



**CAMOSUN COLLEGE**  
**School of Arts & Science**  
**Department of Environmental Technology**

**ENVR-242-001**  
**Vertebrate Diversity & Ecology**  
**Winter 2020**

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## **COURSE OUTLINE**

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The course description is online @ <http://camosun.ca/learn/calendar/current/web/envr.html>  
Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

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### **1. Instructor Information**

(a) Instructor	Annette Dehalt MSc	
(b) Office hours	T 11:30-12:20, W/Th 1:30-2:20	
(c) Location	F 252B	
(d) Phone	250-370-3388	Alternative: _____
(e) E-mail	dehalt@camosun.ca	
(f) Website	<a href="http://sites.camosun.ca/annettedehalt">sites.camosun.ca/annettedehalt</a>	

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### **2. Intended Learning Outcomes**

Upon completion of this course the student will be able to:

1. Use logic, critical thinking, and the scientific method in combination with biological terminology pertinent to vertebrates to evaluate and assess the current status of BC chordates.
2. Use biological identification keys for selected groups of vertebrates of B.C.
3. Sample terrestrial and aquatic habitats for vertebrates and understand basic methods of habitat restoration.
4. Describe biodiversity issues including rare and endangered species, introduced species, overharvesting impacts and effects of habitat loss.
5. Discuss the principles of systematics, evolution and wildlife management as they apply to the important ecological and economic vertebrate species of B.C.
6. Discuss the importance and impact of policy and legislation on wildlife management issues.

### **3. Required Materials**

No text book (notes and readings provided on course web site)

#### 4. Course Content and Schedule

Wk	Week days	Lab/Field Exercises (T) <i>FT = Field Trip</i>	Lecture Topics (W, Th)
1	Jan 6-10	Course Introduction	Diversity/Phylogeny/Taxonomy
2	Jan 13-17	Lab 1: Field Methods	Anthrozoology – Interactions of Humans with other Animals; TEKW
3	Jan 20-24	<i>FT: Ecological Restoration</i>	Fishes
4	Jan 27-31	Lab 2: Fishes <b>Seminar Topic Due</b>	<b>Quiz 1</b> (Th) Amphibians
5	Feb 3-7	Lab 3: Amphibians	Reptiles
6	Feb 10-14	Lab 4: Reptiles	Birds
7	Feb 17-21	<b>READING BREAK</b>	
8	Feb 24-28	<i>FT: Birding - Esquimalt Lagoon</i>	Birds cont. <b>Midterm</b> (Th)
9	Mar 2-6	Lab 5: Birds <b>Seminar Outline Due</b>	Mammals
10	Mar 9-13	<i>FT: Urban Deer</i>	Mammals cont.
11	Mar 16-20	Lab 6: Mammals	<b>Quiz 2</b> (Th) Threats to Individual Vertebrates; Animal Welfare Science & Legislation
12	Mar 23-27	<b>Medicine Wheel Seminar</b>	Threats to Vertebrate Species; Ranking Systems
13	Mar 30-Apr 3	<i>FT: Goldstream Salamanders</i>	Wildlife Habitat Requirements; Conservation Biology & Wildlife Management
14	Apr 6-10	<b>Lab/Field Exam</b>	Legislation regarding Vertebrate Animals

*Content and scheduling of field trips may be subject to change.*

## 5. Basis of Student Assessment (Weighting)

- |                          |     |              |
|--------------------------|-----|--------------|
| (a) Assignments          | 10% |              |
| (b) 2 Quizzes            | 10% |              |
| (c) Exams:               |     |              |
| Midterm                  | 15% |              |
| Lab Exam                 | 25% | (cumulative) |
| Final Exam               | 30% | (cumulative) |
| (d) Seminar Presentation | 10% |              |

## 6. Grading System

- Standard Grading System (GPA)
- Competency Based Grading System

## 7. Recommended Materials to Assist Students to Succeed Throughout the Course

- (a) Downloads or print-outs of lecture notes and lab exercises
- (b) Field note-book and basic office supplies including pen, white-out, ruler, stapler...
- (c) Optional: vertebrate field guides, binoculars

## 8. College Supports, Services and Policies



### Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

### College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

### College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://camosun.ca/about/policies/index.html> for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

## **ADDITIONAL INFORMATION**

**Academic Conduct:** Be sure that you are familiar not only with the Student Conduct Code (s.a.), but also with the General Department Policies, which are stated in the lab manual. **Cheating or plagiarism will not be tolerated in any form, and will result in “0”.**

**Attendance:** You are expected to attend all classes (lectures, labs and related activities), and be on time. It is your responsibility to acquire *all* information given during a missed class, incl. notes, hand-outs, assignments, laboratory data, changed exam dates etc.

**Exams:** **Exams have to be written when scheduled.** There are no make-up exams during the term. **A missed exam results in “0” except in case of documented emergency or illness** (doctor’s note required stating that student is too sick to attend class during a specified time period). Valid documentation of illness/emergency needs be received **within 1 week** of the illness/emergency. With a valid excuse, the weighting of the missed exam will be added to the final exam, along with additional questions on course material of that unit. **Please bring a pen and soft pencil to all exams. No programmable devices are allowed in exams.**

**Labs:** It is necessary to read each exercise before coming to lab, correlate the material with lecture notes, and research any unknown terminology or emerging questions beforehand, in order to make best use of lab time. Instructions regarding field-trips will be provided in class.

**Assignments:** Lab assignments can only be handed in for labs actually attended (except in cases of documented illness/emergency). You are encouraged to discuss assignments with your lab partner(s), however, **each assignment has to be your individual work – beware of plagiarism.** Unless otherwise stated, all assignments are due by the **beginning** of the lab/class of the due date. Marks will be based on all or on a portion of the entire assignment. The first late assignment/term is penalty-free – otherwise a **10%/day non-negotiable late penalty** (rounded to the nearest full mark) applies except in cases of documented illness/emergency. Late assignments will **not** be accepted after marked assignments have been returned to the rest of the class one week after the due date. A **professional format** is expected, i.e. a **neat, legible, clean** copy indicating authorship by full name. If the assignment is more than one page, separate pages must be **stapled**. “Rough” drafts risk rejection and a subsequent late penalty or reduced marks.

**Study Habits:** You will probably find this course not very difficult, but surprisingly labor-intensive. Good (and regular!!) study habits are required to do well in this course. Forming a study group can help this make more fun. Some **“study hints” are posted on the course web site.**

Lecture notes will be provided in point form and are posted on the web for you to print prior to class. You will need to write down additional notes of examples and explanations given during lecture. It is also recommended practice to transcribe these notes into a study-friendly format after each lecture, incorporating additional information from recommended readings and other sources. Review these notes before the next class to prepare yourself for new material, which will often build on previously covered material.

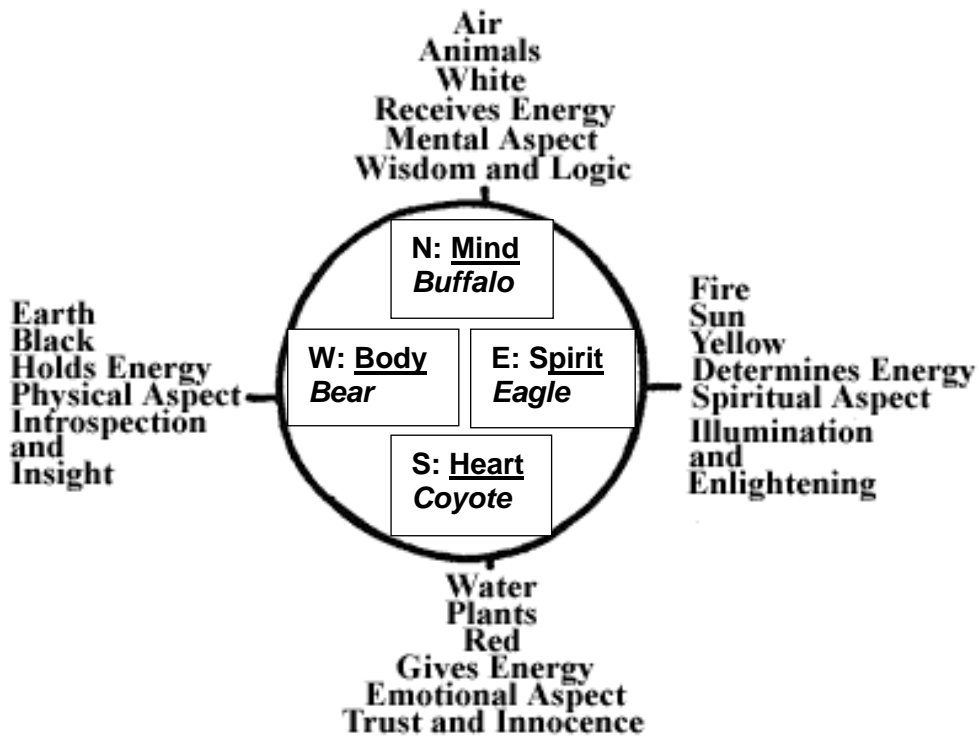
Take advantage of office hours if you need extra clarification and help, or simply would like to discuss a topic of interest a little further.

## “Medicine Wheel” Seminar: Vertebrate Issues

This assignment requires a 10-15 minute oral presentation, done in groups of 2 or 3, on a current issue concerning a vertebrate species of your choice (preferably BC) - excluding *Homo sapiens*. The idea is to study, and empathize with, vertebrate animals of a species other than our own. This is an opportunity to gather and present information on the causes and potential solutions regarding a particular problem facing a group of vertebrate animals or a species (terrestrial or aquatic) that you care about.

Topics may include environmental or ethical issues, for example: endangerment of a vertebrate species through habitat destruction, pollution, or over-exploitation, welfare concerns regarding vertebrates in food production, product testing or entertainment, issues regarding poaching, trade in species (parts), hunting/trapping methods and regulations, or the effect of an introduced species on a native species, etc. There is a wide range of possible topics, but the basic premise is a bio-centric approach, i.e. deconstructing the issue from the point of view of the animal(s) in question, and focusing on the animal's best interest. Please check with your instructor if your topic choice and angle fits the scope of this assignment before you proceed with your research (see course outline for deadlines).

Format and content of this presentation is supposed to be holistic in nature and is loosely based on the concept of a generalized First Nations medicine wheel:



In your presentation, you are therefore expected to present not only the physical and mental aspects of the issue (see West and North), but also the emotional and value-based/ spiritual aspects (see South and East) to the same extent.

Please present your talk in the following sequence:

Briefly introduce yourself and your topic, and then address the 4 basic aspects of your chosen issue by going around the medicine wheel.

1. W: "Physical" Aspect: Issue Definition

Introduce your chosen vertebrates, including a *brief* background on their biology and ecology as it pertains to the issue. Define and explain the concrete problem facing this species or group of vertebrates, keeping in mind that this may be the first time your audience has heard about this issue. Condense your background research into a precise yet concise, readily comprehensible summary. If relevant, mention other species affected by the issue.

2. S: "Emotional" Aspect: Personal Engagement

Why do you care about this species, this particular issue? What is the story behind your choice? What emotions and opinions were shared by your co-presenter (if applicable) or other discussion partners when researching this issue? Did other people share your position or not? Do you think/know whether your (group's) position on this issue is representative of the population at large?

3. E: "Spiritual" Aspect: Underlying Values – and Alternatives

What societal/cultural/spiritual values or belief systems do you perceive to be at the root of the problem? How did the status quo come to be accepted? What ethical principles or choices may need to be re-evaluated? Are there underlying values or attitudes that may have to be changed in your opinion to allow for support for any type of practical solution? What other societies/cultures/value systems can we learn from in this regard, incl. Traditional Ecological Knowledge and Wisdom (TEKW)? Discuss some of the values and attitudes you would like to foster.

4. N: "Mental" Aspect: Thoughtful Solutions

What should be done, in your opinion, to fix or ameliorate the problem facing your chosen vertebrate(s)? What can different levels of society contribute to the solution, e.g. government, NGO's, industry, academia, organized religion etc. and what actions can you and your class mates take to support your solutions? Give specific examples. You may cite published solutions that you support, or think outside the box to come up with your own answers to the problem.

A different path around the medicine wheel may be more suitable to your presentation – please discuss the best sequence or integration of aspects with the instructor.

Conclude your talk with a short statement referring to future hopes or plans and thank your audience. (Note: "that's all we got" or "I guess that's it..." is *not* a good concluding statement!)

You need to know the material well enough to speak freely as well as answer questions for approx. 5 minutes following your talk (*know more than you present!*). The presentation itself will take place in circle format around a replica of a medicine wheel, i.e. the presenters are seated along with the audience in a circle. If necessary, a room other than the lab will be booked for this purpose. Therefore, you will not have to stand in front of the class, and **you are not required to prepare overheads or power-points – this really is an oral presentation**, and it is meant to provide a different presentation and learning experience. This means that your speech should be as free from references to written notes as possible. A recipe card with point form notes for memory aid is permitted, while reading a prepared paper will result in a maximum 50% mark.

You are also required to bring a visual aid to be passed around, e.g. a good quality picture or replica or otherwise relevant object (1 minimum and 3 maximum visual aids per presentation). Aids should be user-friendly and add to your talk but not distract from it; written materials are usually not suitable. Please also have a list of references handy, in case you may be asked about the sources of presented information. Although not a requirement, you are free to integrate original elements of the visual, musical, healing or performing arts as well as aspects of your cultural or spiritual practices that you are able to share.

It is important to practice the talk several times beforehand, in order to feel comfortable speaking freely, to allow for smooth transitions, and to keep within the time limit of 10-15 minutes in fairness to all other students. However, in alignment with common indigenous practice, speakers will be allowed – within reason – to complete their presentation.

As a member of the audience, you are expected to be respectful to the speaker by following the talk with focus and an open mind, so you may be able to contribute a question at the end of the talk. While a class mate is presenting, it is unacceptable to review your own notes, carry on a conversation or leave the circle early. Being a disrespectful listener may affect your overall mark for this project.

**Evaluation of Oral Presentation:**

CRITERIA	SCORE (0 – 10)
1. <b>Content:</b> bio-centric, not anthropocentric perspective maintained; all 4 sub-topics (directions) addressed adequately and with appropriate details in each category; evidence of broad background research and in-depth contemplation of the issue	
a. Physical	
b. Emotional	
c. Spiritual	
d. Mental	
2. <b>Outreach:</b> the issue and potential solutions were presented convincingly, with respect, empathy and engagement – prepared to draw and hold audience attention	
3. <b>Format:</b> appropriate opening and closing statements, smooth and clear transitions between sub-topics; the talk flowed well, trains of thoughts were followed through	
4. <b>Delivery:</b> free speech, referred to notes only very briefly or not at all, used good voice projection, clear pronunciation, suitable intonation	
5. <b>Timing:</b> fair time allocation for each sub-topic/direction, without rushing or needless pauses or fillers; time limit (10 -15 min) observed (-3 marks/extra minute over or under)	
6. <b>Visual Aid(s):</b> well-chosen and informative, attention to ease of viewing and handling, no distracting details such as extensive writing, well-integrated into talk	
7. <b>Questions:</b> questions from the audience were answered knowledgably and honestly, showing involvement with the subject beyond the information given in the talk	
<b>TOTAL SCORE</b>	<b>...../100</b>