



## REN R 401i

### *EVOLUTION AND ECOLOGY OF NORTHERN MAMMALS*

In Fall 2023, REN R 401i, *Evolution and Ecology of Northern Mammals*, is being offered at Yukon University as part of the University of Alberta Northern Environmental and Conservation Sciences, B.Sc. Program. All students registered in REN R 401 must adhere to requirements outlined in this course syllabus. Policy about course outlines can be found in Section 23.4(2) of the University Calendar.

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**INSTRUCTOR:** Thomas Jung, Adjunct Professor

**TEACHING ASSISTANT:** TBD

**OFFICE HOURS:** By appointment

**OFFICE LOCATION:** None

**E-MAIL:** ts\_jung@hotmail.com (336-2048)

**LECTURE/LAB TIMES:** Mondays 6:00-8:50 (A2601)

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#### **COURSE DESCRIPTION AND OBJECTIVES**

This course will provide an introduction to mammalogy, the biology of mammals. The course will place a strong emphasis on northern mammals, those occurring in northern (boreal and arctic) biomes. Students will learn about 1) the diversity of mammals, 2) the basic biology of Mammalia, 3) current research and issues in mammalian ecology and conservation, and 4) methods used by researchers in the field of mammalian biology. The course material will largely be presented within the context of adaptation to the unique challenges posed by mammals inhabiting northern biomes.

This course has two goals: first, to provide students with a broad overview of mammalian biology; second, to provide a detailed understanding of mammals in northern biomes, including diversity, anatomy, physiology, behaviour, and ecology. To the extent possible, these goals will be addressed largely in lectures, but also in occasional lab sessions.

Upon successful completion of this course, students will be able to:

- 1) Describe the distinguishing characteristics of the primary mammalian orders and families, with an emphasis on mammals occurring in boreal and arctic ecozones.
- 2) Explain the diversity of behavioural, morphological, and physiological adaptations of northern mammals that allows them to exist in a northern environment.
- 3) Identify current methods to monitor and study mammals in northern environments.
- 4) Conduct original research (or prepare a species account) on northern mammals.

## **DELIVERY METHODS/FORMAT:**

The course will be structured as a 3-hour lecture/lab on Monday evenings. Class sessions will include a lecture covering general topics in mammalian biology, and occasional lab and field sessions in which practical skills related to mammalian biology and research will be demonstrated.

Optional field trips to local sites (e.g., Yukon Wildlife Preserve, Beringia Centre, Yukon Department of Environment, and select natural areas) may be arranged outside of, or in lieu of, regularly scheduled classes, and will serve to illustrate material covered in the lectures and labs to deepen students knowledge of the material.

Guest lectures will be invited from time-to-time.

This format may vary, depending on the material to be covered.

Audio or video recording of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as part of an approved accommodation plan. Recorded material is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the instructor.

## **PREREQUISITES:**

Registration in University of Alberta/Yukon University B.Sc. in Environmental and Conservation Sciences degree program, and successful completion of a second-year biology course.

## **REQUIRED TEXTBOOKS/MATERIALS:**

There is no required textbook for the course; however, course material will be drawn from the recommended text and it would be beneficial for students to have a copy. Additional readings will be distributed by the instructor (via email).

### *Recommended Text:*

- Feldhamer, G.A., L.C. Drickamer, S.H. Vessey, J.F. Merritt, and C. Krajewski. 2007. *Mammalogy*. Third edition. Johns Hopkins University Press. ISBN-10: 0801886953

### *Others:*

- Naughton, D. 2013. *The Natural History of Canadian Mammals*. University of Toronto Press. ISBN-10: 1442644834
- Ryan, J.M. 2011. *Mammalogy Techniques Manual*. Second edition. Lulu.com ISBN-10: 1257831941

## COURSE REQUIREMENTS/EVALUATION:

### Evaluation

The course grade will be determined as follows:

Assignment	Percent
Mid-Exam (?-October-2023)	25%
Final exam (TBA)	25%
2 Quizzes (5% each)	10%
Research project (?-December-2023)	40%

### Exams

There will be two midterm exams and one comprehensive final exam. The midterm exam will be scheduled during class time on **? October 2023**. The final examination will be on the week of **TBD** and cover material and will not be cumulative; that is, it will cover material taught between the mid-term exam and the final exam.

### Quizzes

Quizzes will occur during select Monday combined lecture and lab sessions.

### Research Project

Students will have an opportunity to conduct an original research project to develop and deepen their skills and knowledge in the collection, management, analysis, and interpretation of data typically collected in the field of mammalogy. They will be required to discuss their topic with the instructor by **3-October-2023**. The research project may take the form of original research presented in the format of a paper in the *Journal of Mammalogy* or *Mammal Review*.

Alternatively, it may be the development of a species account, written in the format of *Mammalian Species*. Further information on the research project will be provided in class.

Unless otherwise specified, assignments must be emailed to the course instructor by 11:59 pm on **?-December-2023**. Late assignments will lose 5% of their mark per day that they are late.

### Assignment of grades

Grades will NOT be adjusted to fit a predetermined distribution. The total numerical score will be converted to a grade on the following letter grading system:

<b>Letter grade</b>	<b>Percentage</b>
A+	95-100
A	90-94
A-	85-89
B+	79-84
B	75-78
B-	71-74
C+	67-70
C	64-66
C-	60-63
D+	55-59
D	50-54
F	0-49

## **ACADEMIC INTEGRITY**

### **Yukon University Academic Standards and Regulations**

Students are expected to contribute toward a positive and supportive environment and are required to conduct themselves in a responsible manner. Academic misconduct includes all forms of academic dishonesty such as cheating, plagiarism, fabrication, fraud, deceit, using the work of others without their permission, aiding other students in committing academic offences, misrepresenting academic assignments prepared by others as one's own, or any other forms of academic dishonesty including falsification of any information on any Yukon University document.

Please refer to YukonU Academic Regulations & Procedures for further details about academic standing and student rights and responsibilities.

### **University of Alberta Academic Integrity and Code of Student Behaviour**

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at [www.governance.ualberta.ca](http://www.governance.ualberta.ca)) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students at the University of Alberta are subject to the Code of Student Behaviour, as outlined at:

<http://www.governance.ualberta.ca/en/CodesofConductandResidenceCommunityStandards/CodeofStudentBehaviour.aspx> Please familiarize yourself with it and ensure that you do not participate in any inappropriate behavior as defined by the Code. Key components of the code

include the following statements.

30.3.2(1) No Student shall submit the words, ideas, images or data of another person as the Student's own in any academic writing, essay, thesis, project, assignment, presentation or poster in a course or program of study.

30.3.2(2) c. No Student shall represent another's substantial editorial or compositional assistance on an assignment as the Student's own work.

## **ACCESSIBILITY AND ACADEMIC ACCOMMODATION**

Yukon University is committed to providing a positive, supportive, and barrier-free academic environment for all its students. Students experiencing barriers to full participation due to a visible or hidden disability (including hearing, vision, mobility, learning disability, mental health, chronic or temporary medical condition), should contact [Accessibility Services](https://www.yukonu.ca/student-life/learning-matters/accessibility-services) (<https://www.yukonu.ca/student-life/learning-matters/accessibility-services>) for resources or to arrange academic accommodations: [access@yukonu.ca](mailto:access@yukonu.ca).

**2023 TENATIVE COURSE SCHEDULE:\*\***

<b>Day</b>	<b>Lecture Session (6:00 ~ 7:20)</b>	<b>Lecture/Lab Session (7:35 ~ 8:50)</b>
Tuesday 5 September	Introduction to Mammalogy	What is a Mammal?
Tuesday 12 September	Mammalian Diversity	Order Soricomorpha
Tuesday 19 September	Mammals of the Yukon	Course Project
Tuesday 26 September	Skeleton & Locomotion	Order Artiodactyla I
Tuesday 3 October	Environmental Adaptations I	Order Artiodactyla II
Tuesday 10 October	Environmental Adaptations II	Order Rodentia & Lagomorpha I
Tuesday 17 October	Biological Rhythms	Order Rodentia & Lagomorpha II
Tuesday 24 October	<b>Mid-Term Exam</b>	
Tuesday 31 November	Movements & Migration	Order Chiroptera
Tuesday 7 November	Social & Spatial Ecology	Order Carnivora I
Tuesday 14 November	Community Ecology	Order Carnivora II
Tuesday 21 November	Parasites & Diseases	Order Cetacea
Tuesday 28 December	Course Review (Optional)	
Tuesday 5 December	<b>Project Due</b>	
Tuesday December	<b>Final Exam (Date TBD)</b>	

\*\* subject to change