

**Faculty of Science Course Syllabus** (revised June 2020)**\*\*\*VALID FOR SUMMER 2020 ONLY\*\*\*****Department of Biology***BIOL/MARI/ENVS 3623.03 – Coastal Ecology**July 2-21, 2020***Instructor(s):** Dr. Jen Frail-Gauthier (she/her) jfrail@dal.ca 902-497-6372

**Lectures, Labs:** Asynchronous, online delivery for summer 2020. Course content will be asynchronous, with daily check-ins/live Q and A's with guest lecturers, and synchronous group work throughout the time frame of the class.

*The times and deadlines for the class are all listed in ATLANTIC TIME. If you are in another time zone, please make sure you adjust accordingly.*

*Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.*

*Coastal Ecology supports an open, respectful, and safe learning environment, for all students. As part of the Dalhousie Strategic Direction, we support diversity, equality, and inclusion.*

---

**Course Description**

Virtual\*, hands-on study of the anthropogenic impacts on the structure and function of coastal ecosystems. Through field trips\*, laboratories and guest demonstrations, students examine ecosystem health, e.g. communities on rocky shores, salt marshes and sandy shores and learn basic experimental design, principles of environmental assessment and monitoring, and coastal habitat remediation. \*Online only in Summer 2020.

**Course Prerequisites**

BIOL 2003.03 (Animal Diversity); BIOL 2060.03 (Ecology) or BIOA 3001.03

**Course Overview**

Applied Coastal Ecology aims to provide students with (VIRTUAL --- no personal field trips required) field and laboratory experiences, including the geology, biology, ecology, and conservation, of the sensitive coastal ecosystems in Nova Scotia. Nova Scotia is surrounded by the ocean (over 7 500 km of coastline!), and we will get to experience various coastal zones along the Atlantic Coast and the Bay of Fundy during this three-week course. Students will learn about the geological dynamics, ecology and biological interactions of the main coastal zones seen in Nova Scotia (rocky shores, sandy beaches, sand dunes, mudflats and salt marshes) through lectures and accompanying (VIRTUAL) field trips. Physical and biotic factors will be examined and compared across various coastal zones, including the intertidal zonation, physical parameters, and biological interactions. Specifically, comparisons of pristine and impacted coastal areas will be done to examine the human impacts along our coasts. Additionally, through guest lectures and student-led seminars, students will explore the sensitivity of these coastal ecosystems and examine various human impacts on coastal zones in Nova Scotia and all over the world. We will also recognize, understand, and respect indigenous knowledge and traditional land-use issues in Nova Scotia, specific to coastal zones. Canada's Ocean Playground, here we come!

### Course Objectives/Learning Outcomes

As described above, by the end of this course, students...

- ✓ ... will understand the biology, ecology and geology of sandy shores, rocky shores, salt marshes and mudflats.
- ✓ ... will be able to identify key flora and fauna of these ecosystems, and know which are indicative of pristine versus impacted coastal areas.
- ✓ ... will be able to effectively and efficiently organize tasks related to ecological work in the field (following instructions and using scientific curiosity to explore key questions).
- ✓ ... will be able to understand when to use what types of scientific equipment in the lab and field, how to effectively process samples, and quantify animals and plants to explore key questions.
- ✓ ... will be able to manage group work and work effectively with peers.
- ✓ ... will be able to critically analyze and synthesize information in independent term projects on human impacts in the coastal zone, conduct peer-review, and present the information through scientific writing and general-public science-communication infographics.
- ✓ ... will gain extensive information and external knowledge from a variety of invited guests from industry, NGOs, government, and research.
- ✓ ... will recognize, understand, and respect indigenous and traditional knowledge and land-use issues in Nova Scotia.
- ✓ ... will develop new time management tools to manage a variety of work tasks in a short period of time.
- ✓ ... will have greatly enhanced their undergraduate learning experience through the SEASIDE program!

### Course Materials

- No required material needed for this course. Auxiliary fee of \$30 to cover cost of equipment needed in virtual field trips and sample collecting, and honouraria for guest organization (e.g., Blue Beach Fossil Museum).
- All course content will be posted on BrightSpace; if external learning sites are used, they too will be linked into BrightSpace. Examples include zoom, Panopto, collaborate, google docs, Slack, FlipGrid, Kahoot, etc. **You will need daily access to your Dalhousie email.** If you do not use your Dalhousie email, please make sure you FORWARD emails from it to your reliable email address.
- Reliable computer/laptop, internet, and microphone/webcam
- Word processing, presentation, and spreadsheet software (e.g., Office 365 or Google)

### Course Assessment (will be discussed in detail on Day 1)

Coastal Ecology will retain as much of the evaluation scheme and major assignments as possible in the switch to an online, virtual format. This will ensure we keep with the main learning outcomes of the course.

Unless otherwise directed, all assignments are to be submitted through the BrightSpace assignment drop box system, and are due at 11:59 PM Atlantic the day they are due. Accommodations may be made for those in western time zones, on a case-by-case basis.

**Types of Assessments (will be presented in detail on Day 1):****1. Human Impacts on The Coast – individual term project – TOTAL = 45%**

Over 1/3 of your grade comes from this (and did in the “normal” field course, too), so most of your out-of-class energy will be focused on your chosen topic of impacts in the coastal zone (list will be given out during the first class and you should choose your topic by the end of the first class- no duplicates!). The presentation should be “Ted-Ed style” – fun, enthusiastic, engaging, informative – (the guest lecture from the Ocean Tracking Network’s communication team will help with this!), as you will be teaching the class about your topic.

**Breakdown of Human Impacts Project:**

Outline of paper and brief annotation of scientific literature: 5%

Draft one – student peer-review: 5%

Infographic – 5%

Final Paper: 20% -- in the format of a scientific review paper; with appropriate, primary peer-reviewed references (a paper written from Wikipedia is not acceptable!) Full details in a separate document.

“Ted-Ed” Presentation to teach the class (5 mins or less): 10%

**2. Participation, Dedication, Online Presence, Quizzes – 15%**

Participating in check-ins, interactive quizzes, guest lecturer live Q and A’s, reflections and reviews if unable to participate live, activity in discussion boards/Slack message boards, Mood boards, Flip Grids, etc.

**3. Coastal Ecology Modules– Field, Lab, Ecology, Biology, Geology – TOTAL = 30%**

**Modules may include a variety of group assignments, and reflections/quizzes (these assignments replace the lab assignments and field books from the “normal” course).**

Module 1 – Introduction to Coastal Ecology (including how humans impact the coast) =3%

Module 2 – Geology of Nova Scotia (including Blue Beach Fossil Museum) = 4%

Module 3 – Coastal Zones: Sandy shores and Dunes = 5%

Module 4 – Coastal Zones: Rocky shores = 7%

Module 5– Coastal Zones: Salt marshes and Mudflats = 8%

Module 6 – Coastal Zones: Seagrasses = 3%

*The specific assessments for each module will be discussed as each comes live. Modules 3, 4, and 5 will include “field and lab” based group assignments, as was done in the “normal” course. Other modules will be a mix of reflections and small quizzes.*

**4. Guest Lecture Preparation Assignments and Reflections = 10%**

-Ecology Action Centre

-Ocean Tracking Network

-Dr. Tyler Eddy

-Department of Fisheries and Oceans – Fisheries Officer Megan Carver

-Mi’kmaw Conservation Group

-Fundy FORCE tidal energy

Component	Weight (% of final grade)	Date (11:59 PM)
Module Assignments (6; Group)	30%	See Schedule
Guest lecture reflections/assignments	10%	See Schedule
Outline/Annotated Bibliography	5%	Fri. July 3 <sup>rd</sup>
Draft 1 for peer-review	5%	Mon. July 13 <sup>th</sup> (due back July 15 <sup>th</sup> )
Infographic of topic	5%	Thurs. July 16 <sup>th</sup>
Term Paper (Individual)	20%	Tues. July 21
Oral Presentations (Individual)	10%	Mon. July 20
Participation	15%	All Course

**Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale**

A+ (90-100)	B+ (77-79)	C+ (65-69)	D (50-54)
A (85-89)	B (73-76)	C (60-64)	F (<50)
A- (80-84)	B- (70-72)	C- (55-59)	

**Course Policies (will be discussed in detail on Day 1)**

It is my commitment to you, Coastal Ecology students of 2020, that I will work with you and for you to ensure you gain all the learning outcomes and have an experience of community in a course that is immersive and normally hands-on “in the mud”.

In order to get the most from this class, you will need to be immersed, committed, and dedicated. The old saying “You Get What You Give” rings true for everything, but especially during intense, demanding SEASIDE courses. It is up to YOU to stay organized and on top of all the work, and engage in the course each day. If you are not participating **equally** in the group assignments (too much, or too little), deductions to your participation grade can occur. BrightSpace is able to monitor student engagement, and we can use this to double check suspected lack of engagement in the course materials (such as viewing student presentations, guest lectures, and course content).

Every teaching day, Jen will make announcements on BrightSpace of the tasks ahead, and reminders of deadlines, etc. The general schedule below will give you a good overview of the main components each day/week.

Jen and your teaching team will be available every day. On the first day of the class, Jen will be going over communication policies, netiquette, course structure, assignments and evaluation, and information about technology. University resources are listed at the end of the syllabus. These policies ensure we will be transparent and give equal and fair treatment for all.

*\*\*\* Until August 31, 2020 (as per Senate policy re: COVID-19), students are not required to provide a sick note for assessments. However, students **are still required to notify the instructor** if they are unable to complete the assessments on time. \*\*\* Unapproved late submissions will be penalized.*

**Course Content – specific guest lecture recordings and live Q and A's to be determined; live check-ins and group collaboration times will be determined throughout the course! If you finish tasks before the next modules become live, or while waiting for a guest lecture video, please work on your Human Impacts project! The time will sneak away from you! ☺**

<b>Date</b>	<b>Activity: Modules Open, continuing, and live check-ins</b>	<b>Extra Information/Due dates (blank days may be filled with Guest Lecture reflections, too!)</b>
Thurs. July 2	Introduction to the class, logistics, evaluations, etc. Module 1: Introduction to Coastal Ecology- Setting the Scene	Sign up for project topic Group organization
Fri. July 3	Module 1: Continued; daily check-in; Quiz on Module 1 Watch and read information from the Ecology Action Centre to prepare for live Q&A Monday	<b>Annotated Bibliography/Paper outline due by 11:59 PM</b> <b>Module 1 assessments due 11:59 PM</b>
Mon. July 6	Module 2: Geology of Nova Scotia and Blue Beach Fossil Museum	<b>Guest Q and A – Nancy Anningson, Ecology Action Centre, 3:30 PM</b> <b>Reflection/Assignment due 11:59 PM</b>
Tues. July 7	Module 2: Geology of Nova Scotia continued	<b>Module 2 assessment due 11:59 PM</b>
Wed. July 8	Module 3: Coastal Zones – Sandy Shores and Dunes and “lab work” Ocean Tracking Network guest lecture - communication	
Thurs. July 9	Module 3: Coastal Zones – Sandy Shores and Dunes continued	<b>Module 3 – Sandy Shores assessment due 11:59 PM</b>
Fri. July 10	Module 4: Coastal Zones – Rocky Shores	
Mon. July 13	Module 4: Coastal Zones – Rocky Shores continued	<b>Draft 1 of paper to submit for peer-review due 11:59 PM</b>
Tues. July 14	Module 5: Coastal Zones – Salt marshes and Mudflats	<b>Module 4 – Rocky Shores assessment due 11:59 PM</b>
Wed. July 15	Module 5: Coastal Zones – Salt marshes and mudflats continued Module 6: Coastal Zones – Seagrasses	<b>Peer-reviews due back by 11:59 PM</b>
Thurs. July 16	Modules 5 and 6 continued; Guests TBA; work day	<b>Project Infographics due 11:59 PM</b>
Fri. July 17	Check-in and review of project infographics Q and A	<b>Module 5 assessments due by 11:59 PM FRIDAY</b> <b>Module 6 assessments due by 11:59 PM SATURDAY</b>
Mon. July 20	Work day – presentations/papers	<b>Presentations due 11:59 PM</b>
Tues. July 21	Watch peer’s topic presentations with live Q and A (open all day; sign up for “presentation” time) End of class Bash	<b>Seminar papers due 11:59 PM</b>

**\*Many guests haven’t been slotted into the schedule yet; be aware they will also pop into daily activities with modules! This would happen in the “normal” course too – we would be working in the lab, break for a guest lecture, then go back to the lab!\***

**Faculty of Science Course Syllabus (Section B) (revised June-2020)****\*\*\*VALID FOR SUMMER 2020 ONLY\*\*\****BIOL/MARI/ENVS 3623.03 – Coastal Ecology July 2020***University Policies and Statements**

**This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate**

**Missed or Late Academic Requirements due to Student Absence**

As per Senate decision instructors must not require medical notes of students who must miss an academic requirement, including a final exam, for courses offered during spring or summer sessions 2020 (until Aug 31, 2020).

Information on regular policy, including the use of the Student Declaration of Absence can be found here:

[https://www.dal.ca/dept/university\\_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html](https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html)

**Academic Integrity**

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

**Information:** [https://www.dal.ca/dept/university\\_secretariat/academic-integrity.html](https://www.dal.ca/dept/university_secretariat/academic-integrity.html)

**Accessibility**

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

**Information:** [https://www.dal.ca/campus\\_life/academic-support/accessibility.html](https://www.dal.ca/campus_life/academic-support/accessibility.html)

**Student Code of Conduct**

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

**Code:** [https://www.dal.ca/dept/university\\_secretariat/policies/student-life/code-of-student-conduct.html](https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html)

**Diversity and Inclusion – Culture of Respect**

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

**Statement:** <http://www.dal.ca/cultureofrespect.html>

**Recognition of Mi'kmaq Territory**

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) ([elders@dal.ca](mailto:elders@dal.ca)).

**Information:** [https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

**Important Dates** in the Academic Year (including add/drop dates)

[https://www.dal.ca/academics/important\\_dates.html](https://www.dal.ca/academics/important_dates.html)

**University Grading Practices**

[https://www.dal.ca/dept/university\\_secretariat/policies/academic/grading-practices-policy.html](https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html)

## **Student Resources and Support**

### **Advising**

**General Advising** [https://www.dal.ca/campus\\_life/academic-support/advising.html](https://www.dal.ca/campus_life/academic-support/advising.html)

**Science Program Advisors:** <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

**Indigenous Student Centre:** [https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

**Black Students Advising Centre:** [https://www.dal.ca/campus\\_life/communities/black-student-advising.html](https://www.dal.ca/campus_life/communities/black-student-advising.html)

**International Centre:** [https://www.dal.ca/campus\\_life/international-centre/current-students.html](https://www.dal.ca/campus_life/international-centre/current-students.html)

### **Academic supports**

**Library:** <https://libraries.dal.ca/>

**Writing Centre:** [https://www.dal.ca/campus\\_life/academic-support/writing-and-study-skills.html](https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html)

**Studying for Success:** [https://www.dal.ca/campus\\_life/academic-support/study-skills-and-tutoring.html](https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html)

**Copyright Office:** <https://libraries.dal.ca/services/copyright-office.html>

**Fair Dealing Guidelines** <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

### **Other supports and services**

**Student Health & Wellness Centre:** [https://www.dal.ca/campus\\_life/health-and-wellness/services-support/student-health-and-wellness.html](https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html)

**Student Advocacy:** <https://dsu.ca/dsas>

**Ombudsperson:** [https://www.dal.ca/campus\\_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html](https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html)

### **Safety**

**Biosafety:** <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

**Chemical Safety:** <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

**Radiation Safety:** <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

**Scent-Free Program:** <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>