

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: BIO 305		Number of Credits: 4 Course credit policy (105)															
Course Full Title: Structural and Functional Anatomy of Vertebrates Course Short Title: Anatomy of Vertebrates <i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>																	
Faculty: Faculty of Science		Department (or program if no department): Biology															
Calendar Description: Focuses on the physiological and anatomical adaptations of the different vertebrate groups including fish, amphibians, reptiles, birds, and mammals. Covers the similarities and differences in the integumentary systems, musculoskeletal systems, sensory and nervous systems, and endocrine systems of vertebrate groups.																	
Prerequisites (or NONE):		Any three 200-level or above Biology courses.															
Corequisites (if applicable, or NONE):																	
Pre/corequisites (if applicable, or NONE):																	
Antirequisite Courses <i>(Cannot be taken for additional credit.)</i> Former course code/number: Cross-listed with: Dual-listed with: Equivalent course(s): <i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>		Special Topics <i>(Double-click on boxes to select.)</i> This course is offered with different topics: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, topic will be recorded when offered.)</i>															
		Independent Study If offered as an Independent Study course, this course may be repeated for further credit: <i>(If yes, topic will be recorded.)</i> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit															
		Transfer Credit Transfer credit already exists: <i>(See bctransferguide.ca.)</i> <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Submit outline for (re)articulation: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i>															
Typical Structure of Instructional Hours <table border="1"> <tr> <td>Lecture/seminar hours</td> <td>45</td> </tr> <tr> <td>Tutorials/workshops</td> <td></td> </tr> <tr> <td>Supervised laboratory hours</td> <td>45</td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td>Total hours</td> <td>90</td> </tr> </table>		Lecture/seminar hours	45	Tutorials/workshops		Supervised laboratory hours	45	Experiential (field experience, practicum, internship, etc.)		Supervised online activities		Other contact hours:		Total hours	90	Grading System <input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit	
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Labs to be scheduled independent of lecture hours: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Maximum enrolment (for information only): 24 Expected Frequency of Course Offerings: Every second year <i>(Every semester, Fall only, annually, etc.)</i>															
Department / Program Head or Director: Gregory Schmaltz		Date of meeting: October 1, 2021															
Faculty Council approval		Date of meeting: November 5, 2021															
Undergraduate Education Committee (UEC) approval		Date of meeting: January 28, 2022															

Learning Outcomes:

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

1. Compare the physical characteristics of the major groups of vertebrates.
2. Analyze the reasons for the differences in the integumentary system in vertebrates.
3. Evaluate the physiology of muscles and contrast the musculoskeletal system of vertebrates.
4. Examine the physiology of the nervous and sensory systems in different vertebrates.
5. Compare the role of the endocrine system in different vertebrates.
6. Recognize and analyze the evolutionary trends in vertebrate anatomy.

Prior Learning Assessment and Recognition (PLAR)

☒ Yes ☐ No, PLAR cannot be awarded for this course because

Typical Instructional Methods (*Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.*)

Lectures, laboratories, small group discussions, audio-visual presentations.

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials (*If more space is required, download Supplemental Texts and Resource Materials form.*)

Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1.	In-house Lab Manual	<input type="checkbox"/>		
2.	Free online texts	<input type="checkbox"/>		
3. Betts, Young, Wise, E Johnson, Poe, Kruse, Korol, J E Johnson, Womble, DeSaix	Anatomy and Physiology OPEN textbook	<input checked="" type="checkbox"/>	Pressbooks	2019
4.		<input type="checkbox"/>		

Required Additional Supplies and Materials (*Software, hardware, tools, specialized clothing, etc.*)

Typical Evaluation Methods and Weighting

Final exam:	35%	Assignments:	%	Field experience:	%	Portfolio:	%
Midterm exam:	25%	Project:	%	Practicum:	%	Other:	%
Quizzes/tests:	10%	Lab work:	30%	Shop work:	%	Total:	100%

Details (if necessary):

Typical Course Content and Topics

Introduction

- history of anatomy physiology
- overview of experimental methods used
- membrane physiology and cellular transport

Integumentary system of vertebrates

Musculoskeletal system of vertebrates

- skeletal anatomy of vertebrates
- physiology of skeletal muscle
- major muscle groups in vertebrates

Nervous systems

- physiology of neural function
- differences in vertebrate brains, intelligence

Sensory systems

- unique adaptations of vertebrate sensory structures

Endocrine systems

- vertebrate hormones

Laboratory experiments:

- Histology lab
- Skeletal system comparison labs
- External anatomy
- Comparative muscle anatomy
- EMG muscle physiology
- Nervous system physiology simulation
- Comparative sensory and nervous system anatomy lab