

**SENATE MEETING  
PUBLIC SESSION  
MINUTES**

May 22, 2019  
3:30 – 5:30 PM

Senate Chambers (Room 1079 Charles J McCaffray Hall)

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**Present:** B. Annear (Secretary of Senate), S. Barton, R. Budde, D. Casperson, A. Constantin, B. Daigle (non-voting), M. Dale, B. Deo, D. Desai, Z. Fleck, E. Fredeen, P. Harding (non-voting), I. Hartley, L. Haslett, K. Hirsh-Pearson (*Vice-Chair*), C. Hofsink, H. Holler-Busch, S. Horianopoulos, C. Ho Youngusband, P. Jackson, E. Jensen, G. Keeler, T. Klassen-Ross, E. Korkmaz, C. Lawrence, M. Mandy, Holly McVea (non-voting), C. Meroniuk, A. Muñoz Gómez, M. Murphy, A. Palmer, A. Parent (Recording Secretary), L. Parent, S. Rader (non-voting), C. Ramsay, D. Ryan, S. Sakshi, H. Sanford (University Secretary), A. Sommerfeld (non-voting), N. Turner, S. Wagner, D. Weeks (*Chair*), C. Whalen, R. Wheate, J. Wimmers-Klick

**Regrets:** A. Kranz, D. Nyce, G. Payne, M. Peterson, L. Roldan-Flores (non-voting), L. Roodenburg, A. Sommerfeld (non-voting), T. Tannert, T. Tribe (non-voting), P. Winwood (non-voting),

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The meeting commenced at 3:43 p.m.

**1.0 Acknowledgement of Territory**

Senator Wagner acknowledged the Senate meeting was taking place on the traditional unceded territory of the Lheidli T'enneh Nation.

**2.0 S-201905.01  
Approval of the Agenda**

Casperson

That the agenda for the May 22, 2019 Public Session of Senate be approved as presented.

CARRIED

**3.0 S-201905.02 (15 minutes)  
Move to In Camera Session**

Mandy

That the meeting move In Camera.

CARRIED

The Public Session of Senate reconvened at 3:55 p.m.

**4.0 S-201905.09  
Approval of Senate Minutes**

Barton

That the minutes of the April 24, 2019 Public Session of Senate be approved as presented.

CARRIED

Non-voting members, except the Secretaries are currently not included in the Senate minutes.

<b>ACTION:</b> Non-voting members to be included in future minutes.
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**5.0 Business Arising**

5.1 Graduate Supervision by Non-Program Supervisors

A memo from the Vice President Research & Graduate Programs was included in the meeting package. Jill Mitchell Nielsen, Manager, Graduate Programs was available to answer any questions.

A question was asked as to what are factors that would lead to the appointment of a supervisor not from a student's area of study.

Ms. Mitchell Nielsen indicated that each case is looked at on an individual basis. A broad example might include when a student loses their supervisor near the completion of their credential. The Office of Graduate Programs may assign a supervisor rather than have a student disengage near completion and additional expertise may be sought from other institutions. The Office of Graduate Programs guiding principle is to manage each case individually within the policies, best practices and by prioritizing the welfare of the student and their experiences at UNBC.

## **6.0 President's Report**

**Dr. Weeks**

The President reported on his experience of serving on the selection council for the Order of British Columbia and the Premier's Innovation and Excellence Awards selection panel.

The External Review of our Art Collection and its governance has been completed and we are awaiting a report from the external reviewer from the University of Victoria.

The President reported that UNBC and Volunteer Prince George are hopeful for a partnership that will provide opportunities for our students to become more engaged in the community. Not only would such a partnership help the community but it will also benefit our students in building their resumes and growing their leadership skills.

Further discussions continue with the City of Prince George for establishing a Land Trust at UNBC. These are early discussion but the President is hopeful that after due diligence he will be able to report to the Board of Governors in the near future.

The President was the keynote speaker at the AGM and Convention of the North Central Local Government Association. The President reported that community leaders from the North continue to be supporters of UNBC and our programs.

The President attended the Business of Education Summit, which largely promoted engagement with India. Leonel Roldan-Flores, Director of International Education at UNBC presented at the Summit and highlighted how UNBC can be a great destination for international students.

Other events of note over the last month include, the annual Staff Appreciation Breakfast, a dinner reception for Professors achieving full professor, the launch of 1000 Ravens for Reconciliation event (larger launch of this event is expected in the Fall of 2019) and a Town Hall meeting on Space Allocation.

## **7.0 Report of the Provost (10 minutes) 58.46**

**Dr. Ryan**

The Provost reported on the enrollment numbers for summer and fall. Current domestic FTEs remain the same as last year with International FTEs up 84%. For fall 2019, the domestic FTEs are down 4% and International FTEs are up 14%. Total applications are up 10% with admissions and registrations down slightly as many are still in progress.

Conversations are ongoing regarding the Senate Handbook revisions. The Provost indicated that a meeting of all faculty will need to be held to decided where from and how faculty are elected to Senate.

Once the Academic Re-Structuring motion for faculty alignments is approved by the Board, the next step will be to look at the composition of the hiring committees based on the new hiring procedures. Currently there is a review of the request for proposals for search consultants, as they will be used to help with the search for the five Deans.

Discussions have also begun regarding space allocation. The Provost indicated that the process for space allocation be strategic, transparent and data driven. In preparation for the change to the five Faculties, we will be looking at moving the Deans closer to their faculties. Further discussions regarding space will be occurring over the next few months.

The Provost asked Senate to congratulate the graduating class of 2019 and thanked all faculty and staff for their work over the last year.

- Update on the Proposed Process for Review of Awarding of Graduate Degree

The Provost walked in a draft Terms of Reference for the proposed Senate Standing Advisory Committee on the Integrity and Awarding of Degrees for discussion.

A question was asked as to when a motion for approval of this committee would be coming to Senate. The Provost indicated that he was hopeful to have the motion to Senate for June.

Areas of discussion highlighted were:

#### Composition

- How much experience is needed? Should the experience be specifically at UNBC?
- Should supervisory experience be required?
- Should there be an express Term for appointments? And, allowance for renewal?
- Should there be provision for student representation? (Graduate for Graduate issue, UG for UG issue)
- Should we reference here the potential for a Conflict and need to recuse? Or, in Procedures?

Concern was expressed that there is no student on the committee, as degree integrity directly affects them. The University Secretary addressed this matter as one of confidentiality and privacy. If a legal review of a decision was to occur, the University has an obligation to limit the potential for a privacy breach. Given the length of many of these reviews, having students with one-year terms on the committee greatly increases this risk.

It was suggested that perhaps an Alumni member be added.

It was discussed that a greater diversity in what we consider experience when selecting faculty be considered.

#### Scope

- Can the Committee challenge decisions made by the Chair, Dean or Registrar – if those decisions affect the integrity of the degree?

It was discussed that the intent of the initial review of the matter by the Provost and at least one of the Faculty Members on the Advisory Committee is not meant to be a decision step. This is an opportunity to gather documentation and make sure the committee receives all information. This step will also look to ensure that all internal processes have been exhausted. If internal processes have not been exhausted this would be reported to the Advisory Committee.

A question was raised about what internal process the committee would use to ensure the review is done correctly. It was indicated that each review would be looked at on a case-by-case basis. The committee would have the opportunity to bring in relevant expertise and legal counsel as required.

It was suggested that perhaps a guiding document on current case laws be provided as a tool to the committee.

Vice Chair, Kristen Hirsh-Pearson, indicated that she had received an email from a student that included a letter from 13 Alumni/Students with concerns regarding the graduation process. This letter will be going to the Steering Committee in June.

## **8.0 Report of the Registrar**

**Mr. Annear**

The Registrar reported that Office of the Registrar is currently working on the final grade audits, production of parchments and final preparations for graduation. Other ongoing activities include the completion of the new online applications, planning for the update to five faculties and the review of the scheduling process and software updates. Feedback sessions for scheduling are ongoing.

## **9.0 Question Period**

### **8.1 Written questions submitted in advance**

None.

### **8.2 Questions from the floor**

8.2.1 It was asked if there were any plans by the Provost, Dean or School of Education to modify, revoke or amend Senate motion S-200606.10 (motion creating the Bachelor of Education in Terrace).

The Provost indicated that the Dean is currently looking at UNBCs current offerings of the Education programs to bring them into line with the expectations of the Education Program. The Dean added that the School of Education is in the stages of curriculum renewal, which is looking at increased offerings in the Regions. While any

discussions are still in the early stages, any changes will be designed to increase access and provided more accessibility to the Regions, including Terrace.

Any changes will be brought through Senate and the current model will continue until changes are proposed and approved.

8.2.2 It was asked what the timeline and process for hiring a University Librarian would be.

The Provost indicated he would be meeting with library staff and stakeholders to review the needs of the Library. There have been early discussions for the expansion of the vision of the library. He is hopeful to begin the search for the University Librarian in the fall.

**10.0 S-201905.10**

**Approval of Motions on the Consent Agenda**

**Dr. Weeks**

Jensen

That the motions on the consent agenda, except for those removed for placement on the regular agenda, be approved as presented.

CARRIED

**11.0 Committee Reports**

**11.1 Senate Committee on Academic Affairs (10 minutes)**

**Dr. Ryan**

**“For Approval” Items:**

Details of the approved calendar text are as follows (for revisions, deleted text indicated by ~~strikethrough~~, new text indicated by underline, and [commentary, where included, in Courier New font within square brackets]):

**S-201905.11**

**Change(s) to Program Requirements – Major in First Nations Studies**

Klassen-Ross

That, on the recommendation of the Senate Committee on Academic Affairs, the changes to the program requirements for the Major in First Nations Studies, on page 122 of the 2018/2019 undergraduate calendar, be approved as proposed.

Effective date: September 2019

CARRIED

**Major in First Nations Studies**

A major in First Nations Studies requires students to take ~~48~~ 54 credit hours of First Nations Studies, at least ~~24~~ 24 credit hours of which must be upper-division courses. Those courses from the offerings of other programs with content focused on First Nations are designated as approved ancillary courses for a major in First Nations Studies, and may be included among the ~~48~~ 54 credit hours required for a major (for example HIST 390-3 [Aboriginal People in Canada]). ~~Students may not take more than 60 credit hours of First Nations Studies without written permission from the Chair of the Department of First Nations Studies program.~~ After the lower-division requirements have been met, all students majoring in First Nations Studies, must take FNST 300-3 (Research Methods in First Nations Studies), and FNST 440-3 (Internship in First Nations Studies) plus ~~eighteen~~ 18 credit hours of 300- or 400- level First Nations Studies courses or approved ancillary courses for the major in First Nations Studies.

This structure permits each student to design a program emphasizing various aspects of First Nations Studies such as contemporary political issues, languages and cultures, etc. The minimum requirement for completion of a Bachelor of Arts with a major in First Nations Studies is 120 credit hours.

**Program Requirements**

**Lower-Division Requirements**

**100 and 200 Level**

FNST 100-3 The Aboriginal Peoples of Canada

FNST 200-3 Perspectives in First Nations Studies

Any One of the following culture or language courses:

FNST 131-3 A First Nations Language: Level 1

FNST 132-3 A First Nations Language: Level 2

FNST 133-3 Dakelh / Carrier Language: Level 1

FNST 134-3 Dakelh / Carrier Language: Level 2  
FNST 135-3 Haisla Language (X-a'islak'ala): Level 1  
FNST 136-3 Haisla Language (X-a'islak'ala): Level 2  
FNST 137-3 Tsimshian Language (Sm'algyax): Level 1  
FNST 138-3 Tsimshian Language (Sm'algyax): Level 2  
FNST 139-3 Nisga'a Language: Level 1  
FNST 140-3 Nisga'a Language: Level 2  
FNST 161-3 A First Nations Culture: Level 1  
FNST 162-3 A First Nations Culture: Level 2  
FNST 163-3 Dakelh / Carrier Culture: Level 1  
FNST 164-3 Dakelh / Carrier Culture: Level 2  
FNST 167-3 Tsimshian Culture: Level 1  
FNST 168-3 Tsimshian Culture: Level 2  
FNST 169-3 Nisga'a Culture: Level 1  
FNST 170-3 Nisga'a Culture: Level 2  
FNST 171-3 Métis Studies: Level 1  
FNST 172-3 Métis Studies: Level 2

### Upper-Division Requirement

#### 300 Level

FNST 300-3 Research Methods in First Nations Studies

#### 400 Level

FNST 440-3 Internship in First Nations Studies

~~Eighteen~~ 18 credit hours of 300- or 400-level First Nations Studies courses or approved ancillary courses for the major in First Nations Studies.

### Subject Requirement

~~Twenty-one~~ 21 additional credit hours of First Nations Studies or approved ancillary courses at any level.

#### **S-201905.12**

#### **Change(s) to Program Requirements – BHSC Major in Biomedical Sciences**

Murphy

That, on the recommendation of the Senate Committee on Academic Affairs, the change(s) to the list of 3<sup>rd</sup> and 4<sup>th</sup> year program requirements for BHSc Major in Biomedical Sciences on page 142 of the 2018/2019 undergraduate calendar, be approved as proposed.

Effective date: September 2019

CARRIED

### Major in Biomedical Studies

Students pursuing a major in Biomedical Studies are required to complete the following 34 credit hours of courses. It is recommended that students take the following courses ~~listed below~~ in the year of study indicated. Students must take an additional 24 elective credit hours of which at least 9 credit hours must be upper-division courses from any discipline for degree completion.

#### 1st year - 34 credit hours

BIOL 103-3 Introductory Biology I  
BIOL 104-3 Introductory Biology II  
BIOL 123-1 Introductory Biology I Laboratory  
BIOL 124-1 Introductory Biology II Laboratory  
CHEM 100-3 General Chemistry I  
CHEM 120-1 General Chemistry Lab I  
CHEM 101-3 General Chemistry II  
CHEM 121-1 General Chemistry Lab II  
FNST 100-3 The Aboriginal Peoples of Canada  
HHSC 101-3 Introduction to Health Science I: Issues and Controversies  
HHSC 103-3 Health Care Systems  
HHSC 105-3 Functional Anatomy Health Sciences

Two of the following:

ENGL 100-3 Introduction to Literary Structures

ENGL 102-3 Introduction to Poetry  
ENGL 103-3 Introduction to Fiction  
ENGL 104-3 Introduction to Film  
ENGL 170-3 Writing and Communication Skills

**2nd year - 32 credit hours**

BIOL 203-3 Microbiology  
BIOL 210-3 Genetics  
CHEM 201-3 Organic Chemistry I  
CHEM 203-3 Organic Chemistry II  
CHEM 204-3 Introductory Biochemistry  
CHEM 250-1 Organic Chemistry Lab I  
CHEM 251-1 Organic Chemistry Lab II  
HHSC 201-3 Ethics and Law in Health Care  
HHSC 311-3 Nutrition  
PSYC 101-3 ~~Psychology as a Science~~ Introduction to Psychology I  
PSYC 102-3 ~~Psychology and Human Problems~~ Introduction to Psychology II  
STAT 240-3 Basic Statistics  
or ECON 205-3 Statistics for Business and the Social Sciences

**3rd and 4th years - 32- 23 credit hours**

BIOL 311-3 Cell and Molecular Biology  
BCMB 306-3 Intermediary Metabolism  
FNST 302-3 First Nations Health and Healing  
HHSC 305-3 Human Physiology I  
HHSC 306-3 Human Physiology II  
HHSC 325-1 Human Physiology I Lab  
HHSC 326-1 Human Physiology II Lab  
HHSC 351-3 Research Design and Methods for Health Sciences  
PSYC 309-3 Introduction to Health Psychology

**4<sup>th</sup> year – 9 credit hours**

HHSC 401-3 Principles of Epidemiology  
HHSC 471-3 Health and Chronic Disease Management  
~~PSYC 345-3 Lifespan Development or SOCW 421-3 Human Growth and Development~~  
HHSC 445-3 Human Health and Development

**Major in Community and Population Health – Aboriginal and Rural Health**

Students pursuing a major in Community and Population Health Aboriginal and Rural Health are required to complete the following 97 credit hours. It is recommended that students take the courses listed below in the year of study indicated:

**1st year - 26 credit hours**

BIOL 103-3 Introductory Biology I  
BIOL 104-3 Introductory Biology II  
BIOL 123-1 Introductory Biology I Laboratory  
BIOL 124-1 Introductory Biology II Laboratory  
CHEM 100-3 General Chemistry I  
FNST 100-3 The Aboriginal Peoples of Canada  
HHSC 101-3 Introduction to Health Science I: Issues and Controversies  
HHSC 103-3 Health Care Systems  
HHSC 105-3 Functional Anatomy

One of the following:

ENGL 100-3 Introduction to Literary Structures  
ENGL 102-3 Introduction to Poetry  
ENGL 103-3 Introduction to Fiction  
ENGL 104-3 Introduction to Film  
ENGL 170-3 Writing and Communication Skills

**2nd year - 24 credit hours**

BIOL 203-3 Microbiology  
ECON 210-3 Introduction to Health Economics and Policy  
or GEOG 202-3 Resources, Economies, and Sustainability  
HHSC 102-3 Introduction to Health Science II: Rural and Aboriginal Issues

HHSC 201-3 Ethics and Law in Health Care  
HHSC 311-3 Nutrition  
PSYC 101-3 ~~Psychology as a Science~~ Introduction to Psychology I  
PSYC 102-3 ~~Psychology and Human Problems~~ Introduction to Psychology II  
STAT 240-3 Basic Statistics  
or ECON 205-3 Statistics for Business and the Social Sciences

### **3rd year - 23 credit hours**

ENPL 313-3 Rural Community Economic Development  
FNST 302-3 First Nations Health and Healing  
FNST 303-3 First Nations Religion and Philosophy  
or FNST 304-3 Indigenous Environmental Philosophy  
HHSC 305-3 Human Physiology I  
HHSC 306-3 Human Physiology II  
HHSC 325-1 Human Physiology I Lab  
HHSC 326-1 Human Physiology II Lab  
HHSC 351-3 Research Design and Methods for Health Sciences  
PSYC 309-3 Introduction to Health Psychology

### **4th year - 18 credit hours**

HHSC 401-3 Principles of Epidemiology  
HHSC 421-3 Medical Geography  
or ENV5 306-3 Human Ecology  
HHSC 471-3 Health and Chronic Disease Management  
HHSC 473-3 Health Promotion  
~~PSYC 345-3 Lifespan Development~~  
or ~~SOCW 421-3 Human Growth and Development~~  
HHSC 445-3 Human Health and Development  
SOCW 444-3 Social Work Critical Issues in Aging

Students must take an additional 6 credit hours from the following list, of which at least 3 credit hours must be upper-division courses. Students must ensure that all prerequisites are fulfilled prior to registering in any course.

ANTH 201-3 Medical Anthropology  
ANTH 206-3 Ethnography in Northern British Columbia  
ECON 410-3 Health Economics  
FNST 249-3 Aboriginal Resource Planning  
FNST 305-3 Seminar in First Nations Studies  
SOCW 440-3 Social Work and Mental Health  
SOCW 441-3 Social Work and Substance Abuse  
SOCW 443-3 Medical Social Work  
POLS 403-3 Social and Health Policy and Administration

## **Major in Community and Population Health – Environmental Health**

Students pursuing a major in Community and Population Health - Environmental Health are required to complete the following 97 credit hours. It is recommended that students take the courses listed below in the year of study indicated:

### **1st year - 26 credit hours**

BIOL 103-3 Introductory Biology I  
BIOL 104-3 Introductory Biology II  
BIOL 123-1 Introductory Biology I Laboratory  
BIOL 124-1 Introductory Biology II Laboratory  
CHEM 100-3 General Chemistry I  
FNST 100-3 The Aboriginal Peoples of Canada  
HHSC 101-3 Introduction to Health Science I: Issues and Controversies  
HHSC 103-3 Health Care Systems  
HHSC 105-3 Functional Anatomy

One of the following:

ENGL 100-3 Introduction to Literary Structures  
ENGL 102-3 Introduction to Poetry  
ENGL 103-3 Introduction to Fiction  
ENGL 104-3 Introduction to Film

**2nd year - 27 credit hours**

BIOL 203-3 Microbiology  
ECON 210-3 Introduction to Health Economics and Policy  
or GEOG 202-3 Resources, Economies, and Sustainability  
ENPL 205-3 Environment and Society  
HHSC 102-3 Introduction to Health Science II: Rural and Aboriginal Issues  
HHSC 201-3 Ethics and Law in Health Care  
HHSC 311-3 Nutrition  
PSYC 101-3 ~~Psychology as a Science~~ Introduction to Psychology I  
PSYC 102-3 ~~Psychology and Human Problems~~ Introduction to Psychology II  
STAT 240-3 Basic Statistics  
or ECON 205-3 Statistics for Business and the Social Sciences

**3rd year - 20 credit hours**

ENSC 308-3 Northern Contaminated Environments  
FNST 302-3 First Nations Health and Healing  
HHSC 305-3 Human Physiology I  
HHSC 306-3 Human Physiology II  
HHSC 325-1 Human Physiology I Lab  
HHSC 326-1 Human Physiology II Lab  
HHSC 351-3 Research Design and Methods for Health Sciences  
PSYC 309-3 Introduction to Health Psychology

**4th year - 18 credit hours**

HHSC 401-3 Principles of Epidemiology  
HHSC 421-3 Medical Geography  
or ENV 306-3 Human Ecology  
HHSC 471-3 Health and Chronic Disease Management  
HHSC 473-3 Health Promotion  
~~PSYC 345-3 Lifespan Development~~  
~~or SOCW 421-3 Human Growth and Development~~  
HHSC 445-3 Human Health and Development  
SOCW 444-3 Social Work Critical Issues in Aging

Students must take an additional 6 credit hours from the following list. Students must ensure that all prerequisites are fulfilled prior to registering in any course.

ECON 410-3 Health Economics  
ENPL 208-3 First Nations Community and Environmental Planning  
ENPL 304-3 Mediation, Negotiation and Public Participation  
HIST 360-3 An Introduction to Environmental History  
INTS 470-3 G Global Environmental Governance  
NREM 306-3 Society, Policy and Administration  
or POLS 344-3 Society, Policy and Administration of Natural Resources  
POLS 403-3 Social and Health Policy and Administration

**S-201905.13**

**New Course - HHSC 445**

Klassen-Ross

That, on the recommendation of the Senate Committee on Academic Affairs, the new course HHSC 445-3 Health and Human Development be approved as follows.

Effective date: January 2020

CARRIED

This seminar course provides students with an opportunity for in-depth discussions of health-related human growth and development, maturation, and ageing. Particular emphasis is placed on developmental biology, physiology, psychology, and gerontology, as well as typical Western psychosocial and cultural perspectives.

**Prerequisites (taken prior):** HHSC 101-3 and HHSC 105-3, PSYC 101-3, PSYC 102-3

**Preclusions:** PSYC 345, PSYC 211, SOC 421

An Executive Summary for the following History motions was provided in the meeting package.

**S-201905.14**

**Change(s) to Course Title and Description – HIST 240**

Jensen

That, on the recommendation of the Senate Committee on Academic Affairs, the changes to the course title and description for HIST 240-3 on page 248 in the print of the 2018/19 undergraduate calendar, be approved as proposed.

Effective date: September 2019

CARRIED

**HIST 240 – The Expansion of Europe-The Global Age of Expansion**

~~This course~~course examines the expansion of Europe from the Renaissance to the French Revolution. The creation of European empires and settlements in the western hemisphere are highlighted.

**studies the expansion and transformation of states, empires, knowledge, religions, economies, and technology before and during the first wave of globalization. Topics to be considered include: intercultural contact, colonization, and conflict; the unprecedented global mobility of human beings and other organisms (and its implications); the creation of maritime and land empires such as the Aztec, Ottoman, Spanish, Portuguese, Mughal, and Qing; the rise of global economies and trade; religious expansion and global missions; and the transformation of knowledge and development of science.**

*Prerequisites:* None

**S-201905.15**

**Change(s) to Course Title and Description – HIST 241**

Jensen

That, on the recommendation of the Senate Committee on Academic Affairs, the changes to the course title and description for HIST 241-3 on page 248 in the print of the 2018/19 undergraduate calendar, be approved as proposed.

Effective date: September 2019

CARRIED

~~HIST 241-3 The Age of Empire: Europe and the World, 1789–1914 This survey course examines relations among Europe and Asia, Africa and the Americas from the French Revolution to the First World War.~~

**This course surveys the rise and decline of global and continental empires in the nineteenth and twentieth centuries. It surveys topics such as colonialism, industrialization, commodities, war, science, race, and sexuality. Focusing on cases such as the British, French, Japanese, German, American, Russian, or Ottoman Empires, it explores how peoples in imperial centres sought to create and maintain their supremacy in a hierarchal world order and the various strategies used by people around the world to resist and modify those ambitions.**

*Prerequisites:* None

**S-201905.16**

**Change(s) to Course Prerequisites – HIST 407**

Jensen

That, on the recommendation of the Senate Committee on Academic Affairs, the changes to the course prerequisites for HIST 407-3 on page 250 in the print of the 2018/19 undergraduate calendar, be approved as proposed.

Effective date: September 2019

CARRIED

HIST 407-3 Topics in Local History/Methodology This course examines the craft of history by focusing on the history of localities in northern British Columbia. Students are expected to conduct their own research using primary sources. With the permission of the Chair, this course may be repeated to a maximum of 6 credit hours if the material is substantially different.

*Prerequisites:* **HIST 200-3 and** HIST 300-3, or permission of the instructor

**S-201905.17**

**Change(s) to Course Prerequisites – HIST 421**

Jensen

That, on the recommendation of the Senate Committee on Academic Affairs, the changes to the course prerequisites for HIST 421-3 on page 251 in the print of the 2018/19 undergraduate calendar, be approved as proposed.

Effective date: September 2020

CARRIED

HIST 421-3 Topics in Environmental History This course explores aspects of environmental history in a variety of geographic settings in various historical periods. The precise content of the course varies from year to year depending on the expertise of the instructor. With the permission of the Chair, this course may be repeated to a maximum of 6 credit hours if the material is substantially different.

*Prerequisites:* **HIST 200-3 and** HIST 300-3, or permission of the instructor

An Executive Summary for the following Engineering BAsC Program motions was provided in the meeting package.

Motions S-201905.19 to S-201905.59 were dealt with as an omnibus motion.

**S-201905.18**

**Change(s) to Program Description and Program Requirements – BAsC Engineering**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the changes to the program description and program requirements for the BAsC Engineering degree program, including Civil Engineering and Environmental Engineering (pages 2 – 10 of the New Academic Program Proposal for Civil and Environmental Engineering Degree approved by Senate April 27, 2016) and the Joint UNBC/UBC Environmental Engineering (pages 104 – 106 of the PDF undergraduate calendar), be approved as proposed.

Effective date: September 2019

CARRIED

**ENGINEERING (BAsC Program)**

Engineers serve society across a wide range of economic sectors in a number of capacities. ~~Highly skilled~~ Engineers require a solid technical and academic background, good communication skills, and the ability to work across a number of disciplines. Engineers deal with problems ranging from structures, bridges, mine and dam construction to transit systems to air, water, and soil pollution control.

~~The Engineering program at UNBC offers has three two engineering degrees programs – a Civil Engineering degree, and an Environmental Engineering degree and an Environmental Engineering degree offered jointly with UBC. —and These degrees prepares graduates for a wide range of employment opportunities where their technical expertise and problem-solving skills are required. -The program provides graduates with a strong awareness and understanding of environmental issues and problems. Our graduates are prepared for employment with engineering firms of all sizes in the resource industries (e.g. forestry, fisheries, mining, oil and gas, pulp and paper, and the agri-food industry), as well as various government ministries, and research organizations., and with engineering firms of all sizes. Our graduates help shape the new environmental and civil engineering economy.~~

~~The Engineering Bachelor of Applied Science program is designed around a mandatory Co-operative education component. Students gain valuable and practical skills through four paid Co-op work terms while being gainfully employed. The degree program is also designed to minimize the semester hours during the nine academic semesters to ensure students gain the necessary knowledge in a timely fashion. By incorporating Co-op into the degree program, our graduates finish their degree in five years with over a year and a half of relevant work experience on their resume to ensure a high probability of successful employment.~~

~~Both~~ The Civil and Environmental Engineering degrees start with a ~~common~~ similar first year in which the basic sciences and mathematics are emphasized along with an introduction to the ~~E~~ngineering discipline. In second year ~~two~~, a number of courses are common ~~to both in all of the engineering degrees streams but program requirements~~ students will also need to start to differentiate between the Civil and Environmental Engineering degrees. In the remaining years, some of the courses are common to both programs while each degree ~~stream~~ develops the in-depth knowledge to allow students to qualify within their discipline upon graduation. The final year exposes students to practical engineering problems.

**Admission Requirements**

Admission to the program is limited and ~~is~~ based on academic qualifications and available space. Priority admission is given to students who meet the admission criteria and apply by the deadline of March 1.

Applicants from BC and Yukon secondary schools must:

- ~~M~~meet UNBC admission requirements, and
- ~~H~~have an average of at least 75% based on the following four courses: ~~Principles of~~ Math 12 or Pre-calculus 12, English 12 and two provincially examinable Science 12 courses. In addition, applicants must have successfully completed Chemistry 11 in order to meet course prerequisites in the Program. Physics 12 or an equivalent is strongly recommended, as it is a prerequisite for first-year Physics courses in the program. Students who are admitted without the Physics 12 prerequisite may be delayed in their studies as they may not be able to complete the first four semesters of the program in the normal ~~two-year~~ time period. Meeting the minimum GPA does not

guarantee admission. Under exceptional circumstances the prerequisites may be waived.

Other applicants must demonstrate that they possess qualifications at least equivalent to the BC and Yukon requirement.

### **Standards of Professional Conduct**

~~In addition to fulfilling all University and Program regulations and expectations, all students are expected to abide by professional standards as set forth by the Association of Professional Engineers and Geoscientists of British Columbia. Violation of professional standards may result in suspension or dismissal from the program and/or the University.~~

### **Academic Performance**

~~Students must adhere to the policies and regulations as specified in the UNBC calendar. This requirement includes, but is not limited to, matters related to academic offenses and progression through the program. Progression is covered by the guidelines on academic standing and continuance. Offenses are governed by the relevant regulations in the appropriate calendar.~~

~~Students must obtain the minimum passing grade for all courses. Failure to do so may result in suspension or removal from the program. Note that the courses ENGR 217, ENGR 400, ENGR 401, MATH 200, and MATH 230 must be completed at UNBC.~~

### **Qualification for Degree**

~~It is the responsibility of the students to ensure that his/her the degree requirements are met. General graduation requirements are found in the Regulations and Policy section of the UNBC Calendar. To fulfill the requirements of graduation, the student must also:~~

- ~~• maintain a minimum Cumulative GPA of 2.00 (C) on courses for credit towards an Engineering degree.~~
- ~~• obtain a minimum passing grade of 1.67 (C-) in each of ENGR 217, ENGR 400, ENGR 401, MATH 200, and MATH 230; and~~
- ~~• complete all requirements for the B.A.Sc. program within eight years of admission into the program or from the first Engineering course used for credit towards the degree.~~

### UNBC Civil and Environmental Engineering degree programs:

#### Students must

- have a Cumulative GPA of at least 2.00 (C) on courses for credit towards an Engineering degree;
- obtain a minimum passing grade of 1.67 (C-) in each of ENGR 217, MATH 200, MATH 230 and either CIVE 400 and CIVE 401 (Civil Engineering) or ENVE 400 and ENVE 401 (Environmental Engineering);
- complete all requirements of the BASC program within eight years counted from admission into the program or from the first Engineering course used for credit towards the degree.

### UNBC/UBC Joint Environmental Engineering degree program

#### Students must have

- a good academic standing at both institutions to graduate;
- a Cumulative GPA of at least 2.00 (63%) over all courses taken at UNBC;
- an average of at least 55%, and passing grades in at least 65% of the credits taken at UBC.

The diploma will carry crests from both granting institutions (UNBC and UBC).

### **Letter of Permission**

Once admitted to Engineering at UNBC, students who want to take course work at another institution for credit must obtain a Letter of Permission prior to registration in the course. Students who complete courses without first having obtained a Letter of Permission risk not having those courses accepted for transfer credit. A student who has committed an academic offence or is on academic probation may be denied a Letter of Permission for subsequent course work. Students should consult the Engineering Academic Advisor before considering course work for transfer credit. (Refer to Academic Regulation 19).

### **Graduation**

~~It is the responsibility of the student to ensure that his/her degree requirements are met. Students must have a Cumulative GPA of at least 2.00 (C) over all courses to graduate.~~

### **Transfers**

Transfers into the program are allowed provided that the prerequisite courses or articulated courses are completed, and space is available in the program. Acceptance of transfers into the program will be based upon GPA, with priority given to those with the highest GPA. The admission GPA for transfer students into the Environmental Engineering program will be assessed on the following four courses or their university transferrable equivalents: Principles of Math 12 or Pre-calculus 12, English 12, and two provincially examinable Science 12 courses. In order to be considered for admission into the program, transfer students must have at least a 75% average based on these four courses or their equivalents. In addition, the following requirements for the four courses apply:

- UNBC Civil and Environmental Engineering degree programs: Where both high school and university transfer coursework are provided for each of these four courses, the most recent GPA for each course will be used. Transfer students must also have an overall Cumulative transfer GPA of 2.00, which is based on all their university transferrable coursework. Regardless of the articulated courses transferred, students must satisfy the residency requirement of a minimum of 90 credit hours. In addition, students within the program must complete ENGR 217, ENGR 400, ENGR 401, MATH 200, and MATH 230 at UNBC.
- UNBC/UBC Joint Environmental Engineering degree program: Where both high school and university transfer coursework are provided for each of these four courses the highest GPA for each course is used. Transfer students must also have an overall Cumulative transfer GPA of 2.00, which is based on all their university transferrable coursework. Regardless of the articulated courses transferred, students must satisfy the residency requirement of a minimum of 90 credit hours. These may be fulfilled through a combination of courses taken at UNBC and UBC, provided that at least 30 credit hours are completed at each of the two institutions.

### Co-operative Education

Engineering at UNBC requires students to successfully complete four one semester long Co-operative Education work terms. These work terms are interspersed within the degree program and occur in semesters 6, 8, 10, and 12. Each work experience will meet the following criteria:

- each work situation is developed and/or approved by the co-operative educational institution as a suitable learning situation;
- the co-operative student is engaged in productive work rather than merely observing;
- the co-operative student receives remuneration for the work performed;
- the co-operative student's progress on the job is monitored by UNBC Engineering;
- the co-operative student's performance on the job is supervised and evaluated by the student's co-operative employer;
- the time spent in periods of work experience must be at least 30 per cent of the time spent in academic study

The overall timetable for semesters is as follows:

Year	Fall	Winter	Summer
1 <sup>st</sup> year	Academic Semester 1	Academic Semester 2	(semester 3)
2 <sup>nd</sup> year	Academic Semester 4	Academic Semester 5	<b>Co-op Work Term I</b>
3 <sup>rd</sup> year	Academic Semester 7	<b>Co-op Work Term II</b>	Academic Semester 9
	<b>Co-op Work Term III</b>	Academic Semester 11	<b>Co-op Work Term IV</b>
4 <sup>th</sup> year	Academic Semester 13	Academic Semester 14	

Engineering at UNBC is a mandatory Co-operative Education program and successful work terms are required for degree completion. For further information, contact the Co-operative Education Advisor.

**Note:** Co-operative education terms are completed in Semesters 6, 8, 10, and 12. Only under extraordinary circumstances will a student be allowed to deviate from this pattern.

Co-operative education is an optional but strongly recommended element of the Engineering program.

For students in the UNBC Civil and Environmental Engineering degree programs, contact the UNBC Co-operative Education program for opportunities.

For students in the UNBC/UBC Environmental Engineering degree program, contact UBC Engineering Co-op for opportunities.

### CIVIL ENGINEERING DEGREE PROGRAM REQUIREMENTS

UNBC offers a rigorous Civil Engineering education augmented by business skills training and opportunities for specialized instruction in several areas, timber structures, renewable energy technology, cold climate, and geotechnical

~~engineering.~~ Today's civil engineer not only designs the infrastructure essential to modern society (buildings, bridges, highways, transit systems, water and waste treatment facilities, foundations, tunnels, dams, etcetera\_) but also analyzes the effects of deterioration on infrastructure elements while considering system interdependencies and ~~the evaluation of~~ life-cycle impacts. Civil engineers must consider environmental impact and economic sustainability in the development of modern infrastructure.

UNBC offers an integrated ~~systems~~ approach to ~~Civil Engineering~~ which is in keeping with the themes of design, life-cycle assessment, systems engineering, sustainable materials, renewable energy, and low-impact development throughout.

The minimum requirement for completion of a Bachelor of Applied Science degree with a major in Civil Engineering is ~~156~~ 153 credit hours. ~~Students are also required to successfully complete 12 credit hours of Co-operative Education.~~

### **Standards of Professional Conduct**

In addition to fulfilling all University and program regulations and expectations, all Civil Engineering students are expected to abide by professional standards as set forth by Engineers and Geoscientists of British Columbia. Violation of professional standards may result in suspension or dismissal from the program and/or the University.

### **Academic Performance**

Students must adhere to the policies and regulations as specified in the UNBC calendar. This requirement includes, but is not limited to, matters related to academic offenses and progression through the program. Progression is covered by the guidelines on academic standing and continuance. Offenses are governed by the regulations in the UNBC calendar.

In order to progress through the program, students must obtain the minimum passing grade for all courses. Failure to do so may result in a requirement to withdraw from the program.

### **Program Requirements**

#### First Year (Semesters 1 & 2)

CHEM 100-3	General Chemistry I
CHEM 120-1	General Chemistry Laboratory I
CPSC 110-3	Introduction to Computer <del>Science</del> <u>Systems</u> and Programming
ENGR 110-3	Technical Writing
ENGR 117-3	Engineering Design 1
ENGR 130-4	Mechanics of Materials I
ENGR 151-1	Engineering Tools I
ENGR 152-1	Engineering Tools II
MATH 100-3	Calculus I
MATH 101-3	Calculus II
MATH 220-3	Linear Algebra
PHYS 110-4	Introductory Physics I: Mechanics
PHYS 111-4	Introductory Physics II: Waves and Electricity

#### ~~Second Year (Semesters 4 & 5)~~

#### Second Year (Semesters 3 & 4)

CIVE 241-4	Civil Engineering Materials
CIVE 260-4	Soil Mechanics I
ENGR 211-3	Engineering Communication
ENGR 217-3	Engineering Design II
ENGR 221-3	Thermodynamics and Heat Transfer
ENGR 240-4	Mechanics of Materials II
ENGR 250-3	Engineering Tools III
ENGR 254-4	Fluid Mechanics I
ENGR 270-3	Surveying
MATH 200-3	Calculus III
MATH 230-3	Linear Differential Equations and Boundary Value Problems
STAT 371-3	Probability and Statistics <u>for Scientists and Engineers</u>

3 credit hours chosen from the lists of electives

<del>ENGR 260-3</del>	<del>Soil Mechanics I</del>
<del>ENGR 250-4</del>	<del>Structural Design I</del>
<del>ENGR 251-4</del>	<del>Structural Design II</del>
<del>GEOG 205-3</del>	<del>Cartography and Geomatics</del>
<del>ENGR 240-4</del>	<del>Materials I</del>

~~ENGR 241-4 Materials II~~

~~Third Year (Semesters 7, 9, & 11)~~

~~Third Year (Semesters 5 & 6)~~

~~CIVE 320-3 Structural Analysis I  
CIVE 321-3 Structural Analysis II  
CIVE 340-3 Structural Design I  
CIVE 341-3 Structural Design II  
CIVE 360-4 Soil Mechanics II  
CIVE 370-3 Transportations Systems  
CIVE 372-3 Construction Management  
ENGR 300-3 Sustainable Principles of Engineering  
ENGR 353-4 Hydrology and Open Channel Flow  
ENGR 358-3 Water and Wastewater Systems  
ENGR 380-3 Engineering Economics  
ENGR 360-4 Soil Mechanics II  
ENGR 370-3 Transportations Systems  
ENGR 372-3 Construction Management  
ENGR 317-3 Engineering Design III  
ENGR 351-4 Fluid Mechanics I  
ENGR 352-4 Fluid Mechanics II  
ENGR 300-3 Green Principles of Engineering  
ENGR 340-3 Materials III  
ENGR 350-3 Structural Analysis  
ENGR 374-3 Cold Climate Engineering  
ENGR 381-3 Urban and Regional Planning  
3 credit hours technical electives  
3 credit hours Physical or Life Sciences  
3 credit hours chosen from the lists of electives~~

~~Fourth Year (Semesters 13 & 14)~~

~~Fourth Year (Semesters 7 & 8)~~

~~CIVE 400-3 Capstone Design Project I  
CIVE 401-6 Capstone Design Project II  
CIVE 411-3 Project Management  
ENGR 410-3 Professional Practice & Law  
ENGR 400-4 Capstone Design Project I  
ENGR 401-4 Capstone Design Project II  
ENGR 411-3 Project Management  
ENGR 440-3 Foundation Design  
12 credit hours chosen from technical electives  
3 credit hours of electives from the Humanities  
21 credit hours chosen from the lists of electives~~

## **Technical Electives**

~~Technical electives are chosen, as appropriate to the student's discipline, from the technical electives list.~~

~~ENSC 302-3 Low Carbon Energy Development  
ENSC 404-3 Waste Management  
ENSC 406-3 Environmental Modelling  
ENSC 408-3 Storms  
ENSC 425-3 Climate Change and Global Warming  
ENSC 450-3 Environmental and Geophysical Data Analysis  
ENSC 452-3 Reclamation and Remediation of Disturbed Environments  
ENSC 453-3 Environmental Resources Management and Decision Making  
ENSC 460-3 Soil Chemical Processes and the Environment  
NREM 410-3 Watershed Management~~

~~Students may also choose appropriate courses from other engineering disciplines as technical electives. It is the student's responsibility to ensure that they have the prerequisites for the technical electives they wish to take.~~

## Electives

Electives must be chosen from the following lists.

15 credit hours total must be chosen from the Civil and Environmental Engineering elective lists.

Civil Engineering technical electives: 9 or 12 credit hours of the following:

<u>CIVE 451-3</u>	<u>Building Physics</u>
<u>CIVE 461-3</u>	<u>Foundation Design</u>
<u>CIVE 471-3</u>	<u>Cold Climate Construction Engineering</u>
<u>CIVE 481-3</u>	<u>Urban and Regional Planning</u>

Environmental Engineering electives: 3 or 6 credit hours of the following:

<u>ENGR 354-3</u>	<u>Fluid Mechanics II</u>
<u>ENGR 412-3</u>	<u>Engineering Business &amp; Project Management</u>
<u>ENVE 355-3</u>	<u>Engineering Hydrology</u>
<u>ENVE 462-3</u>	<u>Geo-Environmental Engineering</u>

Science electives: 6 credit hours from the following:

<u>ENSC 308-3</u>	<u>Northern Contaminated Environments</u>
<u>ENSC 412-3</u>	<u>Air Pollution</u>
<u>ENSC 425-3</u>	<u>Climate Change and Global Warming</u>
<u>FSTY 345-3</u>	<u>Wood Materials Science</u>
<u>GEOG 205-3</u>	<u>Cartography and Geomatics</u>
<u>GEOG 210-3</u>	<u>Introduction to Earth Science</u>

Humanities or Social Sciences electives: 6 credit hours from the following:

<u>ENPL 305-3</u>	<u>Environmental Impact Assessment</u>
<u>ENVS 230-3</u>	<u>Introduction to Environmental Policy</u>
<u>ENVS 414-3</u>	<u>Environmental and Professional Ethics</u>
<u>FNST 304-3</u>	<u>Indigenous Environmental Philosophy</u>
<u>GEOG 202-3</u>	<u>Resources, Economies, and Sustainability</u>
<u>NREM 303-3</u>	<u>Aboriginal Perspectives on Land and Resource Management</u>
<u>NREM 306-3</u>	<u>Society, Policy and Administration</u>
<u>POLS 100-3</u>	<u>Contemporary Political Issues</u>

## **ENVIRONMENTAL ENGINEERING DEGREE PROGRAM REQUIREMENTS (UNBC PROGRAM)**

Environmental and ecological problems are ~~an~~ increasingly ~~of concern to~~ for all Canadians ~~but~~ particularly in the resource-rich northern portion of British Columbia. The concerns are especially acute due to a primarily resource-based economy, which depends on forestry, mining, oil and gas, and fisheries. Further, the northern economy generates a significant portion of British Columbia's primary wealth and feeds the provincial economic growth. UNBC offers an Environmental Engineering degree ~~which~~ that integrates basic science with modern Engineering practices. Our graduates are prepared to take on ~~the~~ challenges facing modern society, ~~from problems in~~ including the protection of society from adverse environmental factors, protection of environments from potentially detrimental effects of natural and human activities, water, air, and soil pollution control, to mine waste disposal to solid waste management and mine contaminated site remediation. Modern issues require highly skilled engineers with a solid background in environmental engineering, strong communication skills, and the ability to work across disciplinary boundaries. This program prepares graduates for a wide range of employment opportunities where the technical expertise and problem-solving skills of engineers are needed in conjunction with a strong awareness and understanding of environmental issues and problems.

~~Our graduates work in the new environmental economy — in areas related to environmental reclamation, remediation, and restoration.~~

The minimum requirement for completion of a Bachelor of Applied Science degree with a major in Environmental Engineering is ~~454~~ 151 credit hours. ~~Students are also required to successfully complete 12 credit hours of Co-operative Education.~~

### **Standards of Professional Conduct**

In addition to fulfilling all University and program regulations and expectations, all Environmental Engineering students are expected to abide by professional standards as set forth by Engineers and Geoscientists of British Columbia. Violation of professional standards may result in suspension or dismissal from the program and/or the University.

## Academic Performance

Students must adhere to the policies and regulations as specified in the UNBC calendar. This requirement includes, but is not limited to, matters related to academic offenses and progression through the program.

In order to progress through the program, students must obtain the minimum passing grade for all courses. Failure to do so may result in a requirement to withdraw from the program. Environmental Engineering students must complete ENGR 217, ENVE 400, ENVE 401, MATH 200, and MATH 230 at UNBC.

## **Program Requirements**

### First Year (Semesters 1 & 2)

CHEM 100-3	General Chemistry I
CHEM 120-1	General Chemistry Laboratory I
CHEM 101-3	General Chemistry II
CHEM 121-1	General Chemistry Laboratory II
CPSC 110-3	Introduction to Computer <del>Science</del> <u>Systems and Programming</u>
ENGR 110-3	Technical Writing
ENGR 117-3	Engineering Design 1
ENGR 130-4	Mechanics of Materials I
ENGR 151-1	Engineering Tools I
ENGR 152-1	Engineering Tools II
MATH 100-3	Calculus I
MATH 101-3	Calculus II
MATH 220-3	Linear Algebra
PHYS 110-4	Introductory Physics I: Mechanics

### Second Year (Semesters 4 & 5)

<del>BIOL 103-3</del>	<del>Introductory Biology I</del>
<del>BIOL 123-1</del>	<del>Introductory Biology I Laboratory</del>
<del>ENGR 210-3</del>	<del>Materials and Energy Balance</del>
<del>ENGR 211-3</del>	<del>Engineering Communication</del>
<del>ENGR 217-4</del>	<del>Engineering Design II</del>
<del>ENGR 210-3</del>	<del>Materials and Energy Balance</del>
<del>ENGR 220-4</del>	<del>Engineering Chemistry</del>
<del>ENGR 221-3</del>	<del>Thermodynamics &amp; Heat Transfer</del>
<del>ENGR 254-4</del>	<del>Fluid Mechanics I</del>
<del>ENGR 270-3</del>	<del>Surveying</del>
<del>ENSC 201-3</del>	<del>Weather and Climate</del>
<del>ENVE 222-3</del>	<del>Engineering Biology</del>
<del>ENGR 260-3</del>	<del>Soil Mechanics I</del>
<del>ENGR 270-3</del>	<del>Groundwater</del>
<del>GEOG 205-3</del>	<del>Cartography and Geomatics</del>
<del>MATH 200-3</del>	<del>Calculus III</del>
<del>MATH 230-3</del>	<del>Linear Differential Equations and Boundary Value Problems</del>
<del>STATS 371-3</del>	<del>Probability and Statistics for Scientists and Engineers</del>

One of the following:

<u>FSTY 205-3</u>	<u>Introduction to Soil Science</u>
<u>GEOG 210-3</u>	<u>Introduction to Earth Science</u>

### Third Year (Semesters 7, 9, & 11)

<del>CIVE 260-4</del>	<del>Soil Mechanics I</del>
<del>ENGR 244-3</del>	<del>Thermodynamics</del>
<del>ENGR 300-3</del>	<del>Green Sustainable Principles of Engineering</del>
<del>ENGR 306-3</del>	<del>Environmental Modelling</del>
<del>ENGR 317-3</del>	<del>Engineering Design III</del>
<del>ENGR 351-4</del>	<del>Fluid Mechanics I</del>
<del>ENGR 352-4</del>	<del>Fluid Mechanics II</del>
<del>ENGR 353-4_3</del>	<del>Hydrology and Open Channel Flow</del>
<del>ENGR 354-4</del>	<del>Fluid Mechanics II</del>
<del>ENGR 358-3_4</del>	<del>Waste and Waste Water Systems</del>
<del>ENGR 359-3</del>	<del>Ground Water Contamination</del>
<del>ENGR 360-4</del>	<del>Soil Mechanics II</del>
<del>ENGR 365-3</del>	<del>Mining and the Environment</del>
<del>ENGR 380-3</del>	<del>Engineering Economics</del>

ENGR 381-3	Urban and Regional Planning
ENVE 310-3	Environmental Engineering Processes
ENVE 317-3	Engineering Design III - Municipal Engineering
ENVE 318-3	Environmental Eng. Measurement Lab
ENVE 351-4	Groundwater Flow and Contaminant Transport

6 credit hours chosen from the lists of technical electives  
 3 credit hours of electives from the Physical or Life Sciences

Fourth Year (Semesters 13 & 14)

ENGR 400-4	Capstone Design Project I
ENGR 401-4	Capstone Design Project II
ENGR 410-3	Professional Practice & Law
ENGR 412-3	Engineering Business & Project Management
ENGR 411-3	Project Management
ENGR 420-3	Transport Phenomena
ENGR 421-3	Environmental Hydraulics
ENGR 430-3	Unit Operations
ENSC 406-3	Environmental Modelling
ENVE 400-3	Capstone Design Project I
ENVE 401-6	Capstone Design Project II
ENVE 430-3	Energy Systems
ENVE 455-3	Engineering Hydrology

6 12 credit hours chosen from the lists of technical electives  
 3 credit hours of electives from the Humanities

Electives

Electives must be chosen from the following lists.

6 credit hours of the following:

CIVL 370-3	Transportation Systems
CIVL 451-3	Building Physics
CIVL 481-3	Urban and Regional Planning
ENVE 421-3	Contaminant Transport in the Environment
ENVE 462-3	Geo-environmental Engineering

6 credit hours of the following:

ENSC 307-3	Introduction to Geochemistry
ENSC 308-3	Northern Contaminated Environments
ENSC 325-3	Soil Physical Processes and the Environment
ENSC 412-3	Air Pollution
ENSC 425-3	Climate Change and Global Warming
ENSC 450-3	Environmental and Geophysical Data Analysis
ENSC 452-3	Reclamation & Remediation of Disturbed Environments
FSTY 205-3	Introduction to Soil Science
FSTY 345-3	Wood Materials Science
FSTY 425-3	Soil Formation and Classification
GEOG 205-3	Cartography and Geomatics
GEOG 210-3	Introduction to Earth Science
GEOG 311-3	Drainage Basin Geomorphology

3 credit hours of the following:

ENPL 305-3	Environmental Impact Assessment
ENPL 401-3	Environmental Law
ENVS 230-3	Introduction to Environmental Policy
ENVS 414-3	Environmental and Professional Ethics
FNST 304-3	Indigenous Environmental Philosophy
GEOG 202-3	Resources, Economies, and Sustainability
GEOG 401-3	Tenure, Conflict and Resource Geography
GEOG 403-3	First Nations and Indigenous Geographies
NREM 303-3	Aboriginal Perspectives on Land and Resource Management
NREM 306-3	Society, Policy and Administration
POLS 100-3	Contemporary Political Issues

3 credit hours of Humanities and Social Sciences courses with subject matter that deals with the central issues, methodologies, and thought processes of the Humanities and Social Sciences

### **Technical Electives**

~~Technical electives are chosen, as appropriate to the student's discipline, from the technical electives list.~~

~~ENSC 302-3 Low Carbon Energy Development  
ENSC 404-3 Waste Management  
ENSC 406-3 Environmental Modelling  
ENSC 408-3 Storms  
ENSC 425-3 Climate Change and Global Warming  
ENSC 450-3 Environmental and Geophysical Data Analysis  
ENSC 452-3 Reclamation and Remediation of Disturbed  
———Environments  
ENSC 453-3 Environmental Resources Management and  
———Decision Making  
ENSC 460-3 Soil Chemical Processes and the Environment  
NREM 410-3 Watershed Management~~

~~Students may also choose appropriate courses from other engineering disciplines as technical electives. It is the student's responsibility to ensure that they have the prerequisites for the technical electives they wish to take.~~

### **ENVIRONMENTAL ENGINEERING DEGREE PROGRAM REQUIREMENTS (UNBC/UBC JOINT PROGRAM)**

Engineers serve society across a wide range of economic sectors, and an increased number of engineering graduates are needed by the province to assure its economic growth and maintain its high quality of life. Therefore, future development decisions in most major sectors of the British Columbia economy must fully integrate environmental and economic factors. Problems in water, air and soil pollution control and remediation, solid waste management, mine waste disposal, and geo-environmental engineering require highly skilled engineers with a solid background in environmental engineering, strong communication skills and the ability to work across disciplines. The program prepares graduates for a wide range of employment opportunities where the technical expertise and problem-solving skills of engineers are needed in conjunction with a strong awareness and understanding of environmental issues and problems. This is the case for resource-based industries (e.g., forestry, fisheries, mining, oil and gas, pulp and paper, and the agri-food industry); various government departments and research organizations; and environmental engineering consulting companies. Graduates may work in the new environmental economy in areas such as environmental protection, reclamation, remediation and restoration.

The Environmental Engineering Bachelor of Applied Science program is a 4.5 year (nine semester) joint degree between the University of British Columbia and the University of Northern British Columbia. The program is based on a unique collaboration between UNBC and UBC that capitalizes on the strength of UNBC in Environmental Science and the strength of UBC in Engineering. It incorporates complementary elements and expertise from each institution while exposing students to the distinctive character of both institutions. The program starts with a two-year foundation in mathematics and basic and environmental sciences from UNBC. In the third and fourth years, the program provides a thorough education and training in engineering fundamentals, engineering analysis and engineering design, largely through courses in Civil Engineering and Chemical and Biological Engineering at UBC. The final term at UNBC exposes students to practical environmental engineering problems.

The joint UNBC/UBC Environmental Engineering program is accredited by the Canadian Engineering Accreditation Board.

### **Regulations**

Unless otherwise specified, the rules and regulations will be those applicable at the institution (UBC or UNBC) at which the students are attending at the time the rules/regulations need to be applied. In the case where the rules and regulations are needed to cover the program as a whole, or where the institution of attendance is not relevant, then the more stringent rules/regulations are applied. Academic appeals are handled using the procedures at the institution where the rules/regulations need to be applied.

### **Leave of Absence**

Students wanting to take a Leave of Absence must apply to the Environmental Engineering Advisor at the institution that the student is currently attending. Upon approval, students are eligible for up to a one-year Leave of Absence. Students who do not apply for a Leave of Absence are withdrawn from the Environmental Engineering program.

### **Transit between institutions**

Transit between years and institutions requires good academic standing in the program at the most recent institution of

residence (UNBC or UBC).

At UNBC this means students must be in good academic standing, must have a Cumulative GPA of 2.00 or greater in required 1st and 2nd year courses (including 3 credit hours of Humanities or Social Sciences), and must have successfully completed all ENGR, ENVE, MATH and STAT courses. For transit to UBC, all transit requirements must be met by April 30<sup>th</sup> of the year of transfer.

At UBC this means an average of at least 55%, and passing grades in at least 65% of the credits taken. Refer to the UBC Environmental Engineering website (enve.ubc.ca) for more details on UBC to UNBC transit requirements.

### **Program Requirements**

UNBC degree requirements: 90 credit hours

UBC degree requirements: 71 credit hours

Total credits for degree: 161 credit hours

#### **Semester 1 and 2 completed at UNBC**

<u>CHEM 100-3</u>	<u>General Chemistry I</u>
<u>CHEM 101-3</u>	<u>General Chemistry II</u>
<u>CHEM 120-1</u>	<u>General Chemistry Lab I</u>
<u>CHEM 121-1</u>	<u>General Chemistry Lab II</u>
<u>CPSC 110-3</u>	<u>Introduction to Computer Systems and Programming</u>
<u>ENGR 110-3</u>	<u>Technical Writing</u>
<u>ENGR 117-3</u>	<u>Engineering Design I</u>
<u>ENGR 151-1</u>	<u>Engineering Tools I</u>
<u>ENGR 152-1</u>	<u>Engineering Tools II</u>
<u>MATH 100-3</u>	<u>Calculus I</u>
<u>MATH 101-3</u>	<u>Calculus II</u>
<u>PHYS 110-4</u>	<u>Introductory Physics I: Mechanics</u>
<u>PHYS 111-4</u>	<u>Introductory Physics II: Waves and Electricity</u>

3 credit hours of Humanities and Social Sciences courses with subject matter that deals with the central issues, methodologies, and thought processes of the Humanities and Social Sciences (for example, any ANTH, ENGL, ENVS, FNST, HIST, INTS, NORS, PHIL, POLS, or WMST course that does not principally impart language skills or statistics). GEOG and ENPL courses may qualify with the approval of the Chair.

#### **Semester 3 and 4 completed at UNBC**

<u>BIOL 110-3</u>	<u>Introductory Ecology</u>
<u>ENGR 210-3</u>	<u>Material and Energy Balances</u>
<u>ENGR 217-3</u>	<u>Engineering Design II</u>
<u>ENGR 220-3</u>	<u>Engineering Chemistry</u>
<u>ENGR 350-3</u>	<u>Fluid Mechanics</u>
<u>ENGR 451-3</u>	<u>Groundwater Hydrology</u>
<u>ENSC 201-3</u>	<u>Weather and Climate</u>
<u>GEOG 210-3</u>	<u>Introduction to Earth Science</u>
<u>MATH 200-3</u>	<u>Calculus III</u>
<u>MATH 220-3</u>	<u>Linear Algebra</u>
<u>MATH 230-3</u>	<u>Linear Differential Equations and Boundary Value Problems</u>
<u>STAT 371-3</u>	<u>Probability and Statistics for Scientists and Engineers</u>

Note: Lists for courses completed at UBC for semesters 5 through 8 are provided for information only. Please refer to the UBC calendar for official requirements.

<u>CHBE 244-3</u>	<u>Chemical and Biological Engineering Thermodynamics I</u>
<u>CHBE 351-3</u>	<u>Transport Phenomena II</u>
<u>CHBE 364-2</u>	<u>Environmental Engineering Laboratory</u>
<u>CHBE 373-3</u>	<u>Water Pollution Control</u>
<u>CHBE 459-3</u>	<u>Chemical and Biological Engineering Economics</u>
	<u>or CIVL 403-3 Engineering Economic Analysis</u>
<u>CHBE 484-3</u>	<u>Green Engineering Principles and Applications for Process Industries</u>
<u>CHBE 485-3</u>	<u>Air Pollution Prevention and Control</u>
<u>CIVL 200-3</u>	<u>Engineering and Sustainable Development</u>
<u>CIVL 210-4</u>	<u>Soil Mechanics I</u>
<u>CIVL 311-4</u>	<u>Soil Mechanics II</u>
<u>CIVL 315-4</u>	<u>Fluid Mechanics II</u>

CIVL 316-4 Hydrology and Open Channel Flow  
CIVL 402-3 Engineering Law and Contracts in Civil Engineering  
CIVL 408-3 Geoenvironmental Engineering  
CIVL 409-3 Municipal Engineering  
CIVL 416-3 Environmental Hydraulics  
CIVL 418-3 Engineering Hydrology  
EOSC 429-3 Groundwater Contamination  
MINE 486-3 Mining and the Environment

12 credit hours of technical electives chosen from a constrained list available at UBC.

**Semester 9 completed at UNBC**

ENGR 417-6 Engineering Design V  
ENPL 401-3 Environmental Law  
ENSC 418-3 Environmental Measurement and Analysis  
3 credit hours of Humanities or Social Sciences elective  
3 credit hours of elective

**Technical electives available at UNBC for the UBC portion of the curriculum in the UBC/UNBC Joint Environmental Engineering Program**

The following UNBC courses may be used to meet a Technical Elective requirement in the UBC portion of the Joint UBC/UNBC Environmental Engineering BAsc program. Normally, no more than one course from the list may be used. To count towards UBC technical elective requirements, the technical elective must be taken prior to transition to UBC.

ENSC 302-3 Low Carbon Energy Development  
ENSC 404-3 Waste Management  
ENSC 406-3 Environmental Modelling  
ENSC 408-3 Storms  
ENSC 425-3 Climate Change and Global Warming  
ENSC 450-3 Environmental and Geophysical Data Analysis  
ENSC 452-3 Reclamation and Remediation of Disturbed Environments  
FSTY 345-3 Wood Materials Science  
NREM 410-3 Watershed Management

**S-201905.19**

**Change(s) to Program Description and Program Requirements – BAsc UNBC/UBC Joint Environmental Engineering**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the program description and requirements for the UNBC/UBC Joint Environmental Engineering program on pages 104-106 of the PDF version of the 2018/19 undergraduate calendar be deleted from the Environmental Programs section of the calendar.

Effective date: September 2019

CARRIED

Environmental Programs (BAsc, BA, and BSc Programs)

Environmental and ecological problems are of increasing concern to Canadians. In northern British Columbia, the concerns are especially acute in a primarily resource-based economy. The Environmental Programs recognize the complex nature of these issues through the integrated approach contained in the ~~three~~ two degree offerings: ~~the Joint UNBC/UBC Bachelor of Applied Science in Environmental Engineering~~, the Bachelor of Arts in Environmental Studies, and the Bachelor of Science in Environmental Science. The University also offers an Environmental Engineering degree and a joint UNBC/UBC Environmental Engineering degree (see page XXX of calendar).

Environmental Engineering (BAsc Program)

~~Todd Whitcombe, Associate Professor and Chair~~

~~Jianbing Li, Professor~~

~~Jueyi Sui, Professor~~

~~Ron Thring, Professor~~

~~Steve Helle, Associate Professor and Co-Director~~

Engineers serve society across a wide range of economic sectors, and an increased number of engineering graduates are needed by the province to assure its economic growth and maintain its high quality of life. Therefore, future development decisions in most major sectors of the British Columbia economy must fully integrate environmental and economic factors. Problems in water, air and soil pollution control and remediation, solid waste management, mine waste disposal, and geo-environmental engineering require highly skilled engineers with a solid background in environmental engineering, strong communication skills and the ability to work across disciplines. The program prepares graduates for a wide range of employment opportunities where the technical expertise and problem-solving skills of engineers are needed in conjunction with a strong awareness and understanding of environmental issues and problems. This is the case most particularly for resource industries (e.g., forestry, fisheries, mining, oil and gas, pulp and paper, and the agri-food industry); various government departments and research organizations; and in environmental engineering consulting companies. It is also anticipated that graduates will work in the new environmental economy—areas related to environmental reclamation, remediation and restoration.

The Environmental Engineering Bachelor of Applied Science program is a 4.5 year (nine semester) joint degree between the University of British Columbia and the University of Northern British Columbia. The program is based on a unique collaboration between UNBC and UBC that capitalizes on the strength of UNBC in Environmental Science and the strength of UBC in Engineering. It incorporates complementary elements and expertise from each institution while maintaining the exposure of students to the distinctive character of both institutions. The program starts with a two-year foundation in mathematics, basic and environmental sciences from UNBC. In the third and fourth years, the program provides a thorough education and training in engineering fundamentals, engineering analysis and engineering design, largely through courses in Civil Engineering and Chemical and Biological Engineering at the University of British Columbia. The final term at UNBC exposes students to practical environmental engineering problems. The Environmental Engineering program is accredited by the Canadian Engineering Accreditation Board.

### **Admission Requirements**

Admission to the program is limited and is based on academic qualifications and available space. Priority admission will be given to students who meet admission criteria and apply by the deadline of March 1.

Applicants from British Columbia and Yukon secondary schools must:

- Meet UNBC admission requirements, and
- Have an average of at least 75% based on the following four courses: Principles of Math 12 or Pre-calculus 12, English 12 and two provincially examinable Science 12 courses. In addition, applicants must have successfully completed Chemistry 11 in order to meet course prerequisites in the Program. Physics 12 or an equivalent is strongly recommended, as it is a prerequisite for first year Physics courses in the program. Students who are admitted without the Physics 12 prerequisite may be delayed in their studies as they may not be able to complete the first four semesters of the program in the normal two-year time period. Meeting the minimum GPA does not guarantee admission. Under exceptional circumstances the prerequisites may be waived.

Other applicants must demonstrate that they possess qualifications at least equivalent to the British Columbia and Yukon requirement.

### **Regulations**

Unless otherwise specified, the rules and regulations will be those applicable at the institution (UBC or UNBC) at which the students are attending at the time the rules/regulations need to be applied. In the case where the rules and regulations are needed to cover the program as a whole, or where the institution of attendance is not relevant, then the more stringent rules/regulations will be applied. Any academic appeals will be handled using the procedures at the institution where the rules/regulations need to be applied.

### **Residency**

The minimum residency requirement is 90 credits. These may be fulfilled through a combination of courses taken at UNBC and UBC, provided that at least 30 credits are completed at each of the two institutions.

### **Progression**

Progression between years and institutions requires good academic standing in the program at the most recent institution of residence (UNBC or UBC). At UNBC this means a GPA of at least 2.00 or 63%. At UBC this means an average of at least 55%, and passing grades in at least 65% of the credits taken.

### **Graduation**

It is the responsibility of the student to ensure that his/her degree requirements are met. Students must have a good academic standing at both institutions to graduate: a CGPA of at least 2.00 (63%) over all courses taken at UNBC; and an

average of at least 55%, and passing grades in at least 65% of the credits taken at UBC. The diploma will carry credits from both granting institutions (UNBC and UBC).

### **Transfers**

Transfers into the program are allowed provided that the prerequisite courses or articulated courses are completed, and space is available in the program. Acceptance of transfers into the program will be based upon GPA, with priority given to those with the highest GPA. The admission GPA for transfer students into the Environmental Engineering program will be assessed on the following four courses or their university transferrable equivalents: Principles of Math 12 or pre-calculus 12, English 12, and two provincially examinable Science 12 courses. In order to be considered for admission into the program transfer students must have at least 75% average based on these four courses or their equivalents. Where both high school and university transfer coursework are provided for each of these four courses the highest GPA for each course will be used. Transfer students must also have an overall cumulative transfer GPA of 2.00, which is based on all their university transferrable coursework. Regardless of the articulated courses transferred, students must satisfy the residency requirement (see above).

### **Co-operative Education**

Co-operative education, available through UBC Engineering Co-op, is an optional but strongly recommended element of the Environmental Engineering program.

### **Program Requirements**

UNBC degree requirements: 90 credit hours

UBC degree requirements: 71 credit hours

Total credits for degree: 161 credit hours

#### **Semester 1 and 2 completed at UNBC**

CHEM 100-3 — General Chemistry I

CHEM 101-3 — General Chemistry II

CHEM 120-1 — General Chemistry Lab I

CHEM 121-1 — General Chemistry Lab II

CPSC 110-3 — Introduction to Computer Systems and Programming

ENGR 110-3 — Technical Writing

ENGR 117-3 — Engineering Design I

ENGR 151-1 — Engineering Tools I

ENGR 152-1 — Engineering Tools II

MATH 100-3 — Calculus I

MATH 101-3 — Calculus II

PHYS 110-4 — Introductory Physics I: Mechanics

PHYS 111-4 — Introductory Physics II: Waves and Electricity

Three credit hours of humanities and social science courses with subject matter that deals with the central issues, methodologies, and thought processes of the humanities and social science (for example, any ANTH, ENGL, ENVS, FNST, HIST, INTS, NORS, PHIL, POLS, or WMST course that does not principally impart language skills or statistics). GEOG and ENPL courses may qualify with the approval of the Chair.

#### **Semester 3 and 4 completed at UNBC**

BIOL 110-3 Introductory Ecology

ENSC 201-3 Weather and Climate

ENGR 210-3 Material and Energy Balances

ENGR 217-3 Engineering Design II

ENGR 220-3 Engineering Chemistry

ENGR 350-3 Fluid Mechanics

ENGR 451-3 Groundwater Hydrology

GEOG 210-3 Introduction to Earth Science

MATH 200-3 Calculus III

MATH 220-3 Linear Algebra

MATH 230-3 Linear Differential Equations and Boundary Value Problems

STAT 371-3 Probability and Statistics for Scientists and Engineers

**Note:** Lists for courses completed at UBC for Semester 5 through 8 completed at UBC are provided for information only. Please refer to the UBC calendar for official requirements.

CHBE 244-3 Chemical and Biological Engineering Thermodynamics I

CHBE 351-3 Transport Phenomena II

CHBE 364-2 Environmental Engineering Laboratory

CHBE 373-3 Water Pollution Control

CHBE 459-3 Chemical and Biological Engineering Economics

or CIVL 403-3 Engineering Economic Analysis  
CHBE 484-3 Green Engineering Principles and Applications for  
Process Industries  
CHBE 485-3 Air Pollution Prevention and Control  
CIVL 200-3 Engineering and Sustainable Development  
CIVL 210-4 Soil Mechanics I  
CIVL 311-4 Soil Mechanics II  
CIVL 315-4 Fluid Mechanics II  
CIVL 316-4 Hydrology and Open Channel Flow  
CIVL 402-3 Engineering Law and Contracts in Civil Engineering  
CIVL 408-3 Geoenvironmental Engineering  
CIVL 409-3 Municipal Engineering  
CIVL 416-3 Environmental Hydraulics  
CIVL 418-3 Engineering Hydrology  
EOSC 429-3 Groundwater Contamination  
MINE 486-3 Mining and the Environment

Twelve credit hours of technical electives chosen from a constrained list.

**Semester 9 completed at UNBC**

ENPL 401-3 Environmental Law  
ENSC 418-3 Environmental Measurement and Analysis  
ENGR 417-6 Engineering Design V  
Three credit hours of Social Science or Humanities elective.  
Three credit hours of elective.

**Technical electives available at UNBC for the UBC portion of the curriculum in the UBC/UNBC Joint Environmental Engineering Program**

The following UNBC courses may be used to meet a Technical Elective requirement in the UBC portion of the Joint UBC/UNBC Environmental Engineering BSc program. Normally, no more than one course from the list may be used. To qualify towards UBC technical elective requirements, the technical elective must be taken prior to transition to UBC.

ENSC 302-3 Low Carbon Energy Development  
ENSC 404-3 Waste Management  
ENSC 406-3 Environmental Modelling  
ENSC 408-3 Storms  
ENSC 425-3 Climate Change and Global Warming  
ENSC 450-3 Environmental and Geophysical Data Analysis  
ENSC 452-3 Reclamation and Remediation of Disturbed Environments  
FSTY 345-3 Wood Materials Science  
NREM 410-3 Watershed Management

**S-201905.20**

**New Course – CIVE 241**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 241-4 Civil Engineering Materials be approved as follows.

Effective date: January 2021

CARRIED

This course introduces the structure and properties of common civil engineering materials such as aggregates, cement, concrete, wood, steel and other construction materials. The emphasis is on the relationship between the structure of materials and their mechanical properties.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 130-4; MATH-101; MATH-220

**S-201905.21**

**New Course – CIVE 260**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 260-4 Soil Mechanics be approved as follows.

Effective date: September 2021

CARRIED

This course provides students with a theoretical and practical understanding of soil properties. Topics include but are not limited to the following: physical properties of soils; classification; capillarity and permeability; seepage; filter criteria; geostatic stresses; consolidation; and slope stability.

**Prerequisites (taken prior):** Admission to an Engineering program; PHYS 110; ENGR 130; MATH-220

**New Course – CIVE 320**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 320-3 Structural Analysis I be approved as follows.

Effective date: September 2021

CARRIED

This course introduces forms of structural analysis including but not limited to the following: indeterminate structural analysis; approximate analysis of structures; calculation of displacements using virtual work; flexibility (force) method; stiffness method for frames; moment distribution method; and P-delta and geometric stiffness, buckling of columns and frames.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 240; ENGR 250

**S-201905.23**

**New Course – CIVE 321**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 321-3 Structural Analysis II be approved as follows.

Effective date: January 2022

CARRIED

This course explores the following advanced concepts of structural analysis: shear flow and deformation; St. Venant torsion and warping torsion; beams on an elastic foundation; shear wall analysis and elasto-plastic analysis. Students are introduced to the following finite element method and structural dynamics: mode shapes; natural frequencies; lumped mass models; modal analysis and response spectra.

**Prerequisites (taken prior):** Admission to an Engineering program and CIVE 320

**S-201905.24**

**New Course – CIVE 340**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 340-3 Structural Design I be approved as follows.

Effective date: September 2021

CARRIED

This course focuses on steel and wood structure design. Topics include but are not limited to the following: design loads for structures; properties of structural steel and structural wood; design of tension compression and bending members; bolted and welded connections; and the use of design standards and handbooks.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 217; CIVE 241

**S-201905.25**

**New Course – CIVE 341**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 341-3 Structural Design II be approved as follows.

Effective date: January 2022

CARRIED

This course focuses on concrete and masonry structure design. Topics include but are not limited to the following: design loads for structures; properties of concrete and masonry; design of tension compression and bending members; connections; and the use of design standards and handbooks.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 217; CIVE 241

**S-201905.26**

**New Course – CIVE 360**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 360-4 Soil Mechanics II be approved as follows.

Effective date: September 2021

CARRIED

This course continues the study of soil mechanics begun in CIVE 260. Topics include but are not limited to the following: concept of failure and failure theories; Mohr-Coulomb failure criterion; shear resistance between soil particles; shear testing methods; pore pressure parameters; shear strength of non-cohesive and cohesive soils; types of stability analysis; flow of water in embankments/dams and natural slopes; engineering in permafrost; and geo-environmental engineering.

**Prerequisites (taken prior):** Admission to an Engineering program and CIVE 260

**S-201905.27**

**New Course – CIVE 370**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 370-3 Transportation Systems be approved as follows.

Effective date: January 2022

CARRIED

This course introduces elements and operations involved in various transportation systems (air, sea, rail, road). Topics include but are not limited to the following: analysis of system performance; traffic stream characteristics; traffic flow theory; traffic engineering studies; intersection control; capacity and level of service of freeways and signalized intersections; the role of traffic engineering in sustainable transportation systems; highway safety; and travel demand forecasting.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 211; ENGR 217

**S-201905.28**

**New Course – CIVE 372**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 372-3 Construction Management be approved as follows.

Effective date: September 2021

CARRIED

This course provides the knowledge required for managers. Topics include but are not limited to the following: construction methods selection; practice of construction management; contract administration and control; computer integration in administration; control and project network techniques; total quality management and the ISO framework; design of false work and formwork lifting and rigging; welding techniques and procedures; and occupational health and safety.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 211; ENGR 217

**S-201905.29**

**New Course – CIVE 400**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 400-3 Capstone Design Project I be approved as follows.

Effective date: September 2022

CARRIED

This is the first course of a two-course civil engineering capstone design project intended to provide real life experience as part of a design team. Working in teams, students solicit a project from an industrial sponsor, develop a full set of specifications, and deliver a project proposal and preliminary design report. The intent is for the teams to draw upon all of the knowledge gained during their civil engineering degree.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 300; ENGR 380

**S-201905.30**

**New Course – CIVE 401**

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 401-6 Capstone Design Project II be approved as follows.

Effective date: January 2023

CARRIED

This course is the continuation of the two-semester civil engineering capstone design project. Working in teams, students complete the project started in CIVE 400-3 Capstone Design Project I and deliver a final design report. The intent is for the teams to draw upon all of the knowledge gained during their civil engineering degree.

**Prerequisites (taken prior):** Admission to an Engineering program and CIVE 400

Regular **S-201905.31**

**New Course – CIVE 411**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 411-3 Project Management be approved as follows.

Effective date: September 2022

CARRIED

This course examines perspectives on project management as it relates to Civil and Environmental Engineering. The study of project management spans all phases of the project life cycle including but not limited to the following: preliminary feasibility analysis; concept development; and commissioning a project. Students explore key issues in project management using case studies.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 300

**S-201905.32**

**New Course – CIVE 451**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 451-3 Building Physics be approved as follows.

Effective date: September 2022

CARRIED

This course explores concepts of building physics associated with the design of modern buildings. The course focuses on the building envelope's role in environmental separation and controlling the movement of heat, air, and water in liquid and vapour states.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 221; ENGR 300

**S-201905.33**

**New Course – CIVE 461**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 461-3 Foundation Design be approved as follows.

Effective date: September 2022

CARRIED

This course introduces building and structure foundations. Topics include but are not limited to the following: stress distribution in soils; settlement of structures; bearing capacity of soils; design of shallow foundations; retaining structures; excavations; geotechnical earthquake engineering; design of deep foundations; piles and pile foundations; and the underpinning of existing structures.

**Prerequisites (taken prior):** Admission to an Engineering program; CIVE 360; CIVE 321; CIVE 341

**S-201905.34**

**New Course – CIVE 471**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 471-3 Cold Climate Construction Engineering be approved as follows.

Effective date: January 2023

CARRIED

This course explores concepts of building physics associated with the design of modern buildings. The course focuses on the building envelope's role in environmental separation and controlling the movement of heat, air, and water in liquid and vapour states.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 221; ENGR 300

**S-201905.35**

**New Course – CIVE 481**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course CIVE 481-3 Urban and Regional Planning be approved as follows.

Effective date: January 2023

CARRIED

This course provides an introduction to urban and regional planning. The course considers the legal, environmental and governmental context of topics such as land use, growth management, transportation, environmental planning and community development.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 300; CIVE 370

**S-201905.36**

**New Course – ENGR 211**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 211-3 Engineering Communication be approved as follows.

Effective date: January 2021

CARRIED

This course builds on key principles of written and oral engineering communication. Content complements ENGR 217 Engineering Design II and includes correspondence, meeting minutes, memos, proposals, executive summaries, technical reports and oral presentations.

**Prerequisites (taken prior):** Admission to an Engineering program and ENGR 110

**Co-requisites (must be taken simultaneously):** ENGR 217

**S-201905.37**

**New Course – ENGR 221**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 221-3 Thermodynamics and Heat Transfer be approved as follows.

Effective date: January 2021

CARRIED

This course is an introduction to thermodynamics and heat transfer relevant to building systems, waste treatment systems and energy systems. Topics include but are not limited to the following: energy and the first law of thermodynamics; the second law of thermodynamics; power cycles; refrigeration; conductive, convective and radiative heat transfer; and heat exchanger design.

**Prerequisites (taken prior):** Admission to an Engineering program and PHYS 110

**S-201905.38**

**New Course – ENGR 240**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 240-4 Mechanics of Materials II be approved as follows.

Effective date: September 2020

CARRIED

This course introduces the following advanced principles applicable to practical problems in the mechanics of materials: transformation equations for plane stress and plane strain; principal and maximum shearing stresses and strains; Mohr's circle; stresses in thin-walled pressure vessels; combined loading problems; beam deflection by integration and superposition; buckling; and Euler's equation for columns, the secant formula, and the empirical column formulas.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 130; MATH-101; MATH-220

**S-201905.39**

**New Course – ENGR 250**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 250-3 Engineering Tools III be approved as follows.

Effective date: September 2020

CARRIED

**Calendar Course Description:**

This course provides an introduction to engineering problem-solving using advanced software tools such as Matlab. Case studies provide relevance and serve to bind together many of the topics covered in the course.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 151; ENGR 152; MATH-101; MATH-220

**S-201905.40**

**New Course – ENGR 254**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 254-4 Fluid Mechanics I be approved as follows.

Effective date: September 2020

CARRIED

This course introduces students to fluid mechanics. The course covers the following topics: definition of fluid; fluid properties; variation of pressure in a fluid; hydrostatic forces; buoyancy; dimensional analysis; kinematics of flow; control volumes; continuity equation; momentum equation; energy equation; and flow in closed conduits.

**Prerequisites (taken prior):** MATH 152-3 or both of (MATH 100-3 and MATH 101-3), and PHYS 100-4 or PHYS 110-4

**Preclusions:** ENGR 350 Fluid Mechanics

**S-201905.41**

**New Course – ENGR 270**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 270-3 Surveying be approved as follows.

Effective date: May 2021

CARRIED

This course introduces students to fluid mechanics. The course covers the following topics: definition of fluid; fluid properties; variation of pressure in a fluid; hydrostatic forces; buoyancy; dimensional analysis; kinematics of flow; control volumes; continuity equation; momentum equation; energy equation; and flow in closed conduits.

**Prerequisites (taken prior):** MATH 152-3 or both of (MATH 100-3 and MATH 101-3), and PHYS 100-4 or PHYS 110-4

**Preclusions:** ENGR 350 Fluid Mechanics

**S-201905.42**

**New Course – ENGR 300**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 300-3 Sustainable Principles of Engineering be approved as follows.

Effective date: January 2022

CARRIED

This course examines the implications of a finite biosphere and the complexities inherent in environmental and civil engineering decision-making. It explores the social and biophysical context of infrastructure and the impact of technologies on people, the economy and the environment. Topics include but are not limited to the following: pollution prevention; cleaner production; sustainable development; and environmental impact assessment including life-cycle assessment, total cost analysis and environmental systems analysis.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 211; ENGR 217

**S-201905.43**

**New Course – ENGR 353**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 353-3 Hydrology and Open Channel Flow be approved as follows.

Effective date: September 2021

CARRIED

This course is an introduction to water resource systems and hydrology, including energy, momentum, and flow resistance. Topics include but are not limited to the following: energy and momentum principles in open channel flow; critical, subcritical, and supercritical flow; applications to rectangular and non-rectangular channel sections; hydraulic jump; flow resistance; uniform flow computations; non-uniform flow; longitudinal profiles; culvert design; estimation of design discharge; and flood statistics.

**Prerequisites (taken prior):** Admission to an Engineering program and ENGR 254

**S-201905.44**

**New Course – ENGR 354**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 354-3 Fluid Mechanics II be approved as follows.

Effective date: September 2021

CARRIED

The course concentrates on the behavior of compressible fluids. Topics include but are not limited to the following: the fluid medium, kinematics, and dynamics of a flow field; compressible flow; steady and unsteady flows; turbulent flows; two dimensional flow and immersed objects; velocity and pressure fields; lift and drag on cylinders and aerofoils; evaluation of wind loads on structures; pump and turbine analysis and the design of pipeline systems; and application of hydraulic engineering principles to problems of environmental concern such as pollutant transport and dispersion and mixing in rivers and lakes.

**Prerequisites (taken prior):** Admission to an Engineering program and ENGR 254

**S-201905.45**

**New Course – ENGR 358**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 358-4 Water and Wastewater Systems be approved as follows.

Effective date: January 2022

CARRIED

**Calendar Course Description:**

This course introduces students to the field of water management and wastewater treatment. Topics include but are not limited to the following: water quality criteria and standards; treatment techniques and systems for surface water and groundwater sources; design of water storage, transmission, and distribution systems; pumps and pumping; wastewater collection and wastewater treatment systems.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 254; completion of 60 credit hours in an Engineering program

**S-201905.46**

**New Course – ENGR 380**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 380-3 Engineering Economics be approved as follows.

Effective date: September 2021

CARRIED

This course examines economic issues relevant to the profession of engineering. Topics include but are not limited to the following: quantitative analysis of engineering decision-making; cash flow analysis and comparisons of alternatives; decision models, cost concepts, and accounting; depreciation and taxation; risk and uncertainty analysis; economic analysis for sustainable development; financial accounting; company structures; and public sector projects. Case studies are presented.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 211; ENGR 217

**S-201905.47**

**New Course – ENGR 410**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 410-3 Professional Practice and Law be approved as follows.

Effective date: January 2023

CARRIED

This course prepares graduates for the roles and responsibilities of a professional engineer. Topics include but are not limited to the following: professional practice; public responsibility; registration, the Engineers Act and the Code of Ethics; licensing; law and liability; contracts, documents, and the preparation of specifications; torts and independent contractors; companies and partnerships; mechanic liens; agency; evidence; expert witness; liability; patents, copyright, and trademarks.

**Prerequisites (taken prior):** Admission to an Engineering program and ENGR 300

**S-201905.48**

**New Course – ENGR 412**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENGR 412-3 Engineering Business & Project Management be approved as follows.

Effective date: January 2023

CARRIED

This course introduces topics related to working in a small engineering office and managing engineering projects. Topics include communication skills used with contractors, stakeholders and clients, and occupational health and safety.

**Prerequisites (taken prior):** Admission to an Engineering program and completion of 90 credit hours in an engineering program

**S-201905.49**

**New Course – ENVE 222**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 222-3 Engineering Biology be approved as follows.

Effective date: January 2021

CARRIED

This course is an introduction to concepts in biology relevant to environmental engineering. Topics include but are not limited to the following: biochemistry; metabolism; microbial groups; biogeochemical cycles; biological pollution control; toxicity and dose-response relationships; and applications to engineering problems.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 210, ENGR 220

**S-201905.50**

**New Course – ENVE 310**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 310-3 Environmental Engineering Processes be approved as follows.

Effective date: January 2022

CARRIED

This course examines the theory and design of physical, chemical and biological unit operations within environmental engineering processes. Topics include but are not limited to the following: solid handling; solid-solid separation; solid-liquid separation; mixing, aeration, kinetics of chemical and biological reactions; and ideal and non-ideal reactor design. Design problems and case studies provide students with an opportunity to develop processes using sequences of unit operations.

**Prerequisites (taken prior):** Admission to an Engineering program, ENGR 210, ENVE 222, MATH 200

**S-201905.51**

**New Course – ENVE 317**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 317-3

Engineering Design III Municipal Engineering be approved as follows.  
Effective date: January 2022  
CARRIED

This course explores engineering design of municipal infrastructure. Topics include but are not limited to the following: design of water supply networks; sewers; stormwater systems; and solid waste management. The project-based design exercises require the application of sustainability principles, engineering tools and teamwork.

**Prerequisites (taken prior):** Admission to an Engineering program; ENGR 211; ENGR 217

**Co-requisites (must be taken simultaneously):** ENGR 300, ENGR 358

**S-201905.52**

Mandy

**New Course – ENVE 318**

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 318-3 Environmental Engineering Measurement Lab be approved as follows.

Effective date: September 2021

CARRIED

This course is a quantitative laboratory- and field-based course focusing on measurement and analysis of selected parameters relevant to environmental quality. Topics include natural and anthropogenic systems. Some lab sessions are problem-oriented, requiring students to generate a working hypothesis, plan the investigation, carry out the sampling, conduct the experiments, and evaluate the results.

**Prerequisites (taken prior):** Admission to an Engineering program, ENVE 222, one of FSTY 205 or GEOG 210

**S-201905.53**

Mandy

**New Course – ENVE 351**

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 351-4 Groundwater Flow and Contaminant Transport be approved as follows.

Effective date: September 2021

CARRIED

This course introduces fundamental principles of groundwater flow and their applications to solve problems related to groundwater resources evaluation, development, and management. Topics include the following: the role of groundwater in geological processes; the occurrence and movement of groundwater; steady-state and transient well hydraulics; aquifer testing techniques; unsaturated flow theory; contaminant transport processes; and mathematical models describing migration and chemical evolution of contaminant plumes.

**Prerequisites (taken prior):** MATH 100-3 and MATH 101-3, or MATH 152-3, or permission of the instructor

**Preclusions:** ENGR 451 Groundwater Hydrology

**S-201905.54**

Mandy

**New Course – ENVE 455**

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 455-3 Engineering Hydrology be approved as follows.

Effective date: January 2022

CARRIED

This course explores hydrologic processes. Topics include but are not limited to the following: weather; precipitation; infiltration; evaporation; snowmelt; runoff generation; hydrograph analysis; reservoir and channel routing; statistical methods and design floods; and hydrologic modelling.

**Prerequisites (taken prior):** Admission to an Engineering program and ENGR 353

**S-201905.55**

Mandy

**New Course – ENVE 400**

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 400-3 Environmental Engineering Capstone Design Project I be approved as follows.

Effective date: September 2022  
CARRIED

**Calendar Course Description:**

This is the first course of a two-course environmental engineering capstone design project intended to provide real life experience as part of a design team. Working in teams, students solicit a project from an industrial sponsor, develop a full set of specifications, and deliver a project proposal and preliminary design report. The intent is for the teams to draw upon all of the knowledge gained during their environmental engineering degree.

**Prerequisites (taken prior):** Admission to an Engineering program, ENGR 300, ENGR 380, ENVE 310, ENVE 317

**S-201905.56**

Mandy

**New Course – ENVE 401**

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 401-6 Environmental Engineering Capstone Design Project II be approved as follows.

Effective date: January 2023

CARRIED

This course is the continuation of the two-semester environmental engineering capstone design project. Working in teams, students complete the project started in ENVE 400-3 Environmental Engineering Capstone Design Project I and deliver a final design report. The intent is for the teams to draw upon all of the knowledge gained during their environmental engineering degree.

**Prerequisites (taken prior):** Admission to an Engineering program and ENVE 400

**Prerequisites with concurrency (taken prior or simultaneously):** ENGR 410

**S-201905.57**

Mandy

**New Course – ENVE 421**

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 421-3 Contaminant Transport in the Environment be approved as follows.

Effective date: September 2022

CARRIED

This course explores the fate and effects of environmental contaminants. Topics may include the following: contaminant transport; dispersion; phase transfer; degradation pathways; population exposure pathways; and toxicity and dose-response relationships.

**Prerequisites (taken prior):** Admission to an Engineering program, ENGR 220, ENVE 222, ENVE 351

**S-201905.58**

Mandy

**New Course – ENVE 430**

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 430-3 Energy Systems be approved as follows.

Effective date: September 2022

CARRIED

This course explores the design of energy and resource recovery systems. Topics may include energy efficiency, solar energy, run-of-river hydroelectricity, heat recovery, anaerobic digestion, bioenergy, and waste-to-energy systems. Building on environmental engineering fundamentals, students develop sustainable energy system designs using software tools.

**Prerequisites (taken prior):** Admission to an Engineering program, ENGR 300, ENVE 310, ENVE 317

**S-201905.59**

Mandy

**New Course – ENVE 462**

That, on the recommendation of the Senate Committee on Academic Affairs, the new course ENVE 462-3 Geoenvironmental Engineering be approved as follows.

Effective date: September 2022

CARRIED

This course explores methods to mitigate environmental contamination. Topics may include regulatory requirements, site investigation, risk assessment, soil and groundwater remediation technologies, waste characterization, landfills and recycling.

**Prerequisites (taken prior):** Admission to an Engineering program, CIVE 260, ENGR 300

The Library Holding Form for new CIVE, ENGR, ENVE courses and New Academic Program Proposal Evaluation of Library Resources were provided in the meeting package for reference.

### **S-201905.60**

#### **Change(s) to Degree Requirements – BSc (Integrated)**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the changes to the degree requirements for the BSc (Integrated), on page 57-58 in the PDF calendar accessible on the UNBC web page of the 2018-2019 undergraduate calendar, be approved as proposed.

Effective date: September 2019

CARRIED

#### *BSc (Integrated)*

The Bachelor of Science (Integrated) provides a broad science base and integrates more than one area of study. Students must complete two Areas of Specialization listed above below. The program is built upon a foundation of Biology, Chemistry, Mathematics and Physics. The program allows students to transfer into single-discipline science majors built on a foundation of Biology, Chemistry, Mathematics and Physics, or, alternatively, to switch from ~~them~~ those majors to the BSc (Integrated). This program may be useful to students planning to pursue studies in various post-baccalaureate professional areas. In order to be eligible for entry into ~~a programs in the desired professional area program,~~ students should consult with the appropriate professional school(s) to ensure ~~inclusion of all the required courses they have met all requirements. to be eligible for entry into programs in the desired professional area.~~ they have met all requirements. Prior to starting the first year of study, students are strongly encouraged to consult with an appropriate Student Advisor for their anticipated Areas of Specialization.

Areas of Specialization are:

- Biology, Ecology, and Biochemistry & and Molecular Biology
- Chemistry, and Biochemistry and Molecular Biology
- Computer Science
- Environmental and Earth Sciences
- Geography (Science) and GIS
- Mathematics and Statistics
- Natural Resources and Forestry
- Physics

Students enrolled in the Bachelor of Science (Integrated) must successfully complete a total of 120 credit hours including a minimum of 45 credit hours from upper-division (300- or 400- level) courses, and not less than 15 credit hours, at any level, of Humanities and Social Sciences courses. Humanities and Social Sciences courses may be selected from among the areas that are considered Humanities and Social Sciences for purposes of the BA (General). ~~Students must complete two areas of Specialization listed above.~~ Students must ensure completion of course prerequisites before registering in any course.

### **Program Requirements**

#### **Lower-Division Requirement**

BIOL 103-3 Introductory Biology I  
BIOL 104-3 Introductory Biology II  
BIOL 123-1 Introductory Biology I Laboratory  
BIOL 124-1 Introductory Biology II Laboratory  
CHEM 100-3 General Chemistry I  
CHEM 101-3 General Chemistry II  
CHEM 120-1 General Chemistry Lab I  
CHEM 121-1 General Chemistry Lab II  
MATH 100-3 Calculus  
and MATH 101-3 Calculus II

or  
MATH 152-3 Calculus for Non-majors  
and STAT 240-3 Basic Statistics  
PHYS 100-4 Introduction to Physics I  
or PHYS 110-4 Introductory Physics I: Mechanics  
PHYS 101-4 Introduction to Physics II  
or PHYS 111-4 Introductory Physics II: Waves & Electricity

### **Upper-Division Requirement**

Students must complete 18 upper-division credit hours within each of two Areas of Specialization for a minimum of 36 credit hours.

*Note that if a course falls into more than one Area of Specialization, it may be counted in only one Area of Specialization.*

#### **1. Eligible courses for the Biology, Ecology, and Biochemistry & and Molecular Biology Area of Specialization**

BCMB 306-3 Intermediary Metabolism  
BCMB 308-3 Biochemistry Lab II  
~~BCMB 330-3 Nucleic Acids~~  
BCMB 340-3 Physical Biochemistry  
BCMB 405-3 Topics in Biochemistry and Molecular Biology  
All upper-division BIOL courses

#### **2. Eligible courses for the Chemistry, Biochemistry & and Molecular Biology Area of Specialization**

BIOL 312-3 Molecular Cell Physiology  
BIOL 423-3 Molecular Evolution and Ecology  
~~BIOL 424-3 Molecular Cell Physiology~~  
BIOL 425-3 Applied Genetics and Biotechnology  
All upper-division BCMB and CHEM courses.

#### **3. Eligible courses for the Computer Science Area of Specialization**

Students considering this Area of Specialization should include in the first year:

CPSC 100-4 Computer Programming I  
CPSC 141-3 Discrete Computational Mathematics  
CPSC 101-4 Computer Programming II  
All upper-division CPSC courses ~~except CPSC 311-3 Computer Applications Programming~~

#### **4. Eligible courses for the Environmental and Earth Sciences Area of Specialization**

ENPL 305-3 Environmental Impact Assessment  
~~FSTY 315-3 Forest Soil Management~~  
FSTY 415-3 Forest Soils  
FSTY 425-3 Soil Formation and Classification  
~~FSTY 455-3 Biogeochemical Processes in Soil Systems~~  
GEOG 310-3 Hydrology  
GEOG 311-3 ~~Concepts in Geomorphology~~ Drainage Basin Geomorphology  
GEOG 405-3 Fluvial Geomorphology  
GEOG 411-3 Quaternary and Surficial Geology  
~~GEOG 412-3 Geomorphology of Cold Regions~~  
~~GEOG 414-3 Weathering Processes~~  
GEOG 416-3 Mountains  
NREM 410-3 Watershed Management  
PHYS 307-3 Selected Topics in Environmental Physics  
All upper-division ENSC courses ~~except ENSC 417-6 Designing Solutions in Environmental Engineering~~

#### **5. Eligible courses for the Geography (Science) and GIS Area of Specialization**

GEOG 300-3 Geographic Information Systems  
GEOG 310-3 Hydrology  
GEOG 311-3 ~~Concepts in Geomorphology~~ Drainage Basin Geomorphology  
GEOG 357-3 Introduction to Remote Sensing

GEOG 405-3 Fluvial Geomorphology  
GEOG 411-3 Quaternary and Surficial Geology  
~~GEOG 412-3 Geomorphology of Cold Regions~~  
GEOG 413-3 Advanced GIS  
~~GEOG 414-3 Weathering Processes~~  
GEOG 416-3 Mountains  
~~GEOG 432-3 Remote Sensing~~  
GEOG-450 Advanced Geospatial Analysis  
~~GEOG 457-3 Advanced Remote Sensing~~

#### **6. Eligible courses for the Mathematics & Statistics Area of Specialization**

All upper-division MATH courses ~~except MATH 342-3 Biostatistics.~~

#### **7. Eligible courses for the Natural Resources and Forestry Area of Specialization**

All upper-division FSTY courses except FSTY 310-3 Forest Economics  
All upper-division NREM courses except NREM 306-3 Society, Policy and Administration  
All upper-division NRES courses

#### **8. Eligible courses for the Physics Area of Specialization**

All upper-division PHYS courses except PHYS 307-3 Selected Topics in Environmental Physics

#### **Elective and Academic Breadth**

Elective credit hours as necessary to ensure completion of a minimum of 120 credit hours including any additional credit hours necessary to meet the Academic Breadth requirement of the University (see Academic Regulation 15).

##### **S-201905.61**

##### **Change(s) to Course Description and Credit Hours – ENPL 430**

Murphy

That, on the recommendation of the Senate Committee on Academic Affairs, the change(s) to ENPL 430-3 Undergraduate Thesis in the 2018/2019 undergraduate calendar, be approved as proposed.

Effective date: September 2019

CARRIED

~~ENPL 430-36 Undergraduate Thesis. This is an optional course, allowing students to devote time to a concentrated piece of research. In this course students pursue an independent research project under the direct supervision of a faculty member from the School of Environmental Planning. Students are expected to design and implement a research methodology, analyze data, and present findings in thesis format. The final grade in this course is based in part on a written research proposal, a written thesis, a public presentation of research results, and the evaluation of the thesis by a second reader. The thesis is normally completed over the September and January semesters.~~

~~Co-Prerequisites: ENPL 420 90 credit hours of study including all lower-division ~~degree~~ requirements, and permission of an Academic Supervisor and the Program Chair.~~

~~Precluded: ENVS 430-3~~

##### **S-201905.62**

##### **Change(s) to Program Requirements – B. PI.**

Mandy

That, on the recommendation of the Senate Committee on Academic Affairs, the changes to the program requirements for the B.PI, on pages 106-110 of the 2018/19 undergraduate calendar, be approved as proposed.

Effective date: July 2019

CARRIED

#### **School of Environmental Planning (BPI)**

Andrew D. Seidel, Professor and Chair

Mark Groulx, Assistant Professor

Darwin Horning, Assistant Professor

Daniela Fisher, Adjunct Professor

Theresa Healy, Adjunct Professor

Richard Krehbiel, Adjunct Professor

Angel Ransom, Adjunct Professor

Finlay Sinclair, Adjunct Professor  
Andrew Young, Adjunct Professor

Website: [www.unbc.ca/environmental-planning](http://www.unbc.ca/environmental-planning)

The degree provides a broad education in environmental planning. The focus is on understanding the relationship between people and the environment, ~~and on~~ reducing the environmental impact of human activities, and responding and adapting to environmental change.

The study of planning examines public processes that improve the quality of decisions affecting the environment. Responsible planning integrates various private and public interests and identifies viable, workable options. Planners play a vital role in decision-making processes concerning the future of human settlements, resource management, environmental protection, human health and well-being, economic development, and many other areas. Ultimately, the work of planners becomes part of, or a catalyst to, public policy.

To achieve its purposes, Environmental Planning offers a comprehensive program of courses, such as environmental assessment, ecological design, economic development, First Nations planning, land-use planning, and sustainable communities. Each course provides a creative and challenging learning environment for students to tackle today's most contentious issues such as sustainability, climate change, biodiversity, environmental stewardship, and urban sprawl. Environmental Planning offers unique perspectives on a rapidly evolving field of study and solutions for an increasingly complex world.

Environmental Planning is dedicated to upholding professional standards of practice and is accredited by the Professional Standards Board (PSB) which is recognized by the Canadian Institute of Planners (CIP) and the Planning Institute of British Columbia (PIBC). Accreditation is a system for promoting national standards of education in planning and for recognizing educational institutions for a level of performance, integrity, and quality.

Accreditation benefits students in Environmental Planning in three ways:

- Current students can apply for Student Membership in PIBC;
- Graduates are eligible for Full Membership in PIBC and CIP after ~~only~~ two years of professional planning experience; and
- Employers in the planning field look for students graduating from an accredited planning program, thus significantly improving graduates' job prospects.

Three majors are available to students completing the Bachelor of Planning:

- Northern and Rural Community Planning;
- First Nations Planning;
- Natural Resources Planning.

Planning students complete a set of program requirements totaling ~~69~~ 72 credit hours in addition to completing the specialized course requirements for each major.

## **Program Requirements for all Majors in Planning**

### **Lower-Division General Environmental Planning Requirement**

#### **100 Level**

ECON 100-3 Microeconomics  
ENPL 104-3 Introduction to Planning

One of the following:

ENGL 170-3 Writing and Communication Skills  
~~or~~ POLS 290-3 Research and Writing for Political Science  
~~or~~ NRES 100-3 Communications in Natural Resources and  
Environmental Studies

### **200 Level**

ENPL 204-3 Principles and Practices of Planning  
ENPL 205-3 Environment and Society  
ENPL 206-3 Planning Analysis and Techniques  
ENPL 207-3 Introduction to Computer Aided Design  
or GEOG 205-3 Cartography and Geomatics  
ENPL 208-3 First Nations Community and Environmental  
Planning  
GEOG 204-3 Introductory GIS for the Social Sciences  
or GEOG 300-3 Geographic Information Systems  
GEOG 210-3 Introduction to Earth Science  
POLS 200-3 Canadian Government and Politics

One of the following:

ECON 205-3 Statistics for Business and the Social Sciences  
~~or~~ STAT 240-3 Basic Statistics  
~~or~~ STAT 371-3 Probability and Statistics for Scientists  
and Engineers

### **Upper-Division General Environmental Planning Requirement**

#### **300 Level**

ENPL 301-3 Sustainable Communities: Structure and Sociology  
ENPL 303-3 Spatial Planning with Geographical Information  
Systems  
ENPL 304-3 Mediation, Negotiation and Public Participation  
ENPL 305-3 Environmental Impact Assessment  
ENPL 313-3 Rural Community Economic Development  
ENPL 318-3 Professional Planning Practice  
ENPL 319-3 Social Research Methods

#### **400 Level**

ENPL 401-3 Environmental Law  
ENPL 410-3 Land Use Planning  
ENPL 411-3 Planning Theory, Process and Implementation  
ENPL 415-3 Ecological Design  
ENVS 414-3 Environmental and Professional Ethics

~~In addition, students may undertake ENPL 420-1 Research  
Methodology, ENPL 430-3 Undergraduate Thesis, ENPL 431-3  
Professional Report, ENPL 440 (2-6) Internship as part of their  
electives.~~

### **Major Requirements**

Students must choose to specialize in one major. All course requirements in the major must be completed.

### **Major in Northern and Rural Community Planning**

The focus of this major is to promote an understanding of the complexity and diversity of environmental problems, to develop an appreciation of community change processes, and to provide planners with knowledge which will improve the quality of the built environment and reduce the impact of human activities on the natural world. The

unique planning requirements of smaller communities and rural regions demand a grounding in both physical and social science methods and an understanding of the relationship between northern communities and surrounding rural resource regions. Environmental planning necessitates strategic thought and action combined with knowledge grounded in professional practice. The Northern Rural and Community Planning major combines concepts such as bioregionalism, sustainability, and landscape design within the context of physical land-use planning, social planning and community economic development.

Northern and Rural Community Planning is the application of environmental planning principles and practices to the often unique social, economic, and ecological issues confronting northern and circumpolar communities in Canada and elsewhere in the northern hemisphere. Successfully addressing these issues requires an appreciation of how and why communities change, an understanding of relationships between northern communities and surrounding rural resource regions, ~~an understanding and~~ of the place and function of northern communities and rural regions in the global environment, and a grounding in both physical and social science methods of research and analysis.

~~Students enrolled in the Northern and Rural Community Planning Major must successfully complete 120 credit hours.~~ Students must ensure that all prerequisites are fulfilled prior to registering in any courses.

Program requirement for all majors in planning:	69 72 credit hours
Major requirement:	15 credit hours
Major elective requirement:	18 credit hours
<del>General elective requirement:</del>	<del>18 credit hours</del>
General elective requirement:	Elective credit hours as necessary to ensure the completion of 120 credit hours.

The minimum requirement for a Bachelor of Planning with a ~~M~~major in Northern and Rural Community Planning is 120 credit hours.

## Major Requirements

### Lower-Division Requirements

BIOL 110-3 Introductory Ecology

~~One of the following:~~

ENVS 101-3 Introduction to Environmental Citizenship  
or GEOG 206-3 Social Geography

Three of the following:

ANTH 213-3 Peoples and Cultures  
ENVS 306-3 Human Ecology (regional campus only)  
FNST 100-3 The Aboriginal Peoples of Canada  
GEOG 101-3 Planet Earth  
GEOG 200-3 British Columbia: People and Places  
GEOG 202-3 Resources, Economies, and Sustainability  
GEOG 206-3 Social Geography  
INTS 100-3 Introduction to Global Studies  
MATH 115-3 Precalculus  
POLS 100-3 Contemporary Political Issues  
SOCW 201-3 Introduction to Social Welfare

### Upper-Division Requirements

POLS 350-3 Law and Municipal Government

One of the following:

NREM 306-3 Society, Policy and Administration  
or POLS 316-3 Municipal Government and Politics  
or POLS 320-3 Canadian Politics and Policy

One of the following:

GEOG 424-3 Northern Communities  
~~or POLS 415-3 Comparative Northern Development~~  
or POLS 434-3 Resource Communities in Transition  
~~or POLS 415-3 Comparative Northern Development~~

Three of the following, minimum 9 credit hours:

ANTH 316-3 The Social Theory and Structure of  
Contemporary Canadian Society  
ANTH 413-(3-6) Environmental Anthropology  
ECON 411-3 Cost Benefit Analysis  
ENPL 430-6 Undergraduate Thesis  
ENPL 431-3 Professional Report  
ENPL 440 (2-6) Internship  
ENSC 404-3 Waste Management  
ENSC 302-3 Low Carbon Energy Development  
FNST 350-3 Law and ~~Aboriginal~~ Indigenous Peoples  
GEOG 305-3 Political Ecology: Environmental Knowledge  
and Decision-Making  
GEOG 403-3 First Nations and Indigenous Geographies  
GEOG 424-3 Northern Communities  
NREM 306-3 Society, Policy and Administration  
POLS 302-3 ~~Canadian Public Administration~~ How Government Works  
POLS 316-3 Municipal Government and Politics  
POLS 320-3 ~~How Government Works~~ Canadian Politics and Policy  
POLS 332-3 Community Development  
POLS 351-3 Local Services and Public Policy  
POLS 360-3 Local Government Finance  
POLS 415-3 Comparative Northern Development  
POLS 434-3 Resource Communities in Transition  
SOCW 320-3 Critical Social Policy

Students must ensure that all prerequisites are fulfilled prior to ~~taking~~  
~~the~~ registering in any course.

~~General electives courses comprise of a total of 18 credit hours.~~

Students are encouraged to use the general electives to take a minor offered in Geography and Political Science, First Nations Studies, or other fields associated with community development.

### **Major in First Nations Planning**

First Nation communities have significant and growing demands for qualified planners. The opportunities for skilled planners increase as many First Nations move to define land claims and others build upon existing treaties in Canada, potentially giving First Nations significant responsibilities for land and community planning. ~~and as others work to build upon existing treaties. the availability of skilled planners becomes essential.~~ However, planning by, and with, First Nations requires specific skills and abilities in the planners, whether or not they themselves are First Nation.

For most First Nations communities few distinctions are made between ecological/environmental planning and planning for social and cultural needs. Cultural and social needs are which are developed from within, and are grounded in, the ecosystem. First Nations planning must necessarily integrate all of these domains. First Nations wish to remain grounded in tradition and seek to move into the future through sound community economic development and skilled land management. Most face significant community development needs, including infrastructure development,

housing, and health planning. Students need not ~~just only~~ a sound grasp of planning principles, but also an understanding of the protocols, history, social structure, and ecology of Canadian First Nations. ~~Further,~~ Cross-cultural translation skills, community participation techniques, and a solid grounding in ethics are required.

~~Students enrolled in the First Nations Planning Mmajor must successfully complete 121-120 credit hours. Students must ensure that all prerequisites are fulfilled prior to registering in any courses. Major and elective course requirements must also be met.~~

Program requirement for all majors in planning:	69 72 credit hours
Major requirement:	19 credit hours
Major elective requirement:	8 credit hours
General elective requirement:	15 credit hours
General elective requirement:	<u>Elective credit hours as necessary to ensure the completion of 120 credit hours.</u>

The minimum requirement for a Bachelor of Planning with a ~~M~~major in First Nations Planning is ~~121~~ 120 credit hours.

### Lower-Division Requirements

BIOL 110-3 Introductory Ecology  
FNST 100-3 The Aboriginal Peoples of Canada  
FNST 131-3 A First Nations Language; Level 1

Three of the following:

ANTH 213-3 Peoples and Cultures  
ENVS 101-3 Introduction into Environmental Citizenship  
FNST 161-3 A First Nations Culture; Level 1  
FNST 200-3 Perspectives in First Nations  
Studies  
FNST 203-3 Introduction to Traditional Ecological  
Knowledge  
HHSC 102-3 Introduction to Health Sciences II: Rural and  
Aboriginal Issues  
MATH 115-3 Precalculus  
NREM 210-4 Integrated Resource Management

### Upper-Division Requirements

ENPL 409-4 Advanced First Nations Community and  
Environmental Planning  
FNST 304-3 Indigenous Environmental Philosophy  
FNST 350-3 Law and Indigenous Peoples

Three of the following:

BIOL 350-3 Ethnobotany  
ENPL 430-6 Undergraduate Thesis  
ENPL 431-3 Professional Report  
ENPL 440 (2-6) Internship  
FNST 303-3 First Nations Religion and Philosophy  
FNST 305-3 Seminar in First Nations Studies  
FNST 407-3 First Nations Perspectives on Race, Class,  
Gender and Power  
GEOG 403-3 First Nations and Indigenous Geographies  
NREM 303-3 Aboriginal Perspectives on Land and  
Resource Management  
ORTM 306-3 Indigenous Tourism and Recreation  
POLS 350-3 Law and Municipal Government  
SOCW 455-3 First Nations Governance and Social Policy  
SOCW 457-3 Individual and Community Wellness

Of the above lower- and upper-division course requirements, students

must select a minimum of three FNST courses (9 credit hours). Students must ensure that all prerequisites are fulfilled prior to registering in any courses.

~~General elective courses comprise a total of 15 credit hours.~~ Students are encouraged to use the general electives to take a minor offered in First Nations Studies or other courses associated with aboriginal and First Nations issues.

### Major in Natural Resources Planning

The major in Natural Resources Planning is designed to provide students with an understanding of the complexities of including the natural and cultural environment in planning decision-making. The major is intended to address both project-level and large-scale environmental planning issues that occur in developments that impact the natural environment.

The objective of this major is to familiarize students with planning and decision-making in a variety of sectors that include provincial land use planning, environmental assessment, watershed planning and integrated resource and environmental management. These areas of planning are characterized by complex and intricate ~~problems that revolve around questions about~~ how to use our natural resources and who should decide. The multidimensional aspects of environmental management include natural and cultural complexity, different desired futures, value differences, assessment and monitoring tools, and integration methods. This major emphasizes an understanding of planning in both the substantive realm (natural and social sciences) and the procedural realm (the process of including people in the decision-making process).

Students enrolled in the Natural Resources Planning ~~major~~ must successfully complete 120 credit hours. ~~Major and elective course requirements must also be met. Students must ensure that they complete course prerequisites before registering in any course.~~ Students interested in working with biological and environmental aspects of natural resource planning should take BIOL 103/BIOL 123 and BIOL 104/124 as elective courses and BIOL 201 as the ecology elective ~~as they are prerequisite courses to satisfy prerequisites~~ for many of the other biological and environmental courses. ~~Furthermore,~~ Those students interested in the environmental sciences should ~~also consider taking~~ take first- and second-year Chemistry courses as part of the general electives. Students interested in integrated natural resource planning ~~are encouraged to should~~ take BIOL 104/124 and a mix of courses in areas of Political Science, First Nations (FNST or ENPL), Environment Sciences (ENSC), Geography and Outdoor Recreation and Tourism Management, and International Studies and Economics.

Students must ensure that they complete course prerequisites before registering in any course.

Program requirement for all majors in planning:	<del>69</del> <u>72</u> credit hours
Major requirement:	17 credit hours
<del>Major elective requirement:</del>	<del>18 – 22</del> credit hours
General elective requirement:	<u>Elective credit hours as necessary to ensure the completion of 120 credit hours.</u>

The minimum requirement for a Bachelor of Planning with a ~~major~~ in Natural Resource Planning is 120 credit hours.

### Lower-Division Requirements

BIOL 110-3 Introductory Ecology  
or BIOL 201-3 Ecology

NREM 210-4 Integrated Resource Management  
GEOG 205-3 Cartography and Geomatics

One of the following:

~~BIOL 110-3 Introductory Ecology~~  
or ~~BIOL 201-3 Ecology~~

Three of the following, minimum 9 credit hours:

BIOL 103-3 Introductory Biology I  
and BIOL 123-1 Introductory Biology I Laboratory  
BIOL 104-3 Introductory Biology II  
and BIOL 124-1 Introductory Biology II Laboratory  
ENSC 201-3 Weather and Climate  
ENSC 202-3 Introduction to Aquatic Systems  
FNST 100-3 The Aboriginal Peoples of Canada  
FNST 203-3 Introduction to Traditional Ecological  
Knowledge  
FSTY 205-3 Introduction to Soil Science  
INTS 100-3 Introduction to Global Studies  
MATH 115-3 Precalculus  
NREM 101-3 Introduction to Natural Resources  
Management and Conservation  
NREM 203-3 Resource Inventories and Measurements  
NREM 204-3 Introduction to Wildlife & Fisheries  
ORTM 200-3 Sustainable Recreation and Tourism

### Upper-Division Requirements

NREM 400-4 Natural Resources Planning  
NREM 410-3 Watershed Management

Three of the following, minimum 9 credit hours:

BIOL 302-3 Limnology  
BIOL 411-3 Conservation Biology  
ECON 305-3 Environmental Economics and  
Environmental Policy  
ECON 331-3 Forestry Economics  
ECON 411-3 Cost-Benefit Analysis  
ENPL 409-4 Advanced First Nations Community and  
Environmental Planning  
ENPL 430-6 Undergraduate Thesis  
ENPL 431-3 Professional Report  
ENPL 440 (2-6) Internship  
ENSC 302-3 Low Carbon Energy Development  
ENSC 308-3 Northern Contaminated Environments  
ENSC 312-3 Biometeorology  
ENSC 404-3 Waste Management  
ENSC 412-3 Air Pollution  
ENV5 326-3 Natural Resources, Environmental Issues and  
Public Engagement  
FNST 451-3 Traditional Use Studies  
GEOG 401-3 Tenure, Conflict and Resource Geography  
INTS 307-3 Global Resources  
INTS 470-3 Global Environmental Governance  
NREM 413-3 Agroforestry  
ORTM 300-3 Recreation and Tourism Impacts  
ORTM 305-3 Protected Area Planning and Management  
ORTM 407-3 Recreation, Tourism, Communities  
POL5 344-3 Society, Policy and Administration of Natural  
Resources  
or NREM 306-3 Society, Policy and Administration  
POL5 350-3 Law and Municipal Government

Students must ensure that all prerequisites are fulfilled prior to registering in any course.

~~General elective courses comprise a total of 18 credit hours. Students are encouraged to use the general electives to take a minor offered in areas of Geography, and Political Science, First Nations Studies, or other fields associated with community development.~~

### **Minor in Planning**

The minor in Planning is designed to provide students with an opportunity to acquire a basic knowledge of planning theory and methods. The minor consists of 12 required credits ~~hours~~ (four designated courses) and ~~six 6 credits hours from a set of upper-division~~ elective courses listed below. A maximum of ~~6 credit hours two courses (2 courses)~~ used to fulfill program requirements for a major or another minor may also be used to fulfill requirements for a minor in Planning.

~~The Minor in Planning requires the completion of 18 credit hours of ENPL Planning Courses, of which 12 credit hours must be at the upper-division level.~~

### **Required**

ENPL 104-3 Introduction to Planning  
ENPL 204-3 Principles and Practices of Planning  
ENPL 301-3 Sustainable Communities: Structure and Sociology  
ENPL 411-3 Planning Theory, Process and Implementation

### **Electives**

~~Two of: the following:~~

ENPL 305-3 Environmental Impact Assessment  
ENPL 318-3 Professional Planning Practice  
ENPL 410-3 Land Use Planning  
ENPL 415-3 Ecological Design

### **S-201905.63**

#### **Change(s) to Program Description**

Horianopoulos

That, on the recommendation of the Senate Committee on Academic Affairs, the changes to the program description for Co-operative Education, on page 48-49 of the 2018/2019 undergraduate calendar, be approved as proposed.

Effective date: September 2019

CARRIED

### **Co-operative Education**

UNBC's Co-operative Education (Co-op) program is an educational model that integrates a student's academic program with practical work experiences. In order to receive a Co-operative Education designation on their transcript, ~~Students~~ students usually alternate academic and co-op work terms and are required to ~~do the following:~~

- attend the required number of workshops ~~as outlined by the UNBC Co-operative Education Student Handbook by the Co-op office;~~
- pass ~~three~~ the number of co-op work terms equal to at least 30% of a student's time spent in academic study (e.g., three co-op work terms for a four-year program);
- end the Co-op program on an academic or ~~parallel co-op work~~ term prior to graduation.

UNBC's Co-op office is not obligated to guarantee ~~Work Term~~ work term placements.

### **Admission to the Program**

Intake into the Co-op program occurs ~~once~~ at the beginning of the September and January semesters. Students planning to enter the ~~Co-op~~ Co-op program should contact the Co-op ~~Office~~ office and attend an information session. To qualify for and continue in the Co-op program, students must:

- have completed 30 credit hours before participating in their first co-op work term;
- be enrolled full time (~~9 credit hours~~); and
- have a minimum ~~e~~ Cumulative grade point average GPA of 2.50 ~~with normally no grade lower than D.~~

Students required to withdraw from the Co-op program due to their academic standing may re-apply for admission based upon re-qualification.

### **Co-op Work Terms**

A co-op work term is normally equal in length to an academic term (~~approximately 13 weeks~~approximately four months in length). A minimum of 12 weeks are required for each work term. A co-op work term consists of full-time work relevant to a student's declared academic major or minor (approximately ~~455~~420-520 hours of work experience, dependent on employer needs). Some co-op work terms are equal in length to two academic terms and ~~will be~~ are considered as two co-op work terms. ~~To be considered for as two co-op work terms,~~ A two-work term placement must be approximately 26 weeks eight months in length and consist of full-time work, relevant to a student's declared academic major or minor (approximately ~~940~~840-1,040 hours of work experience, dependent on employer needs). If students wish to be enrolled in an academic course while on a co-op work term, they must receive the approval of the Co-op office before registering.

### **Parallel Co-op Work Terms**

A parallel co-op work term is normally equal in length to two academic terms (~~approximately 26 weeks~~eight months in length) and consists of part-time work relevant to a student's declared academic major or minor (approximately 17.5-20 hours per week, for a total of ~~455~~420-520 hours of work experience, dependent on employer needs). A parallel co-op work term is considered as one co-op work term. During parallel co-op work terms, students are expected to be enrolled in two academic courses (minimum ~~six~~ 6 credit hours) per academic semester. If students wish to be enrolled in more than two academic courses in an academic semester, they must receive the approval of the Co-op office before registering.

### **Self-Developed Work Terms**

A self-developed work term recognizes work term placements found as a result of students' own contacts and networks. Students ~~who wish to discuss whether a particular work term should be declared~~ interested in self-developed work terms should consult with the Co-op ~~program~~ office before beginning the work term.

### **Co-operative Education Transferable Work Terms**

Co-op work terms successfully completed at a Canadian postsecondary institution ~~will be~~ are eligible for transfer work term credit, as determined on an individual basis, if they meet the following requirements:

- the program in which the work term(s) was undertaken is ~~provincially~~ approved under the criteria of the Accountability Council of Co-operative Education and Work-Integrated Learning of BC or ~~is nationally approved under the criteria of the Cooperative~~ Co-operative Education and Work-Integrated Learning Canada;
- the work term(s) is officially recognized (i.e. noted on the transcript) by the institution where the work term originated;
- the credit for a ~~second~~ transfer work term was granted for work experience typical of a ~~similar major or minor~~ the discipline into which the student is transferring, ~~and~~;
- ~~a~~ the student is accepted into the UNBC Co-op program and applies for assessment of a transfer of work terms.

Transfer students must complete the number of workshops outlined in ~~the UNBC Co-operative Education Student Handbook~~ by the Co-op office before participating in their first co-op work term as a UNBC student.

### **Co-operative Education Work Term Credit Challenge**

The UNBC Co-op program allows students to challenge their first work term on the basis of prior relevant and satisfactory work experience. Students should discuss any potential work term course challenge with the Co-op office. Work term course challenges are eligible for work term credit, as determined on an individual basis, upon verification of the following:

- an aggregate of approximately ~~455~~420-520 hours of relevant work experience, dependent on employer needs, and not previously counted toward work term credit, practicum, internship, and similar options;
- employment verification and performance evaluation by the employer;
- a job description providing evidence that the student acquired professional and personal knowledge and skills appropriate to the declared academic major or minor; and
- ~~a portfolio which meets UNBC Co-operative Education Student Handbook guidelines~~ completion of assignments set by the Co-op office.

If the work term course challenge is approved, the result is entered on the student's transcript on a PPass or FFail basis.

For additional information, ~~including the UNBC Co-operative Education student and employer handbooks~~, please visit the Co-op office or the program website at [www.unbc.ca/co-op](http://www.unbc.ca/co-op).

## 11.2 Steering Committee of Senate

Dr. Weeks

The President reported that the Steering Committee will bring back the presentations to Senate in the fall. These presentations will begin in September and will be 10-minute presentations at the beginning of each Senate meeting to highlight some of the activities on campus.

The Steering Committee is continuing discussions for revisions of the Senate Handbook. A master list of what our committee structure might look like under the five-faculty model will be provided to Senate in August.

## 11.3 Senate Committee on Nominations

Dr. Casperson

### "For Approval" Items:

#### **S-201905.64**

#### **Recommendation of Senate Committee Members to Senate**

Casperson

That, on the recommendation of the Senate Committee on Nominations, the following candidates, who have met all eligibility requirements to serve on Senate committees as indicated, be appointed as proposed.

Effective date: Upon Approval of Senate

#### **SENATE COMMITTEE ON SCHOLARSHIPS AND BURSARIES**

Faculty Senator — CSAM (03/31/2021)

Graduate Student (08/31/2020)

Roger Wheate  
Courtney Lawrence

#### **SCAAF SUBCOMMITTEE ON ACADEMIC SCHEDULING**

Faculty Senator (appointed by Senate) (03/31/2022)

Peter Jackson

#### **SENATE COMMITTEE ON ACADEMIC APPEALS**

Faculty Member – Professional Programs (03/31/2022)

Catharine Schiller

CARRIED

### "For Information" Items:

#### **SCAAF SUBCOMMITTEE ON ACADEMIC SCHEDULING**

CSAM Faculty Rep (appointed by Dean of CSAM) (03/31/2022)

Professional Program Faculty Rep (appointed by the Provost) (03/31/2020)

Mark Shrimpton

Vacant

CASHS Faculty Rep (appointed by Dean of CASHS) (03/31/2020)

Vacant

#### **SENATE COMMITTEE ON ACADEMIC APPEALS**

Lay Senator (03/31/2021)

Vacant

#### **SENATE COMMITTEE ON ADMISSIONS AND DEGREES**

Faculty Member — CASHS (03/31/2021)

Faculty Member – Professional Programs (03/31/2022)

Faculty Member (03/31/2022)

Vacant

Ngoc Huynh (approved May 15, 2019)

Vacant

#### **SENATE COMMITTEE ON ACADEMIC AFFAIRS**

Faculty Senator (03/31/2021)

Faculty Member – Professional Programs (03/31/2021)

Regional Senator (03/31/2021)

Vacant

Vacant

Vacant

#### **SENATE COMMITTEE ON FIRST NATIONS AND ABORIGINAL PEOPLES**

Aboriginal Regional Senator or Aboriginal Lay Senator (03/31/2020)

Vacant

#### **SENATE COMMITTEE ON SCHOLARSHIPS AND BURSARIES**

Faculty Senator — CASHS (03/31/2021)

Faculty Senator — CSAM (03/31/2020)

Vacant

Vacant

#### **SENATE COMMITTEE ON STUDENT DISCIPLINE APPEALS**

First Nations Student (08/31/2020)

Vacant

Administrative Staff Member (03/31/2022)

Vacant

**SENATE COMMITTEE ON UNIVERSITY BUDGET**

Exempt Staff Representative, appointed by the Exempt Group

Vacant

**11.4 Senate Committee on Academic Appeals**

No report.

**11.5 Senate Committee on Curriculum and Calendar**

No report.

**11.6 Senate Committee on Admissions and Degrees**

Details of the approved calendar text are as follows (for revisions, deleted text indicated by ~~striketrough~~, new text indicated by underline, and [commentary, where included, in Courier New font within square brackets]):

**“For Approval” Items:**

**S-201905.65**

**Change(s) to Admission Requirements – Nursing**

Casperson

That, on the recommendation of the Steering Committee of Senate, the changes to the admission requirements and maximum transfer credits under the Admission Requirements: Licensed Practical Nurse (LPN) Access, on page 165 of the 2018/2019 PDF undergraduate calendar, be approved as proposed.

Effective date: September 2019

CARRIED

**Admission Requirements: Licensed Practical Nurse (LPN) Access**

Licensed Practical Nurses (LPNs) who are applying for admission to the NCBNP must:

- meet all Northern Collaborative Baccalaureate Nursing Program admission requirements;
- be a graduate of a Practical Nursing program recognized by the ~~College of Licensed Practical Nurses of BC (CLPNBC)~~ British Columbia College of Nursing Professionals (BCCNP) since 1994;
- have current ~~practising~~ practicing registration or be eligible for ~~practising~~ practicing registration with the ~~CLPNBC~~ BCCNP.
- ~~have practised as a LPN for a minimum of 1700 hours in a patient care setting during the last 4 years, OR graduated from a BC Practical Nursing Program within the year of application. Proof of worked hours must be submitted with application and can be obtained from employers~~

LPN applicants are assessed on an individual basis and may be eligible for up to a maximum of 15 ~~27~~ transfer credit hours of Nursing NCBNP courses.

Applicants who have completed a BC Practical Nursing Certificate prior to 1994, or have completed a certificate or diploma from a program outside of British Columbia, or have graduated from an institution not listed in the BC Transfer Guide, may not be exempt from any of the ~~first or second year~~ Year 1 or Year 2 nursing NCBNP courses.

In order to have their documents referred to Nursing faculty members for transfer credit assessment, All successful LPN applicants must meet individually with the Nursing Advisor at the institution to which they are applying, in order to be referred to a Nursing Faculty member for transfer credit and proficiency assessment. Further criteria may be required in order to receive transfer credit.

**S-201905.66**

**Change(s) to Admission Requirements – Engineering**

Jensen

That, on the recommendation of the Steering Committee of Senate, the change(s) to the Admission Requirements by Degree Groups on page 22 of the 2018-2019 Undergraduate Calendar be approved as proposed.

Effective date: September 2019

CARRIED

Admission Requirements by Degree Groups

Nursing**** see program regulations	Bachelor of Health Sciences see program regulations	Environmental Engineering see program regulations
English 12 or English First Peoples 12 (70% minimum)**	English 12 or English First Peoples 12** (70% minimum)	English 12 or English First Peoples 12**
Foundations of Mathematics 11 or Pre-calculus 11 or Principles of Mathematics 11 (67% minimum) Chemistry 11 or equivalent (67% minimum)	Pre-calculus 11 or Principles of Mathematics 11 (70% minimum) Chemistry 11 or equivalent (70% minimum)	Principles of Mathematics 12 or Pre-Calculus 12
Biology 12 (73% minimum) within 5 years prior to the semester of admission to the NCBNP	Biology 12 (70% minimum) Two other approved* Grade 12 courses	Two provincially examinable Science 12 courses: Chemistry 12 Physics 12 (recommended)
Two other approved* Grade 12 courses	Biomedical Studies † see program regulations  Pre-Calculus 12 recommended for prerequisite purposes	Chemistry 11 see program regulations
A fifth Grade 12 course***	A fifth Grade 12 course***	A fifth Grade 12 course***
Minimum admission average 67%	Minimum admission average 70%	Minimum admission average 75%

\* Approved Grade 12 Courses: Applications of Mathematics, BC First Nations Studies, Biology, Calculus, Chemistry, Comparative Civilizations, Economics, English Literature, Français, Français Langue Seconde-Immersion, French, German, Geography, Geology, History, Japanese, Latin, Law, Mandarin, Math Foundations, Middle Earth 12, Physics, Pre-Calculus, Principles of Mathematics, Punjabi, Social Justice, Spanish, Sustainable Resources, Technical and Professional Communications, Writing. Approved Advanced Placement Courses: AP Biology (General), AP Calculus AB or BC, AP Chemistry, AP Computer Science A or AB, AP English, AP Environmental Science, AP European History, AP French, AP German, AP History of Art, AP Human Geography, AP Latin, AP Microeconomics/Macroeconomics, AP Music Theory, AP Physics B and/or Physics C, AP Psychology, AP Spanish Literature, AP Spanish Language, AP Statistics, AP United States History, AP US Government & Politics, AP World History. Approved International Baccalaureate Courses: IB Biology, IB Business Management, IB Chemistry, IB Computer Science, IB Economics, IB English Language A, IB Environmental Systems, IB French Language A and/or French Language B, IB Geography, IB German, IB Greek, IB History, IB History - Asian, IB History - European, IB Latin, IB History and Culture of the Islamic World, IB Mathematics, IB Further Mathematics, IB Music, IB Philosophy, IB Physics, IB Psychology, IB Social & Cultural Anthropology, IB Spanish A and/ or Spanish B.

\*\* Approved AP and IB (all standard level and higher level) courses can be used in place of any approved Grade 12 Canadian high school course.

\*\*\* A fifth Grade 12 Course: Any other of the approved Grade 12 courses, and also any Grade 12 course taught in the secondary school including locally-developed courses (e.g. First Nations Languages), career preparation courses (Construction 12, etc.), or others (Art 12, Band 12, Information Technology 12, Communications 12, CAPP 12, etc.), or any Advanced Placement or International Baccalaureate courses.

\*\*\*\* Nursing: UNBC's partner institutions, the College of New Caledonia (CNC) and Coast Mountain College (CMNT) are processing admissions to the Northern Collaborative Baccalaureate Nursing Program. If you wish to apply to our Prince George or Quesnel campuses, please apply through CNC: [www.cnc.bc.ca](http://www.cnc.bc.ca); if you wish to apply to our Terrace campus, please apply through CMNT at [www.coastmountaincollege.ca](http://www.coastmountaincollege.ca)

† Students interested in pursuing the BHSc Biomedical Studies Major are strongly encouraged to take Pre-Calculus 12 or Principles of Mathematics 12, and Chemistry 12 before entering the Program.

Admission Average: For all provinces the best grade for each required course will be used (either the course mark or the course mark blended with the provincial exam).

Note: Table excludes entry to upper division (Social Work) or post-baccalaureate (Education) professional programs.

### 11.7 Senate Committee on First Nations and Aboriginal Peoples

Dr. Ryan

No report.

### 11.8 Senate Committee on Honourary Degrees and Special Forms of Recognition

Dr. Weeks

No report.

### 11.9 Senate Committee on Scholarships and Bursaries 2:03

Mr. Annear

**“For Information” Items:**

**SCSB20190327.04 (approved)**

**2018/2019 Annual SCSB Report & SCSB Annual Report Trends Document**

That the 2018/2019 Annual SCSB Report be approved as presented.

Effective Date: March 2019

Concerns were expressed over awards that have not been awarded. These concerns will be brought up to the committee.

**11.10 Senate Committee on University Budget**

No report.

**11.11 Senate Committee on Student Discipline Appeals**

No report.

**12.0 Information**

**13.0 Other Business**

**14.0 S-201905.67 2:10**

**Adjournment**

Casperson

That the Senate meeting be adjourned.

CARRIED

The meeting adjourned at 5:13 p.m.