



Pre-Education Certificate

Program Outline

PROGRAM IMPLEMENTATION DATE: September 2010
OUTLINE EFFECTIVE DATE: January 2016
PROGRAM OUTLINE REVIEW DATE: September 2021

GENERAL PROGRAM DESCRIPTION:

This certificate is a survey of academic courses that can be used to pursue a Bachelor of Education or a Bachelor of Arts degree. All of the courses in this certificate are approved by the BC Teacher Regulation Branch.

Program Information: The Pre-Education certificate program is a participating program in the UVic dual admission agreement with COTR and can be used as the first year toward the University of Victoria four-year teacher education program. The courses in this certificate can also be used to transfer to other education programs in BC and Alberta, for credit towards an arts and science diploma, and for credit towards an Associate of Arts degree.

Delivery: Face to face and online

COTR Credits: 30

Hours for this program: 540 hours (+)

Typical Structure of Instructional Hours:

Instructional Activity	Duration
Lecture Hours	450
Seminars / Tutorials	
Laboratory / Studio Hours	90
Practicum / Field Experience Hours	
Other Contact Hours	
Total	540 +

Practicum Hours (if applicable):

Type of Practicum	Duration
On-the-job Experience	N/A
Formal Work Experience	N/A
Other	N/A
Total	

Course Program Author or Contact:

Ildi Walkley, Department Head

Signature

APPROVAL SIGNATURES:

Department Head

Ildi Walkley

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Dean of Instruction

Darrell Bethune

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Department Head Signature

Dean of Instruction Signature

EDCO

Valid from: January 2016 – September 2021

Education Council Approval Date

PROGRAM PREREQUISITES AND TRANSFER CREDIT:

Admission Requirements: Secondary school graduation (or equivalent). Students must have at least a 60% in Foundations Math or equivalent, and a 65% in English 12 or equivalent. Basic computer skills are also recommended.

Flexible Assessment (FA):

Credit can be awarded for this course through FA

☒ Yes ☐ No

Learners may request formal recognition for flexible assessment at the College of the Rockies through one or more of the following processes: External Evaluation, Worksite Assessment, Demonstration, Standardized Test, Self-assessment, Interview, Products/Portfolio, Challenge Exam. Contact an Education Advisor for more information.

Transfer Credit: For transfer information within British Columbia, Alberta and other institutions, please visit <http://www.cotr.bc.ca/Transfer>.

Students should also contact an academic advisor at the institution where they want transfer credit.

PRE-EDUCATION CERTIFICATE- 30 credits**Two English courses (6 credits)**

- Choose from ENGL 100, 101 or 102.
- Grade requirements: ENGL 100 with a C+, or ENGL 101 and 102 with a C+ average or better

Two Canadian studies courses (6 credits)

- Choose from HIST 201, HIST 202, HIST 208, HIST 211, FNST 101 and 203

Two mathematics courses with a minimum C+ average **(6 credits)**

- Choose from MATH 101, 102, 103, 104, 105, 113 or STAT 106.
- MATH 101 and (MATH 105 or STAT 106) are recommended.
- Note: Courses completed more than 10 years prior to the start date of the program are not normally accepted.

Two laboratory science courses **(6 credits)**.

It is recommended that you take more than one discipline.

- Choose from: ASTR 100, BIOL 101, BIOL 102, BIOL 151, CHEM 100, CHEM 101, CHEM 102, GEOL 105, GEOL 106, GEOG 101, PHYS 103, PHYS 103, PHYS 104.
- Note: One of: KNES 190, KNES 200 or KNES 210 are accepted. Courses completed more than 10 years prior to the start date of the program are not normally accepted.

Two academic electives **(6 credits)**

- Choose from subjects related to those taught in BC elementary schools. For example: Anthropology, Biology, Chemistry, Computer Science, Economics, First Nations Studies, French, Geography, Kinesiology, Philosophy, Physics, Political Science, Psychology, Sociology, Spanish, Fine Arts.

COURSE GRADE

Course grades are assigned as follows:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
Mark (Percent)	≥ 90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	< 50

A grade of "D" grants credit, but may not be sufficient as a prerequisite for sequential courses.

COURSE DESCRIPTIONS:

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, scholarly research, and academic reading.

ENGL 101: Introduction to Poetry and Drama

An introduction to the critical reading of literature through the study and analysis of poetry and drama.

ENGL 102: Introduction to Prose Fiction

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. Above all, students can read with increased understanding of the art of literature and, therefore, with more enjoyment and with a better grasp of fiction's contribution to their understanding of the moral, social, and political forces that shape modern life.

FNST 101: First Nations Studies

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.

FNST 102: First Nations Studies

This course is a continuation of the introduction to the multi-disciplinary field of Aboriginal studies. Several themes and topics are explored, including: Aboriginal and non-Aboriginal relations and power in contemporary issues, organizations, self-government, land claims, justice system, cultures, treaty, economic development, media, literature, health and wellness, education, community, and policy development.

HIST 201: Pre-Confederation Canada (to 1867)

HIST 201 surveys the history of Canada from the Aboriginals to Confederation using both a chronological and thematic approach. It covers Canada's political, economic, social, and cultural background, including how such forces as regionalism, race/ethnicity, gender, and class shaped the nation's development.

HIST 202: Post-Confederation Canada (from 1867)

A historical survey of Canada's development, this course traces the country from the immediate aftermath of Confederation in 1867 to the present day. Emphasis is placed upon the political developments that occurred over that time period, but consideration is also given to such themes as nationalism, regionalism, imperialism, continentalism, industrialization, urbanization, pluralism, labour, and gender. Students learn how all these forces shaped the nation's development.

HIST 208: Canadian-American Relations 1867 to the Present

This course explores the relationship between Canada and the United States, primarily in diplomatic terms, touching on the military, political, economic, and cultural exchanges between the two countries. Canada has not always shared peaceful interactions with its neighbour. Students also come to understand the mercurial nature of Canadians' attitudes to Americans. Students are also made aware of the adjunct role played by Great Britain in the Canadian-American relationship.

HIST 211: Women in Canada: 1920 to the Present

This course focuses on a number of important aspects of women's twentieth century experiences in intriguing ways. Concepts such as domesticity and motherhood are examined via marriage rituals, childrearing practices, and contraceptive methods. The sexual division of labour is analyzed in terms of women's paid and unpaid work at times like the Second World War. Consumption is examined by looking at shopping habits of the 1950s. Political involvement is measured not only in the progress women made in becoming persons, but also in becoming feminists. Attempts are also made to account for the experiences of immigrant and lesbian women.

MATH 101: Finite Mathematics 1

This course is intended for students who require an appreciation of higher mathematics, but don't require calculus. Math 101 stresses a logical and critical thinking approach while investigating the following topics: an introduction to linear algebra, linear programming, the simplex method, set theory and counting, an introduction to probability and statistics, and game theory.

MATH 102: Finite Mathematics 2

This course is intended for students entering programs which do not require Calculus, but instead require an appreciation of higher mathematics. The course covers the following topics: regular and absorbing Markov Processes, operations in and conversions in other bases, introduction to logic (statements, truth tables, laws, simplification), Boolean Algebra, logic gates, sets and relations, logical puzzles, algorithms and flowcharts, graphs, directed graphs, trees, Euler and Hamiltonian graphs.

Math 102 is usually taken by students working towards a B.A. or a B. Ed. Students planning to take a B.Sc may take Math 102 as an elective, but need to take Calculus, as well, as a requirement of that degree. Math 102 is often taken by Business students, as it is good preparation for further study in computing.

MATH 103: Calculus 1 (Differential Calculus)

This course is intended for students who are pursuing a Bachelor of Science degree. Topics include: functions; limits; continuity; derivatives, 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; 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.

MATH 104: Calculus 2 (Integral Calculus)

Topics include: Logarithmic, exponential and hyperbolic functions, complex numbers, integration techniques (substitution, parts, partial fractions, trigonometric substitution, numerical methods), l'Hôpital'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.

MATH 105: Mathematics for Teachers

Mathematics for Teachers introduces future elementary school teachers and others to the mathematical content and principles of the British Columbia elementary school curriculum. In the process of taking a theoretical and historical, in-depth look at the curriculum, students are encouraged to develop comfort and confidence with mathematics as well as the ability to communicate mathematically and solve mathematical problems.

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.

MATH 113: Calculus for Commerce and Life Sciences 1

Math 113 can be taken by any student aspiring to learn about calculus but is intended for students who are studying Biology, Psychology or Commerce. The focus of the course is derivatives and their applications in these fields. Topics include: functions, limits, continuity, and the Intermediate Value Theorem; first and second derivatives of functions including logs, exponentials and trig functions; linear approximation, Newton's Method, optimization problems and curve sketching; antiderivatives, substitution, and areas between curves. At least two of the following topics are included: derivatives of inverse trig functions, related rates, probability and statistics, matrices and Gaussian elimination; related rates, partial derivatives and Lagrange Multipliers.

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.

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.

BIOL 151: Biology of the Environment

Biology 151 is an introductory course to the fields of environmental studies and biology. This course concentrates on environmental/ecological topics within biology. The course will concentrate on the relationships within nature, how the environment affects us, how we affect the environment, how to deal with environmental problems and live more sustainably. Local issues and current event topics are used as examples wherever possible.

CHEM 100: Introduction to Environmental Chemistry

CHEM 100 is an introduction to the fields of environmental studies and environmental chemistry. Qualitative and quantitative aspects of environmental processes are studied. Topics include atmospheric processes (including those involving carbon dioxide and ozone), air pollution, acid rain, natural waters, dissolved oxygen, and the fate of chemical compounds in the environment. Where possible, examples involving local issues and current events are studied.

CHEM 101: Fundamentals of Chemistry 1

A study of the fundamental principles of chemistry with particular reference to atomic and molecular structure; stoichiometry; properties of gases, liquids, solids and solutions; chemical equilibrium and thermodynamics. The laboratory program stresses the basic techniques of quantitative and qualitative chemistry.

This course is designed for students seeking a degree or diploma in a field of science or technology. It is also suitable as an elective course for General Interest or Arts students. Note prerequisite requirements listed below.

CHEM 102: Fundamentals of Chemistry 2

A continuation of CHEM 101 with particular reference to acids and bases, buffers, precipitation reactions, complexation reactions, redox reactions, cells and batteries, detailed study of representative elements, nuclear chemistry and organic chemistry. The laboratory program emphasizes basic techniques of qualitative and quantitative chemistry.

GEOL 105: Physical and Historical 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.

GEOL 106: Physical and Historical Geology

An introduction to the major principles of structural, historical, and economic geology covering the origin and structure of the Earth, the dynamics of plate boundaries and related topics of deformation of the Earth's crust, volcanism and other mountain building processes. Historical geology topics include geologic time, relative and absolute dating techniques, organic evolution, the geologic history of Earth from the Precambrian to the present and the study of fossils. Mineral deposits and natural resource issues will also be examined.

PHYS 103: Introduction to Physics 1 (Calculus)

This course is an integral part of the Applied Math-Physics Program. That means that the course is team taught with calculus in a completely integrated format. Students enrolled in this course should take the section of Math 103 that is part of the Applied Math-Physics program.

PHYS 104: Introduction to Physics 2 (Calculus)

This course is an integral part of the Applied Math-Physics Program. That means that the course is team taught with calculus in a completely integrated format. Students enrolled in this course should take the section of Math 104 that is part of the Applied Math-Physics program. Waves – sound and light, electricity and, magnetism using calculus

ASTR 100: Astronomy

This course is primary for students not majoring in Astronomy. It presents Astronomy as a representative science in its ancient and modern contexts. Practical and observational work are included. (Note: may not be acceptable for transfer to some science programs for lab science credit.)

GEOG 101: Introduction to Physical Geography 1

Physical geography includes the study of the various “spheres” of the Earth, namely the atmosphere, the lithosphere, the hydrosphere, and the biosphere. Course lectures and lab topics introduce the sciences of cartography, meteorology, climatology, biogeography and soils.

KNES 190: Basic Human Anatomy

This course introduces the student to basic human anatomy and physiology with a particular interest in health and wellness. The basic structure and function of various organ systems are discussed through a series of lectures and labs. Organ systems included in this course are skeletal, muscular, cardiovascular, respiratory, nervous, urinary and endocrine systems.

KNES 200: Introductory Human Anatomy and Physiology 1

This course is an introduction to the structural and functional aspects of the human musculoskeletal, cardiovascular and respiratory systems.

KNES 210: Introductory Human Anatomy and Physiology 2

A continuation of KNES 200, this course is designed to allow the student to explore the anatomical and physiological details of the nervous, endocrine, digestive, excretory, immune and reproductive systems. Emphasis is placed on the integrated homeostatic balance of the body and its relationship to physical activity.