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## MEMORANDUM

ATTENTION	Senate	DATE	February 7, 2020
FROM	Wade Parkhouse, Chair Senate Committee on Undergraduate Studies	PAGES	1/1
RE:	New Course Proposals		

**For information:**

Acting under delegated authority at its meeting of February 6, 2020 SCUS approved the following curriculum revisions effective Fall 2020.

**a. Faculty of Environment (SCUS 20-09)****1. School of Resource and Environmental Management****(i) New Course Proposals:**

- REM 207-3, Indigenous Peoples and Resource Management
- REM 211-3, Introduction to Applied Ecology
- REM 225-3, Quantitative Toolkit for Social-Ecological Systems
- REM 325-3, Uncertainty, Risk and Decision Analysis
- REM 334-3, Earth's Past Climates
- REM 357-3, Planning for Sustainable Food Systems
- REM 388-3, Wildlife Conservation
- REM 431-4, Climate Change and Environmental Management

**2. School of Environmental Science**

- (i) New Course Proposal: EVSC 334-3, Earth's Past Climates

Senators wishing to consult a more detailed report of curriculum revisions may do so on the Senate Docushare repository at  
<https://docushare.sfu.ca/dsweb/View/Collection-12682>.

COURSE SUBJECT NUMBER 

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

CAMPUS where course will be normally taught:  Burnaby  Surrey  Vancouver  Great Northern Way  Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

REPEAT FOR CREDIT  YES  NO Total completions allowed  Within a term?  YES  NO**LIBRARY RESOURCES**NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit [www.lib.sfu.ca/about/overview/collections/course-assessments](http://www.lib.sfu.ca/about/overview/collections/course-assessments).**RATIONALE FOR INTRODUCTION OF THIS COURSE**

1. An introduction to the timely issues of resource management and Indigenous peoples, such as oil and gas infrastructure, forestry, mining and fisheries. Whereas REM 407 delves into these issues much more deeply in a seminar-based learning environment, REM 207 provides a solid, broad-based foundation in a lecture and tutorial format.
2. Several undergraduate REM courses contain Indigenous content but none (other than REM 407) make it their primary focus. REM 207 and 407 are intended to be integral components of the REM major that explore Indigenous issues and perspectives.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016)

Term in which course will typically be offered  Spring  Summer  Fall

Other (describe)

Will this be a required or elective course in the curriculum?  Required  Elective

What is the probable enrollment when offered? Estimate:

UNITS

Indicate number of units:

Indicate no. of contact hours:  Lecture  Seminar  Tutorial  Lab  Other; explain below

OTHER

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

WQB DESIGNATION

(attach approval from Curriculum Office)

PREREQUISITE AND / OR COREQUISITE

**EQUIVALENT COURSES** [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

**1. SEQUENTIAL COURSE** [is not hard coded in the student information management system (SIMS).]

Students who have taken (place relevant course(s) in the blank below (ex: STAT 100)) **first** may not then take this course for further credit.

N/A

**2. ONE-WAY EQUIVALENCY** [is not hard coded in SIMS.]

(Place relevant course(s) in the blank below (ex: STAT 100)) will be accepted in lieu of this course.

N/A

**3. TWO-WAY EQUIVALENCY** [is hard coded and enforced by SIMS.]

Students with credit for (place relevant course(s) in the blank below (ex: STAT 100)) may not take this course for further credit.

N/A

Does the partner academic unit agree that this is a two-way equivalency?  YES  NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

**4. SPECIAL TOPICS PRECLUSION STATEMENT** [is not hard coded in SIMS.]

N/A

#### FEES

Are there any proposed student fees associated with this course other than tuition fees?  YES  NO

#### COURSE – LEVEL EDUCATIONAL GOALS (OPTIONAL)

Students who complete this course will:

1. Have learned an appreciation for diverse Indigenous worldviews and perspectives vis-a-vis resource management
2. Have a basic understanding of Indigenous-environmentalist relations in BC
3. Have a basic understanding of neoliberal capitalism and Indigenous peoples
4. Have a basic understanding of Settler-colonialism in Canada
5. Have a basic understanding Indigenous aspirations for self-determination in Canada in the context of resource management
6. Learn from several case studies that may include oil and gas, fishery and forestry industries





**RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

N/A

**OTHER IMPLICATIONS**

Final exam required  YES  NO

Criminal Record Check required  YES  NO

**OVERLAP CHECK**

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

**Name of Originator**

Dr. Clifford Atleo

COURSE SUBJECT REM

NUMBER 211

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Introduction to Applied Ecology

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Intro Applied Ecology

CAMPUS where course will be normally taught:  Burnaby  Surrey  Vancouver  Great Northern Way  Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Balancing the needs of people and nature is among the foremost challenges of our time. Understanding key processes that structure nature across space and through time can help inform this challenge. Motivated by real-world management and conservation problems, this course will introduce students to the foundational concepts of applied ecology.

REPEAT FOR CREDIT  YES  NO Total completions allowed 2 Within a term?  YES  NO

## LIBRARY RESOURCES

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## RATIONALE FOR INTRODUCTION OF THIS COURSE

The Faculty of Environment currently has no introductory course in Applied Ecology. The proposed course will offer students the background knowledge and skills they will need to enter REM 311, an advanced course in Applied Ecology. I have specifically differentiated this introductory class from similar courses offered in the Faculty of Science (such as BISC 204) and Faculty of Environment (such as GEOG 215) by focusing on applied ecological problems and the knowledge, approaches and techniques to address them.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) Fall 2020

Term in which course will typically be offered [X] Spring [ ] Summer [ ] Fall

Other (describe) NA

Will this be a required or elective course in the curriculum? [X] Required [ ] Elective

What is the probable enrollment when offered? Estimate: 30

UNITS

Indicate number of units: 3

Indicate no. of contact hours: 2 Lecture [ ] Seminar 1 Tutorial [ ] Lab [ ] Other; explain below

OTHER

N/A

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

Anne Salomon, Jonathan Moore, Sean Cox, Scott Harrison

WQB DESIGNATION

(attach approval from Curriculum Office)

Intention is to seek B-Sci designation at the earliest opportunity

PREREQUISITE AND / OR COREQUISITE

None

**EQUIVALENT COURSES** [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

**1. SEQUENTIAL COURSE** [is not hard coded in the student information management system (SIMS).]

Students who have taken (*place relevant course(s) in the blank below (ex: STAT 100)*) **first** may not then take this course for further credit.

N/A

**2. ONE-WAY EQUIVALENCY** [is not hard coded in SIMS.]

(*Place relevant course(s) in the blank below (ex: STAT 100)*) will be accepted in lieu of this course.

N/A

**3. TWO-WAY EQUIVALENCY** [is hard coded and enforced by SIMS.]

Students with credit for (*place relevant course(s) in the blank below (ex: STAT 100)*) may not take this course for further credit.

N/A

Does the partner academic unit agree that this is a two-way equivalency?  YES  NO

*Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).*

**4. SPECIAL TOPICS PRECLUSION STATEMENT** [is not hard coded in SIMS.]

N/A

#### FEES

Are there any proposed student fees associated with this course other than tuition fees?  YES  NO

#### COURSE – LEVEL EDUCATIONAL GOALS (OPTIONAL)

1. Identify and describe the foundational principles of applied ecology that should be considered while addressing a management and conservation problem

2. Demonstrate awareness of the key processes that drive population, community and ecosystem dynamics and their associated uncertainties in the context of applied resource management and conservation

3. Communicate applied ecological concepts clearly and effectively to a target audience





**RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

N/A

**OTHER IMPLICATIONS**

Final exam required  YES  NO

Criminal Record Check required  YES  NO

**OVERLAP CHECK**

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

**Name of Originator**

Anne K. Salomon



COURSE SUBJECT REM NUMBER 225

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation
Quantitative Toolkit for Social-Ecological Systems

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation
Quantitative Toolkit

CAMPUS where course will be normally taught: [X] Burnaby [ ] Surrey [ ] Vancouver [ ] Great Northern Way [ ] Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.
Develops a basic understanding of the breadth and role of quantitative models in social-ecological systems. Introduces skills, methods, and software typically used in data analysis, quantitative modelling, and research for environmental professionals.

REPEAT FOR CREDIT [ ] YES [X] NO Total completions allowed [ ] Within a term? [ ] YES [X] NO

LIBRARY RESOURCES
NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit www.lib.sfu.ca/about/overview/collections/course-assessments.

RATIONALE FOR INTRODUCTION OF THIS COURSE
Effective decision-makers use simple models from a range of disciplines to clarify and solve interdisciplinary social-ecological problems. Resource and environmental managers, especially, need to be aware of these models and the insights they provide to decision-making, yet no interdisciplinary modelling courses exist at SFU that could provide this important background. In addition, students require a practical suite of techniques, methods, and software skills to turn these abstract models into actual tools for decision-making. The "toolkit" for this course will improve student success in upper division courses, co-op work, and thesis research, regardless of their quantitative aptitude upon entry to SFU, by teaching students how to use modern analytical tools such as MS Excel and R statistical computing software.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016)

Term in which course will typically be offered  Spring  Summer  Fall

Other (describe)

Will this be a required or elective course in the curriculum?  Required  Elective

What is the probable enrollment when offered? Estimate:

UNITS

Indicate number of units:

Indicate no. of contact hours:  Lecture  Seminar  Tutorial  Lab  Other; explain below

OTHER

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

WQB DESIGNATION

(attach approval from Curriculum Office)

PREREQUISITE AND / OR COREQUISITE

**EQUIVALENT COURSES** [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

**1. SEQUENTIAL COURSE** [is not hard coded in the student information management system (SIMS).]

Students who have taken *(place relevant course(s) in the blank below (ex: STAT 100))* **first** may not then take this course for further credit.

**2. ONE-WAY EQUIVALENCY** [is not hard coded in SIMS.]

*(Place relevant course(s) in the blank below (ex: STAT 100))* will be accepted in lieu of this course.

**3. TWO-WAY EQUIVALENCY** [is hard coded and enforced by SIMS.]

Students with credit for *(place relevant course(s) in the blank below (ex: STAT 100))* may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency?  YES  NO

*Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).*

**4. SPECIAL TOPICS PRECLUSION STATEMENT** [is not hard coded in SIMS.]

#### FEES

Are there any proposed student fees associated with this course other than tuition fees?  YES  NO

#### COURSE – LEVEL EDUCATIONAL GOALS (OPTIONAL)

1. Describe how models and quantitative reasoning are used in social-ecological contexts to inform policy choices and research
2. Identify and compare the bell curve, long-tailed, and power law distributions for describing random events in both social and natural systems
3. Identify basic linear, non-linear, network, and system dynamics models and their roles in social-ecological systems and policy analysis
4. Relate concepts of uncertainty, information, learning, and adaptive management to social-ecological contexts





**RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

**OTHER IMPLICATIONS**

Final exam required  YES  NO

Criminal Record Check required  YES  NO

**OVERLAP CHECK**

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

**Name of Originator**

Dr. Sean Cox

COURSE SUBJECT REM

NUMBER 325

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Uncertainty, Risk, and Decision Analysis

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Uncertainty and Risk

CAMPUS where course will be normally taught:  Burnaby  Surrey  Vancouver  Great Northern Way  Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Provides a broad, yet practical, perspective on uncertainty and risk that can be used to improve decision-making abilities in a wide range of settings. Quantitative decision analysis provides a formal approach to accounting for uncertainty in resource and environmental management decision-making.

REPEAT FOR CREDIT  YES  NO Total completions allowed  Within a term?  YES  NO

## LIBRARY RESOURCES

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## RATIONALE FOR INTRODUCTION OF THIS COURSE

Humans impact the environment both directly and indirectly via exploitation of living and non-living resources, pollution, development, and habitat alteration. Decision-makers need to make explicit choices about regulating harmful activities, developing resources, and investing in restoration to meet objectives across a broad range of stakeholder values. Decisions can be made via ad hoc approaches, usually in response to problems and conflicts as they arise, or by applying the formalism of structured decision-making that anticipates potential problems by explicitly considering objectives, alternative actions, uncertainties, and risks.

There are no undergraduate courses at SFU that deal with the interactions among these topics from a resource and environmental perspective despite the uncertainties, risks, and values inherent to decision-making problems in this arena. Furthermore, hands-on tutorial sessions and assignments provide student with essential skills needed to succeed in other resource and environmental management courses, co-op terms, thesis research, and eventual employment.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) Fall 2020

Term in which course will typically be offered [X] Spring [ ] Summer [ ] Fall

Other (describe) [ ]

Will this be a required or elective course in the curriculum? [ ] Required [X] Elective

What is the probable enrollment when offered? Estimate: 40

UNITS

Indicate number of units: 3

Indicate no. of contact hours: 2 Lecture [ ] Seminar 1 Tutorial [ ] Lab [ ] Other; explain below

OTHER

[ ]

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

S. Cox, S. Harrison

WQB DESIGNATION

(attach approval from Curriculum Office)

[ ]

PREREQUISITE AND / OR COREQUISITE

45 units. Recommended: REM 225 or STAT 201 or STAT 203 or STAT 205 or GEOG 251 or equivalent.

**EQUIVALENT COURSES** [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

**1. SEQUENTIAL COURSE** [is not hard coded in the student information management system (SIMS).]

Students who have taken (*place relevant course(s) in the blank below (ex: STAT 100)*) **first** may not then take this course for further credit.

**2. ONE-WAY EQUIVALENCY** [is not hard coded in SIMS.]

(*Place relevant course(s) in the blank below (ex: STAT 100)*) will be accepted in lieu of this course.

**3. TWO-WAY EQUIVALENCY** [is hard coded and enforced by SIMS.]

Students with credit for (*place relevant course(s) in the blank below (ex: STAT 100)*) may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency?  YES  NO

*Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).*

**4. SPECIAL TOPICS PRECLUSION STATEMENT** [is not hard coded in SIMS.]

#### FEES

Are there any proposed student fees associated with this course other than tuition fees?  YES  NO

#### COURSE – LEVEL EDUCATIONAL GOALS (OPTIONAL)

After completing REM 325, students will be able to:

- Identify and describe potential types and sources of uncertainty;
- Explain how uncertainty creates to risk in environmental management;
- Describe the differences between risk assessment and risk management;
- Quantify uncertainty using intuitive Bayesian statistical methods;
- Use quantitative decision analysis to rank management actions while taking uncertainties into account;
- Apply sensitivity analyses to evaluate robustness of decisions;
- Set research priorities by estimating the value of future research and monitoring information;
- Assess the advantages and limitations of quantitative decision methods;
- Communicate uncertainties and risks to scientific and non-scientific audiences.



**RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

**OTHER IMPLICATIONS**

Final exam required  YES  NO

Criminal Record Check required  YES  NO

**OVERLAP CHECK**

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

**Name of Originator**

Dr. Sean Cox

COURSE SUBJECT NUMBER 

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

CAMPUS where course will be normally taught:  Burnaby  Surrey  Vancouver  Great Northern Way  Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Paleoclimatology is the study of how and why Earth's climate has changed in the past. Paleoclimatologists study ice ages, past abrupt changes, and what the Earth was like during past climate warm periods. The knowledge gained from paleoclimate studies provides us with the information needed to refine climate models, so that we understand how the Earth's climate works, and better predict how human activity will impact climate in the future. Describes the tools used by paleoclimatologists to reconstruct past climate change and evaluate the hypothesis put forth to explain those changes.

REPEAT FOR CREDIT  YES  NO Total completions allowed  Within a term?  YES  NO**LIBRARY RESOURCES**

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**RATIONALE FOR INTRODUCTION OF THIS COURSE**

The Intergovernmental Panel on Climate Change (IPCC) has projected a future warmer climate that has the potential to affect every person on Earth. But how do current and future changes compare to what has happened in the past, and how do we test climate models that project these future changes? Paleoclimatology is the study of how and why Earth's climate has changed in the past. Paleoclimatologists study ice ages, past abrupt changes, and what the Earth was like during past climate warm periods. The knowledge gained from paleoclimate studies provides us with the information needed to refine climate models, so that we understand how the Earth's climate works, and better predict how human activity will impact climate in the future.

Currently, Simon Fraser University offers a suite of courses that develop our understanding of modern climatology (GEOG 214, 314, 414). At the introductory level, several courses examine the interaction between climate change in human society (e.g. REM 100, GEOG 104). However, the SFU curriculum lacks a course that exclusively explores how past changes in the Earth's continents, geochemistry, and evolution have influenced climate processes. This course serves as an excellent complement to the existing courses in climatology and will present hypotheses about the dominant controls on Earth's climate behavior over geologic history. It will detail how paleoclimatologists use geologic evidence to reconstruct past climate change, and use this evidence to test these hypotheses. Students will gain practice in examining hypotheses with geologic evidence and will gain insight into what past climate changes tell us about future climate changes.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) Fall 2020

Term in which course will typically be offered [checked] Spring [ ] Summer [ ] Fall

Other (describe) [ ]

Will this be a required or elective course in the curriculum? [ ] Required [checked] Elective

What is the probable enrollment when offered? Estimate: 40

UNITS Indicate number of units: 3

Indicate no. of contact hours: [ ] Lecture 3 [ ] Seminar [ ] Tutorial [ ] Lab [ ] Other; explain below

OTHER [ ]

FACULTY Which of your present CFL faculty have the expertise to offer this course? Dr. Karen Kohfeld

WQB DESIGNATION (attach approval from Curriculum Office) [ ]

PREREQUISITE AND / OR COREQUISITE REM 100 or EVSC 100; GEOG 111 or EASC 101 or EASC 106; and 45 units. Recommended: EASC 210, GEOG 214 or GEOG 215.

**EQUIVALENT COURSES** [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

**1. SEQUENTIAL COURSE** [is not hard coded in the student information management system (SIMS).]

Students who have taken (place relevant course(s) in the blank below (ex: STAT 100)) **first** may not then take this course for further credit.

**2. ONE-WAY EQUIVALENCY** [is not hard coded in SIMS.]

(Place relevant course(s) in the blank below (ex: STAT 100)) will be accepted in lieu of this course.

**3. TWO-WAY EQUIVALENCY** [is hard coded and enforced by SIMS.]

Students with credit for (place relevant course(s) in the blank below (ex: STAT 100)) may not take this course for further credit.

EVSC 334

Does the partner academic unit agree that this is a two-way equivalency?  YES  NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

**4. SPECIAL TOPICS PRECLUSION STATEMENT** [is not hard coded in SIMS.]

Students who have taken REM 463-3 "Special Topics" in Spring 2019 may not enroll in this course for further credit.

#### FEES

Are there any proposed student fees associated with this course other than tuition fees?  YES  NO

#### COURSE – LEVEL EDUCATIONAL GOALS (OPTIONAL)

By the end of this course, students will be able to:

1. Appreciate the value of paleoclimate studies for predicting future climate change
2. Explain the emerging hypotheses in paleoclimate science (e.g., the Early Anthropocene Hypothesis) and communicate the evidence for and against these hypotheses.
3. Read, interpret, and evaluate, and communicate a point of view expressed in a scientific journal article
4. Identify the relevance of past climate behavior for our understanding of future climate change





**RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

**OTHER IMPLICATIONS**

Final exam required  YES  NO

Criminal Record Check required  YES  NO

**OVERLAP CHECK**

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

**Name of Originator**

Dr. Karen Kohfeld

COURSE SUBJECT REM

NUMBER 357

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Planning for Sustainable Food Systems

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Sustainable Food Systems

CAMPUS where course will be normally taught:  Burnaby  Surrey  Vancouver  Great Northern Way  Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Provides students with the tools to identify the strengths and weaknesses of the current food system and will encourage them to critically analyze diverse solutions from both the global South and global North to build a more sustainable food system. Students will work collaboratively with the instructor to examine diverse and interdisciplinary approaches to food sustainability and strengthen their problem-solving skills.

REPEAT FOR CREDIT  YES  NO Total completions allowed  Within a term?  YES  NO

## LIBRARY RESOURCES

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## RATIONALE FOR INTRODUCTION OF THIS COURSE

1. A course on "Planning for Sustainable Food Systems" (REM 357) is important to REM as REM offers courses on water and energy but not necessarily on food. The food-water-energy nexus is a critical component to support REM students in better understanding the decisions that needs to be made to manage resources within a changing climate and with diverse stakeholders. Understanding food systems and how it impacts other systems is particularly important to address global issues such as food waste, where water, energy and resources are currently used to grow food that is then wasted;
2. The focus of the REM 357 is on "Food Systems Planning" as it is offered by the instructor (Tammara Soma) who is a land use planner. With the new undergraduate planning stream, this course will be an opportunity for undergraduate planning students to specialize in the growing field of food systems planning;
3. At the University of Toronto, a similar 3rd year course entitled "Global Food Systems" was taught by the instructor (Tammara Soma) and was a popular elective for 3rd year students, with an enrollment of approximately 60 students. She also has experience teaching courses entitled "Food Matters I" and "Food Matters II";
4. There is growing interest in food systems and agricultural-related research with opportunities for students to specialize in this field. REM 357 Planning for Sustainable Food Systems will allow students to explore what is available in the Burnaby mountain campus, such as the embark learning garden, the teaching kitchen, and will highlight potential opportunities to learn from staff members working in ancillary and dining services about the complexity of feeding the entire campus while ensuring sustainability, equity, and culturally sensitive options.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016)

Term in which course will typically be offered  Spring  Summer  Fall

Other (describe)

Will this be a required or elective course in the curriculum?  Required  Elective

What is the probable enrollment when offered? Estimate:

UNITS

Indicate number of units:

Indicate no. of contact hours:  Lecture  Seminar  Tutorial  Lab  Other; explain below

OTHER

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

WQB DESIGNATION

(attach approval from Curriculum Office)

PREREQUISITE AND / OR COREQUISITE

**EQUIVALENT COURSES** [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

**1. SEQUENTIAL COURSE** [is not hard coded in the student information management system (SIMS).]

Students who have taken *(place relevant course(s) in the blank below (ex: STAT 100))* **first** may not then take this course for further credit.

N/A

**2. ONE-WAY EQUIVALENCY** [is not hard coded in SIMS.]

*(Place relevant course(s) in the blank below (ex: STAT 100))* will be accepted in lieu of this course.

NA

**3. TWO-WAY EQUIVALENCY** [is hard coded and enforced by SIMS.]

Students with credit for *(place relevant course(s) in the blank below (ex: STAT 100))* may not take this course for further credit.

N/A

Does the partner academic unit agree that this is a two-way equivalency?  YES  NO

*Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).*

**4. SPECIAL TOPICS PRECLUSION STATEMENT** [is not hard coded in SIMS.]

Students who have taken REM 363-3 "Special Topics" in Spring 2019 and Fall 2019 may not enroll in this course for further credit.

**FEES**

Are there any proposed student fees associated with this course other than tuition fees?  YES  NO

**COURSE - LEVEL EDUCATIONAL GOALS (OPTIONAL)**

After completing REM 357, students will be able to:

1. Identify diverse solutions towards building a sustainable food system, as well as associated strengths and limitations (trade offs to said solutions).
2. Think critically about their own food practices and describe key economic, social and environmental factors that negatively impact the sustainability of the food system.
3. Identify and analyze key concepts and seminal debates in the field of food studies generally and food system planning particularly.
4. Understand the value of different ways of knowing around food (traditional ecological knowledge, non-western cultures, case studies from the global South).
5. Collaborate and manage food-related research project in a team environment.





**RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

**OTHER IMPLICATIONS**

Final exam required  YES  NO

Criminal Record Check required  YES  NO

**OVERLAP CHECK**

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

**Name of Originator**

Dr. Tammara Soma

COURSE SUBJECT REM

NUMBER 388

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Wildlife Conservation

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Wildlife Conservation

CAMPUS where course will be normally taught:  Burnaby  Surrey  Vancouver  Great Northern Way  Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Provides an overview of the taxonomic, ecological, and conservation relationships among wildlife and with humans. This knowledge is used to identify the ecological and social opportunities and constraints for sustainable resource and environmental management and planning related to the ecosystems that support wild populations.

REPEAT FOR CREDIT  YES  NO Total completions allowed  Within a term?  YES  NO**LIBRARY RESOURCES**

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit [www.lib.sfu.ca/about/overview/collections/course-assessments](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

There is a need for courses at SFU that examine ecological, and conservation relationships among wildlife and with humans. This knowledge is necessary to identify the ecological and social opportunities and constraints for sustainable resource and environmental management and planning related to the ecosystems that support wild populations.

REM 388 explores the examines the taxonomic, natural history, and ecological relationships of selected mammals, birds, reptiles, and amphibians, and outlines strategies, tools, and techniques for conserving wildlife. The course explores how incorporating scientific data and social values in an Adaptive Management framework enables environmental professionals to identify the ecological and social opportunities and constraints for sustainable resource and environmental management and planning. The goal is to improve societal decisions that support human-wildlife coexistence and sustain free-ranging wildlife populations, species-at-risk, and the ecosystems that support wild populations.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016)

Term in which course will typically be offered  Spring  Summer  Fall

Other (describe)

Will this be a required or elective course in the curriculum?  Required  Elective

What is the probable enrollment when offered? Estimate:

UNITS

Indicate number of units:

Indicate no. of contact hours:  Lecture  Seminar  Tutorial  Lab  Other; explain below

OTHER

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

WQB DESIGNATION

(attach approval from Curriculum Office)

PREREQUISITE AND / OR COREQUISITE

**EQUIVALENT COURSES** [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

**1. SEQUENTIAL COURSE** [is not hard coded in the student information management system (SIMS).]

Students who have taken *(place relevant course(s) in the blank below (ex: STAT 100))* **first** may not then take this course for further credit.

**2. ONE-WAY EQUIVALENCY** [is not hard coded in SIMS.]

*(Place relevant course(s) in the blank below (ex: STAT 100))* will be accepted in lieu of this course.

**3. TWO-WAY EQUIVALENCY** [is hard coded and enforced by SIMS.]

Students with credit for *(place relevant course(s) in the blank below (ex: STAT 100))* may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency?  YES  NO

*Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).*

**4. SPECIAL TOPICS PRECLUSION STATEMENT** [is not hard coded in SIMS.]

**FEES**

Are there any proposed student fees associated with this course other than tuition fees?  YES  NO

**COURSE - LEVEL EDUCATIONAL GOALS (OPTIONAL)**





**RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

**OTHER IMPLICATIONS**

Final exam required  YES  NO

Criminal Record Check required  YES  NO

**OVERLAP CHECK**

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

**Name of Originator**

Dr. Scott Harrison

COURSE SUBJECT REM

NUMBER 431

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Climate Change and Environmental Management

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Climate Change and Env. Mgt.

CAMPUS where course will be normally taught:  Burnaby  Surrey  Vancouver  Great Northern Way  Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Reviews how climate change is impacting multiple facets of earth system (e.g atmosphere, oceans, and freshwater systems). Students will examine the challenges faced by environmental managers as they attempt to mitigate or adapt to these changes. One major goal of the course is to teach an appreciation of uncertainties and predictability in earth systems, to better address resource management issues on regional to global scales.

REPEAT FOR CREDIT  YES  NO Total completions allowed  Within a term?  YES  NO**LIBRARY RESOURCES**

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit [www.lib.sfu.ca/about/overview/collections/course-assessments](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

Ongoing changes in Earth's climate will have far-reaching implications for how Earth's resources will be utilized, and how environmental managers will need to address regional-to-global issues facing our communities, municipalities, and nations. This course will examine how climate change is likely to impact different parts of the Earth system that are relevant to environmental managers. This course is not a course in climate science nor do students require a background in this field. Instead, it complements existing courses that deal strictly with the science of climate change (e.g. GEOG 214, 314, 414) in that it provides an interdisciplinary approach to understanding the science behind the problem, the potential impacts, along with technology-, policy-, and planning-based approaches to dealing with these problems. This course fills a gap in the curriculum of Simon Fraser University in that it is designed, at the 4th year level, to place the science of climate change impacts within the context of how environmental managers will need to deal with them.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) Fall 2020

Term in which course will typically be offered [X] Spring [ ] Summer [ ] Fall

Other (describe) [ ]

Will this be a required or elective course in the curriculum? [ ] Required [X] Elective

What is the probable enrollment when offered? Estimate: 15

UNITS Indicate number of units: 4

Indicate no. of contact hours: [ ] Lecture 4 Seminar [ ] Tutorial [ ] Lab [ ] Other; explain below

OTHER [ ]

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

Dr. Karen Kohfeld

WQB DESIGNATION

(attach approval from Curriculum Office)

[ ]

PREREQUISITE AND / OR COREQUISITE

REM 100 or EVSC 100 or GEOG 111; REM 221; 60 units; or permission from instructor

**EQUIVALENT COURSES** [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

**1. SEQUENTIAL COURSE** [is not hard coded in the student information management system (SIMS).]

Students who have taken *(place relevant course(s) in the blank below (ex: STAT 100))* **first** may not then take this course for further credit.

**2. ONE-WAY EQUIVALENCY** [is not hard coded in SIMS.]

*(Place relevant course(s) in the blank below (ex: STAT 100))* will be accepted in lieu of this course.

**3. TWO-WAY EQUIVALENCY** [is hard coded and enforced by SIMS.]

Students with credit for *(place relevant course(s) in the blank below (ex: STAT 100))* may not take this course for further credit.

Does the partner academic unit agree that this is a two-way equivalency?  YES  NO

*Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).*

**4. SPECIAL TOPICS PRECLUSION STATEMENT** [is not hard coded in SIMS.]

**FEES**

Are there any proposed student fees associated with this course other than tuition fees?  YES  NO

**COURSE - LEVEL EDUCATIONAL GOALS (OPTIONAL)**

1. To understand terminology, concepts, and current issues pertaining to environmental processes being affected by climate change
2. To access and critically assess the relevant peer-reviewed scientific literature
3. To develop an integrative and holistic approach to understanding the interactions between climate change, earth system processes, and how we manage them.
4. To communicate the importance of climate change and its links to environmental management clearly (through writing and presentation) to people from a range of backgrounds and disciplines





**RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

**OTHER IMPLICATIONS**

Final exam required  YES  NO

Criminal Record Check required  YES  NO

**OVERLAP CHECK**

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

**Name of Originator**

Dr. Karen Kohfeld

COURSE SUBJECT NUMBER 

COURSE TITLE LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

COURSE TITLE SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

CAMPUS where course will be normally taught:  Burnaby  Surrey  Vancouver  Great Northern Way  Off campus

COURSE DESCRIPTION — 50 words max. Attach a course outline. Don't include WQB or prerequisites info in this description box.

Paleoclimatology is the study of how and why Earth's climate has changed in the past. Paleoclimatologists study ice ages, past abrupt changes, and what the Earth was like during past climate warm periods. The knowledge gained from paleoclimate studies provides us with the information needed to refine climate models, so that we understand how the Earth's climate works, and better predict how human activity will impact climate in the future. Describes the tools used by paleoclimatologists to reconstruct past climate change and evaluate the hypothesis put forth to explain those changes.

REPEAT FOR CREDIT  YES  NO Total completions allowed  Within a term?  YES  NO

## LIBRARY RESOURCES

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by the email that serves as proof of assessment. For more information, please visit [www.lib.sfu.ca/about/overview/collections/course-assessments](http://www.lib.sfu.ca/about/overview/collections/course-assessments).

## RATIONALE FOR INTRODUCTION OF THIS COURSE

The Intergovernmental Panel on Climate Change (IPCC) has projected a future warmer climate that has the potential to affect every person on Earth. But how do current and future changes compare to what has happened in the past, and how do we test climate models that project these future changes? Paleoclimatology is the study of how and why Earth's climate has changed in the past. Paleoclimatologists study ice ages, past abrupt changes, and what the Earth was like during past climate warm periods. The knowledge gained from paleoclimate studies provides us with the information needed to refine climate models, so that we understand how the Earth's climate works, and better predict how human activity will impact climate in the future.

Currently, Simon Fraser University offers a suite of courses that develop our understanding of modern climatology (GEOG 214, 314, 414). At the introductory level, several courses examine the interaction between climate change in human society (e.g. REM 100, GEOG 104). However, the SFU curriculum lacks a course that exclusively explores how past changes in the Earth's continents, geochemistry, and evolution have influenced climate processes. This course serves as an excellent complement to the existing courses in climatology and will present hypotheses about the dominant controls on Earth's climate behavior over geologic history. It will detail how paleoclimatologists use geologic evidence to reconstruct past climate change, and use this evidence to test these hypotheses. Students will gain practice in examining hypotheses with geologic evidence and will gain insight into what past climate changes tell us about future climate changes.



SCHEDULING AND ENROLLMENT INFORMATION

Effective term and year (e.g. FALL 2016) Fall 2020

Term in which course will typically be offered [X] Spring [ ] Summer [ ] Fall

Other (describe) [ ]

Will this be a required or elective course in the curriculum? [ ] Required [X] Elective

What is the probable enrollment when offered? Estimate: 40

UNITS

Indicate number of units: 3

Indicate no. of contact hours: [ ] Lecture 3 Seminar [ ] Tutorial [ ] Lab [ ] Other; explain below

OTHER

[ ]

FACULTY

Which of your present CFL faculty have the expertise to offer this course?

Dr. Karen Kohfeld

WQB DESIGNATION

(attach approval from Curriculum Office)

[ ]

PREREQUISITE AND / OR COREQUISITE

REM 100 or EVSC 100; GEOG 111 or EASC 101 or EASC 106; and 45 units. Recommended: EASC 210, GEOG 214 or GEOG 215.

**EQUIVALENT COURSES** [For more information on equivalency, see Equivalency Statements under [Information about Specific Course components.](#)]

**1. SEQUENTIAL COURSE** [is not hard coded in the student information management system (SIMS).]

Students who have taken (place relevant course(s) in the blank below (ex: STAT 100)) **first** may not then take this course for further credit.

**2. ONE-WAY EQUIVALENCY** [is not hard coded in SIMS.]

(Place relevant course(s) in the blank below (ex: STAT 100)) will be accepted in lieu of this course.

**3. TWO-WAY EQUIVALENCY** [is hard coded and enforced by SIMS.]

Students with credit for (place relevant course(s) in the blank below (ex: STAT 100)) may not take this course for further credit.

REM 334

Does the partner academic unit agree that this is a two-way equivalency?  YES  NO

Please also have the partner academic unit submit a course change form to update the course equivalency for their course(s).

**4. SPECIAL TOPICS PRECLUSION STATEMENT** [is not hard coded in SIMS.]

Students who have taken REM 463-3 "Special Topics" in Spring 2019 may not enroll in this course for further credit.

#### FEES

Are there any proposed student fees associated with this course other than tuition fees?  YES  NO

#### COURSE - LEVEL EDUCATIONAL GOALS (OPTIONAL)

By the end of this course, students will be able to:

1. Appreciate the value of paleoclimate studies for predicting future climate change
2. Explain the emerging hypotheses in paleoclimate science (e.g., the Early Anthropocene Hypothesis) and communicate the evidence for and against these hypotheses.
3. Read, interpret, and evaluate, and communicate a point of view expressed in a scientific journal article
4. Identify the relevance of past climate behavior for our understanding of future climate change





**RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

**OTHER IMPLICATIONS**

Final exam required  YES  NO

Criminal Record Check required  YES  NO

**OVERLAP CHECK**

Checking for overlap is the responsibility of the Associate Dean.

Each new course proposal must have confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.

**Name of Originator**

Dr. Karen Kohfeld