

ASSOCIATE OF SCIENCE

Environmental Science

PROGRAM PLANNING GUIDE 2024/2025



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ASSOCIATE OF SCIENCE

An Associate of Science (ASc) Degree provides students with the first two year of study towards a Bachelor of Science degree.

In the ASc, degree program, students complete 20 courses providing both breadth of knowledge and in-depth study in specific disciplines.

Since many students will continue their studies, the requirements are sufficiently flexible to enable students to complete the required prerequisites for upper level coursework in their intended major.

This guide was developed to help students choose courses and to develop a sequencing plan for transfer to a Bachelor of Science degree program.



DISCLAIMER

This document is provided for information only.

Students should always consult the course calendar of the degree-granting institution to ensure that they have taken appropriate prerequisites.

COTR Education advisors are available for further assistance.

For current course transfer agreements between COTR and BC institutions please consult *bctransferguide.ca*

For transfer to AB institutions please consult transferalberta.alberta.ca/transfer-alberta-search

For University of Lethbridge transfer agreements please consult *bridge.uleth.ca/PROD/uofl_ro_tc_agrmnts.front_end*

Sequencing plans are samples.

Students may need to modify plans based on prerequisite requirements or course scheduling and availability.



Environmental Science

36 credits in SCIENCE

at least 3 credits in laboratory science, 15 credits other science courses and at least 18 credits in 200 level in 2 or more areas

1.	BIOL 101	Introduction to Biology 1	х
2.	BIOL 102	Introduction to Biology 2	х
3.	BIOL 200	Introduction to Microbiology	X ¹
4.	BIOL 203	Genetics	х
5.	BIOL 204	Introduction to Ecology	х
6.	BIOL 208	Vertebrate Biology	X ¹
7.	CHEM 101	Fundamentals of Chemistry 1	х
8.	CHEM 102	Fundamentals of Chemistry 2	х
9.	CHEM 201	Organic Chemistry	X *
10.	CHEM 215	Analytical Chemistry	X *
11.	ENSC 101	Introduction to Environmental Science	х
12.	GEOG 101	Introduction to Physical Geography	х
13.	GEOG 211	Intro to Geographical Info Systems	х
14.	GEOG 230	Meteorology, Climatology, & Hydrology	х
15.	GEOG 251	Quantitative Geography	х

х х х х х х х x¹ х х х х Х х х х х х Х \mathbf{X}^* Х \mathbf{X}^* x х х х Х х Х х х х х х х х

SFU BSc Environmental Science Environmental Earth Systems

UNBC BSc Environmental Science

SFU BSc Environmental Science Applied Biology School

U of L BSc Environmental Science

6 credits in ENGLISH

1.	ENGL 100	English Composition	х	х	х	
2.	ENGL 101	Introduction to Poetry and Drama	X *	X *	X *	
3.	ENGL 102	Introduction to Prose Fiction	X [*]	x *	X [*]	

6 credits in MATH (at least 3 credits in Calculus)

1.	MATH 103	Differential Calculus	x	х	X	х
2.	MATH 104	Integral Calculus	х	х	х	х
3.	STAT 106	Statistics	х	х	X *	х

6 credits in ARTS (other than English)

1.	Elective		
2.	Elective		

6 credits in ARTS, SCIENCE OR OTHER AREAS

1.	PHYS 103	Introduction to Physics 1
2.	PHYS 104	Introduction to Physics 2
3.	GEOL 105	Introduction to Physical Geology
4.	ENST 200	Intro to Environmental Sustainability
5.	Elective	

х	x	х	х
	x	х	х
х	х		х
	X *	X *	

NOTE the above listed are example institutions.

Consult bctransferguide.ca for transfer to these and other institutions.

 - indicates that there is more than one option.
 ex. English 101 or 102 will help fulfill the English requirement, but English 100 is required.

R - in	dicates recommended
e	lective

x¹ - indicates credit granted but not core requirement

COLLEGE OF THE ROCKIES



SAMPLE SEQUENCING PLANS



University of Lethbridge BSc Environmental Science

YEAR 1

Fall Semester

BIOL 101 Introduction to Biology 1

CHEM 101 Fundamentals of Chemistry 1

ENGL 100 English Composition

ENSC 101 Introduction to Environmental Science

GEOG 101 Introduction to Physical Geography Winter Semester

BIOL 102 Introduction to Biology 2

CHEM 102 Fundamentals of Chemistry 2

ENGL 101 OR ENGL 102 Intro to Poetry & Drama

Intro to Prose

MATH 103 Differential Calculus

GEOG 230 Meteorology, Climatology, & Hydrology

YEAR 2

Fall Semester

BIOL 204 Ecology

GEOG 211 Introduction to Geographic Information Systems

STAT 106 Statistics

FA 101 Contemporary Art: A History **BIOL 208** Vertebrate Biology

OR

GEOL 105 Introduction to Physical Geology Winter Semester

BIOL 203 Genetics

GEOG 251 Quantitative Geography

BIOL 200 OR Introduction to Microbiology

Elective

Liberal Arts Requirement

CHEM 215 Analytical Chemistry



BSc Environmental Science Applied Biology Concentration

If you want to do this concentration,

please see Math and Science Program Coordinator as well as an Academic Advisor YEAR 1

Fall Semester

BIOL 101 Introduction to Biology 1

CHEM 101 Fundamentals of Chemistry 1

MATH 103 Differential Calculus

ENSC 101 Introduction to Environmental Science

GEOG 101 Introduction to Physical Geography Winter Semester

BIOL 102 Introduction to Biology 2

CHEM 102 Fundamentals of Chemistry 2

MATH 104 Integral Calculus

ENGL 100 English Composition

Elective

YEAR 2

Fall Semester

BIOL 204 Ecology

GEOG 211 Introduction to Geographic Information Systems

OR

ENST 200 Intro to Enviro Sustainability

BIOL 208 Vertebrate

PHYS 103 Intro to Physics 1

CHEM 201 Organic Chem Winter Semester

STAT 106 Statistics

PHYS 104 Intro to Physics 2

GEOG 230 Meteorology, Climatology and Hydrology

ENGL 101 Intro to Poetry & Drama

Drama ENGL 102

Elective



Simon Fraser University BSc Environmental Science Environmental Earth Systems Concentration

YEAR 1

Fall Semester

BIOL 101 Introduction to Biology 1

CHEM 101 Fundamentals of Chemistry 1

MATH 103 Differential Calculus

ENSC 101 Introduction to Environmental Science Winter Semester

BIOL 102 Introduction to Biology 2

CHEM 102 Fundamentals of Chemistry 2

MATH 104 Integral Calculus

GEOG 230 Meteorology, Climatology and Hydrology

ENGL 100 English Composition

YEAR 2

Fall Semester

BIOL 204 Ecology

GEOL 105 Introduction to Physical Geology

ENST 200 Intro to Environmental Sustainability

PHYS 103 Introduction to Physics 1

GEOG 211 Introduction to Geographic Information Systems Winter Semester

ENGL 101 OR ENGL 102
Intro to Poetry & Drama Intro to Prose

Intro to Prose

STAT 106 Statistics

GEOG 251 Quantitative Geography

PHYS 104 Introduction to Physics 2

CHEM 215 Analytical Chemistry



University of Northern British Columbia BSc Environmental Science

YEAR 1

Fall Semester

BIOL 101 Introduction to Biology 1

GEOG 101 Intro to Physical Geography

MATH 103 Differential Calculus

ENSC 101 Introduction to Environmental Science

CHEM 101 Fundamentals of Chemistry 1

YEAR 2

Fall Semester

BIOL 204 Ecology

ENGL 101 Intro to Poetry & Drama OR ENGL 102

GEOL 105 Introduction to Physical Geology

PHYS 103 Introduction to Physics 1

GEOG 211 Introduction to Geographic Information Systems Winter Semester

BIOL 102 Introduction to Biology 2

ENGL 100 English Composition

MATH 104 Integral Calculus

GEOG 230 Meteorology, Climatology, & Hydrology

CHEM 102 Fundamentals of Chemistry 2

Winter Semester

STAT 106 Statistics

GEOG 251 Quantitative Geography Elective

OR

BIOL 200 Introduction to Microbiology

PHYS 104 Introduction to Physics 2

CHEM 215 Analytical Chemistry





SAMPLE SEQUENCING PLANS 4-YEAR (2 + 2) PROGRAM





COTR to University of Lethbridge BSc. Environmental Science

The following is a sample 2 + 2 planning guide outlining courses required to complete a BSc. Environmental Sciences at University of Lethbridge.

This sequencing plan shows the courses students need to take in each semester at COTR and at Lethbridge.

Liberal arts (numerous options at COTR) and list course requirements should be chosen according to U of L requirements outlined in U of L program planning guide. Between the COTR and U of L program and sequencing plans students will have a clear plan and should not require much in the way of academic advising.

Courses in brackets are U of L course equivalent.

YEAR 1	College of the Rockies	
	FA	WI
	BIOL 101 (BIOL 1010)	BIOL 102 (BIOL 1020)
	CHEM 101 (CHEM 1000)	CHEM 102 (CHEM 2000)
	GEOG 101 (GEOG 1000)	MATH 103 (MATH 1560)
	ENG 100 (ENG 1000)	ENG 101/102 (ENG 1900)
	ENSC 101 (EVSC 2000)	GEOG 230 (GEOG 2300)
YEAR 2	College of the Rockies	
	FA	WI
	BIOL 204 (BIOL 2200)	BIOL 203 (BIOL 2000)
	GEOL 105 (GEOG 2060)	BIOL 200 (BIOL 3400) or LIB ARTS REQ
	GEOG 211 (GEOG 2735)	GEOG 251 (GEOG 2700)
	STAT 106 (MATH REQ.)	CHEM 215 (CHEM 2410)
	FA 101 (ARHI 1000) or LIB ARTS REQ	BIOL 208 (BIOL 3530) or LIB ARTS REQ
YEAR 3	University of Lethbridge	
	FA .	WI
	Technical Studies Term (Lethbridge College)	GEOG 2030
		GEOG 3080

GEOG 3080 FIELD COURSE LIB ARTS REQ. LIB ARTS REQ.

YEAR 4 University of Lethbridge

FA

ENSC 4000 GEOG or GEOL List Course GEOG or GEOL List Course Lib Arts req. 3000/4000 level Elective 3000/4000 level

WI

BIOL 3300 BIOL List 2 or 3 course Independent or Applied Study 3000/4000 Lib Arts req. 3000/4000 level Elective 3000/4000 level

COLLEGE OF THE ROCKIES

COTR to Simon Fraser University BSc. Environmental Science – Applied Biology Concentration

The following is a sample 2 + 2 planning guide outlining courses required to complete a BSc. Environmental Sciences at Simon Fraser University.

The sequencing plan clearly shows students the courses they need to take in each semester at COTR and at SFU.

Humanities requirements should be chosen according to SFU requirements (numerous options available at COTR) and list courses at SFU would be chosen by students according to the SFU program planning guide.

Courses in brackets are SFU course equivalent.

YEAR 1 College of the Rockies	
FA	WI
BIOL 101 (BIOL 101)	BIOL 102 (BIOL 102)
CHEM 101 (CHEM 121)	CHEM 102 (CHEM 122)
MATH 103 (MATH 102)	MATH 104 (MATH 152)
GEOG 101 (GEOG 111)	ENG 100 (WRIT 1XX)
ENSC 101 (EVSC 100)	Elective
YEAR 2 College of the Rockies	
FA	WI
BIOL 204 (BIOL 204)	STAT 106 (STAT 270)
BIOL 208 (BIOL 316)	PHYS 104 (PHYS 102)
GEOG 211 (GEOG 255) or ENST 200 (REM 100)	GEOG 230 (GEOG 214)
PHYS 103 (PHYS 101)	ENGL 101 or ENGL 102 (ENGL 113/102)
CHEM 201 (CHEM281)	Elective
YEAR 3 Simon Fraser University	
FA	WI
EVSC 201	EVSC 305
REM 100	B- Science req.
BISC 337	STAT 302
EVSC 300	B- Science req.
REM 311	B- Science req.
YEAR 4 Simon Fraser University	
FA	WI
ENVC 400	List Course/humanities req./Honours req
List Course	List Course/humanities req./Honours req
List Course/humanities req./Honours req	List Course/humanities req./Honours req
List Course/humanities req./Honours req	List Course/humanities req./Honours req
List Course/humanities req./Honours req	List Course/humanities req./Honours req

COLLEGE OF THE ROCKIES

COTR to Simon Fraser University BSc. Enviro Science – Enviro Earth Systems Concentration

The following is a sample 2 + 2 planning guide outlining courses required to complete a BSc. Environmental Sciences at Simon Fraser University.

The sequencing plan clearly shows students the courses they need to take in each semester at COTR and at SFU.

Humanities requirements should be chosen according to SFU requirements (numerous options available at COTR) and list courses at SFU would be chosen by students according to the SFU program planning guide.

Courses in brackets are SFU course equivalent

YEAR 1	College of the Rockies	
	FA	WI
	BIOL 101 (BIOL 101)	BIOL 102 (BIOL 102)
	CHEM 101 (CHEM 121)	CHEM 102 (CHEM 122)
	GEOG 101 (GEOG 111)	ENG 100 (WRIT 1XX)
	MATH 103 (MATH 151)	MATH 104 (MATH 152)
	ENSC 101 (EVSC 100)	GEOG 230 (GEOG 214)
YEAR 2	College of the Rockies	
	FA	WI
	BIOL 204 (BIOL 204)	ENG 101/ENG 102 (ENG 103/ENG 112)
	PHYS 103 (PHYS 101)	PHYS 104 (PHYS 102)
	GEOL 105 (EASC 101)	GEOG 251 (GEOG 251)
	GEOG 211 (GEOG 255)	ELECTIVE
	ENST 200 (REM 100)	STAT 106 (STAT 270)
YEAR 3	FA	WI
	EVSC 201	EVSC 305
	RFM 100	List Course
	GEOG 215	List Course
	EVSC 300	List course
	List Course	
YEAR 4	Simon Fraser University	
	FA	WI
	ENVC 400	List Course/humanities req./Honours req
	List Course/humanities req./Honours req	List Course/humanities req./Honours req
	List Course/humanities req./Honours req	List Course/humanities req./Honours req
	List Course/humanities reg./Honours reg	List Course/humanities reg./Honours reg

List Course/humanities req./Honours req

List Course/humanities req./Honours req



COTR to UNBC BSc. Environmental Science

The following is a sample 2 + 2 planning guide outlining courses required to complete a BSc. Environmental Sciences at University of Northern BC.

The sequencing plan shows students the courses they need to take in each semester at COTR and at UNBC.

Breadth requirements should be chosen according to UNBC requirements according to the UNBC BSc Environmental Science program requirements.

Courses in brackets are UNBC course equivalent

YEAR 1	College of the Rockies	
	FA	WI
	BIOL 101 (BIOL 103 & 123)	BIOL 102 (BIOL 104 & 124)
	CHEM 101 (CHEM 100 & 120)	CHEM 102 (CHEM 101 & 121)
	GEOG 101 (GEOG 102)	ENGL 100 (ENG 170)
	MATH 103 (MATH 100)	MATH 104 (MATH 101)
	ENSC 101 (ENSC 111)	GEOG 230 (ENSC 201)
YEAR 2	College of the Rockies	\A/I
	BIOL 204 (BIOL 201)	BIOL 200 (BIOL 203)
	GEOL 105 (GEOG 210)	STAT 106 (STAT 240)
	GEOG 211 (GEOG 204)	GEOG 251 (ENSC 250)
	ENGL 101/102 (ENG 101/103)	CHEM 215 (CHEM 210)
	PHYS 103 (PHYS 110)	PHYS 104 (PHYS 111)
YEAR 3	University of Northern British Columbia	
	FA	WI
	ENSC 202	ENPL 305
	FSTY 205	ENPL 401
	GEOG 205	ENSC 308
	GEOG 210	ENSC 406
	Breadth Requirement	Breadth Requirement
YFAR 4	University of Northern British Columbia	
	FA	WI
	ENSC 440 OR ENSC 499	ENSC 218
	ENSC 450	ENVS 225 or FNST 304 or GEOG 307 or GEOG 401 or INST 307
	ENSC 414	ENGR 451 or ENSC 404
	Breadth Requirement	ENSC 412 or ENSC 452
	Breadth Requirement	Breadth Requirement



INSTITUTION SPECIFIC REQUIREMENTS

University of Lethbridge requirements:

At least 20 courses of the 40-course degree program must be taken at U of L.

Liberal Arts Requirements:

Four courses in Fine Arts & Humanities Four courses in Social Sciences Four courses in Science

Technical Studies Term (five courses)

Students are required to complete a term of study at Lethbridge College, consisting of five courses from the College's Environmental Science program. The Technical Studies term counts as the equivalent of 15.0 credit hours at the University of Lethbridge (three unspecified 2000-level and two unspecified 3000-level Environmental Science courses). The Technical Studies term should be taken after at least 20 university courses have been completed and prior to registration in the final 10 courses for the degree. Students must have the college course selection approved by the Coordinator of Environmental Science. Students are not permitted to complete any courses in addition to the approved Lethbridge College courses during the Technical Studies term. Further details are available from the Coordinator

SFU Residency requirements:

At least ½ of the program's total units and 2/3 of the programs upper division units must be taken at SFU.

SFU WQB Requirements:

6 units of Writing (W) including at least 3 credits taken at SFU

* SFU requires 6 credits in Writing, 3 credits must be 300, 400 level and must be taken at SFU.

6 units of Quantitative (Q)

- 18 units of destinated Breadth (B)
 - 6 units of B-Soc (Social Sciences)
 - 6 units of B-Hum (Humanities)
 - 6 units of B-Sci (Science)
- 6 units of Undesignated Breadth

UNBC Breadth requirements:

Arts and Humanities:

At least 3 credit hours of courses with the prefix ENGL, HIST, PHIL, WMST.

Social Science:

At least 3 credit hours of courses with the prefix: ANTH, COMM, ECON, EDUC, ENPL, FNST, INTS, NORS, ORTM, POLS, PSYC, RRT.

Natural Science:

At least 3 credit hours of courses with the prefix BIOL, GEOG, ENSC, ENVS, FSTY, HHSC, NREM.

Physical Science:

At least 3 credit hours of courses with the prefix ASTR, CHEM, CPSC, MATH, PHYS, STAT.



COURSE DESCRIPTIONS

These courses form the core of the Associate of Science Degree Program. Please see course calendar or course outlines for specific course prerequisites and when choosing courses, please consult receiving institution for specific degree requirements.

36 Credits in Science

at least 3 credits in lab science, up to 15 credits in other science courses and at least 18 credits in second year science in two or more subject area

BIOL 101 Introduction to Biology 1

An introduction to the structure and function of organisms with particular reference to molecular, biochemical and physiological aspects of the living world. Designed for students seeking a degree or diploma in a field of science or technology, BIOL 101, with BIOL 102, lays the foundations on which the higher-level courses in Biology are based. It is also suitable as an elective course for general interest or arts students.

Credits: 3.00

BIOL 102 Introduction to Biology 2

BIOL 102 is an introduction to organismic and population biology with emphasis on reproduction, genetics, developmental biology, evolution, diversity, and ecology.

Credits: 3.00

CHEM 101 Fundamentals of Chemistry 1

This course presents the fundamental principles of chemistry with particular reference to acid base and redox chemistry, electronic structure of atoms and molecules, properties of liquids, gases, solids and their solutions, phase changes, and thermochemistry. The associated laboratory exercises emphasize proper experimental techniques, data collection and analysis, safety and technical writing skills.

Credits: 3.00

CHEM 102 Fundamentals of Chemistry 2

Together with CHEM 101, CHEM 102 provides a solid foundation in fundamental chemical principles. Topics include equilibrium, thermodynamics, kinetics, electrochemistry, chemistry of the main group elements and the chemistry of organic and biomolecules. The associated laboratory exercises emphasize proper experimental techniques, data collection and analysis, safety and technical writing skills.

Credits: 3.00

ENSC 101 Introduction to Environmental Science

This course introduces students to scientific analysis and communication of environmental issues. Students will learn about natural systems and the complex interactions among their biological, physical, chemical and anthropogenic components. Students will consider Western and Indigenous perspectives, governance, and economic factors to critically evaluate and communicate environmental problems. Students will investigate how these issues affect various aspects of the ecosphere, including humans, and will use integrated knowledge and perspectives to explore sustainable solutions. Laboratory activities, field trips and guest lectures will offer the opportunity to study regional environments and local environmental issues.



GEOG 101 Physical Geography

This course examines the concepts and processes of physical geography that govern the function of the atmosphere, lithosphere, hydrosphere, and biosphere using an earth-systems approach. Course lectures and lab topics introduce the sciences of cartography, meteorology, climatology, geomorphology, hydrology, biogeography, and soils. A focus on how human activities impact the environment, such as climate change and other real-world issues will also be addressed.

Credits: 3.00

GEOL 105 Introduction to Geology

An introduction to the major principles of physical and historical geology covering the origin and structure of the Earth, plate tectonics, volcanism and other mountain building processes, the erosion of the Earth's crust, and the formation and properties of minerals and rocks.

Credits: 3.00

BIOL 200 Introduction to Microbiology

Introduction to Microbiology is an introduction to the general principles of microbiology. Lectures and laboratory exercises explore fundamental topics of microbiology, environmental microbiology and molecular microbiology such as diversity of microorganisms, microbial structure, metabolism, genetics and microbial ecology emphasizing applied, medical and environmental microbiology. The laboratory introduces methods for safe handling of microorganisms, techniques of microbial isolation, enumeration and identification as well as experiments relevant to lectures.

Credits: 3.00

BIOL 203 Genetics

Genetics is the study and understanding of inheritance and development of organisms. This course will provide an introduction to genes and gene function. Mendelian and extramendelian genetics and molecular genetics review and expand on these topics explored in first year biology. Topics in transmission, molecular and quantitative genetics will also be discussed. Lab material will include descriptive aspects, techniques, data analysis and experimentation.

Credits: 3.00

BIOL 204 Ecology

The course studies the interactions between organisms and their environment at the organismal, population, community and ecosystem levels. Topics considered include energy flow, nutrient cycling, ecological succession, population dynamics and evolutionary processes. Local examples may be used to illustrate some of the principles.

Credits: 3.00

BIOL 208 Vertebrate Biology

This course covers the evolution and comparative anatomy of cephalochordates, urochordates, fish, amphibians, reptiles, birds, and mammals. The comparative anatomy of major organ systems among fishes, amphibians, birds, and mammals will be studied in the lab via dissection of representative organisms. The lab will emphasize the relationship between structure and function of vertebrate organisms while the lecture will focus on current controversies and discoveries in the scientific study of vertebrate evolution.

CHEM 201 Organic Chemistry

CHEM 201 is an introductory course in organic chemistry including the structure and reactions of aliphatic and aromatic hydrocarbons and their derivatives. The laboratory stresses the techniques of preparation, purification and identification of organic compounds.

Credits: 3.00

CHEM 215 Analytical Chemistry

This course provides a solid background in the principles of analytical chemistry and their applications in fields such as environmental science. Topics include measurements and their errors, the use of statistics in data analysis and sampling, redox-, complexometric-and acid-base titrations, absorption and emission forms of atomic and molecular spectroscopy, electrochemical methods of analysis and separation techniques. The laboratory exercises emphasize proper experimental techniques, data collection and analysis, safety and technical writing skills.

Credits: 3.00

GEOG 211 Introduction to Geographic Information Systems

Geographic Information Systems (GIS) is an applied field encompassing the acquisition, storage, processing, analysis and presentation of spatial information. GIS has become an essential tool for spatially informed decision making in government, academic and private sectors. Course lectures will cover underlying theory, concepts and applications of GIS. Topics covered include spatial data acquisition, raster and vector data models, database, cartography and geoprocessing. Lab sessions will apply lecture theory through hands-on experience with industry standard GIS software. Next Offered 2021/2022

Credits: 3.00

GEOG 230 Meteorology, Climatology and Hydrology

This course will examine the basic principles and processes governing the Earth's weather and climate, including the movement of water. In this course, students will analyze the linkages between the atmosphere, hydrosphere, and land surface interactions responsible for creating the weather and climate that we experience each day. Specifically, we will examine fluxes of mass and energy exchanges, radiation, precipitation, winds, weather systems, fluvial hydrology, water balances, and global climates. First Offering 2021/2022

Credits: 3.00

GEOG 251 Quantitative Geography

This course will introduce methods for collecting, analyzing, and reporting geographic data. Course topics include gathering samples, describing data and theoretical distributions, testing significance, and exploring spatial relationships. Real-world examples from both physical and human geography as well as other related subject areas will provide a foundation for more advanced courses and applications. All lab activities are computer based using statistical software.



6 Credits in first year English (ENG 100 and one of ENG 101 or ENG 102)

ENGL 100 English Composition

English 100 focuses on composition for academic purposes and develops a student's ability to write clearly and effectively. Students also learn the fundamentals of critical thinking, persuasive writing techniques (including rhetorical appeals and devices), scholarly research, and academic reading.

Credits: 3.00

ENGL 101 Introduction to Poetry and Drama

An introduction to the critical reading of literature through the study and analysis of poetry and drama across historical periods from Shakespeare to twenty-first century poets and dramatists. While this course will teach students how to preform college-level literary analysis of canonical texts, it will also teach students how to question and evaluate the cultural narratives that literature circulates. As such, the class will explore questions of gender, class, race, nationhood/nation building, and the problematic literary canon in order to develop strategies for negotiating complex literary texts and to become better, more nuanced readers.

Credits: 3.00

ENGL 102 Introduction to Prose

English 102 introduces students to the genre of literary fiction from the origins of the short story in early nineteenth century to the novels of twentieth and twenty-first century. The aim of English 102 is to read fiction with an understanding of genre, technique and form; to apply various critical strategies to literary texts; and to develop analytical writing skills appropriate to essays at the university level. Ultimately, the course encourages students to consider how narrative forms can shape, challenge and respond to their moral, social, and political contexts.

Credits: 3.00

6 Credits in Mathematics (at least 3 credits in calculus)

MATH 103 Differential Calculus

This course is intended for students who are pursuing a Bachelor of Science degree. Topics include functions, limits, continuity, derivatives and their interpretation, differentiation rules, techniques of differentiation, implicit differentiation, inverse functions, exponential functions, logarithms, applications of differentiation such as linear approximations, Newton's method, related rates, analysis of graphs and optimization, the Mean Value Theorem, definite and indefinite integrals, integration by substitution, Riemann sums, and applications of integration. Calculus is a necessary step in any career in the sciences including Biology, Chemistry, Commerce, Computer Science, Engineering, Geology, Mathematics, Medicine, and Physics. It is also useful in any field which uses statistics to analyze data.

Credits: 3.00

MATH 104 Integral Calculus

Topics include: Logarithmic, exponential and hyperbolic functions, complex numbers, integration techniques (substitution, parts, partial fractions, trigonometric substitution, numerical methods), L'Hopital's rule, improper integrals, sequences, series, convergence tests (divergence, integral, comparison, limit comparison, ratio, root, and alternating series tests), Taylor Maclaurin and Fourier series, vectors (dot products, vector valued functions), and polar curves. Calculus is a necessary step in any career in the sciences including Biology, Chemistry, Commerce, Computer Science, Engineering, Geology, Mathematics, Medicine, and Physics. It is also useful in any field which uses statistics to analyze data.



STAT 106 Statistics

This course introduces the fundamental ideas of statistics and can be applied to any discipline. Topics include: collection, description, and presentation of data; calculating central tendency and dispersion; probability and statistical inference; hypothesis testing (means, proportions, variances, one and two samples); correlation and regression; decision making and sampling, Goodness of Fit Tests, and Contingency Tables.

Credits: 3.00

6 Credits in Arts (other than English)

HUMANITIES

FNST 101 First Nations Studies 1

This course is an introduction to the multi-disciplinary field of Aboriginal studies. The prehistory, history, and traditional and contemporary cultures of Aboriginals in Canada and their various perspectives are addressed. Additionally, the historical overview of Aboriginal/non-Aboriginal relations and their effects are explored.

Credits: 3.00

HIST 201 Pre-Confederation Canada

This course surveys Canada's past before 1867. It looks at original Indigenous inhabitants through French settlers and English conquerors to colonial immigrants, labourers, businessmen, politicians, and women, a panoply of fascinating historical agents. In addition, significant events, such as group contact/relations, expansion/settlement processes, economic undertakings, military battles as well as rebellions, social developments, and political evolutions, are examined. Attention is paid to time's impact on continuity and change throughout the period, but greater emphasis is placed on understanding these agents and events through the major analytical categories of race/ethnicity, gender, and class. Doing so helps foster students' interest in the importance of understanding this country's past and allows them to acquire greater historical consciousness to critically understand Canadians' current context.

Credits: 3.00

HIST 202 Post-Confederation Canada

A historical survey of Canada, this course traces the country's development from the immediate aftermath of Confederation to contemporary times. Over that period, significant actors and events, like the World Wars and the Depression, will be considered. Greater attention, however, will be paid to changes and continuities arising from Canada's territorial growth; consolidation under the national policy, including incorporating large numbers of immigrants into the country; cleavages in their various manifestations; imperialism-continentalism choices; industrialization/urbanization/reform movements; post-war international and social decisions; Sixties' upheavals, and Indigenous marginalization. All of these areas of study will help foster students' interest in the importance of understanding this country's past and allow them to acquire greater historical consciousness to critically question whether Canadians' attempts to create a great nation were best for all.



PHIL 102 Introduction to Philosophical Inquiry 2

Philosophy 102 is designed to explore three primary subject areas of philosophy: the nature of reality (metaphysics), the study of knowledge (epistemology), and the question of God (the philosophy of religion). Resources include Plato, Aristotle, Descartes, Materialism, Locke, Hume, Kant, and many more, both classical and contemporary. Some of the particular issues explored are: the question of transcendent reality, the mind-body problem, free will versus determinism, the role of mind and perception in knowing, the claims of skepticism, and the central arguments for and against the existence of God.



SOCIAL SCIENCES

ANTH 101 Introduction to Cultural Anthropology

This course involves an in-depth exploration of the concept of culture and the cross-cultural study of human diversity within the discipline of anthropology. Students focus on topics such as anthropological research, ethics, culture, worldview, gender, language, marriage, families and households, Indigenous peoples, religion, and globalization. Students also engage in self-reflexive examination of their own worldviews, perceptions, and biases in relation to other peoples and cultures.

Credits: 3.00

ECON 101 Microeconomics

This course deals with the economic principles that govern the individual segments of the economy. Topics include supply and demand, price elasticity, utility, cost of production, perfect and imperfect market structures, theory of production, the demand for factors, and the pricing of factors. Some current business situations are discussed.

Credits: 3.00

ECON 102 Macroeconomics

This course presents the economic principles that govern the behaviour of the nation's economy. Topics include production possibility, supply and demand, national income analysis, money and banking, fiscal and monetary policy, and international trade. Current Canadian economic problems are discussed.

Credits: 3.00

ECON 250 Environmental Economics

This course provides an introduction to the concepts and methods of analysis in environmental economics. It applies microeconomic principles to the examination of market failures and how they may be corrected either through incentives or policy. Topics include valuing the environment, cost-benefit analysis, environmental policy analysis, and specific Canadian environmental issues and policy.

Credits: 3.00

ENST 200 Introduction to Environmental Sustainability

This course examines the central concepts of environmental sustainability and considerations for development. Students are introduced to the complexity and debate of developing resource-based industries and minimizing impacts to ecosystems and communities. Planning and management strategies for various industries, as well as the role of various agencies and organizations, will be examined with specific examples.

Credits: 3.00

GEOG 210 Geography of BC

This course presents a regional geographic analysis of British Columbia and investigates the physical, cultural, economic, and historical characteristics of the various provincial regions. This course also examines patterns of settlement and development, with particular emphasis on industries of importance to the Columbia Basin region, including forestry, mining, and tourism.



POLI 100 Introduction to Politics & Government

This course introduces students to political science, assisting them to gain a foundational understanding of first, the discipline's key concepts and second, its practicalities. In order to do so, study will start with the fundamental nature of politics; power in all its guises; political beliefs, attitudes, and values acquisition; and the theoretical bases/action plans of various ideologies. Consideration will then turn to an exploration of peoples' efforts to create proper sized political units; set fundamental rules; lead and make decisions; debate and pass laws; offer advice for and put in place government programs; organize to achieve goals and aims; and devise electoral systems to make choices. To clarify and solidify learning this information, students will work up case studies so they can develop better-informed political opinions and proceed to other political science courses.

Credits: 3.00

PSYC 101 Introduction to Psychology 1

This course provides an introduction to the history, principles, and methods of psychology. Topics may include the brain and behaviour, sensation and perception, learning and memory, thinking and language, and states of consciousness.

Credits: 3.00

PSYC 102 Introduction to Psychology 2

This course is a continuation of Psychology 101. Topics may include development across the lifespan, intelligence, motivation, emotion, stress and health, personality, psychological disorders, therapy, and social behaviour.

Credits: 3.00

GEOL 220 Environmental Geology and Natural Disasters

This course examines the nature of a variety of natural hazards including events such as earthquakes, volcanic eruptions, landslides, river flooding, severe weather, wildfire, and hurricanes. Current methods of analysis, prediction and mitigation are investigated. Laboratory activities concentrate on working from real-life situations in order to draw conclusions about natural hazards issues.

Credits: 3.00

FINE ARTS

FA 101 Contemporary Art: A History

This course provides an opportunity to study and interpret significant social, historical, political and philosophical themes of contemporary art as a cultural expression of society. Beginning with Western Art of the 13th century, we will study the influences leading to Modern and Contemporary Art of the 20th and 21st centuries. Students explore important developments through the intersection of art, science, technology and the new forms of visual culture that are shaping the contemporary art of today.

Credits:3.00

FA 105 Studio Foundation

The Studio Foundations course embodies fundamental hands-on experience with art materials and creative processes in drawing, painting, sculpture, printmaking, photography, and graphics. It provides students with an introduction to concepts and processes used in producing and presenting art through the study and application of creative methods and techniques, specific and multimedia approaches, and other considerations needed in the planning, rendering and presenting of art.



FA 106 Introduction to Drawing

This course provides a magnificent opportunity for student-artists to develop a keen sensitive eye along with deeper feelings for materials and subjects of drawing. Through lecture and hands-on experience, the student-artist explores contemporary and historical drawing practices, bringing their intellectual awareness, emotional responses, skills, and capabilities to a new level. Beginning with how one perceives an image through a broad spectrum and diverse techniques of drawing practice, the student-artist sees the indispensable role of drawing as an important aspect of art making.

Credits:3.00

FA 107 Sculpture

The student is introduced to sculpture and 3D thinking through the element of clay, exploring a variety of historical and contemporary methods and styles. Investigation of a number of building techniques, and various embellishment and firing styles lead the student to an experience of the processes and qualities inherent in clay as a sculpture medium.

Credits:3.00

6 Credits in Arts, Science or other areas

ARTS

ANTH 101 Introduction to Cultural Anthropology

This course involves an in-depth exploration of the concept of culture and the cross-cultural study of human diversity within the discipline of anthropology. Students focus on topics such as anthropological research, ethics, culture, worldview, gender, language, marriage, families and households, Indigenous peoples, religion, and globalization. Students also engage in self-reflexive examination of their own worldviews, perceptions, and biases in relation to other peoples and cultures.

Credits: 3.00

OR any humanities course, social science course or fine arts course not used to meet other requirements

SCIENCE

GEOL 105 Introduction to Geology

An introduction to the major principles of physical and historical geology covering the origin and structure of the Earth, plate tectonics, volcanism and other mountain building processes, the erosion of the Earth's crust, and the formation and properties of minerals and rocks.

Credits: 3.00

PHYS 103 Introduction to Physics 1

This course introduces the student to how calculus is used to build physical theory and to solve problems in kinematics, dynamics, momentum, and center of mass calculations. In addition, the student is introduced to several conservation laws, in particular conservation of mechanical energy and linear and angular momentum.



PHYS 104 Introduction to Physics 2

This course builds on PHYS 103. Electric and magnetic fields are used as examples of vector fields, and the concept of flux and Gauss's theorem are used to calculate the electric field in simple cases. Line integrals and the gradient are introduced as a means of going between electric field and potentials. Students are taught the uses for resistors, capacitors, and inductors and how to do calculations for circuits which use them. Ideas from relativity and quantum mechanics are introduced.

Credits: 3.00

STAT 106 Statistics

This course introduces the fundamental ideas of statistics and can be applied to any discipline. Topics include: collection, description, and presentation of data; calculating central tendency and dispersion; probability and statistical inference; hypothesis testing (means, proportions, variances, one and two samples); correlation and regression; decision making and sampling, Goodness of Fit Tests, and Contingency Tables.

Credits: 3.00

OR any other science course not already used to meet other requirements



CURRENT TRANSFER CREDIT AGREEMENTS



For Core Science Courses In The Asc In Environmental Science

Current Transfer Credit Agreements for Core Science courses in the Associate of Science – Environmental Science with University of Lethbridge, Simon Fraser University and University of Northern British Columbia.

COTR	U of L	SFU	UNBC
BIOL 101	BIOL 1010	BIOL 101 (B-SCI)	BIOL 103 &123
Introduction to Biology 1	Cellular Basis of Life	General Biology	Introductory Biology I & Lab
BIOL 102	BIOL 1020	BIOL 102 (B-SCI)	BIOL 104 & 124
Introduction to Biology 2	Diversity of Life	General Biology	Introductory Biology II & Lab
BIOL 200	BIOL 3400	BIOL 1XX	BIOL 203
Introduction to Microbiology	Principles of Microbiology		Microbiology
BIOL 203	BIOL 2000	BIOL 202	BIOL 210
Genetics	Principles of Genetics	Genetics	Genetics
BIOL 204	BIOL 2200	BIOL 204	BIOL 201
Ecology	Principles of Ecology	Introduction to Ecology	Ecology
BIOL 208	BIOL 3530	BIOL 316	BIOL 2XX
Vertebrate Biology	Vertebrate Zoology	Vertebrate Biology	
CHEM 101	CHEM 1000	CHEM 121 (Q, B-SCI)	CHEM 100 & 120
Fundamentals of Chemistry 1	General Chemistry I	General Chemistry I	General Chemistry I & Lab
CHEM 102	CHEM 2000	CHEM 122 (Q)	CHEM 101 & 121
Fundamentals of Chemistry 2	General Chemistry II	General Chemistry II	General Chemistry II & Lab
CHEM 201	CHEM 2500	CHEM 281	CHEM 201 &250
Organic Chemistry 1	Organic Chemistry I		
GEOG 101	GEOG 1000	GEOG 111 (B-SCI)	GEOG 102
Physical Geography	Intro to Physical Geography	Earth Systems	
MATH 103	MATH 1560	MATH 151 (Q)	MATH 100
Differential Calculus	Calculus I	Calculus I	Calculus I
MATH 104	MATH 2560	MATH 152 (Q)	MATH 101
Integral Calculus	Calculus II	Calculus II	Calculus II
PHYS 103	PHYS 1000	PHYS 101 (Q, B-SCI)	COTR PHYS 103 & 104
Intro to Physics 1	Introduction to Physics I	Physics for the Life Science I	= PHYS 110 &111
DUNC 404	DUNC 2000		Introduction to Physics I & II
PHYS 104	PHYS 2000	PHYS 102 (Q, B-SCI)	CUTR PHYS 103 & 104
Intro to Physics 2	Introduction to Physics II		= PHYS IIU &III
ENC 100			
English Composition	Intro to Academic Writing	WRITING IXX" (W)	Writing & Communication Skills
ENG 101	ENGL 1900 (EA, HUM)	ENGL 103	ENGL 100
Intro to Poetry & Drama	Intro to Language & Literature	Introduction to Drama	Intro to Literary Structure
ENG 102	ENGL 1900 (FA HUM)	ENGL 112	ENGL 103
Introduction to Prose	Intro to Language & Literature	Intro to Issues in Lit & Culture	Introduction to Fiction
STAT 106	STAT 1770	STAT 205	STAT 240
Statistics	Intro to Probability & Statistics	Introduction to Statistics	Basic Statistics
ENSC 101	ENVSC 2000	EVSC 100 (B-SCI)	ENSC 111
Introduction to Environmental Science	Fund. of Enviro Science	Intro to Enviro. Science	Intro to Environmental Science
GEOG 211	GEOG 2735	GEOG 255	GEOG 204
GIS	Introduction to GIS	Geographic Info Science	Intro to GIS for the Soc. Sciences
GEOG 230	GEOG 2300	GEOG 214	ENSC 201
Weather & Climate	Weather and Climate	Weather and Climate	Weather and Climate
GEOG 2xx	GEOG 2700	EVSC 305	ENSC 250
Quantitative/Methods	Geographical Data & Analysis	Methods in Enviro Science	Environmental Data Analysis
CHEM 2xx	CHEM 2410	CHEM 215 (Q)	CHEM 210
Analytical Chemistry	Analytical Chemistry I	Intro to Analytical Chemistry	Analytical Chemistry I



Arts, Humanities and Social Sciences Courses Recommended for The Asc In Environmental Science

Current Transfer Agreements for suggested arts, social science, humanities and fine arts courses for the Associate of Science - Environmental Science with University of Lethbridge, Simon Fraser University and UNBC.

COTR	U of L	SFU	UNBC
FNST 101	INDG 1000 (FA & HUM)	FNST 101 (B- HUM)	FNST 1XX
First Nations Studies 1	Intro to Native American Studies	Introduction to First Nation Studies	
FNST 203 Indigenous Ways of Knowing	INDG 1000 (FA & HUM) Intro to Native American Studies	FNST 2XX (B- HUM)	FNST 2XX
HIST 201 Pre-Confederation Canada	HIST 2710 (FA & HUM) Canada to 1867	HIST 101 (B- HUM) Canada to Confederation	HIST 210 Canada Before Confederation
HIST 202 Post Confederation Canada	HIST 2720 (FA & HUM)	HIST 102 (B- HUM)	HIST 211 Canada Since Confederation
HIST 230	HIST 2XXX (FA & HUM)	HIST 1XX (B- HUM)	HIST 2XX
PHIL 101	PHIL 1XXX (FA & HUM)	PHIL 120 (B- HUM)	PHIL 1XX
PHIL 102	PHIL 1000 (FA & HUM)	PHIL 100 (B- HUM)	PHIL 1XX
PHIL 180	PHIL 1XXX (FA & HUM)	PHIL 1XX (B- HUM)	PHIL 1XX
The search for Meaning			
ANTH 101		SA 101 (B- HUM)	
Intro to Cultural Anthropology	The Anthropological Perspective	Introduction to Anthropology	
ANTH 102	ARKY 1000 (SCI) Introduction to Archaeology	ARCH 1XX	ANTH 102 Anthropology: A World of Discovery
ANTH 216 <i>Culture and the Environment</i>	ANTH 2XXX (SOC SCI)	SA 2XX ANTH	ANTH 2XX
ECON 101 Microeconomics	ECON 1010 (SOC SCI) Introduction to Microeconomics	ECON 103 (B-SOC) Principles of Microeconomics	ECON 100 Microeconomics
ECON 102 Macroeconomics	ECON 1012 (SOC SCI) Introduction to Macroeconomics	ECON 105 (B-SOC) Principles of Macroeconomics	ECON 101 Macroeconomics
ECON250 Environmental Economics	ECON 3220 (SOC SCI)	ECON 260 (Q)	ECON 2XX
POLI 100	POLI 1000 (SOC SCI)	POL 100 (B-SOC)	POLS 100
Intro to Politics and Government	Introduction to Political Science	Introduction to Politics and Government	Contemporary Political Issues
POLI 202 Environmental Politics	POLI 2XXX (SOC SCI)	POL 2XX	POLS 2XX
ENST 200	SCI 2000 (SOC SCI)	EVSC 100 (B-SCI)	ORTM 200
Intro to Enviro Sustainability	Environmental Science 2000	Introduction to Environmental Science	Sustainable Recreation and Tourism
PSYC 101 Introduction to Psychology 1	PSYC 101 & 102 = PSYC 1000 Basic Concepts in Psychology & 1XXX (SOC SCI)	PSYCH 100 (B-SOC) Introduction to Psychology I	PSYC 101 Introduction to Psychology I
PSYC 102 Introduction to Psychology 2		PSYCH 102 (B-SOC) Introduction to Psychology II	PSYC 102 Introduction to Psychology II
PSYCH 270 Environmental Psychology	PSYCH 2XXX (SOC SCI)	PSYCH 1XX	PSYC 2XX
SOCI 101 Sociology and the Individual	SOCI 101 + 102 = SOCI 1000 Intro to Sociology = 1XXX (SOC SCI)	SA 1XX	SOSC 1XX
SOCI 102 Intro to Sociology 2: Social Institutions		SA 150 (B-SOC) Introduction to Sociology	SOSC 1XX
CRWT 101 Creative Writing	ENGL 1XXX (FA & HUM)	GE 1XX	ENGL 1XX
CRWT 102 Creative Writing 2	ENGL 2XXX (FA & HUM)	GE 1XX	ENGL 1XX

COLLEGE OF THE ROCKIES

CRWT 202	ENGL 2XXX (FA & HUM)	NO CREDIT	ENGL 271 Expository Writing
FA 100 Introduction to Fine Arts	ART 1XXX (FA & HUM)	CA 1XX (ART & CULTURE)	HUMN 1XX
FA 101 Contemporary Art: A History	ARHI 1000 (FA & HUM) Introduction to Art	CA 1XX (ART & CULTURE)	HUMN 1XX
FA 105 Studio Foundations	ART 2XXX (FA & HUM)	CA 1XX (VISUAL ARTS STUDIO)	HUMN 1XX
FA 106 Introduction to Drawing	ART 2031 (FA & HUM) Foundation Studio (Drawing and Image)	CA 262 Methods & Concepts: Drawing-based Principles	NO CREDIT
FA 107 Sculpture	ART 2032 (FA & HUM) Foundation Studio (Object and Space)	CA 264 Methods and Concepts: Sculpteral Practices	NO CREDIT
FA 108 Introduction to Painting	ART 2002 (FA & HUM) Fundamentals of Painting	CA 263 Methods and Concepts: Painting – based Practices	NO CREDIT
BIOL 151 Biology of the Environment	BIOL 1XXX (SCI LIB)	BISC 100 (SCI) Introduction to Biology	BIOL 110 Introductory Ecology
CHEM 100 Intro Environmental Chem	SCI 1XXX (SCI LIB)	CHEM 1XX	CHEM 1XX
GEOG 210 Geography of British Columbia	GEOG 1XXX (SCI LIB)	GEOG 2XX	GEOG 200 British Columbia: People and Places
GEOL 105 Introduction to Geology	GEOL 2060 (SCI LIB) Physical Geology	EASC 101 (SCI) Dynamic Earth	GEOG 210 Introduction to Earth Science
GEOL 106 Physical and Historical Geology	GEOL 2XXX (SCI LIB)	EASC 210 (SCI) Stratigraphy and Sedimentation	GEOG 1XX
GEOL 220 Environ Geol and Natural Hazards	GEOL 2XXX (SCI LIB)	EASC 2XX	SCIE 2XX OR GEOG 2XX
STAT 106 Statistics	STAT 1770 (SCI LIB) Intro to Probability and Statistics	STAT 205 (201?) (Q) Introduction to Statistics	STAT 240 Basic Statistics
STAT 206 Calculus Based Statistics	STAT 2XXX (SCI LIB)	STAT 270 (Q) – Introduction to Probability and Statistics	STAT 371 Probability and Statistics for Scientists and Engineers
COMP 105 Intro to C/C++	CPSC 1620 (SCI LIB) Fundamentals of Programming 1	CMPT 125&127, 135 OR 128 Introduction to computing Science and Programming	CPSC 100 Computer Programming I
COMP 153 Intro to Data Processing	CPSC 1000 (SCI LIB) Introduction to Computer Science	NO CREDIT	CPSC 150 Computer Applications



ACADEMIC REQUIREMENTS FOR PROFESSIONAL DESIGNATIONS



Professional Designations in Biology (BC)

For the most current and complete information, please consult: cab-bc.org

Registered Biology Technologist (College of Applied Biology)	R.B.Tech and Trainee (R.B.Tech) applicants must have a diploma from the accredited program list1 or documentation supporting the requirements as set out below.
	Required Courses: • Maximum of 3 courses in each of the following competencies (Min of 20 courses) - Communications - Mathematics/Statistics - Environmental Science - Field/Laboratory Techniques - Applied Science - Project Management
Registered Professional Biologist (College of Applied Biology BC)	Applicants require a minimum of 25 courses, 15 of which must be biology courses. Applicant must have taken all required courses listed or they will not be accepted for membership in the College of Applied Biology.
	First Year Courses

- Introductory Biology
- Communications
- Mathematics (counted as science course)
- Chemistry (counted as science course)

Second Year Courses

- Systematic or Classification
- Cellular
- Organismal
- Ecology
- Applied Biology
- Statistics

Not Required

Courses from these categories may be accepted as Biology Course

- Biochemistry
- Microbiology
- Evolutionary Biology
- Developmental Biology
- Biology Field and/or laboratory courses
- Biomechanics
- Animal Behaviour
- Silviculture, Aquaculture or Agriculture
- Toxicology
- Directed Studies

Total Number of Biology and Science Courses

- (Must equal 25)
 Courses that focus on communication skills such as English Composition, technical writing, journalism, public speaking or use of mass media
 - 2. E.g. Vertebrates, Invertebrates, Vascular-plants, Non-vascular plants, Microbiology, Toxicology, Comparative anatomy
 - 3. Genetics, Molecular Biology, Cell Biology or Biochemistry
 - 4. Physiology (cell, animal, plant or microbial)
 - 5. E.g. Ecology, Population or Community Ecology
 - 6. E.g. Conservation Biology, environmental Biology, Landscape Ecology, Wildlife Management, Fisheries Management
 - 7. For directed studies courses in a biological field to be accepted, the applicant must provide a copy of the report required for the course.



Applicants require a minimum of 25 courses, 15 of which must be biology courses. Applicant must have taken all required courses listed or they will not be accepted for membership in the College of Applied Biology.

Professional Designations in Biology (Alberta)

For the most current and complete information, please consult: aspb.ab.ca

Registered Technologist

in Biology (Alberta Society of Professional Biologists) This membership category will be non-regulated until such time as the Professional Biologist Regulation is amended, potentially in 2018. At that time, the R.T.Biol. will be regulated and will have full title protection, however, technologists will not have sign off or authentication privileges.

Academic Requirements:

• A Registered Technologist in Biology must have a two year diploma from a post-secondary institution. The diploma must contain at least eight biology/ecology courses, applied science courses, and at least one communications and one statistics course.

Registered Biologist (Alberta Society of Professional Biologists) The Registered Biologist membership category is a transitional category for applicants who do not meet the academic requirements for Professional Biologist and who do not have six years of experience required under equivalency for P. Biol. yet wish to be a non-regulated member of the ASPB. Members admitted to this category are expected to either take the required number of courses to meet 15 biology courses, or ensure they are attaining work experience that will meet the course to work equivalency requirements in the Equivalency section above. Members can remain in this category only until they have reached the required six years of work experience for Equivalency.

Academic Requirements:

- A R. Biol. must have an undergraduate degree, and must have 12 – 14 biology courses, 4 at the senior level.
- An applicant should arrange for university transcripts and proof of degree to be sent directly from the university to the ASPB office. For applicants who have completed post-secondary education outside Canada, they must submit a third party evaluation of their academics, such as IQAS.



Professional Biologist (Alberta Society of Professional Biologists) This category designates individuals who fully meet requirements for academic, experience and good character. A P. Biol. has voting privileges in the ASPB, and may hold office as a Board of Director. Only a P. Biol. may use the protected title Professional Biologist or the abbreviation P. Biol. A Professional Biologist must also participate in the continuing competency program.

Academic Requirements:

- A P. Biol. must hold a four year undergraduate and/or graduate degree(s) in the biological sciences from a Canadian university, or equivalent. The Registration Committee considers a university bachelor's degree is equivalent to a biology degree if it includes 15 courses that are in the biological sciences, and where four or more of the biological science courses are at a senior level (i.e., third or fourth-year).
- An applicant should arrange for university transcripts and proof of degree to be sent directly from the university to the ASPB office.
 For applicants with education completed outside Canada, they must submit an evaluation of those credentials in order to be considered.



Professional Designations in Agrology (BC)

For the most current and complete information, please consult: bcia.com

Articling Agrologist (BC Institute of Agrologists)

As a BCIA member you are recognized having met specified criteria and are thereby qualified to call yourself an 'Agrologist' while engaging in the practice of agrology.

Academic Requirements:

- A Bachelor's level degree (with a science focus).
- Coursework must consist of the following:
 - Minimum of 8 foundational knowledge courses (usually 100 and 200 level courses) in the subject matters listed below

Foundational Natural Science Courses

A foundational natural science course provides science instruction that forms the foundation upon which subsequent natural science courses or agrology courses are built. (Cannot be double counted)

- Biology
- Biochemistry
- Hydrology
- Genetics
- Chemistry
- Earth Sciences
- Hydrogeology
- Physics
- Ecology
- Physical Geography
- Microbiology
- Geology

Additional Foundational Courses

Courses that are of benefit to the study of natural sciences or agrology.

- Math
- Statistics
- Computer Science
- Economics
- Communication/Writing
- Minimum 20 courses in natural sciences and/or agricultural and resource economics at any level that demonstrate direct link to agrology.
- Minimum of 11 courses at the 300+ level (can come from the 20 course requirement above) 8 of which must be in natural sciences and/or agricultural and resource economics and relate directly to Agrology (as defined in the Agrologists Act, 2003).



Professional Designations in Agrology (Alberta)

For the most current and complete information, please consult: albertaagrologists.ca/site/home

Agrologist in Training (Alberta Institute of Agrologists)

This category designates individuals who fully meet requirements for academic, experience and good character. A P. Biol. has voting privileges in the ASPB, and may hold office as a Board of Director. Only a P. Biol. may use the protected title Professional Biologist or the abbreviation P. Biol. A Professional Biologist must also participate in the continuing competency program.

Academic Requirements:

- A minimum of four-year, 120-credit Baccalaureate degree in agriculture or environmental science or an equivalent degree that includes:
 - 60 credits agrology of which 24 must be at the senior level (usually 300 or 400 level)
 - 15 credits of foundational natural science (e.g., biology, botany, chemistry, physics, geology, ecology, hydrology, hydrogeology)
 - 3 credits of English/communications
 - 3 credits of math/calculus/statistics
 - 3 credits economics (microeconomics or macroeconomics)

Professional Designations in Environmental Sector

For the most current and complete information, please consult: eco.ca/certification/ep-designation/

Environmental Professional (ECO Canada) The Canadian Environmental Certification Approvals Board (CECAB) is responsible for overseeing the administration, evaluation and ratification of Environmental Professional (EP) certification. The Approvals Board, composed of prominent environmental stakeholders from across Canada, functions as an impartial governing body for the certification and term renewal of members. Through this process, EPs are ratified at the highest level, and are proven as leaders in their respective fields, with the competencies to safeguard public trust.

Basic Requirements for Registration:

- Recognized Canadian college diploma or university degree, or equivalent international credentials
- At least five years of environmental work experience in Canada and this experience must be recent (obtained within the past ten years)
- Complete a self-assessment against the National Occupation Standards (NOS), and then have three peer references validate your environmental competency
- Pass the EP Ethics Examination, demonstrating their understanding and adherence to the Guidelines for Ethical Practice and EP Code of Ethics



Professional Designations in Geoscience

Most graduates from Environmental Science Degree Programs work towards professional designations in biology and agrology. Some courses obtained through these program pathways could be used towards a professional designation in geoscience.

For the most current and complete information, please consult: geoscientistscanada.ca.

Each province has a regulating body with a slightly different application process and set of admission requirements. It is important to contact the regulatory body in the province or territory in which you plan to apply in order to confirm requirements.

Professional Geoscientist (British Columbia)

For the most current and complete information, please consult: egbc.ca

Engineers and Geoscientists British Columbia is the business name of the Association of Professional Engineers and Geoscientists of the Province of British Columbia. Engineers and Geoscientists BC regulates and governs these professions under the authority of the Engineers and Geoscientists Act.

The association is charged with protecting the public interest by setting and maintaining high academic, experience, and professional practice standards for over 37,000 members. Individuals licensed by Engineers and Geoscientists BC are the only persons permitted by law to undertake and assume responsibility for engineering and geoscience projects in BC.

Basic Requirements for Registration:

- Four-year B.Sc degree in geoscience
- 48 months of supervised geoscience work experience
- Good character, reputation and conduct
- Proficiency in the language of business in the province or territory of practice
- Knowledge of professional practice issues, including law and ethics

To become a member you must complete the Engineers & Geoscientists BC Self-Assessment Tool.

Based on your academic background and work experience, the tool will also provide guidance on what to expect during the qualification review process at Engineers and Geoscientists BC or ASTTBC.

egbc.ca/Become-a-Member/Self-Assessment-Tool

Professional Geoscientist (Alberta)

For the most current and complete information, please consult: apega.ca

Professional Geoscientist (Association of Professional Engineers and Geoscientists of Alberta) The Association of Professional Engineers and Geoscientists of Alberta (APEGA) regulates the practices of engineering and geoscience in Alberta on behalf of the Government of Alberta through the Engineering and Geoscience Professions Act.

Basic Requirements for Registration:

- Four-year B.Sc degree in geoscience
- 48 months of supervised geoscience work experience
- Good character, reputation and conduct
- Proficiency in the language of business in the province or territory of practice
- Knowledge of professional practice issues, including law and ethics



Professional Geoscientist (Engineers & Geoscientists British Columbia)





SMALL COLLEGE PROUD.

