

VERTEBRATE BIOLOGY (BIOL 330)

3 credits, Winter semester, January – April 2017

Course prerequisites: BIOL225, BIOL226

INSTRUCTORS	Noa Davidai, Department of Biology, Faculty of Arts and Sciences; Email: noa.davidai@concordia.ca; Tel extension: 3395
LECTURES	8h45-10h00, Tues/Thurs, SI H01 (Loyola Campus)
OFFICE HOURS	Tues 10h00-11h30 or by appointment, SP 375.35 (Loyola Campus)
LABORATORIES	Lab01: 13h30-17h30, Tues, SP 380-5: Jan24; Feb7; Feb28, 14, 28; Apr4 Lab02: 13h30-17h30, Wed, SP 380-5: Jan25; Feb8; Mar1, 15, 29; Apr5 Lab03: 13h30-17h30, Thurs, SP 380-5: Jan26; Feb9; Mar2, 16, 30; Apr6 Lab04: 13h30-17h30, Fri, SP 380-5: Jan27; Feb10; Mar3, 17, 31; Apr7
TECHNICIAN	Don Beattie; email: d.beattie@concordia.ca
TAs	Lab01/02: Laurence Feyten, email: laurencefeyten@me.com Lab03/04: Nicole Hill, email: nicolehill.1592@gmail.com

COURSE OUTLINE

This course will explore how the anatomy, physiology, life history, ecology and behaviour of vertebrates interact to generate animals that function effectively in their environments, and how different groups of vertebrates have evolved over the past few hundred million years. Major vertebrate groups discussed in the course are cartilaginous fishes, bony fishes, amphibians, reptiles, birds, and mammals. Other special topics on vertebrate biology considered will include the role of ecology in vertebrate speciation, vertebrate adaptations to extreme environments, seasonal migrations, human evolution, as well as conservation issues facing different vertebrate groups worldwide.

GRADING COMPONENTS*	Midterm	25%
	Final exam	35%
	Laboratory	40%
	1) Laboratory exam	(25%)
	2) Oral presentation	(7.5%)
	3) Lab Quizzes	(7.5%)

Final grades out of 100 will be assigned a letter according to Concordia University standards: A⁺ = ≥90; A = 85-89; A⁻ = 80-84; B⁺ = 77-79; B = 74-76; B⁻ = 70-73; C⁺ = 67-69; C = 64-66; C⁻ = 60-63; D⁺ = 57-59; D = 54-56; D⁻ = 50-53; F = <50

COURSE TEXT (RECOMMENDED, ***NOT REQUIRED***)

Vertebrate Life, 9th edition, by Pough FH, Janis CM, Heiser JB (2012). Published by Pearson Education Inc., San Francisco, CA, USA. Two copies of *Vertebrate Life 8th edition* will be available on reserve for temporary loan at the Vanier Library.

Much of the course material (>70%) is adapted from this text book (either the 8th or 9th edition which are very similar), and the lectures repeatedly refer to its Figures and Tables. Because of the amount of information provided in the course, students are strongly encouraged to regularly complement the material covered in lectures with independent, textbook readings. Note that subject material in the textbook that is not covered in lectures will *not* be included on exams. However, subject material in lectures that is not in the textbook will be included on exams.

LECTURE SCHEDULE*

Week 1

Jan 10	Lecture 1	Introduction to course, Introduction to vertebrate biology and structure
Jan 12	Lecture 2	Early vertebrates, jawless to jawed vertebrates

Week 2

Jan 17	Lecture 3	Living in water: physiological and anatomical adjustments
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Jan 19 Lecture 4	Cartilaginous fish (Chondrichthyes) biology
Week 3	
Jan 24 Lecture 5	Bony fish (Osteichthyes) biology
Jan 26 Lecture 6	Conservation of fishes
Week 4	
Jan 31 Lecture 7	Living on land: evolutionary context and physiological adjustments
Feb 2 Lecture 8	Amphibian biology and conservation
Week 5	
Feb 7 Lecture 9	Two modes of vertebrate life on land: synapsids vs. sauropsids
Feb 9 Lecture 10	Sauropsid biology: turtles, lizards, snakes, and crocodilians I
Week 6	
Feb 14 Lecture 11	Sauropsid biology: turtles, lizards, snakes, and crocodilians II
Feb 16	Midterm (covers material up to and including Lecture 11)
Week 7	
Feb 21/23	No lecture (Reading week)
Week 8	
Feb 28 Lecture 12	Avian biology I
Mar 2 Lecture 13	Avian biology II
Week 9	
Mar 7 Lecture 14	Avian biology III
Mar 9 Lecture 15	Mammalian biology I
Week 10	
Mar 14 Lecture 16	Mammalian biology II
Mar 16 Lecture 17	Mammalian biology III
Week 11	
Mar 21 Lecture 18	Conservation of mammals
Mar 23 Lecture 19	Vertebrate adaptations to extreme environments I
Week 12	
Mar 28 Lecture 20	Vertebrate adaptations to extreme environments II
Mar 30 Lecture 21	Ecology and vertebrate speciation
Week 13	
Apr 4 Lecture 22	Vertebrate seasonal migrations
Apr 6	Laboratory exam (covers all lab manual material)
Week 14	
Apr 11 Lecture 23	Human evolution, and the future of vertebrate diversity and evolution
Apr 13	No class (use it to prepare for the final exam)

**In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change*

ATTENDANCE AND ABSENCE POLICY: Students who miss a lecture are expected to obtain any missed lecture notes from their classmates. No make-up exams will be given without a written medical excuse, and the appropriate person should be contacted (Noa Davidai or TA) depending on the exam missed: **Any make-up mid-term exams will be taken in Noa Davidai's office between 11:30am and 1:00pm on Wednesday, March 1; **any make-up laboratory exams will be taken in the TAs office between 11:30am and 1:00pm on Wednesday Apr 12.

ACADEMIC INTEGRITY AND ACADEMIC CODE OF CONDUCT: This course (like all other courses offered at Concordia University), follows the 'Academic Integrity and the Academic Code of Conduct'. We strongly encourage students to take a moment to read over this code: <http://registrar.concordia.ca/calendar/17/17.10.html>. Vertebrate Biology (BIOL 330) has a zero tolerance policy for any cheating, plagiarism, personation, or falsification of a document as well as any other form of dishonest behaviour related to the obtention of academic gain or the avoidance of evaluative exercises committed by the student.