

APPLIED COASTAL ECOLOGY (ACE)

In 2021/2022 sections may offered in-person or via

Distributed Learning. Learn more about Distributed

Learning ([https://can01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.coastmountaincollege.ca](https://can01.safelinks.protection.outlook.com?url=https%3A%2F%2Fwww.coastmountaincollege.ca)

<https://www.coastmountaincollege.ca>

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learning&data=04%7C01%7CESuderman%40coastmountaincollege.ca

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%7C1000&sd=NAJnOwF4NYXIA%2Br9c906EQWfjXgZhrVPGoztoQXpoJE

%3D&reserved=0) at CMTN. Individual sections may vary, please contact

info@coastmountaincollege.ca if you have any questions.

View on YouTube (https://www.youtube.com/watch?v=6_wHTxQimBA)

Earn a Diploma in 2 years or a Post-Degree Diploma in 1 year

The Applied Coastal Ecology (ACE) program readies students for careers in coastal natural resources management, ecosystem restoration, environmental monitoring, and many others. ACE balances foundational learning in areas such as biology, geography, chemistry and oceanography with applied courses in areas such as salmon, ground fish and shellfish management, stream habitat restoration, rainforest ecology, wildlife management, and more.

ACE students get important technology training in computer database management, GIS mapping, surveying, technical writing, and presentation. Students participate in real-world, community-based projects to gain employment-ready experience and ultimately gain a strong sense of how coastal ecosystems react to the stresses imposed on them by human activity, and how to apply procedures to mitigate impacts and restore healthy ecosystems.

Learn more about our Post-Degree Diploma (<https://catalogue.coastmountaincollege.ca/programs/applied-coastal-ecology-post-degree/>).

ACE field studies

At Coast Mountain College we are always exploring new ways to move our courses into the field. Our rugged geography and variable climates enhance our classrooms. Learn about our collaborative field day on Digby Island, view samples of our project work and check out the Applied Coastal Ecology photo gallery.

Applied Coastal Ecology field studies (<https://www.coastmountaincollege.ca/programs/study/science/ace-field-studies/>)

Apply to CMTN

Visit Apply to CMTN (<https://www.coastmountaincollege.ca/admissions/apply-to-cmtn/>) for an Admissions Checklist and to apply online.

Our Educational Advisors (<https://www.coastmountaincollege.ca/student-services/student-support/educational-advising/>) are here to help if you have any questions or need guidance along the way.

Dates and locations

Intake	Location
September 7, 2021	Prince Rupert Campus
January 10, 2022	Prince Rupert Campus

Study on a full or part-time basis. Field School (<https://coastmountaincollege.ca/programs/explore/field-schools/>) courses are

Note: Speak with an Educational Advisor (<https://coastmountaincollege.ca/student-services/academic-support/educational-advising/>) for assistance with course selection.

Admission to an intake does not guarantee completion in 2 years.

Faculty

Faculty Member	Campus Location
Reto Riesen (https://coastmountaincollege.ca/about-cmtn/departments-contacts/details/reto-riesen/)	Prince Rupert
Nathasha Lebedick (https://coastmountaincollege.ca/about-cmtn/departments-contacts/details/natasha-lebedick/)	Prince Rupert
Ken Shaw (https://coastmountaincollege.ca/about-cmtn/departments-contacts/details/ken-shaw/)	Prince Rupert
Kirk Hart (https://coastmountaincollege.ca/about-cmtn/departments-contacts/details/kirk-hart/)	Prince Rupert
Andy Blackburn (https://www.coastmountaincollege.ca/about-cmtn/departments-contacts/details/andy-blackburn/)	Prince Rupert

The ACE certificate requires the completion of **24 credits** of ACE or UC courses of which 12 must be ACE.

The ACE Diploma requires the completion of a total of **70 credits** according to the categories shown below. The list of recommended courses outline a typical program for students, however additional courses may be available depending on scheduling and the student's area of specialization. Full-time students can complete this program in a minimum of 2 years but may take longer depending on how many prerequisites are required. All course prerequisites are on a course by course basis. Due to course



scheduling and the student’s area of interest, prospective students are advised to develop a personalized study program in consultation with the ACE Program Coordinator (kshaw@coastmountaincollege.ca) or an Educational Advisor (<https://coastmountaincollege.ca/student-services/academic-support/educational-advising/>).

ACE Program Questions? Email Us (info@coastmountaincollege.ca)

ACE diploma requirements

Code	Title	Credits
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First Year Sciences

18 Credits First Year Sciences: ¹	18
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BIOL 101 & BIOL 102	Introductory Biology I - Cells, Diversity & Physiology and Introductory Biology II - Genetics, Evolution & Ecology	
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4 of the following First Year Sciences: ²	
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CHEM 111	Fundamentals of Chemistry I	
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CHEM 122	Principles of Chemistry II	
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GEOG 110	People and the Environment	
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GEOG 150	Physical Geog I: Biogeography, Meteorology and Climatology	
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GEOG 160	Physical Geography II: Geology, Geomorphology and Soils	
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	or GEOL 157 Intro to Northwest Geology	
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PHYS 101	Introduction to Physics I	
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PHYS 102	Introductory Physics II	
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PHYS 121	Advanced Physics I	
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PHYS 122	Advanced Physics II	
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SUST 120	Permaculture Design	
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Computer Science

3 Credits of Computer Science:	3
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CPSC 111	Introduction to Computer Science	
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English

6 Credits of the following First Year English:	6
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ENGL 101	University Writing	
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ENGL 102	Introduction to Literature	
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ENGL 151	Technical Writing I	
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ENGL 152	Technical Writing II	
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Second Year Courses

15 Credits of Second Year Courses:	15
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GEOG 204	Spatial Analysis and Geographic Information Systems (GIS)	
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4 of the following:	
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BIOL 211	Principles of Ecology	
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OCGY 208	Intro Physical, Chemical and Geological Oceanography	
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OCGY 209	Introduction to Biological Oceanography	
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ENV 201	Environmental Work Placement	
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BIOL 2XX	(When available)	
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ANTH 2XX	(When available)	
GEOG 2XX	(When available)	
CHEM 2XX	(When available)	

ACE Courses

22 Credits of the following ACE Courses:	22
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ACE 101	Applied Service Learning	
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ACE 121	Fisheries Management & Coastal Policy	
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ACE 134	Fishes of the Pacific Northwest Rearing	
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ACE 141	Monitoring & Measuring Aquatic and Intertidal Zone Habitats	
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ACE 142	Coastal Forest Measurements	
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ACE 154	Surveying	
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ACE 170	Mariculture Technology	
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ACE 175	Wildlife Conservation & Monitoring Population Management	
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ACE 182	Stream Habitat Assessment & Restoration	
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ACE 190	Temperate Rainforest Ecology	
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	Other Ace courses as available	
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ACE 197	Environmental Monitoring Techniques	
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Electives

6 Credits of the following Electives:	6
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MATH 101	Calculus I: Differential Calculus	
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MATH 115	Precalculus	
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MATH 131	Introduction to Statistics	
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ECON 150	Micro Economics	
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ECON 151	Macro Economics	
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ANTH 1XX		
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GEOG 1XX		
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SOCI 1XX		
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BIOL 2XX		
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	Others as available	
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Total Credits	70
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¹ Min 6 credits lab biology

² 12 credits 1st year

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English proficiency is required for all students entering CMTN programs. Please visit our English Language Alternatives (<https://coastmountaincollege.ca/admissions/requirements/language-requirements/domestic-english-language-requirements/>) page to see how this requirement can be met.

Need help with the application process? Contact an Educational Advisor (<https://coastmountaincollege.ca/student-services/academic-support/educational-advising/>).



ACE Diploma

1. Apply (<https://apply.educationplannerbc.ca/cmtn/>) direct to Applied Coastal Ecology (ACE)
2. Submit proof of English 12 or equivalent
3. Life Sciences 11, Chemistry 11, Foundation of Math 11 or Equivalent are required to complete the program. Students can be admitted without all three however, students will be required to upgrade throughout the program

The ACE program has multiple entry and exit points depending on your prior studies. Students with Life Sciences 11, Chemistry 11, Foundation of Math 11, and English Studies 12, English First Peoples 12 or equivalents meet all of the course prerequisites and can complete the Diploma within 2 years. Course registration and program planning is on a course by course basis, depending on the student meeting the pre-requisites of each course. Students missing these courses can enter the program and upgrade in the Career and College Prep (CCP) (<https://coastmountaincollege.ca/program/career-college-preparation-ccp/>) program.

ACE Diploma program fees

Students should note that the most common academic schedule is **35 credits per year** to complete the diploma; which requires successful completion of 70 credits. The certificate may be completed in 24 credits, and those fees are not displayed. Please contact the ACE Program Coordinator (kshaw@cmtn.bc.ca) for details.

Fees	Domestic	International
Full-time:	35 credits	35 credits
Tuition:	\$3,459.05	\$14,702.45
Student Union Fees: ¹	\$125.97	\$125.97
Mandatory Fees (includes 24 credits of required lab fees):	\$660.36	\$731.82
Health and Dental Insurance:	\$250.00	\$548.75
Tuition and Mandatory Fees Total:	\$4,495.38	\$16,108.99
Books: ²	\$800.00	\$800.00
Tools: ²	\$100.00	\$100.00
Equipment/ Supplies: ²	\$500.00	\$500.00
Field School Fees (Cost will vary): ²	\$900.00	\$900.00
Estimated Program Cost:	\$6,795.38	\$18,408.99

Fees are effective as of August 1, 2021 for the 2021/22 academic year.

1

These fees are term based and may vary due to the length of the program.

2

Please note that these are approximate costs and may vary depending on courses taken.

The Coast Mountain Students Union (CMSU) is pleased to announce that Extended Health and Dental Insurance has been approved by student referendum held in March 2021. Additional information will be provided by CMSU July 2021, including details of the coverage and directions for the opt out process for students with equivalent coverage. For any inquiries about the plan or referendum, please contact Golnoosh Namazi, organiser@mycmsu.ca

Basic Health insurance is mandatory for all international students. Health insurance costs will be charged every term until students provide proof of MSP.

University transfer agreements

Start here, finish anywhere!

ACE Diploma graduates are able to move onto University Degree completion with a number of transfer pathways. The majority of courses within the program transfer directly to colleges and universities in British Columbia through the BC Transfer System. The ACE program also has a number of specific transfer agreements with institutions that facilitate a seamless transfer between programs.

Explore our pathways to degree completion:

BC Transfer System

The BC Transfer Guide (<http://www.bctransferguide.ca/>) is the main resource to look up the transfer of courses between institutions within the province.

Royal Roads Transfer Agreement

Transfer direct into the third-year of a Royal Road's Bachelor of Science degree (<https://www.coastmountaincollege.ca/programs/explore/degree-partnerships/transfer-agreements/royal-roads-bachelor-of-science-in-env-science-or-env-management/>) and graduate with a degree in Environmental Science or Environmental Management.

UBC Transfer Agreement

Transfer directly into the third-year of UBC's Natural Resources Conservation Bachelor of Science (BSc) (<https://www.coastmountaincollege.ca/programs/explore/degree-partnerships/transfer-agreements/ubc-bachelor-of-science-in-natural-resources-conservation/>) and major in Science and Management or Global Perspectives.

In addition to these pathways, more general agreements exist for degree completion within Canada and internationally. Prospective and current students should check out the Degree Partnership (<https://www.coastmountaincollege.ca/programs/explore/degree-partnerships/>) page for more specific details and consult with the ACE Program Coordinator (kshaw@cmtn.bc.ca) in planning their program.

Career opportunities

Students gain the knowledge and practical skills to acquire employment with a large variety of employers including, Environmental Organizations, Federal Government (i.e. Fisheries and Oceans Canada and others), Provincial Government, Environmental Consulting Firms, First Nations



Governments, Government Funded Programs, Mariculture and Forestry Industries, Eco-tourism, and International Development projects.

Example jobs:

- DFO Stock Assessment Technician
- Nisgaa Fisheries Management
- Northcoast Skeena First Nations Stewardship Society Creel Survey
- Oona River Fish Hatchery
- Archipelago Marine Research
- Babine Lake Stock Assessment
- Assistant Forester
- SFU Fisheries Environmental Toxicology Lab

Program graduates

The ACE program was first initiated in 1996, under the name Coastal Integrated Resources Management (CIRM). It was created in response to growing demands from employers for locally trained experts in the environmental field. In the fall of 2005, the program was expanded and renamed Applied Coastal Ecology to better reflect the new program model.

The ACE program has attracted students from as far away as Japan and Africa, as well as a host of Canadian cities and provinces spanning from coast to coast. A significant portion of our enrolment comes from outside of Prince Rupert.

ACE graduates are generally well-known for their passion and commitment to the environment and the sustainable management of the great wealth of natural resources found in coastal ecosystems across the planet.

Employment & career prospects

Graduates have had exceptional professional and academic opportunities.

- 100% of graduates have found meaningful employment or have gone on to further their education following completion of the program
- 83% of graduates who found employment did so in a field related to their studies

We find our graduates engaged in employment across a wide range of related fields:

Consulting Firms:

- Archipelago Marine
- J.O. Thomas and Associates
- Oona River Resources Association
- Triumph Timber
- First Nations
- Self-employed contracting

Consulting firms generally look for employees that have both the foundational academic training needed to solve problems, as well as the practical hands-on skills needed to carry out consulting contracts in both field and office settings. Many consulting firms have stated that they prefer to hire graduates who possess hands-on experience/skills as well

as the necessary academic training. The ACE program has deliberately included a well-integrated mix of both academic and hands-on courses which together create a balance and prepare graduates to be effective and efficient and hit the ground running.

Government:

- Fisheries and Oceans Canada
- Ministry of Air, Land and Water
- First Nations governments
- Local municipal governments
- Teaching institutions

The ACE program utilizes various government agencies. Government representatives are used as guest lecturers and also serve as expert advisors on the program's advisory committee. The committee has representation from several levels of government - from local to federal. This ensures the program's curriculum remains up to date with governmental policies and procedures and makes ACE grads an attractive prospect to these agencies.

Private Industry:

- Technologists and biologists at mariculture operations ranging from Marine Harvest Canada to smaller-scale private operations
- BC Hydro and any other organization that requires environmental monitoring as part of their business
- Wildlife protection and fish-stream enhancement offices
- Non-governmental environmental organizations such as World Wildlife Fund, T Buck Suzuki Foundation, and EcoTrust Canada
- Guiding or working as wildlife interpreters for eco-tourism operations
- Various forestry operations
- Laboratory technicians
- A variety of international placements

The growth of coastal ecology-related opportunities with private industry has experienced a significant increase in recent years. Graduates have done exceptionally well in these settings, and in some cases make up the bulk of the technical expertise for such employers.