

**SENATE MEETING  
OPEN SESSION  
MINUTES**

May 24, 2023  
3:30 – 5:00 PM  
Senate Chambers/Zoom

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Present: J. Bankole, R. Budde, B. Deo, D. Desai, L. Daukas, B. Durau, K. Fredj, T. Fyfe, M. Gehloff, C. Ho Younghusband, C. Hofsink, J. King, T. Klassen-Ross, A. Kranz, K. Lewis, A. Litt (non-voting), D. Nyce, B. Owen (non-voting), A. Parent (Recording Secretary), A. Palmer, G. Payne (Chair), K. Read (Interim Secretary of Senate), D. Roberts, W. Rodgers, R. Schiff, R. Somani (non-voting), K. Stathers, F. Tong, E. Ukut, T. Whitcombe, J. Zhou,

Regrets: J. Allen, S. Akram, R. Camp II, J. Chavez Suazo, L. Chen, A. Constantin, T. Fuson (non-voting), N. Hanlon, L. Haslett, J. Holler (non-voting), H. Kazemian, K. Long, D. McIntosh, G. Pierre, K. Rennie, R. Robinson, N. Shah, C. Walsh, E. Wilson, P. Winwood (non-voting), S. Zogas (Vice-Chair),

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No quorum was received until 4:14 pm.

Those present discussed ChatGPT and other AI Applications and received updates from the President, Provost and Registrar. No minutes were recorded.

**1.0 Acknowledgement of Territory**

**2.0 S-202305.01**

**Approval of the Agenda †**

Whitcombe

That the agenda for the May 24, 2023, Open Session of Senate be approved as presented.

CARRIED

**3.0 Presentation:**

**3.1 ChatGPT and other AI Applications (Discussion) – No minutes**

**4.0 Approval of the Minutes**

**S-202305.02**

**Approval of the Minutes**

Lewis

That the Minutes for the April 26, 2023, Open Session of Senate be approved as presented.

CARRIED

**5.0 Business Arising**

**6.0 President's Report – No minutes**

**Payne**

7.0 Report of the Provost – No minutes Rodgers

8.0 Report of the Registrar – No minutes Read

8.1 Report on motion S-202303.55 and S-202303.57

S-202303.55

"That the deletion of the course COMM 703 International Business, on page 107 of the 2022/23 graduate calendar, be approved as proposed" with an effective date of September 2023, and which passed at Senate in March 2023

S-202303.57

"That the deletion of the course COMM 751 Project Management, on page 107 of the 2022/23 graduate calendar, be approved as proposed" with an effective date of September 2023, and which passed at Senate in March 2023.

In late April, the School of Business notified the Office of the Registrar that the correct effective date for these course deletions should have been September 2024, not September 2023. That this was an error was confirmed in the executive summary that was submitted by the School of Business with their MBA curriculum changes and which is in the March 2023 Senate agenda and minutes; within the summary it is noted that "The changes to the first year of the MBA program would occur in September 2023 and the changes to the second year of the MBA would occur in September 2024."

9.0 Question Period (10 minutes)

9.1 Written questions submitted in advance - None

9.2 Questions from the floor - None

10.0 Approval of Motions on the Consent Agenda Payne

S-202305.03

**Approval of Motions on the Consent Agenda**

Roberts

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 Student Appeals Klassen-Ross

The committee met with the Deans and Provost to discuss the Academic Misconduct Flowchart, Matrix, and Form. The committee reviewed proposed changes to the Academic and Non-Academic Conduct Student Policy and Procedures and the Student appeals Procedures. The Registrar will continue discussions at Deans' Council with the intent of getting further feedback from the Faculties.

11.2 Senate Committee on Academic Affairs Rodgers

**For Approval:**

FACULTY OF ENVIRONMENT CALENDAR MOTIONS FOR MAY 2023

An EXECUTIVE SUMMARY FOR GEOGRAPHY was included in the meeting package.

S-202305.05

**Change(s) to Program Requirements – BA Geography**

Roberts

That, on the recommendation of the Senate Committee on Academic Affairs, the change(s) to the Lower-Division degree requirements of the BA Geography, on page 136 of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective date:** September 2023

CARRIED

## Major in Geography

This degree provides students with comprehensive training in the study of human geography, emphasizing the cultural, social, economic, and political connections between people and their environments. We offer courses that give students the conceptual and methodological means to make sense of the places and spaces they occupy and to understand how these relate to the rest of the world. Particular emphasis is on issues of community development, social justice, environmental equity, and population health in northern environments as a starting point for understanding the dynamics of place-making in a global context.

The minimum requirement for the completion of a Bachelor of Arts with a major in Geography is 120 credit hours.

## Program Requirements

### Lower-Division Requirement

#### 100 Level

GEOG 101-3 Planet Earth

GEOG 102-3 Earth from Above

#### 200 Level

GEOG 200-3 British Columbia: People and Places

GEOG 203-3 Canada: Places, Cultures and Identities

GEOG 204-3 Introduction to GIS

GEOG 210-3 Introduction to Earth Science

STAT 240-3 Basic Statistics

or ECON 205-3 Statistics for Business and the Social Sciences

Four of the following:

GEOG 202-3 Resources, Economies and Sustainability

GEOG 205-3 Cartography and Geomatics

GEOG 206-3 Social Geography

GEOG 209-3 Migration and Development

GEOG 211-3 Natural Hazards: Human and Environmental Dimensions

GEOG 220-3 World Regions: Latin America and the Caribbean

~~GEOG 222-3 World Regions: Russia~~

GEOG 224-3 World Regions: Inuit Nunangat

GEOG 225-3 Global Environmental Change

GEOG 298-3 Special Topics

#### **S-202305.06**

**Change(s) to Program Requirements** – BA Joint Major in Anthropology and Geography  
Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the Lower-Division degree requirements of the Joint Major in Anthropology and Geography BA, on page 55 of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective:** September 2023  
CARRIED

### Lower-Division Requirements

ANTH 102-3 Anthropology: A World of Discovery  
ANTH 200-3 Biological Anthropology  
ANTH 205-3 Introduction to Archaeology  
ANTH 213-3 Peoples and Cultures  
ANTH 217-3 Language and Culture  
GEOG 101-3 Planet Earth  
or GEOG 102-3 Earth from Above

Four of the following:

GEOG 200-3 British Columbia: People and Places  
GEOG 202-3 Resources, Economies, and Sustainability  
GEOG 203-3 Canada: Places, Cultures, and Identities  
GEOG 204-3 Introduction to GIS  
GEOG 206-3 Social Geography  
GEOG 209-3 Migration and Development  
GEOG 211-3 Natural Hazards: Human and Environmental Dimensions  
GEOG 220-3 World Regions: Latin America and the Caribbean  
~~GEOG 222-3 World Regions: Russia~~  
GEOG 224-3 World Regions: Inuit Nunangat  
GEOG 225-3 Global Environmental Change  
GEOG 298-3 Special Topics

#### **S-202305.07**

**Change(s) to Program Requirements** – BA Joint Major in Geography and Political Science  
Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the Lower-Division degree requirements of the Joint Major in Geography and Political Science, on page 137 of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective:** September 2023  
CARRIED

### Lower-Division Requirement

GEOG 101-3 Planet Earth  
or GEOG 102-3 Earth from Above  
POLS 100-3 Contemporary Political Issues  
POLS 200-3 Canadian Government and Politics  
POLS 202-3 Canada in Comparative Perspective  
POLS 230-3 International Relations  
POLS 270-3 Political Philosophy: Antiquity to Early Modernity

Four of the following:

GEOG 200-3 British Columbia: People and Places  
GEOG 202-3 Resources, Economies, and Sustainability

GEOG 203-3 Canada: Places, Cultures and Identities  
GEOG 204-3 Introduction to GIS  
GEOG 206-3 Social Geography  
GEOG 209-3 Migration and Development  
GEOG 211-3 Natural Hazards: Human and Environmental Dimensions  
GEOG 220-3 World Regions: Latin America and the Caribbean  
~~GEOG 222-3 World Regions: Russia~~  
GEOG 224-3 World Regions: Inuit Nunangat  
GEOG 225-3 Global Environmental Change  
GEOG 298-3 Special Topics

**S-202305.08**

**Change(s) to Program Requirements** – Minor in Human Geography

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the lower division requirements of the Minor in Human Geography, on page 145 of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective date:** September 2023

CARRIED

## Requirements

Two of the following:

GEOG 101-3 Planet Earth  
GEOG 102-3 Earth from Above  
GEOG 200-3 British Columbia: People and Places  
GEOG 202-3 Resources, Economies and Sustainability  
GEOG 203-3 Canada: Places, Cultures and Identities  
GEOG 204-3 Introduction to GIS  
GEOG 206-3 Social Geography  
GEOG 209-3 Migration and Development  
GEOG 211-3 Natural Hazards: Human and Environmental Dimensions  
GEOG 220-3 World Regions: Latin America and the Caribbean  
~~GEOG 222-3 World Regions: Russia~~  
GEOG 224-5 World Regions: Inuit Nunangat  
GEOG 225-3 Global Environmental Change  
GEOG 298-3 Special Topics

**S-202305.09**

**Change(s) to Course Title and Description** – GEOG 403-3

Roberts

That, on the recommendation of the Senate Committee on Academic Affairs, the change(s) to the course title and description for GEOG 403-3, on page 258 of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective date:** September 2023

CARRIED

**GEOG 403-3 First Nations and Indigenous Geographies Indigenous Geographies of Climate Resilience** This course analyzes First Nations and Indigenous traditional land tenure systems, colonial processes of land alienation, and Indigenous methods for regaining control over territory, including land claims, co-management, and legal reforms. Case studies are drawn from Canadian and international examples. This seminar course examines the resilience of Indigenous peoples to environmental change, highlighting the interconnected roles of place, agency, collective

action, knowledge, and learning in adaptation. Theories of vulnerability, cultural adaptation, and resilience will be discussed, drawing on community-led case studies from Indigenous peoples globally.

*Prerequisites:* 60 credit hours or permission of the instructor

*Precluded:* GEOG 603-3

**S-202305.10**

**Change(s) to Course Title and Description – GEOG 603-3**

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the course title and description for GEOG 603-3, on page 122 of the 2022/2023 graduate calendar, be approved as proposed.

**Effective:** September 2023

CARRIED

**GEOG 603-3 Aboriginal Geography Indigenous Geographies of Climate Resilience** This course analyzes ~~aboriginal land tenure systems, processes of land alienation, and First Nations methods used for regaining control over land, including "land claims". Case studies are drawn from First Nations in Canada and the Circumpolar North.~~ This graduate seminar examines the resilience of Indigenous peoples to environmental change, highlighting the interconnected roles of place, agency, collective action, knowledge, and learning in adaptation. Theories of vulnerability, cultural adaptation, and resilience will be discussed, drawing on community-led case studies from Indigenous peoples globally.

*Prerequisites:* Permission of the instructor

*Precluded:* GEOG 403-3

**S-202305.11**

**New Course Approval – GEOG 224-3: World Regions: Inuit Nunangat**

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the new course GEOG 224-3 World Regions: Inuit Nunangat be approved as follows:

**Effective:** September 2023

CARRIED

This course examines the evolution of Inuit Nunangat, the Inuit homeland in the Canadian Arctic, from its early occupation to the present. Social, economic, political, and other issues of concern to Inuit are examined. We use historical, political, ecological, and geographical approaches to understand how Inuit Nunangat came to be, and to analyze the processes that affect this unique region.

**S-202305.12**

**New Course Approval – GEOG 225-3: Global Environmental Change**

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the new course GEOG 225-3 Global Environmental Change be approved as follows:

**Effective:** September 2023

CARRIED

Global environmental sustainability is one of the monumental challenges of our modern world. In this course, students tackle two central questions: What is global-to-local environmental sustainability, and how can we achieve it? A problem-solving approach is emphasized, especially regarding the interaction between science and public policy. Sustainability issues are investigated theoretically and through specific case studies.

**Preclusions:**

ENVS 225-3, INTS 225-3, NREM 225-3

**S-202305.13**

**Course Deletion – GEOG 222-3:** World Regions: Russia

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to GEOG 222-3, World Regions: Russia on page 256 of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective:** September 2023

CARRIED

**S-202305.14**

**Change(s) to Course Prerequisites – ENVS 230-3:** Introduction to Environmental Policy

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the ENVS 230-3 Introduction to Environmental Policy course prerequisite, on page 244 in the PDF calendar accessible on the UNBC web page of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective:** September 2023

CARRIED

ENVS 230-3 Introduction to Environmental Policy This course provides an introduction to the fundamentals of the environmental policy process in Canada. Through the use of lectures, case studies, and individual research, students have the opportunity to learn about the key actors, institutions, and issues involved with the design and implementation of environmental policy, as well as the politics and power dynamics the characterize the 'real world' of policy. ~~Prerequisites: POLS 100-3 or permission of the instructor~~

**S-202305.15**

**Change(s) to Degree Requirements – BA Major in Environmental & Sustainability Studies**

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the BA Major in Environmental & Sustainability Studies degree requirements, on page 119-121 in the PDF calendar accessible on the UNBC web page) of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective:** September 2023

CARRIED

Environmental and Sustainability Studies (BA Program)

Tara Lynne Clapp, Associate Professor and Chair

Annie Booth, Professor

Zoë Meletis, Associate Professor

Sinead Earley, Assistant Professor

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

Major in Environmental and Sustainability Studies

The Bachelor of Arts in Environmental and Sustainability Studies emphasizes a social science and humanities perspective on environmental and sustainability challenges and opportunities. The program provides a strong philosophical, social and scientific basis for understanding the full diversity of environmental and sustainability issues, and positions students to be effective agents of social and environmental innovation, who can promote mitigation of, and/or adaptation to, environmental challenges. An understanding of the foundations of environmental citizenship is emphasized. The degree offers students substantial opportunity for experiential learning through a number of courses.

Students must complete the common degree requirements, the requirements of the Area of Specialization, and elective credit hours in any subject as necessary to ensure completion of a minimum of 120 credit hours

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including any additional credits necessary to meet the Academic Breadth requirement of the University (see Undergraduate Academic Regulation 15).

#### Program Requirements

##### Lower-Division Requirement

##### 100 Level

BIOL 110-3 Introductory Ecology

CHEM 110-3 Chemistry of Everyday Life

or CHEM 100-3 General Chemistry I

or ENSC 201-3 Weather and Climate

or ENSC 202-3 Introduction to Aquatic Systems

or PHYS 150-3 Physics for Future Leaders

ENVS 101-3 Introduction to Environmental Citizenship

FNST 100-3 The Aboriginal Peoples of Canada

GEOG 101-3 Planet Earth

or ENPL 104-3 Introduction to Planning

POLS 100-3 Contemporary Political Issues

Note: CPSC 150-3 (Computer Applications) is recommended for students without computing experience.

##### 200 Level

ENGL 270-3 Expository Writing

or ENGL 271-3 Creative Writing

ENVS 210-3 Environmental Perspectives

ENVS 230-3 Introduction to Environmental Policy

GEOG 202-3 Resources, Economies and Sustainability

or ORTM 200-3 Sustainable Recreation and Tourism

GEOG 204-3 Introduction to GIS

##### Upper-Division Requirement

##### 300 Level

ENVS 309-3 Gender, Environment and Sustainability

ENVS 326-3 Public Engagement for Sustainability

ENVS 339-3 Low-Carbon Transitions: Theory and Practice

NREM 303-3 Aboriginal Perspectives on Land and Resource Management



400 Level

ENPL 401-3 Environmental Law

ENVS 414-3 Environmental and Professional Ethics

ENVS 431-3 Global Environmental Policy: Energy and Climate

**~~ENVS 440 (2-6) Internship~~**

ENVS 480-3 Environmental & Sustainability Studies Senior Seminar

GEOG 401-3 Tenure, Conflict and Resource Geography

or FNST 306-3 Indigenous Women: Perspectives

or FNST 407-3 First Nations Perspectives on Race, Class, Gender and Power

or FNST 416-3 International Perspective

or FNST 444-3 Experiential Course in First Nations Studies

or GEOG 306-3 Critical Development Geographies

GEOG 420-3 Environmental Justice

or GEOG 305-3 Political Ecology: Environmental Knowledge and Decision-Making

PSYC 408-3 Environmental Problems and Human Behaviour

or ANTH 312-3 Human Adaptability and Environmental Stress

or ANTH 405-3 Landscapes, Place and Culture

or ANTH 413-(3-6) Environmental Anthropology

Areas of Specialization

Students must choose one of the following areas of specialization. Courses used to fulfill major requirements above may not be used to satisfy an Area of Specialization requirement.

1. Global Environmental Studies
2. Communities and Environmental Citizenship
3. Natural Resource Management
4. Indigenous Perspectives
5. Justice, Equity, Diversity, Inclusion and Indigeneity

**Global Environmental Studies**

Required

GEOG 206-3 Social Geography

INTS 100-3 Introduction to Global Studies

Eight of the following:

GEOG 301-3 Cultural Geography

GEOG 305-3 Political Ecology: Environmental Knowledge and Decision-Making (if NOT taken as a requirement for the major)

GEOG 306-3 Critical Development Geographies

GEOG 307-3 Changing Arctic: Human and Environmental System

GEOG 426-3 Geographies of Culture, Rights and Power

Any INTS 3-credit language course

INTS 210-3 Globalizations

NORS 101-3 Introduction to Circumpolar North

NORS 311-3 Lands and Environments of the Circumpolar North 1

NORS 331-3 Contemporary Issues of the Circumpolar North

### **Communities and Environmental Citizenship**

ENPL 301-3 Sustainable Communities: Structure and Sociology

or POLS 332 Community Development

GEOG 206-3 Social Geography

Seven of the following:

COMM 100-3 Introduction to Canadian Business

COMM 230-3 Organizational Behaviour

ENPL 205-3 Environment and Society

ENPL 304-3 Mediation, Negotiation and Public Participation

ENPL 313-3 Rural Community Economic Development

FNST 217-3 Contemporary Challenges Facing Aboriginal Communities

FNST 407-3 First Nations Perspectives on Race, Class, Gender and Power

GEOG 209-3 Migration and Development

GEOG 305-3 Political Ecology: Environmental Knowledge and Decision-Making

GEOG 307-3 Changing Arctic: Human and Environmental Systems

GEOG 308-3 Health Geography

NREM 110-3 Food, Agriculture, and Society

ORTM 100-3 Foundations of Outdoor Recreation and Tourism

ORTM 200-3 Sustainable Recreation and Tourism

POLS 316-3 Municipal Government and Politics

## **Natural Resource Management**

Students should note that some of these courses have pre-requisites. It is the student's responsibility to ensure they have completed these pre-requisites.

NREM 100-3 Field Skills

NREM 101-3 Introduction to Natural Resources Management and Conservation

NREM 209-3 The Practice of Conservation

ORTM 100-3 Foundations of Outdoor Recreation and Tourism

One of the following:

FNST 203-3 Introduction to Traditional Ecological Knowledge

GEOG 205-3 Cartography and Geomatics

NREM 203-3 Resource Inventories and Measurements

NREM 210-3 Integrated Resource Management

ORTM 200-3 Sustainable Recreation and Tourism

Five of the following:

ENPL 304-3 Mediation, Negotiation and Public Participation

NREM 333-3 Field Applications in Resource Management

NREM 400-3 Natural Resources Planning

NREM 409-3 Conservation Planning

ORTM 300-3 Recreation and Tourism Impacts

ORTM 305-3 Protected Areas Planning and Management

ORTM 400-3 Conservation Area Design and Management

POLS 315-3 Contemporary Issues in the Circumpolar World

## **Indigenous Perspectives**

Three of the following:

ANTH 206-3 Ethnography in Northern BC

FNST 217-3 Contemporary Challenges Facing Aboriginal Communities

FNST 249-3 Aboriginal Resource Planning

GEOG 206-3 Social Geography

Six of the following:

BIOL 350-3 Ethnobotany

ENPL 208-3 First Nations Community and Environmental Planning

ENPL 409-4 Advanced First Nations Community and Environmental Planning

Any FNST 3-credit language course

Any FNST 3-credit culture course

FNST 300-3 Research Methods in First Nations Studies

FNST 303-3 First Nations Religion and Philosophy

FNST 306-3 Indigenous Women: Perspectives

FNST 350-3 Law and Indigenous Peoples

FNST 407-3 First Nations Perspectives on Race, Class, Gender and Power

FNST 416-3 International Perspective

FNST 444-3 Experiential Course in First Nations Studies

FNST 451-3 Traditional Use Studies

GEOG 301-3 Cultural Geography

GEOG 403-3 First Nations and Indigenous Geographies

HIST 390-3 History of Indigenous People of Canada

**Justice, Equity, Diversity, Inclusion & Indigeneity**

**GEOG 203 - Canada: Places, Cultures and Identities**

**WMST 303 - Lesbian and Bisexual Lives**

**One of the following:**

**ANTH 401 - Anthropological Perspectives on Inequality**

**GEOG 420 – Environmental Justice (if NOT taken as part of the Major’s requirements)**

**POLS 413 - Democracy and Diversity**

**Two of the following**

**FNST 306 - Indigenous Women: Perspectives**

**WMST 103 - Introduction to Gender Studies**

**WMST 209 - Gender and Cultural Studies: An Introduction**

**Three of the following:**

**ENPL 208 - First Nations Community and Environmental Planning**

**FNST 217 - Contemporary Challenges Facing Aboriginal Communities**

**FNST 312 - Image of the Indian in Film**

## **FNST 350 - Law and Indigenous Peoples**

### **One of**

## **GEOG 209 - Migration and Development**

## **GEOG 306 - Critical Development Geographies**

## **POLS 377 Politics of Climate Change**

### Electives and Academic Breadth

Elective credit hours are required as necessary to ensure completion of a minimum of 120 credit hours including any additional credits necessary to meet the Academic Breadth requirement of the University (see Academic Regulation 15). Electives may be at any level in any subject sufficient to ensure completion of a minimum of 120 credit hours.

### **S-202305.16**

#### **Change(s) (s) to Degree Requirements – BA Joint Major in English and Environmental and Sustainability Studies**

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the Joint Major in English and Environmental and Sustainability Studies (BA), on page 99-100 of the PDF calendar accessible on the UNBC web page of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective:** September 2023

CARRIED

### Joint Major in English and Environmental and Sustainability Studies (BA)

The English and Environmental and Sustainability Studies joint major equips students with communication skills and knowledge of environmental issues, regulations and policies. The joint major prepares students to have a positive influence on the environment through written and other forms of expression. This joint major is of particular interest to students who wish to pursue a career in environmental writing, creative non-fiction, science writing and/or journalism.

#### Program Requirements

##### Lower-Division Requirement

BIOL 110-3 Introductory Ecology

ENGL 104-3 Introduction to Film

ENGL 209-3 Introduction to Television Studies English

ENGL 283-3 Introduction to Romantic Literature

ENVS 101-3 Introduction to Environmental Citizenship

ENVS 210-3 Environmental Perspectives

ENVS 230-3 Introduction to Environmental Policy

FNST 100-3 The Aboriginal Peoples of Canada

GEOG 101-3 Planet Earth

GEOG 202-3 Resources, Economies and Sustainability

or ORTM 200-3 Sustainable Recreation and Tourism

Note: CPSC 150-3 (Computer Applications) is recommended for students without computing experience.

Two of the following:

ENGL 100-3 Introduction to Literary Structures

ENGL 120-3 Introduction to Canadian Indigenous Literatures

ENGL 270-3 Expository Writing

ENGL 271-3 Introduction to Creative Writing

One of the following:

ENGL 211-3 Survey of English Literature I

ENGL 284-3 Introduction to Victorian Literature

One of the following:

GEOG 206-3 Social Geography

INTS 100-3 Introduction to Global Studies

NREM 101-3 Introduction to Natural Resources Management and Conservation

Upper-Division Requirement

The following nine courses (27 credit hours) at the 300 or 400 level:

ENVS 309-3 Gender, Environment and Sustainability

ENVS 326-3 Public Engagement for Sustainability

ENVS 414-3 Environmental and Professional Ethics

ENVS 431-3 Global Environmental Policy: Energy and Climate

~~ENVS 440-(2-6) Internship~~

or ENGL 444-(2-6) Internship

ENVS 480-3 Environmental & Sustainability Studies Senior Seminar

GEOG 420-3 Environmental Justice

or GEOG 305-3 Political Ecology: Environmental Knowledge and Decision-Making

HIST 360-3 An Introduction to Environmental History

NREM 303-3 Aboriginal Perspectives on Land and Resource Management

or FNST 304-3 Indigenous Environmental Philosophy

PSYC 408-3 Environmental Problems and Human Behaviour

or ANTH 312-3 Human Adaptability and Environmental Stress

or ANTH 405-3 Landscapes, Place and Culture

or ANTH 413-(3-6) Environmental Anthropology

Eight courses (24 credit hours) of English courses at the 300 or 400 level:

One of the following:

ENGL 309-3 Intermediate Studies in Film or Television

ENGL 331-3 Genres in Canadian Literature

ENGL 350-3 Comparative Literature

ENGL 383-3 Romantic Literature

ENGL 384-3 Victorian Literature

Two of the following:

ENGL 430-3 Special Topics in Canadian Literature

ENGL 431-3 Northern BC Literature

ENGL 480-3 Science Fiction

ENGL 483-3 Special Topics in Romantic Literature

ENGL 486-3 Literature of the Fantastic

ENGL 493-(2-6) Cultural Studies

Five additional English courses (15 credit hours) are required to ensure the fulfillment of the 24 credit hour upper-division requirement in English. Two courses may be chosen from the following list of English ancillary courses:

WMST 306-3 Indigenous Women: Perspectives

WMST 411-3 Contemporary Feminist Theories

One of the following theory courses:

ENGL 200-3 Gender and Literary Theory

ENGL 300-3 Theory

## ENGL 400-3 Contemporary Theory

### Elective and Academic Breadth

Elective credit hours are required as necessary to ensure a 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). Electives may be at any level in any subject sufficient to ensure completion of a minimum of 120 credit hours.

#### **S-202305.17**

**Change(s) to Degree Requirements** – BA Joint Major in Environmental Sustainability Studies and Political Science

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the Joint Major in Environmental and Sustainability Studies and Political Science (BA), on page 122 of the PDF calendar accessible on the UNBC web page of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective:** September 2023

CARRIED

## Joint Major in Environmental and Sustainability Studies and Political Science (BA)

The Joint Major in Environmental and Sustainability Studies and Political Science is for students who want both a broad understanding of environmental issues and the political knowledge needed to respond to those issues. The minimum requirement for completion of a Bachelor of Arts with a Joint Major in Environmental Studies and Political Science is 120 credit hours.

### Program Requirements

#### Lower-Division Requirement

BIOL 110-3 Introductory Ecology

or NREM 101-3 Introduction to Natural Resources Management and Conservation

ENVS 101-3 Introduction to Environmental Citizenship

ENVS 210-3 Environmental Perspectives

ENVS 230-3 Introduction to Environmental Policy

FNST 100-3 The Aboriginal Peoples of Canada

GEOG 101-3 Planet Earth

GEOG 202-3 Resources, Economies and Sustainability

or ORTM 200-3 Sustainable Recreation and Tourism

GEOG 204-3 Introduction to GIS

INTS 100-3 Introduction to Global Studies

POLS 100-3 Contemporary Political Issues

POLS 200-3 Canadian Government and Politics

POLS 202-3 Canada in Comparative Perspective

POLS 270-3 Political Philosophy: Antiquity to Early Modernity

#### Upper-Division Requirement

ANTH 405-3 Landscapes, Place and Culture

or ANTH 413-(3-6) Environmental Anthropology

ENPL 401-3 Environmental Law

ENVS 309-3 Gender, Environment and Sustainability

or GEOG 305-3 Political Ecology: Environmental Knowledge and Decision-Making

or GEOG 420-3 Environmental Justice

ENVS 326-3 Public Engagement For Sustainability

ENVS 414-3 Environmental and Professional Ethics

ENVS 431-3 Global Environmental Policy: Energy and Climate

**~~ENVS 440-(2-6) Internship~~**

**or POLS 440-3 Internship I**

ENVS 480-3 Environmental and Sustainability Studies Senior Seminar  
NREM 303-3 Aboriginal Perspectives on Land and Resource Management  
NREM 306-3 Society, Policy and Administration  
or POLS 344-3 Society, Policy and Administration of Natural Resources  
POLS 302-3 How Government Works  
or POLS 320-3 Canadian Politics and Policy  
POLS 303-3 Democracy and Democratization  
POLS 370-3 Political Philosophy: Early Modernity to Post-Modernity  
or POLS 372-3 Theories of Justice

**POLS 377-3 Politics of Climate Change**

POLS 400-(3-6) Classics in Political Philosophy  
or POLS 472-3 Seminar in Political Philosophy  
POLS 413-3 Democracy and Diversity  
or POLS 415-3 Comparative Northern Development  
PSYC 408-3 Environmental Problems and Human Behaviour  
or ANTH 312-3 Human Adaptability and Environmental Stressor

Elective and Academic Breadth Students must take electives at any level in any subject sufficient to ensure completion of a minimum of 120 credit hours, including taking any additional credits necessary to meet the Academic Breadth requirement of the University (see Academic Regulation 15).

**S-202305.18**

**Reactivate Courses - NRES 731-3** Soil Ecology and **NRES 732-3** Forest Systems and Management  
Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the reactivation of NRES 731-3 and NRES 732-3 be approved as proposed.

**Effective:** September 2023  
CARRIED

**NRES 731-3 Soil Ecology** This course takes an ecological approach to the role of soil organisms in energy flow and biogeochemical cycling, and the contributions of soil organisms and associated processes to ecosystem productivity, sustainability and environmental quality. The habitat, interactions, adaptation and function of organisms in the forest floor, mineral horizons, and at the root-soil interface are studied. Students conduct a research project that employs modern methods to investigate the role of soil organisms in an area pertinent to the course.

*Prerequisites:* Permission of the instructor

**NRES 732-3 Forest Systems and Management** This course covers the important processes and features of forest systems, with special emphasis on sub-boreal, boreal, and riparian systems. Processes such as tree and forest gas and nutrient exchange, tree growth and acquisition of resources, and the effects and interactions of management practices, pathogens, arthropods, vertebrates, and climate change on forest systems are examined. The course requires each student to complete a 'forest systems' laboratory or field research project with a UNBC faculty member.

*Prerequisites:* Background in forest ecology and silviculture



FACULTY OF INDIGENOUS STUDIES, SOCIAL SCIENCES AND HUMANITIES CLAENDAR MOTIONS

**S-202305.19**

**Change(s) to Course Description – POLS377-3: Politics of Climate Change**

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the course description for POLS 377-3: Politics of Climate Change, on page 293 of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective:** September 2023

CARRIED

FACULTY OF SCIENCE AND ENGINEERING MOTIONS

Motions S-202305.20 to .32 were moved as an omnibus motion.

**S-202305.20**

**New Course Approval – PHYS 701-(1.5,3): Graduate Seminar in Physics**

Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course PHYS 701-(1.5,3) Graduate Seminar in Physics be approved as follows:

**Effective:** September 2023

CARRIED

This course comprises weekly seminar sessions in physics, and provides students with an opportunity to develop and present ideas pertaining to their research proposals, research design, scientific writing and presentation of research results.

**Course Equivalencies:** MATH 704-1.5, CPSC 704-1.5, CHEM 714-1.5

**S-202305.21**

**New Course Approval – PHYS 793-6: Master of Science (Physics) Project**

Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course PHYS 793-6 Master of Science (Physics) Project be approved as follows:

**Effective:** September 2023

CARRIED

The MSc project documents an extended paper, plan, or program that makes a contribution to or addresses an issue in Physics. The development of a project requires the application of original thought to the problem or issue being investigated. The non-thesis project does not require the development of a research design or research methodology and need not involve the collection of original data. Successful completion of the project is required for graduation in the Master of Science (Physics) project stream.

**Prerequisites:** Acceptance in the Masters of Science (Physics) project option program

**S-202305.22**

**New Course Approval – PHYS 794-12: Master of Science (Physics) Thesis**

Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course PHYS 794-12 Master of Science (Physics) Thesis be approved as follows:

**Effective:** September 2023

CARRIED

The MSc thesis documents a scientific contribution to the field of Physics. Students are expected to conduct original research involving a literature review, development of a research design and methodology, testing and analysis of data, and development of conclusions. Successful defence of the thesis is required for graduation in the Master of Science (Physics) thesis stream.

**Prerequisites:** Acceptance in the Masters of Science (Physics) program

**S-202305.23**

**New Course Approval – CPSC 793-6:** Master of Science (Computer Science) Project  
Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course CPSC793-6 Master of Science (Computer Science) Project be approved as follows:

**Effective:** September 2023

CARRIED

The MSc Project is an extended position paper, report, plan or program that makes a contribution to, or addresses, a major problem or issue in the field of computer science. The development of the project requires the application of original thought to the problem or issue under investigation. The project does not require the development of a research design or research methodology and need not involve the collection of original data. Successful completion of the project is required for graduation in the Master of Science (Computer Science stream) project option.

**Prerequisites:** Acceptance in the Masters of Science program

**S-202305.24**

**New Course Approval – CPSC 794-12:** Master of Science (Computer Science) Thesis  
Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course CPSC 794-12 Master of Science (Computer Science) Thesis be approved as follows:

**Effective:** September 2023

CARRIED

The MSc thesis documents a scientific contribution to the field of computer science. Students are expected to conduct original research involving a literature review, development of a research design and methodology, testing and analysis of data, and development of conclusions. Successful defence of the thesis is required for graduation in the computer science thesis stream.

**Prerequisites:** Acceptance in the Masters of Science program

**S-202305.25**

**New Course Approval – BCMB 793-6:** Master of Science (Biochemistry) Project  
Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course BCMB 793-6 Master of Science (Biochemistry) Project be approved as follows:

**Effective:** September 2023

CARRIED

The MSc project requires the completion of an extended position paper, report, plan or program making a contribution to, or addressing a major issue in, a scientific field. The development of the project requires the application of original thought to the problem or issue

under investigation. The non-thesis project does not require the development of a research design or research methodology, and need not involve the collection or generation of an original data.

**Prerequisites:** Acceptance in the Masters of Science (Biochemistry) program

**S-202305.26**

**New Course Approval – BCMB 794-12:** Master of Science (Biochemistry) Thesis

Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course BCMB 794-12 Master of Science (Biochemistry) Thesis be approved as follows:

**Effective:** September 2023

CARRIED

The MSc thesis documents a scientific contribution to the field of Biochemistry. Students are expected to conduct original research involving a literature review, development of a research design and methodology, testing and analysis of data, and development of conclusions. Successful defence of the thesis is required for graduation in the Master of Science (Biochemistry) thesis stream.

**Prerequisites:** Acceptance in the Masters of Science (Biochemistry) program

**S-202305.27**

**New Course Approval – CHEM 793-6:** Master of Science (Chemistry) Project

Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course CHEM 793-6 Master of Science (Chemistry) Project be approved as follows:

**Effective:** September 2023

CARRIED

The MSc project requires the completion of an extended position paper, report, plan or program making a contribution to, or addressing a major issue in, a scientific field. The development of the project requires the application of original thought to the problem or issue under investigation. The non-thesis project does not require the development of a research design or research methodology, and need not involve the collection or generation of an original data.

**Prerequisites:** Acceptance in the Masters of Science (Chemistry) program

**S-202305.28**

**New Course Approval – CHEM 794-12:** Master of Science (Chemistry) Thesis

Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course CHEM 794-12 Master of Science (Chemistry) Thesis be approved as follows:

**Effective:** September 2023

CARRIED

The MSc thesis documents a scientific contribution to the field of Chemistry. Students are expected to conduct original research involving a literature review, development of a research design and methodology, testing and analysis of data, and development of conclusions. Successful defence of the thesis is required for graduation in the Master of Science (Chemistry) thesis stream.

**Prerequisites:** Acceptance in the Masters of Science (Chemistry) program

**S-202305.29**

**New Course Approval – MATH 793-6:** Master of Science (Mathematics) Project  
Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course MATH 793-6 Master of Science (Mathematics) Project be approved as follows:

**Effective:** September 2023

CARRIED

The MSc project requires the completion of an extended position paper, report, plan or program making a contribution to, or addressing a major issue in, a scientific field. The development of the project requires the application of original thought to the problem or issue under investigation. The non-thesis project does not require the development of a research design or research methodology, and need not involve the collection or generation of an original data.

**Prerequisites (taken prior):** Acceptance in the Masters of Science (Mathematics) program

**S-202305.30**

**New Course Approval – MATH 794-12:** Master of Science (Mathematics) Thesis  
Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course MATH 794-12 Master of Science (Mathematics) Thesis be approved as follows:

**Effective:** September 2023

CARRIED

The MSc thesis documents a scientific contribution to the field of Mathematics. Students are expected to conduct original research involving a literature review, development of a research design and methodology, testing and analysis of data, and development of conclusions. Successful defence of the thesis is required for graduation in the Master of Science (Mathematics) thesis stream.

**Prerequisites:** Acceptance in the Masters of Science (Mathematics) program

**S-202305.31**

**New Course Approval – STAT 793-6:** Master of Science (Mathematics) Project  
Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course STAT 793-6 Master of Science (Mathematics) Project be approved as follows:

**Effective:** September 2023

CARRIED

The MSc project requires the completion of an extended position paper, report, plan or program making a contribution to, or addressing a major issue in, a scientific field. The development of the project requires the application of original thought to the problem or issue under investigation. The non-thesis project does not require the development of a research design or research methodology, and need not involve the collection or generation of an original data.

**Prerequisites:** Acceptance in the Masters of Science (Mathematics) program

**S-202305.32**

**New Course Approval – STAT 794-12:** Master of Science (Mathematics) Thesis  
Whitcombe

That, on the recommendation for the Senate Committee on Academic Affairs, the new course STAT 794-12 Master of Science (Mathematics) Thesis be approved as follows:

**Effective:** September 2023

CARRIED

The MSc thesis documents a scientific contribution to the field of Statistics. Students are expected to conduct original research involving a literature review, development of a research design and methodology, testing and analysis of data, and development of conclusions. Successful defence of the thesis is required for graduation in the Master of Science (Mathematics) thesis stream.

**Prerequisites:** Acceptance in the Masters of Science (Mathematics) program

**S-202305.33**

**Change(s) to Program Description – MSc Program** - Mathematical, Computer, Physical and Molecular Sciences

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change(s) to the program description for Mathematical, Computer, Physical and Molecular Sciences (MSc Program), on page 67-69 in the 2022/2023 graduate calendar, be approved as proposed.

**Effective:** September 2023

CARRIED

# ~~Mathematical, Computer, Physical, and Molecular Sciences (MSc Program)~~

~~Chair of the Mathematical, Computer, Physical and Molecular Sciences Graduate Committee: Dr. Ron Thring~~

## ~~Biochemistry~~

~~Chow H. Lee, Professor~~

~~Geoffrey Payne, Professor~~

~~Stephen Rader, Professor~~

~~Kerry Reimer, Professor~~

~~Andrea Gorrell, Associate Professor~~

~~Sarah Gray, Associate Professor~~

~~Kendra Furber, Assistant Professor~~

~~Martha Stark, Adjunct Professor~~

~~Daniel Erasmus, Senior Lab Instructor~~

## ~~Chemistry~~

~~Erik Jensen, Professor~~

~~Chow H. Lee, Professor~~

~~Jianbing Li, Professor~~

~~Margot Mandy, Professor~~

~~Stephen Rader, Professor~~

~~Kerry Reimer, Professor~~

~~Ron Thring, Professor~~

~~Todd Whitcombe, Professor~~

~~Andrea Gorrell, Associate Professor~~

~~Hossein Kazemian, Adjunct Professor~~

~~Martha Stark, Adjunct Professor~~

## Computer Science

Liang Chen, Professor  
Waqar Haque, Professor  
David Casperson, Associate Professor  
Fan Jiang, Associate Professor  
Darren Brown, Assistant Professor  
Andreas Hirt, Term Assistant Professor  
Allan Kranz, Senior Lab Instructor

## Mathematics

Lee Keener, Professor Emeritus

Jennifer Hyndman, Professor  
Kevin Keen, Professor  
Pranesh Kumar, Professor  
David Casperson, Associate Professor  
Mohammad El Smailly, Associate Professor  
Alia Hamieh, Associate Professor  
Daniel Ryan, Associate Professor  
Edward Dobrowoski, Assistant Professor  
Andy Wan, Assistant Professor  
Samuel Walters, Adjunct Professor

## Physics

Ahmed Hussein, Professor Emeritus  
Mark Shegelski, Professor Emeritus

Ian Hartley, Professor  
Erik Jensen, Professor  
Elie Korkmaz, Professor  
Margot Mandy, Professor  
Matthew Reid, Associate Professor

Website: [www.unbc.ca/calendar/graduate/math-comp-science](http://www.unbc.ca/calendar/graduate/math-comp-science)

Mathematical, Computer, Physical and Molecular Sciences (MCPMS) is one stream of the Master of Science degree in the Faculty of Science and Engineering. Thesis and project options are available. The thesis option has, as a substantial component, the completion of an original research program, culminating in the preparation of a thesis, and prepares graduates for careers in research or for further academic study. The project option provides training across disciplines particularly suitable to individuals with more defined career objectives, as well as provides a mechanism for non-traditional students (e.g., working students, teachers, and professionals) to upgrade their skills. Students within the MCPMS stream will, upon successful completion of the degree requirements outlined herein, obtain an MSc with one or any combination of the following study areas noted on their transcript: Mathematics, Biochemistry, Computer Science, Chemistry, and Physics.

All students must participate in a Graduate Seminar course (one of MCPM 704-1.5, BCMB 704-1.5, NRES 704-1.5, CPSC 704-1.5, MATH 704-1.5, or CHEM 714-1.5) for at least two semesters during their course of studies. Normally, students in the study area of Physics or a combination of study areas including Physics are expected to take PHYS 710-3.

## Thesis Option

The Master of Science thesis option is designed for candidates who wish to develop career interests related to scientific research or who intend to pursue further academic research degrees. The degree is expected to attract students from traditional science disciplines such as physics, chemistry, biochemistry, mathematics, and computer science. MSc students within the MCPMS stream are required to complete 3 credit hours of Graduate Seminar, a minimum of 12 credit hours of approved electives, and a 12 credit-hour thesis (MCPM 700-12). It is expected that the electives will consist of scientifically oriented courses and that the thesis will involve an independent investigation resulting in a scientific contribution.

The 12 elective credit hours must be graduate level study (i.e., at or above the 600-level) selected from the science courses available at UNBC. A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Specific details of coursework are determined by the research area undertaken by the student. The supervisory committee ensures the appropriate selection of elective courses, and may require a student to complete more

than 12 elective credit hours if, for example, weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

Related to the MSc thesis (MCPM 790-12), students are required to (a) make an oral presentation of the thesis proposal to the supervisory committee, (b) write an original thesis based on the research completed (in accordance with established UNBC guidelines), (c) give a public lecture on the completed thesis, and (d) present an oral defense of the thesis to the examining committee. All course requirements must have been satisfied prior to the oral defense.

### Summary of Thesis Option

Graduate Seminar	3 credit hours
Elective Courses	12 credit hours
MSc Thesis	12 credit hours
Total Required	27 credit hours

### Project Option

The Master of Science project option is designed for candidates who wish to upgrade their skills, or who are constrained in their ability to undertake a traditional research thesis. MSc students within the MCPMS project stream are required to complete 3 credit hours of Graduate Seminar, a minimum of 18 credit hours of approved electives, and a 6 credit-hour project. Given the course-intensive nature of this option, MSc projects are limited, subject to sufficient teaching resources and a critical mass of faculty within an area of defined specialization. It is expected that the electives will consist of scientifically oriented courses, and that the project will involve an independent investigation resulting in a scientific contribution, although this contribution need not include original research. Because of the high weighting of course offerings for this option, it is restricted to designated specializations that have been decided upon within each program area. Designation of a specialization implies that sufficient resources are available to ensure that required courses within the specialization can be offered to fulfill the requirements for the degree.

The 18 elective credit hours must be graduate level study (i.e., at or above the 600 level) selected from the science courses available within the designated specialization. A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Normally, students in the study area of Physics or a combination of study areas including Physics are expected to take PHYS 710-3. Specific details of coursework are determined by the nature of the project undertaken by each student. The supervisory committee ensures the appropriate selection of elective courses, and may require a student to complete more than 18 credit hours if weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

In order to complete an MSc project successfully, a student is required to (a) make a presentation of the project proposal to the supervisory committee, (b) write a project report, (c) give a public lecture on the completed project, and (d) pass an evaluation of the project and report with the examining committee. All core and elective course requirements must have been satisfied prior to the oral presentation of the project.

### Summary of Project Option

Graduate Seminar	3 credit hours
Elective Courses	18 credit hours
MSc Project	6 credit hours
Total Required	27 credit hours

### Recommended Progression

The normal time for completion of the MSc is two academic years. While this is the recommended time line, it may be adjusted at the discretion of the supervisory committee to suit a particular student's research and program needs.

The Graduate Seminar courses (one or more of MCPM 704-1.5, NRES 704-1.5, BCMB 704-1.5, CPSC 704-1.5, MATH 704-1.5, CHEM 714-1.5) are offered during all September and January Semesters. Students are expected to enroll in a seminar course at least two times during their degree program.

Electives may be taken at any time during Years I and II. The sequencing of electives is determined by the student in discussion with the supervisory committee. Over the September and January Semesters of Year I, the student, under the direction of the supervisory committee, develops a thesis or project proposal. By the end of the second semester, the student should have successfully defended their proposal to the supervisory committee. This allows the student to undertake the collection of data during the Summer of Year I. It is expected that the student will have successfully defended the thesis or completed the evaluation phase of the project by the end of Year II.

## Admission, Regulations and Committee Structures

### Admission Requirements

In addition to the admission application requirements outlined in Section 1.0 of the Graduate Academic Calendar, acceptance to the MSc program is contingent upon the prospective student finding a member of the faculty to serve as their supervisor. Applicants must also provide a completed Teaching Assistantship Application and a completed Funding Worksheet. Both forms are included with the application material for this program. Normally, at least two of the three letters of recommendation, exclusive of any letter provided by an intended supervisor, must be from individuals who are able to comment on the applicant's academic and research potential.

Application deadlines are found in this calendar under Admissions and Regulations, or online at [www.unbc.ca/calendar/graduate](http://www.unbc.ca/calendar/graduate) (under Semester Dates). The Mathematical, Computer, Physical and Molecular Sciences MSc Program accepts students for the September and January Semesters. At the specific request of the prospective supervisor, an applicant may be considered for May admission.

For additional information about graduate admissions or to download application materials, go to the Graduate Programs website at [www.unbc.ca/graduate-programs](http://www.unbc.ca/graduate-programs).

### Transfer Students

On the recommendation of the program concerned, the Dean may accept courses taken at other institutions for credit toward a UNBC graduate program. At the time of application, it is recommended that applicants clearly state in a letter the intent to transfer courses and identify the courses to be considered for possible transfer.

### Normal Time Required for Completion

Normally, the degree should be completed in two years or less. Students may take longer to complete the degree depending on their personal circumstances and the nature of their research or project involvement.

### Committee Structure

Students are advised by a supervisory committee consisting of at least three members, including the academic supervisor who will normally serve as the chair of the committee. At least one of the committee members must be from outside of the student's program. The committee will be struck during the student's first term of study.

[new calendar entries, sorted alphabetically]

# Biochemistry (MSc Program)

Program Chair: Dr. Todd Whitcombe  
Chow H. Lee, Professor  
Geoffrey Payne, Professor  
Stephen Rader, Professor  
Kerry Reimer, Professor  
Andrea Gorrell, Associate Professor  
Sarah Gray, Associate Professor  
Kendra Furber, Assistant Professor  
Maggie Li, Adjunct Professor  
Martha Stark, Adjunct Professor  
Daniel Erasmus, Senior Lab Instructor

Website: [www.unbc.ca/biochemistry](http://www.unbc.ca/biochemistry)



Thesis and project options are available. The thesis option prepares graduate students for careers in research or further academic study by requiring the design and completion of an original research program and preparation of a thesis. The project option provides training across disciplines particularly suitable to individuals with more defined career objectives, as well as providing a mechanism for non-traditional students (e.g., working students, teachers, and professionals) to upgrade their skills.

All students must participate in the Graduate Seminar course BCMB 704-1.5 for at least two semesters during their course of studies.

## **Thesis Option**

The Master of Science thesis option is designed for candidates who wish to develop career interests related to scientific research or who intend to pursue further academic research degrees. MSc students within the Biochemistry thesis stream are required to complete 3 credit hours of Graduate Seminar (two semesters), a minimum of 12 credit hours of approved graduate-level electives (i.e., at or above the 600 level), and a 12 credit-hour thesis (BCMB 794-12). It is expected that the electives consist of scientifically-oriented courses and that the thesis involves an independent investigation resulting in an original scientific contribution.

A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Specific details of coursework are determined by the research area undertaken by the student. The supervisory committee ensures the selection of appropriate elective courses, and may require a student to complete more than 12 elective credit hours if, for example, weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

Students are required to (a) make an oral presentation of the thesis proposal to the supervisory committee, (b) write an original thesis based on the research completed (in accordance with established UNBC guidelines), and (c) present a public oral defence of the thesis to the examining committee. All course requirements must have been satisfied prior to the oral defence.

## **Summary of Thesis Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
<u>Elective Courses</u>	<u>12 credit hours</u>
<u>MSc Thesis</u>	<u>12 credit hours</u>
<u>Total Required</u>	<u>27 credit hours</u>

## **Project Option**

The Master of Science project option is designed for candidates who wish to upgrade their skills, or who are constrained in their ability to undertake a traditional research thesis. MSc students within the BCMB project stream are required to complete 3 credit hours of Graduate Seminar (two semesters), a minimum of 18 credit hours of approved electives, and a 6 credit-hour project (BCMB 793-6). Given the course-intensive nature of this option, MSc projects are limited, subject to sufficient teaching resources and a critical mass of faculty within an area of defined specialization. It is expected the electives consist of scientifically-oriented courses, and the project involves an independent investigation resulting in a scientific contribution, although this contribution need not include original research. Because of the number of courses required for this option, it is restricted to designated specializations that have been decided upon within each program area.

The 18 elective credit hours must be graduate-level study (i.e., at or above the 600 level) selected from the science courses available within the designated specialization. A maximum of 6 credit hours from independent studies can be counted towards the elective course requirement. Specific details of coursework are determined by the nature of the project undertaken by each student. The supervisory committee ensures the selection of appropriate elective courses, and may require a student to complete more than 18 credit hours if weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

In order to complete an MSc project successfully, a student is required to (a) make a presentation of the project proposal to the supervisory committee, (b) write a project report, and (c) present a public oral defence of the project to the examining committee. All core and elective course requirements must have been satisfied prior to the oral presentation of the project.

## **Summary of Project Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
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<u>Elective Courses</u>	<u>18 credit hours</u>
<u>MSc Project</u>	<u>6 credit hours</u>
<u>Total Required</u>	<u>27 credit hours</u>

## **Recommended Progression**

The normal time for completion of the MSc is two academic years. While this is the recommended timeline, it may be adjusted at the discretion of the supervisory committee to suit a particular student's research and program needs.

The Graduate Seminar courses are offered during all September and January Semesters. Students are expected to enrol in a seminar course at least two times during their degree program.

Electives may be taken at any time during Years I and II. The sequencing of electives is determined by the student in discussion with the supervisory committee. Over the September and January Semesters of Year I, the student, under the direction of the supervisory committee, develops a thesis or project proposal. By the end of the second semester, the student should have successfully defended their proposal to the supervisory committee. It is expected that the student has successfully defended the thesis or completed the evaluation phase of the project by the end of Year II.

## **Admission Requirements**

In addition to the admission application requirements outlined in Section 1.0 of the Graduate Academic Calendar, acceptance to the MSc program is contingent upon the prospective student finding a member of the faculty to serve as their supervisor. Normally three letters of recommendation are required with two being from individuals who are able to comment on the applicant's academic and research potential.

Additional information about graduate admissions, including application deadlines, is available on the website [www.unbc.ca/admission/graduate](http://www.unbc.ca/admission/graduate)

## **Normal Time Required for Completion**

Normally, the degree should be completed in two years or less. Students may take longer to complete the degree depending on their personal circumstances and the nature of their research or project involvement.

# **Chemistry (MSc Program)**

Program Chair: Dr. Todd Whitcombe  
Erik Jensen, Professor  
Chow H. Lee, Professor  
Jianbing Li, Professor  
Margot Mandy, Professor  
Stephen Rader, Professor  
Kerry Reimer, Professor  
Ron Thring, Professor  
Todd Whitcombe, Professor  
Andrea Gorrell, Associate Professor  
Hossein Kazemian, Adjunct Professor

Website: [www.unbc.ca/chemistry](http://www.unbc.ca/chemistry)

Thesis and project options are available. The thesis option prepares graduate students for careers in research or further academic study by requiring the design and completion of an original research program and preparation of a thesis. The project option provides training across disciplines particularly suitable to individuals with more defined career objectives, as well as providing a mechanism for non-traditional students (e.g., working students, teachers, and professionals) to upgrade their skills.

All students must participate in the Graduate Seminar course CHEM 714-1.5 for at least two semesters during their course of studies.

## **Thesis Option**

The Master of Science thesis option is designed for candidates who wish to develop career interests related to scientific research or who intend to pursue further academic research degrees. MSc students within the Chemistry thesis stream are required to complete 3 credit hours of Graduate Seminar (two semesters), a minimum of 12 credit hours of approved graduate-level electives (i.e., at or above the 600 level), and a 12 credit-hour thesis (CHEM 794-12). It is expected that the electives consist of scientifically-oriented courses and that the thesis involves an independent investigation resulting in an original scientific contribution.

A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Specific details of coursework are determined by the research area undertaken by the student. The supervisory committee ensures the selection of appropriate elective courses, and may require a student to complete more than 12 elective credit hours if, for example, weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

Students are required to (a) make an oral presentation of the thesis proposal to the supervisory committee, (b) write an original thesis based on the research completed (in accordance with established UNBC guidelines), and (c) present a public oral defence of the thesis to the examining committee. All course requirements must have been satisfied prior to the oral defence.

### **Summary of Thesis Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
<u>Elective Courses</u>	<u>12 credit hours</u>
<u>MSc Thesis</u>	<u>12 credit hours</u>
<u>Total Required</u>	<u>27 credit hours</u>

## **Project Option**

The Master of Science project option is designed for candidates who wish to upgrade their skills, or who are constrained in their ability to undertake a traditional research thesis. MSc students within the CHEM project stream are required to complete 3 credit hours of Graduate Seminar (two semesters), a minimum of 18 credit hours of approved electives, and a 6 credit-hour project (CHEM 793-6). Given the course-intensive nature of this option, MSc projects are limited, subject to sufficient teaching resources and a critical mass of faculty within an area of defined specialization. It is expected that the electives consist of scientifically-oriented courses, and that the project involves an independent investigation resulting in a scientific contribution, although this contribution need not include original research. Because of the number of courses required for this option, it is restricted to designated specializations that have been decided upon within each program area.

The 18 elective credit hours must be graduate-level study (i.e., at or above the 600 level) selected from the science courses available within the designated specialization. A maximum of 6 credit hours from independent studies can be counted towards the elective course requirement. Specific details of coursework are determined by the nature of the project undertaken by each student. The supervisory committee ensures the appropriate selection of elective courses, and may require a student to complete more than 18 credit hours if weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

In order to complete an MSc project successfully, a student is required to (a) make a presentation of the project proposal to the supervisory committee, (b) write a project report, and (c) present a public oral defence of the project to the examining committee. All core and elective course requirements must have been satisfied prior to the oral presentation of the project.

### **Summary of Project Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
<u>Elective Courses</u>	<u>18 credit hours</u>
<u>MSc Project</u>	<u>6 credit hours</u>
<u>Total Required</u>	<u>27 credit hours</u>

## **Recommended Progression**

The normal time for completion of the MSc is two academic years. While this is the recommended timeline, it may be adjusted

at the discretion of the supervisory committee to suit a particular student's research and program needs.

The Graduate Seminar courses are offered during all September and January Semesters. Students are expected to enrol in a seminar course at least two times during their degree program.

Electives may be taken at any time during Years I and II. The sequencing of electives is determined by the student in discussion with the supervisory committee. Over the September and January Semesters of Year I, the student, under the direction of the supervisory committee, develops a thesis or project proposal. By the end of the second semester, the student should have successfully defended their proposal to the supervisory committee. It is expected that the student has successfully defended the thesis or completed the evaluation phase of the project by the end of Year II.

## **Admission Requirements**

In addition to the admission application requirements outlined in Section 1.0 of the Graduate Academic Calendar, acceptance to the MSc program is contingent upon the prospective student finding a member of the faculty to serve as their supervisor. Normally, three letters of recommendation are required with two being from individuals who are able to comment on the applicant's academic and research potential.

Additional information about graduate admissions, including application deadlines, is available on the website [www.unbc.ca/admission/graduate](http://www.unbc.ca/admission/graduate).

## **Normal Time Required for Completion**

Normally, the degree should be completed in two years or less. Students may take longer to complete the degree depending on their personal circumstances and the nature of their research or project involvement.

# **Computer Science (MSc Program)**

Acting Chair: Liang Chen, Professor  
Waqar Haque, Professor  
David Casperson, Associate Professor  
Fan Jiang, Assistant Professor  
Andreas Hirt, Term Assistant Professor  
Allan Kranz, Senior Lab Instructor

[www.unbc.ca/computer-science/graduate-program](http://www.unbc.ca/computer-science/graduate-program)

Thesis and project options are available. The thesis option prepares graduate students for careers in research or further academic study by requiring the design and completion of an original research program and preparation of a thesis. The project option provides training across disciplines particularly suitable to individuals with more defined career objectives, as well as providing a mechanism for non-traditional students (e.g., working students, teachers, and professionals) to upgrade their skills.

All students must participate in a Graduate Seminar course CPSC 704-1.5 for at least two semesters during their course of studies.

## **Thesis Option**

The Master of Science thesis option is designed for candidates who wish to develop career interests related to scientific research or who intend to pursue further academic research degrees. MSc students within the Computer Science stream are required to complete 3 credit hours of Graduate Seminar, a minimum of 12 credit hours of approved graduate-level electives (i.e., at or above the 600 level), and a 12 credit-hour thesis (CPSC 793-12). It is expected that the electives consist of scientifically-oriented courses and that the thesis involves an independent investigation resulting in a scientific contribution.

A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Specific details of coursework are determined by the research area undertaken by the student. The supervisory committee ensures the appropriate selection of elective courses, and may require a student to complete more than 12 elective credit hours if, for example, weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

Students are required to (a) make an oral presentation of the thesis proposal to the supervisory committee, (b) write an original thesis based on the research completed (in accordance with established UNBC guidelines), (c) present a public oral defence of the thesis to the examining committee. All course requirements must have been satisfied prior to the oral defence.

### **Summary of Thesis Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
<u>Elective Courses</u>	<u>12 credit hours</u>
<u>MSc Thesis</u>	<u>12 credit hours</u>
<u>Total Required</u>	<u>27 credit hours</u>

### **Project Option**

The Master of Science project option is designed for candidates who wish to upgrade their skills, or who are constrained in their ability to undertake a traditional research thesis. MSc students within the Computer Science project stream are required to complete 3 credit hours of Graduate Seminar, a minimum of 18 credit hours of approved electives, and a 6 credit-hour project (CPSC 794-6). Given the course-intensive nature of this option, MSc projects are limited, subject to sufficient teaching resources and a critical mass of faculty within an area of defined specialization. It is expected that the electives consist of scientifically-oriented courses, and that the project involves an independent investigation resulting in a scientific contribution, although this contribution need not include original research. Because of the number of courses required for this option, it is restricted to designated specializations that have been decided upon within each program area. Designation of a specialization implies that sufficient resources are available to ensure that required courses within the specialization can be offered to fulfill the requirements for the degree.

The 18 elective credit hours must be graduate-level study (i.e., at or above the 600 level) selected from the science courses available within the designated specialization. A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Specific details of coursework are determined by the nature of the project undertaken by each student. The supervisory committee ensures the appropriate selection of elective courses, and may require a student to complete more than 18 credit hours if weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

In order to complete an MSc project successfully, a student is required to (a) make a presentation of the project proposal to the supervisory committee, (b) write a project report, and (c) present a public oral defence of the project to the examining committee. All core and elective course requirements must have been satisfied prior to the oral presentation of the project.

### **Summary of Project Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
<u>Elective Courses</u>	<u>18 credit hours</u>
<u>MSc Project</u>	<u>6 credit hours</u>
<u>Total Required</u>	<u>27 credit hours</u>

### **Recommended Progression**

The normal time for completion of the MSc is two academic years. While this is the recommended timeline, it may be adjusted at the discretion of the supervisory committee to suit a particular student's research and program needs.

The Graduate Seminar courses are offered during all September and January Semesters. Students are expected to enrol in a seminar course at least two times during their degree program.

Electives may be taken at any time during Years I and II. The sequencing of electives is determined by the student in discussion with the supervisory committee. Over the September and January Semesters of Year I, the student, under the direction of the supervisory committee, develops a thesis or project proposal. By the end of the second semester, the student should have successfully defended their proposal to the supervisory committee. It is expected that the student has successfully defended the thesis or completed the evaluation phase of the project by the end of Year II.

## **Admission Requirements**

In addition to the admission application requirements outlined in Section 1.0 of the Graduate Academic Calendar, acceptance to the MSc program is contingent upon the prospective student finding a member of the faculty to serve as their supervisor. Normally, at least two of the three letters of recommendation must be from individuals who are able to comment on the applicant's academic and research potential.

Additional information about graduate admissions, including application deadlines, is available on the website [www.unbc.ca/admission/graduate](http://www.unbc.ca/admission/graduate).

## **Normal Time Required for Completion**

Normally, the degree should be completed in two years or less. Students may take longer to complete the degree depending on their personal circumstances and the nature of their research or project involvement.

# **Mathematics (MSc Program)**

Acting Chair: Dr. Todd Whitcombe

Lee Keener, Professor Emeritus

Jennifer Hyndman, Professor

Kevin Keen, Professor

Pranesh Kumar, Professor

David Casperson, Associate Professor

Mohammad El Smaily, Associate Professor

Alia Hamieh, Associate Professor

Daniel Ryan, Associate Professor

Andy Wan, Associate Professor

Edward Dobrowoski, Assistant Professor

Stanley Xiao, Assistant Professor

Samuel Walters, Adjunct Professor

Website: [www.unbc.ca/math-statistics](http://www.unbc.ca/math-statistics)

Thesis and project options are available. The thesis option prepares graduate students for careers in research or further academic study by requiring the design and completion of an original research program and preparation of a thesis. The project option provides training across disciplines particularly suitable to individuals with more defined career objectives, as well as providing a mechanism for non-traditional students (e.g., working students, teachers, and professionals) to upgrade their skills.

All students must participate in a Graduate Seminar course (MATH 704-1.5) for at least two semesters during their course of studies.

## **Thesis Option**

The Master of Science thesis option is designed for candidates who wish to develop career interests related to scientific research or who intend to pursue further academic research degrees. MSc students within the Mathematics or Statistics stream are required to complete 3 credit hours of Graduate Seminar (two semesters), a minimum of 12 credit hours of approved graduate-level electives (i.e., at or above the 600 level), and a 12 credit-hour thesis (MATH 794-12 or STAT 794-12). It is expected that the electives consist of mathematically- and/or statistically-oriented courses and the thesis involves an independent investigation resulting in an original contribution to the discipline.

A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Specific details of coursework are determined by the research area undertaken by the student. The supervisory committee ensures the selection of appropriate elective courses, and may require a student to complete more than 12 elective credit hours if, for example, weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

Students are required to (a) make an oral presentation of the thesis proposal to the supervisory committee, (b) write an original thesis based on the research completed (in accordance with established UNBC guidelines), and (c) present a public oral

defence of the thesis to the examining committee. All course requirements must have been satisfied prior to the oral defence.

### **Summary of Thesis Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
<u>Elective Courses</u>	<u>12 credit hours</u>
<u>MSc Thesis</u>	<u>12 credit hours</u>
<u>Total Required</u>	<u>27 credit hours</u>

### **Project Option**

The Master of Science project option is designed for candidates who wish to upgrade their skills, or who are constrained in their ability to undertake a traditional research thesis. MSc students within the project stream are required to complete 3 credit hours of Graduate Seminar (two semesters), a minimum of 18 credit hours of approved electives, and a 6 credit-hour project (MATH 793-6). Given the course-intensive nature of this option, MSc projects are limited, subject to sufficient teaching resources and a critical mass of faculty within an area of defined specialization. It is expected that the electives consist of scientifically-oriented courses, and that the project involves an independent investigation resulting in a scientific contribution, although this contribution need not include original research. Because of the number of courses required for this option, it is restricted to designated specializations that have been decided upon within each program area.

The 18 elective credit hours must be graduate-level study (i.e., at or above the 600 level) selected from the mathematics and statistics courses available within the designated specialization. A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Specific details of coursework are determined by the nature of the project undertaken by each student. The supervisory committee ensures the selection of elective courses, and may require a student to complete more than 18 credit hours if weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

In order to complete an MSc project successfully, a student is required to (a) make a presentation of the project proposal to the supervisory committee, (b) write a project report, and (c) present a public oral defence of the project to the examining committee. All core and elective course requirements must have been satisfied prior to the oral presentation of the project.

### **Summary of Project Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
<u>Elective Courses</u>	<u>18 credit hours</u>
<u>MSc Project</u>	<u>6 credit hours</u>
<u>Total Required</u>	<u>27 credit hours</u>

### **Recommended Progression**

The normal time for completion of the MSc is two academic years. While this is the recommended timeline, it may be adjusted at the discretion of the supervisory committee to suit a particular student's research and program needs.

The Graduate Seminar courses are offered during all September and January Semesters. Students are expected to enrol in a seminar course at least two times during their degree program.

Electives may be taken at any time during Years I and II. The sequencing of electives is determined by the student in discussion with the supervisory committee. Over the September and January Semesters of Year I, the student, under the direction of the supervisory committee, develops a thesis or project proposal. By the end of the second semester, the student should have successfully defended their proposal to the supervisory committee. It is expected that the student has successfully defended the thesis or completed the evaluation phase of the project by the end of Year II.

### **Admission Requirements**

In addition to the admission application requirements outlined in Section 1.0 of the Graduate Academic Calendar, acceptance to the MSc program is contingent upon the prospective student finding a member of the faculty to serve as their supervisor. Normally, three letters of recommendation are required, two being from individuals who are able to comment on the applicant's academic and research potential.



Additional information about graduate admissions, including application deadlines, is available on the website [www.unbc.ca/admission/graduate](http://www.unbc.ca/admission/graduate).

## **Normal Time Required for Completion**

Normally, the degree should be completed in two years or less. Students may take longer to complete the degree depending on their personal circumstances and the nature of their research or project involvement.

# **Physics (MSc Program)**

Ahmed Hussein, Professor Emeritus  
Mark Shegelski, Professor Emeritus

Ian Hartley, Professor  
Erik Jensen, Professor  
Elie Korkmaz, Professor  
Margot Mandy, Professor  
Matthew Reid, Professor  
Jean-Sebastien Bernier, Assistant Professor  
George Jones, Senior Lab Instructor

Website: [www.unbc.ca/physics](http://www.unbc.ca/physics)

Thesis and project options are available. The thesis option prepares graduate students for careers in research or further academic study by requiring the design and completion of an original research program and preparation of a thesis. The project option provides training across disciplines particularly suitable to individuals with more defined career objectives, as well as providing a mechanism for non-traditional students (e.g., working students, teachers, and professionals) to upgrade their skills.

All students must participate in the Graduate Seminar course PHYS 701-(1.5,3) for a total of 3 credit hours during their course of studies.

## **Thesis Option**

The Master of Science thesis option is designed for candidates who wish to develop career interests related to scientific research or who intend to pursue further academic research degrees. MSc students are required to complete 3 credit hours of Graduate Seminar, a minimum of 12 credit hours of approved graduate-level electives (i.e., at or above the 600 level), and a 12 credit-hour thesis (PHYS 794-12). It is expected that the electives consist of scientifically-oriented courses and that the thesis involves an independent investigation resulting in a scientific contribution.

A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Specific details of coursework are determined by the research area undertaken by the student. The supervisory committee ensures the appropriate selection of elective courses and may require a student to complete more than 12 elective credit hours if, for example, weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

Students will be required to (a) make an oral presentation of the thesis proposal to the supervisory committee, (b) write an original thesis based on the research completed (in accordance with established UNBC guidelines), and (c) present a public oral defence of the thesis to the examining committee. All course requirements must have been satisfied prior to the oral defence.

## **Summary of Thesis Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
<u>Elective Courses</u>	<u>12 credit hours</u>
<u>MSc Thesis</u>	<u>12 credit hours</u>



Total Required

27 credit hours

## **Project Option**

The Master of Science project option is designed for candidates who wish to upgrade their skills, or who are constrained in their ability to undertake a traditional research thesis. MSc students within the project stream are required to complete 3 credit hours of Graduate Seminar, a minimum of 18 credit hours of approved electives, and a 6 credit-hour project (PHYS 791-6). Given the course-intensive nature of this option, MSc projects are limited, subject to sufficient teaching resources and a critical mass of faculty within an area of defined specialization. It is expected that the electives consist of scientifically-oriented courses, and that the project involves an independent investigation resulting in a scientific contribution, although this contribution need not include original research. Because of the high weighting of course offerings for this option, it is restricted to designated specializations that have been decided upon within each program area. Designation of a specialization implies that sufficient resources are available to ensure that required courses within the specialization can be offered to fulfill the requirements for the degree.

The 18 elective credit hours must be graduate-level study (i.e. at or above the 600 level) selected from the science courses available within the designated specialization. A maximum of 6 credit hours from independent studies can be counted towards the elective requirement. Specific details of coursework are determined by the nature of the project undertaken by each student. The supervisory committee ensures the appropriate selection of elective courses, and may require a student to complete more than 18 credit hours if weaknesses in the student's background exist (including undergraduate prerequisites for graduate courses) or if additional courses are required for professional accreditation.

Student will be required to (a) make a presentation of the project proposal to the supervisory committee, (b) write a project report, (c) give a public lecture on the completed project, and (d) present an oral defence of the project to the examining committee. Normally all course requirements must have been satisfied prior to the oral defence.

## **Summary of Project Option**

<u>Graduate Seminar</u>	<u>3 credit hours</u>
<u>Elective Courses</u>	<u>18 credit hours</u>
<u>MSc Project</u>	<u>6 credit hours</u>
<u>Total Required</u>	<u>27 credit hours</u>

## **Recommended Progression**

The normal time for completion of the MSc is two academic years. While this is the recommended timeline, it may be adjusted at the discretion of the supervisory committee to suit a particular student's research and program needs.

The Graduate Seminar courses are offered during all September and January Semesters. Students are expected to enrol in a seminar course for 3 credit hours of their degree program.

Electives may be taken at any time during Years I and II. The sequencing of electives is determined by the student in discussion with the supervisory committee. Over the first two academic semesters of Year I, the student, under the direction of the supervisory committee, develops a thesis or project proposal. By the end of the second academic semester, the student should have successfully defended their proposal to the supervisory committee. It is expected that the student will have successfully defended the thesis or completed the evaluation phase of the project by the end of Year II.

## **Admission Requirements**

In addition to the admission application requirements outlined in Section 1.0 of the Graduate Academic Calendar, acceptance to the MSc program is contingent upon the prospective student finding a member of the faculty to serve as their supervisor. Normally, at least two of the three letters of recommendation must be from individuals who are able to comment on the applicant's academic and research potential.

Additional information about graduate admissions, including application deadlines, is available on the website [www.unbc.ca/admission/graduate](http://www.unbc.ca/admission/graduate).

## **Normal Time Required for Completion**

Normally, the degree should be completed in two years or less. Students may take longer to complete the degree depending on their personal circumstances and the nature of their research or project involvement.

## OFFICE OF THE REGISTRAR CALENDAR MOTIONS

### **S-202305.34**

#### **Deletion of Minor – Minor in Russian Studies**

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the change to the calendar description for the Minor in Russian Studies, on page 187 of the 2022/2023 undergraduate calendar, be approved as proposed.

**Effective:** September 2023

CARRIED

### **S-202305.35**

#### **Park Courses – Faculty of Business and Economics, Faculty of Environment, Faculty of Human and Health Sciences, Faculty of Indigenous Studies, Social Sciences, and Humanities, Faculty of Science and Engineering**

Roberts

That, on the recommendation for the Senate Committee on Academic Affairs, the following list of courses be excluded from the parking list (Table 1) and parked (Table 2).

**Effective:** June 1, 2023

CARRIED

S-201804.15 Process for Parking courses was included in the meeting package for information.

### **S-202305.36**

#### **Memorandum of Understanding – UNBC and LaSalle College Vancouver Inc.**

Lewis

That, on the recommendation for the Senate Committee on Academic Affairs, the Memorandum of Understanding between UNBC and LaSalle College Vancouver Inc. be approved as proposed.

**Effective:** Upon entering into the agreement (Senate and Board of Governors Approval)

CARRIED

#### **11.3 Steering Committee of Senate**

**Payne**

The Steering Committee discussed how to further support discussions and education for Senate, Faculties and students on ChatGPT and other AI Applications. The Steering Committee discussed the Undergraduate application deadlines for International Students (added under other business).

#### **11.4 Senate Committee on Nominations**

**Payne**

### **For Information Items:**

List of Senate Committee Vacancies was included in the Senate Package.

#### **11.5 Senate Committee on Curriculum and Calendar**

**Stathers**

#### **11.6 Senate Committee on Admissions and Degrees**

**Read**

#### **11.7 Senate Committee on Indigenous Initiatives**

**Payne**

The committee met and discussed the Associate Vice Provost, Indigenous position and job posting. They approved an award and reviewed calendar revisions for courses with Indigenous content. The committee discussed revisiting the visiting Elders or elders in residence programs to enable the university to consult with Indigenous communities to support decolonization initiatives. The committee discussed the interest in offering another Indigenous experiential learning project, e.g., pit house. The committee discussed the Centre for Indigenous Studies.

**11.8 Senate Committee on Honorary Degrees and Special Forms of Recognition** **Payne**

**11.9 Senate Committee on Scholarships and Bursaries** **Lewis**

The VPRI responded to Senator Deo's question from the last Senate meeting regarding the SCSB annual report last month and as to why there were only 2 SD 57 waivers. The waivers are matching amounts for students who are nominated by the school District for one of their awards. The number of waivers given out each year will depend on how many students the schools nominate during their awards process, and whether the students attend UNBC as opposed to another institution.

**11.10 Senate Committee on University Budget** **Gehloff**

**12.0 Information**

**13.0 Other Business**

**13.1 Undergraduate Applications for International Students** **Rodgers/Read**

Associate Registrar, Enrollment, Marlina Hawes and Associate Registrar, International, Amy Beyer provided information on International Application Deadlines. Information on student arrival, workflow, and recruitment efforts was included in the meeting package. Discussion followed.

**14.0 S-202305.38**  
**Move to the Closed Session**  
Hofsink  
That the meeting move to Close Session.  
CARRIED

**15.0 S-202305.46**  
**Adjournment**  
Whitcombe  
That the Senate meeting be adjourned.

The meeting adjourned at 5:07 p.m.