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**Faculty of Science** (<http://science.concordia.ab.ca/>)  
**Department of Biological and Environmental Sciences** (<http://biology.concordia.ab.ca/>)

**BES318**  
**Faculty of Science**  
**Spring 2019**

**Course Description:** This is a field course designed to be taken during the summer following either the second or third year of studies. Field investigations provide the student with experience analyzing the features of various terrestrial and aquatic habitats throughout Alberta, and allow them to evaluate the potential effects of human activity in those environments. Credit is assigned at the end of the fall semester. In addition to the regular tuition and lab fees, there is a special fee to cover transportation, accommodation, and shared meals.

**Course Prerequisite(s) and/or Co-requisites:** Concordia students - ENSC 204 and one of BES 206 or BES 208. Note that students from outside Concordia will be considered on an individual basis.

**Course Hours:** 6 (0-1s-5)

**Credit value:** 3

**Note:** Credit may be obtained for only one of Biology and Environmental Science 308 or ENSC308

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## **Classroom Policies:**

- Concordia provides learning accommodation services for students with disabilities. Please refer to Section 8.4.1 of the Calendar for more details.
- Recording of classes is permitted only if recording is part of an approved accommodation plan or with prior written consent of the instructor. Please refer to Section 9.2.3 of the Calendar for more details.
- Please refer to Section 9.2.8 of the Calendar for details regarding Educational Decorum. It is the responsibility of both students and instructors to facilitate the educational process.

## **Course Objectives:**

Upon successful completion of this course, a student should

1. Have experience with practical field research
2. Be able to design, execute and analyze a field project
3. Be familiar with the major ecological regions of Alberta
4. Be able to use ArcMap to plot their study sites and associate files of data collected at that site
5. Be familiar with the major environmental issues affecting these regions and of how those issues might have broader Canadian and global effects
6. Be aware of the various businesses/industries, government agencies, environmental groups, and members of the public who are stakeholders in the regions visited

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## **Required Resources:**

Moodle access - each student should read the following documents on the Moodle, and fill out forms as required. All forms must be submitted to the instructor prior to departure.

1. Emergency Contact Information
  2. Safety Checklist
  3. Concordia Field Trip Safety Information
  4. Student Waiver
  5. Supplies List
  6. Links to information about the sites to be visited, and trip itinerary
- Field log book (hard cover, numbered pages) - available in the bookstore.
  - Write in the Rain notebook - provided for you
  - Clothing appropriate for all weather conditions, from below freezing to hot, from wet (snow /rain) to dry. This includes good sturdy footwear. See the supplies list on Moodle for details.
  - Note that the Suncor plant in Fort McMurray needs names of all students well ahead of time so they can perform security checks. If you do not clear security, you will not be allowed on-site.

## **Nature of the course:**

One or more information session(s) may be conducted prior to leaving, but the major portion of this class will be conducted as a field course. Students and staff will travel by van, truck or bus to a variety of sites in the major ecological regions of Alberta, where they will be introduced to the region and its associated environmental issues by the course instructors, fellow students and/or

representatives of industry, government, NGO's or a member of the public. In many cases, students will have the opportunity to tour a site such as the Eastern Irrigation District, a plant in the oil sands district, or the Lesser Slave Lake Bird Observatory, under the guidance of a local representative. Students will also learn to sample regional habitats and identify local flora and fauna. There may be lectures given as the group travels from site to site, and students will prepare presentations on each area. During the trips, students will be given assignments (habitat analysis, for example) and must be able to answer questions about their area. Students will also be expected to record their information in a map file using ArcMap. A final report (oral and written) will also be required. Accommodation will be at campsites, field stations, or motels, depending on availability and weather.

Note: not all sites are accessible by vehicle. Students must be able to complete a 3-4 hour medium difficulty hike (including climb) while carrying a pack.

### **Grading:**

The following information is provided as a guide. Read the grade descriptions on the following page carefully, so you know the basis upon which your letter grades will be assigned. Remember that you must complete all midterms and the final and pass both the lecture and the lab to pass the course.

Participation in field work and discussions, log book	40%
Contribution to daily activities in field	20%
Final report (oral + written)*	40%

- \* The final oral report will be on the topic you researched during the trip. It will be presented to the faculty and other students in the course as soon after completion of the field component of the course as is possible. This is worth 20%. The final written report will be due 2 weeks after completion of the field portion of the course. It should consist of a comparison (including statistics) of the data collected from the various regions sampled during the course, and an explanation of the similarities and differences observed. This is worth 20%.

## GRADE EVALUATION:

**Concordia Calendar Table 9.3.2: Extended Description of Grade Levels**

Grade Description		Letter Grade	Grade Point Value
Outstanding	Outstanding performance, demonstrating complete and comprehensive understanding of the subject matter; full mastery of concepts and skills; exceptional interpretive and analytical ability; originality in the use of concepts and skills; achievement of all major and minor objectives of the course.	A+	4.0
Excellent	Excellent performance, indicating superior grasp of subject matter and concepts; development of relevant skills to a high level; a high level of interpretive and analytical ability; originality or intellectual initiative; achievement of all major and minor objectives of the course.	A	4.0
		A-	3.7
Very Good	Very good to good performance, indicating thorough understanding of subject matter and concepts; development of relevant skills to a fairly high level; good interpretive and analytical ability; evidence of intellectual initiative; achievement of major and minor objectives of the course.	B+	3.3
		B	3.0
Good		B-	2.7
Satisfactory	Intellectually adequate performance, of fair but not good quality, demonstrating an acceptable understanding of the subject matter and concepts; development of skills to a satisfactory level; adequate interpretive and analytical ability; achievement of major objectives of the course; some minor objectives may not be achieved. The bottom of this range (C-) is the minimum satisfactory standard of achievement in a course. In courses graded CR or NC, CR denotes that the student has attained at least the C- level.	C+	2.3
		C	2.0
		C-	1.7
Poor	Minimally acceptable performance, demonstrating some understanding of basic subject matter and concepts and partial development of relevant skills, with some evidence of interpretive or analytical ability; achievement of most but not all major objectives of the course; failure to achieve several minor objectives.	D+	1.3
Minimal Pass	The bottom of this range (D) indicates that the student has achieved a marginal level of performance which may not be sufficient background for success at the next level in the discipline.	D	1.0
Failure	Unsatisfactory performance, demonstrating an inadequate understanding of the basic subject matter; failure to develop relevant skills; insufficient evidence of interpretive and analytical ability; and failure to achieve major and minor objectives of the course.	F	0.0

## Academic Honesty:

Academic honesty is fundamental to the academic enterprise. Students are urged to familiarize themselves with Section 9.2.9 of the Calendar and cases of academic dishonesty (ex. cheating, plagiarism, collusion, unauthorized submission for credit of previously graded work, and misrepresentation) are serious offences. Penalties for academic dishonesty range from a grade of zero on the work in question to expulsion.

## Additional Contacts and Services:

- a. Academic Administration
  - i. Dean of Faculty of Science  
Name: Kamau, Patrick, PhD  
Office: HA 219  
Email: [patrick.kamau@concordia.ab.ca](mailto:patrick.kamau@concordia.ab.ca)  
Telephone: +1 780 479 9261
  - ii. Department of Biological and Environmental Sciences  
Department Chair  
Name: Hemmerling, Deborah, PhD  
Office: G110  
Email: [deborah.hemmerling@concordia.ab.ca](mailto:deborah.hemmerling@concordia.ab.ca)  
Telephone: +1 780 479 9265
  - iii. Registrar's Office  
Office: HA120  
Email: [registrar@concordia.ab.ca](mailto:registrar@concordia.ab.ca)  
Telephone: +1 780 479 9250
- b. Academic Support
  - i. Dean of Students  
Name: Dr. Barbara van Ingen  
Email: [barbara.vaningen@concordia.ab.ca](mailto:barbara.vaningen@concordia.ab.ca),  
Telephone: +1 780 479 9289, HA217
  - ii. Student Life and Learning  
Email: [studentlife@concordia.ab.ca](mailto:studentlife@concordia.ab.ca)  
Telephone: +1 780 479 9241, HA114
- c. Writing Centre
  - i. The Writing Centre (located in the Concordia library, L266) is a free service that provides support for teaching and learning through writing for students, staff, and faculty
    - Throughout the academic year, one-on-one consultations are offered (book online at: <http://studyspaces.concordia.ab.ca>).

## Draft itinerary for 2019:

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<b>Date</b>	<b>Activities</b>
<b>May 06</b>	<ul style="list-style-type: none"><li>• Depart from CUCA and travel to Brooks where we will camp for 3 nights</li><li>• Practice using Pasco and other environmental recording equipment</li><li>• Practice setting up tents and camping</li></ul>
<b>May 07</b>	<ul style="list-style-type: none"><li>• Environmental sampling, evaluation of range quality for livestock</li><li>• Environmental sampling, sites of active sand dunes and gas extraction</li></ul>
<b>May 08</b>	<ul style="list-style-type: none"><li>• Tour Eastern Irrigation District</li><li>• Visit Crop Diversification Center</li></ul>
<b>May 09</b>	<ul style="list-style-type: none"><li>• Travel west to the foot hill – camp in Kananaskis area</li><li>• Visit Oldman River Dam and water diversion project</li><li>• Visit wind mill farm</li></ul>
<b>May 10-11</b>	<ul style="list-style-type: none"><li>• Visit Kananaskis country (tourism, forestry, natural gas extraction)</li><li>• Plateau Mountain and/or Picklejar Lakes (high elevation sites)</li></ul>
<b>May 12</b>	<ul style="list-style-type: none"><li>• Travel to Jasper/Hinton region (tourism, forestry and coal mining area)</li><li>• Camp in Hinton area for two nights (opportunity to do laundry)</li><li>• Environmental sampling</li></ul>
<b>May 13</b>	<ul style="list-style-type: none"><li>• Cardinal River Divide (high elevation environment)</li><li>• Environmental sampling</li><li>• Visit area of active coal mining</li></ul>
<b>May 14</b>	<ul style="list-style-type: none"><li>• Drive to Slave Lake Camp along shore of Lesser Slave Lake for 1 nights</li><li>• Environmental sampling, including old burn sites and sites affected by the Slave Lake fire of 2011</li></ul>
<b>May 15</b>	<ul style="list-style-type: none"><li>• Visit the Lesser Slave Lake Bird Observatory to observe mist netting of migrating birds and bird tagging</li><li>• Drive north to Fort McMurray, where we will camp for 3 nights</li></ul>
<b>May 16</b>	<ul style="list-style-type: none"><li>• Suncor tour</li></ul>
<b>May 17</b>	<ul style="list-style-type: none"><li>• Environmental sampling - natural and reclamation sites</li><li>• Presentation by representatives of Wood Buffalo Environmental Association</li><li>• Visit air monitoring sites</li></ul>
<b>May 18</b>	<ul style="list-style-type: none"><li>• Tour of muskeg ecosystem</li></ul>
<b>May 19</b>	<ul style="list-style-type: none"><li>• Return to Edmonton</li></ul>

