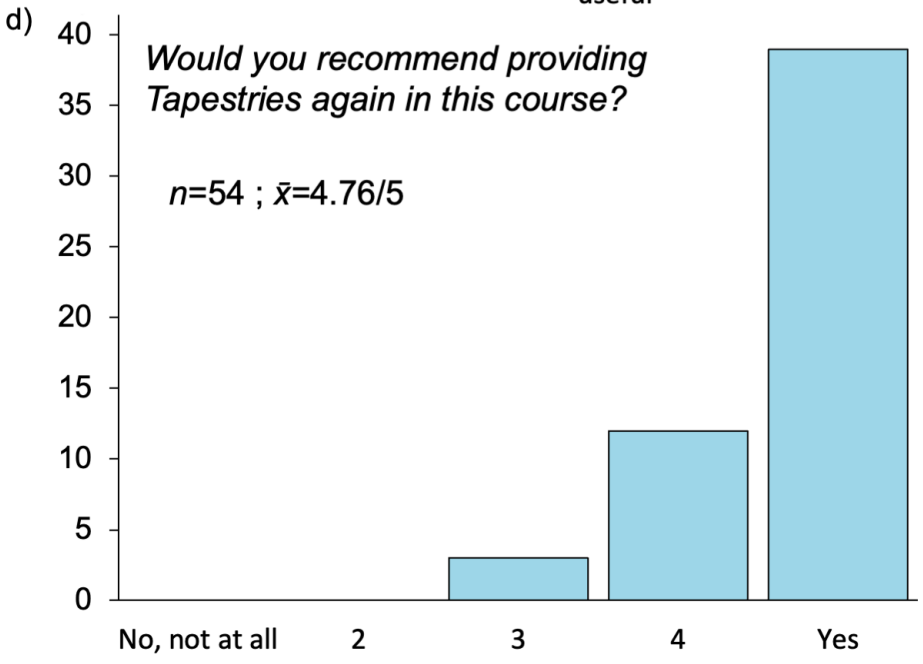
GEOS 102 2022

- 334 students
- Optional
- Bi-weekly









“More tapestry activities please”

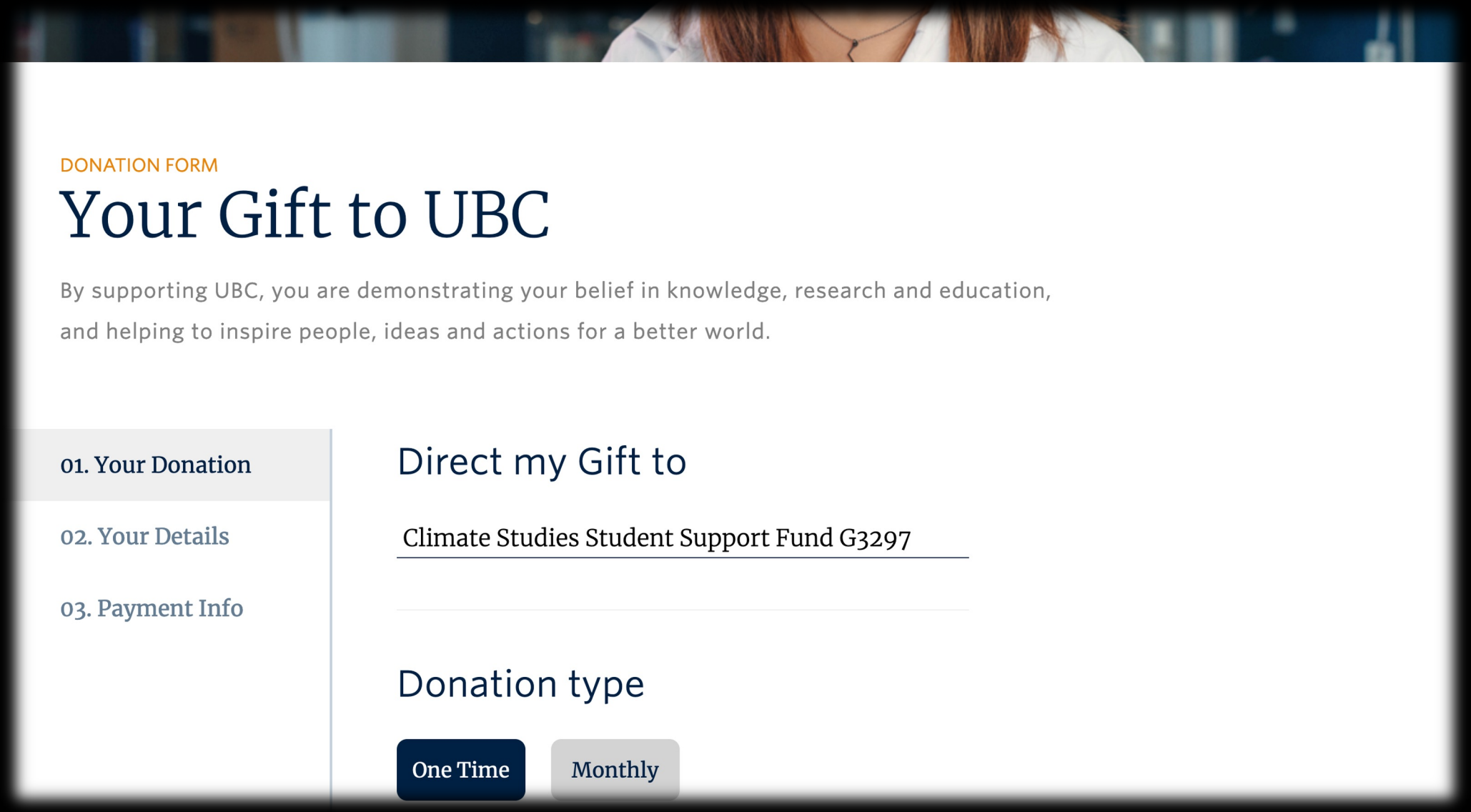
“… very much **a favourite**. … the simplicity was helpful for giving feedback … to solidify [and be] able to **apply the concepts in a more immersive** [way], really **helped to embody the geo-spatial concepts** of physical geography.”

“I really enjoyed the Tapestries as **active reinforcement for material** from lectures and readings! I also **enjoyed that they were optional**, so students could **use them to aid in their learning but did not feel pressured** to complete them as assignments”

“I would have loved these tapestries to be a **regular weekly thing**.”

Anonymous survey responses, Fall 2022/3

Climate Studies IBPOC Student Support Fund to expand opportunities for access to climate education



give.ubc

Questions?

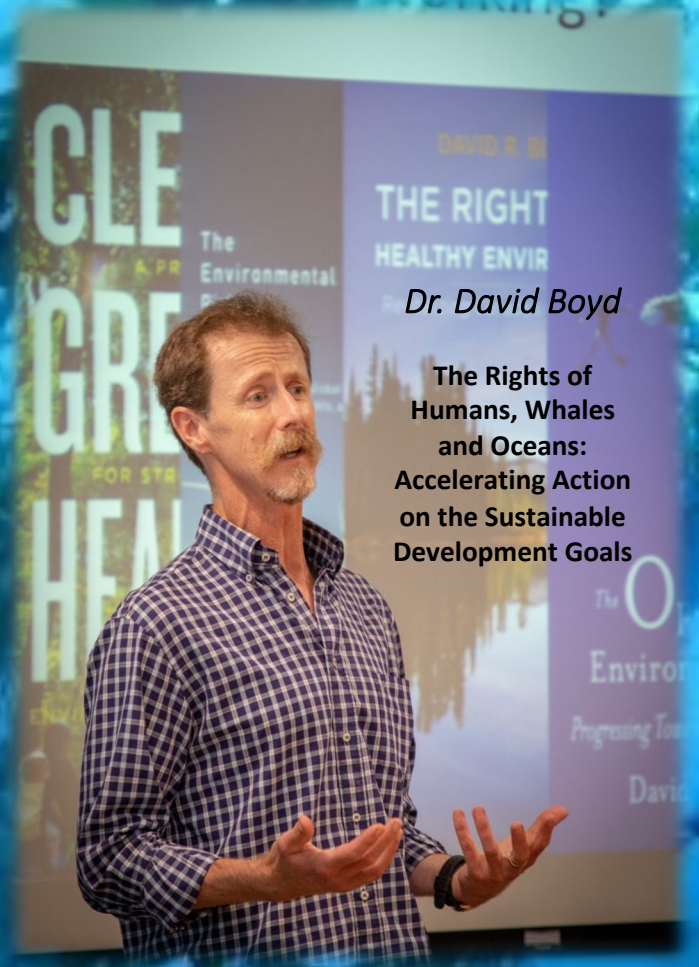
Speakers and Projects

- **Climate Change Education through Immersive Media: Educating for Sustainability in Multimodal Ways**
  - **Dr. Sandra Scott**, Professor of Teaching - Curriculum and Pedagogy, Faculty of Education, UBCV
  - **Dr. Lindsay Rogers**, Assistant Professor of Teaching - Biochemistry and Molecular Biology, Faculty of Medicine, UBCV

Climate Change Education through Immersive Media: Educating for Sustainability in Multimodal Ways

Lindsay Rogers Assistant Professor of Teaching Faculty of Medicine
Sandra Scott Professor of Teaching Faculty of Education

Sharing Stories of
Resilience and Inspiration
in this time of
Climate & Nature Emergency

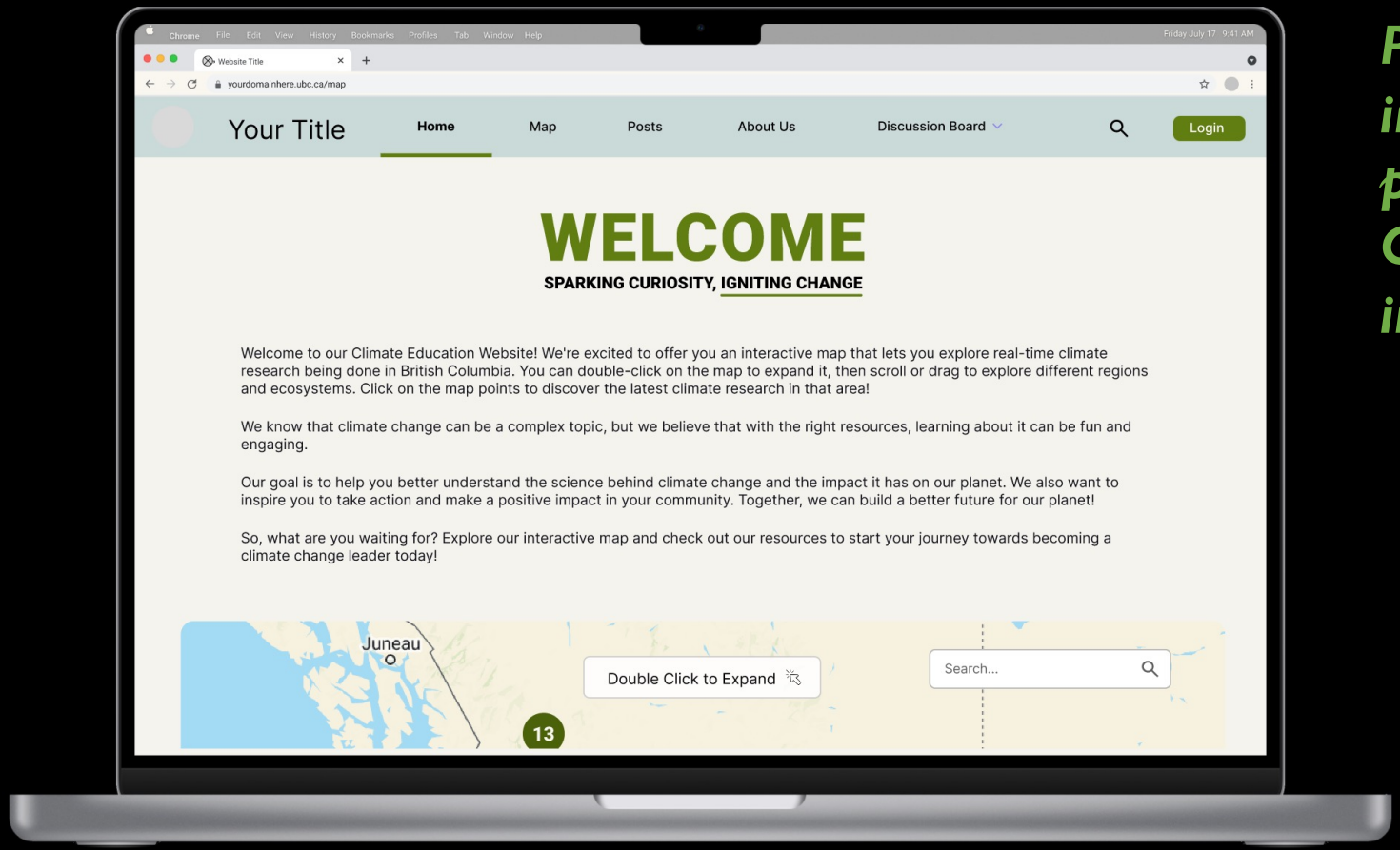


Dr. David Boyd

The Rights of Humans, Whales and Oceans: Accelerating Action on the Sustainable Development Goals

Dr. Sandra Scott - Place as Lived in the Salish Sea
The Storied Lives of the Southern Resident Killer Whales

Ocean Education: Developing Knowledge, Caring, and Taking Action
Collaboration with UBC Studios & Yvonne Dawydiak with Edith Lando Virtual Learning Centre - Seminar Series Featuring UBC Colleagues



Prototyping an interactive online platform for Climate Education in BC!

THTR399E – Collaborative Prototyping

- 3 credit project-based course
- Dr Patrick Pennefather

Project: Climate Education

Student Team: Mariane Olivan, Hana Geara, Shu Sasaki, Victoria McNeil

2023 EML Spring Showcase Presentation

https://www.youtube.com/watch?v=0C0qWfGt0N4&t=6797s

Questions?

Speakers and Projects

- **Sustainability in Engineering Economics**
  - **Dr. Tamara Etmannski**, Assistant Professor of Teaching - Civil Engineering, Faculty of Applied Science, UBCV
  - **Dr. Gabriel Potvin**, Associate Professor of Teaching - Chemical and Biological Engineering, Faculty of Applied Science, UBCV

Engineering Economics: Expanded for Relevancy

TAMARA ETMANNSKI AND GABRIEL POTVIN

DEPARTMENT OF CIVIL ENGINEERING, UBC

DEPARTMENT OF CHEMICAL AND BIOLOGICAL ENGINEERING, UBC

CTLT SUMMER SESSION MAY 31, 2023

Introduction – Team Members

- Dr. Gabriel Potvin
  Associate Professor of Teaching
  Department of Chemical and Biological Engineering
  gabriel.potvin@ubc.ca

- B.A.Sc. Chemical Engineering
- B.Sc. (Hon) Biochemistry
- Ph.D. Chemical Engineering
  - Expertise in molecular biology, bioreactor and bioprocess design
  - Research on developing new microorganisms (yeasts, bacteria and microalgae) for the production of industrial enzymes and biofuels and their mass production

- At UBC since 2015
  - Academic Director, Academic Essentials Program
  - Former Chair of the Vantage Engineering Program
  - Has taught courses for CHBE, APSC, SBME and Vantage

- 2018-2019 Sustainability Hub Fellow with Dr. Jen Peterson
- 2022-2023 Sustainability Hub Fellow with Dr. Tamara Etmannski

Introduction – Team Members

- Dr. Tamara R. Etmannski PEng.
  Assistant Professor of Teaching,
  Civil Engineering
  tamara.etmannski@ubc.ca

- B.Sc.Hons. Applied & Environmental Geology – University of Calgary
- B.A. International Relations – University of Calgary
- Ph.D. Environmental Engineering – University of Oxford
  - Expertise in water treatment, waste water disposal, water filter technologies
  - Research on developing new water filer technology used to remove arsenic from water in rural India

- At UBC since 2014
  - Department of Civil Engineering
  - Director of UBC/UNBC Joint Environmental Engineering Program
  - Previous Academic Director (& Founder) of Master of Engineering Leadership Programs (MEL & MHLP)

Typical Engineering Education Curriculum

- Costs and Cost Estimation
- Time Value of Money (TVM)
- Cash Flow Diagrams
- Present Worth and Annual Cash Flow Analysis
- Rate of Return and Incremental Analysis
- Risk and Sensitivity Analysis
- Depreciation
- Taxes
- Replacement Decisions
- Inflation
- Capital Structure and Cost of Capital
- Accounting and Engineering Economy

Proposed Sustainability Modules

- Costs and Cost Estimation
- Ecological accounting/impacts on climate change and biodiversity
- Time Value of Money (TVM)
- Cash Flow Diagrams
- Present Worth and Annual Cash Flow Analysis
- Rate of Return and Incremental Analysis
- Risk and Sensitivity Analysis
- Evaluation of social impact
- Depreciation
- Taxes
- Replacement Decisions
- Circular economy and sustainability
- Inflation
- Capital Structure and Cost of Capital
- Cultural and social capital
- Accounting and Engineering Economy

Module Deployment

- Modules deployed in CIVL 403 – Engineering Economics (for Civil Engineering)
  - Module 1 – Environmental Accounting: January 31st, 2023
  - Module 2 – Assessing Social Impact: February 2nd, 2023
  - Module 3 – Introduction to the Circular Economy: March 16th, 2023
  - Module 4 – Social and Cultural Capital: March 21st, 2023

- At the conclusion of each module, QR code with a survey containing Likert-scale questions (1 – Strongly disagree, 3 – Neither agree nor disagree, 5 – Strongly agree) and open-ended text-based prompts.

- Quantitative statements:
  - Q1: This module was interesting
  - Q2: The content of this module connected to the content of the course
  - Q3: The topics covered in this module are important for engineers
  - Q4: The topics covered in this module are relevant to my career
  - Q5: This module should be included in this course in the future
  - Q6: All engineering students in Canada should have to learn the material covered in this module (as they do for the material covered in the rest of the course)

Module 1 – Ecological Accounting

Description:

This module builds upon the discussion of costs and cost-estimation by introducing the concept of a value-based accounting (often referred to as ecological or sustainability accounting) and exploring other forms of costs that engineers could consider when working on a project. This includes discussion on the benefits and risks with translating impact into a monetary cost. This module will focus on the ecological impacts/costs specifically.

Learning Outcomes:

- Understand the need and scope for ecology-, sustainability-, and value-based accounting
- Explore various reporting models and frameworks used in ecological accounting
- Recognize and discuss associated benefits and risks of using these types of methodologies

Module 1 – Ecological Accounting: Survey Results

	Average Scores	Standard Deviation
Q1	3.54	1.08
Q2	3.96	0.71
Q3	4.42	0.61
Q4	4.27	0.73
Q5	3.96	0.84
Q6	4.04	0.77

Major themes from open-ended comments:

- General satisfaction with the course content
- Some redundancy identified with material covered in other courses
- More focus on quantitative examples would be appreciated

Proposed Sustainability Modules

- Costs and Cost Estimation
- Ecological accounting/impacts on climate change and biodiversity
- Time Value of Money (TVM)
- Cash Flow Diagrams
- Present Worth and Annual Cash Flow Analysis
- Rate of Return and Incremental Analysis
- Risk and Sensitivity Analysis
- Evaluation of social impact
- Depreciation
- Taxes
- Replacement Decisions
- Circular economy and sustainability
- Inflation
- Capital Structure and Cost of Capital
- Cultural and social capital
- Accounting and Engineering Economy

Module 2 – Evaluation of Social Impact

Description:

This module continues the discussion of converting impact to costs with a special focus on the evaluation of social/cultural impacts in engineering work (positive and negative). Social Impact Assessment (SIA) as a tool is introduced.

Learning Outcomes:

- Explain and discuss the need for quantifying social impact and the scope in which this quantification is useful
- Use and critique Social Impact Assessment as an evaluation tool when costing projects
- Identify and account for the ethical and equity issues related to social impacts in engineering projects

Module 2 – Evaluation of social impact: Survey Results

	Average Scores	Standard Deviation
Q1	3.78	1.04
Q2	3.81	0.95
Q3	4.13	0.80
Q4	3.87	0.95
Q5	3.72	1.00
Q6	3.81	1.01

Major themes from open-ended comments:

- General satisfaction with the course content
- Novelty in the use of tools to quantify qualitative impacts
- More focus on quantitative examples would be appreciated

Proposed Sustainability Modules

- Costs and Cost Estimation
- Ecological accounting/impacts on climate change and biodiversity
- Time Value of Money (TVM)
- Cash Flow Diagrams
- Present Worth and Annual Cash Flow Analysis
- Rate of Return and Incremental Analysis
- Risk and Sensitivity Analysis
- Evaluation of social impact
- Depreciation
- Taxes
- Replacement Decisions
- Circular economy and sustainability
- Inflation
- Capital Structure and Cost of Capital
- Cultural and social capital
- Accounting and Engineering Economy

Module 3 – The Circular Economy

Description:

This module will introduce the concept of a circular economy, and allow students to compare costs and benefits for projects designed within traditional (linear) and circular economy frameworks. Will build on the replacement analysis content covered in the previous module, and leverage sustainability evaluation tools like LCAs to obtain more representative cost estimates.

Learning Outcomes:

- Describe and discuss the differences between linear and circular economic models
- Apply economic assessment tools to estimate the costs and/or benefits of projects developed using a circular economy framework
- Develop economic value propositions for the implementation of circular economy elements during the design process

Module 3 – Circular Economy: Survey Results

	Average Scores	Standard Deviation
Q1	4.31	0.69
Q2	4.38	0.75
Q3	4.69	0.47
Q4	4.44	0.62
Q5	4.31	0.74
Q6	4.28	0.81

Major themes from open-ended comments:

- Interesting and applicable content

Proposed Sustainability Modules

- Costs and Cost Estimation
- Ecological accounting/impacts on climate change and biodiversity
- Time Value of Money (TVM)
- Cash Flow Diagrams
- Present Worth and Annual Cash Flow Analysis
- Rate of Return and Incremental Analysis
- Risk and Sensitivity Analysis
- Evaluation of social impact
- Depreciation
- Taxes
- Replacement Decisions
- Circular economy and sustainability
- Inflation
- Capital Structure and Cost of Capital
- Cultural and social capital
- Accounting and Engineering Economy

Module 4 – Cultural and Social Capital

Description:

Building on the idea of economic capital having a cost, the topics of social capital (goodwill, relationships with community, other intangibles) and cultural capital (education, training and tradition for community improvement) are introduced, both to establish economic costs and benefits to company activities, and as a means of evaluating social or cultural costs of projects to get more representative estimates.

Learning Outcomes:

- Describe and discuss the concepts of social and cultural capital
- Discuss non-economic costs of project-related activities
- Outline and qualitatively analyze value propositions for indirect project-related initiatives

Module 4 – Social and Cultural Capital: Survey Results

	Average Scores	Standard Deviation
Q1	4.58	0.54
Q2	4.27	0.75
Q3	4.38	0.78
Q4	4.40	0.78
Q5	4.29	0.87
Q6	4.22	0.90

Major themes from open-ended comments:

- Content was enjoyable
- Content was common sense/intuitive and not necessarily relevant to engineering/technical work

Summary of Survey Results

	Module 1 (Eco Accounting)	**Module 2** (Social Impact)	**Module 3** (Circular Econ)	**Module 4** (Soc/Cul Capital)
Q1: Module is interesting	3.54	3.78	4.31	4.58
Q2: Connected to course content	3.96	3.81	4.38	4.27
Q3: Topics important for engineers	4.42	4.13	4.69	4.38
Q4: Topics relevant to my career	4.27	3.87	4.44	4.40
Q5: Topics should be included in this course	3.96	3.72	4.31	4.29
Q6: Material should be mandatory nation-wide (like the rest of the course is)	4.04	3.81	4.28	4.22

Lessons Learned & General Tips

- A value proposition or sales pitch for the material goes a long way.
- Integrate the material as seamlessly as possible in the course – don't make it stand-alone
- Consider concept touch points in the program and scaffold from there
- Consider context (i.e. for engineers, link to design and include quantifiable examples)
- Guest lecturers are appreciated – especially to emphasize the topic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THANKS!
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Questions?

Questions and Discussion

THANK YOU!

- Climate and Wellbeing Education Grants – Deadline to apply is June 12.
  https://sustain.ubc.ca/teaching-applied-learning/climate-and-wellbeing-education-grants

- Together | Ensemble – Advancing the SDGs in British Columbia –June 7
  https://sustain.ubc.ca/SDGBC

- Faculty resources - https://sustain.ubc.ca/faculty


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