

# Biol 324: Comparative Vertebrate Anatomy

## Fall Syllabus 2015

**Lectures:** T/TH 12:30-1:45 pm

**Room:** TLC 028

**Lab:** M/W 2:30-5:20 pm

**Room:** LIFE 341

**Professor:** Dr. Craig McGowan  
email: cpmcgowan@uidaho.edu

Office: LIFE 263

Office Phone: 885-6598

**Office Hours:** Tuesdays/Wednesday 10-11am or by appointment

**Teaching Assistant:** Savannah Patterson

Office: Gibb 246

email: patt2692@vandals.uidaho.edu

### Textbooks:

Kardong, K.V. (2015). *Vertebrates: Comparative Anatomy, Function, Evolution*, 7<sup>nd</sup> ed. McGraw-Hill

Kardong, K.V. and Zalisko, E.J. (2015). *Comparative Anatomy: A Laboratory Dissection Guide*, 7<sup>nd</sup> ed. McGraw-Hill

**Other Required Material:** Dissection tool kits are required and are available in the Bookstore.

All course materials are on Blackboard Learn (Bb) through the UI website. Course materials include: syllabus, schedule, additional readings, additional information necessary for the course, etc.

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**Course Description:** Comparative Vertebrate Anatomy examines the evolutionary history of vertebrate morphology with a primary focus on structure-function relationships. Lectures will trace the evolutionary origin of vertebrates through the vast diversity of animals living today. Emphasis will be placed on the analysis of similarities and differences across groups using a systems based approach to assess the significance of adaptations. Laboratory exercises will provide a hands-on opportunity to examine the major vertebrate organ systems through dissections and group activities.

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**Learning Outcomes:** Several critical Learning Outcomes are sought in this course. These Learning Outcomes include both the University of Idaho Learning Outcomes and a listing of specific Learning Outcomes of the college, unit and/or the course.

1. **Learn and integrate** - Through independent learning and collaborative study, attain, use, and develop knowledge in the arts, humanities, sciences, and social sciences, with disciplinary specialization and the ability to integrate information across disciplines.

**Analytical ability.** You will learn how to use the comparative method to analyze and critically evaluate the structure and function of vertebrate systems. This information will enable you to examine the evolutionary history of vertebrate species and assess the functional significance of morphological adaptations.

2. **Think and create** - Use multiple thinking strategies to examine real-world issues, explore creative avenues of expression, solve problems, and make consequential decisions.

**Analytical ability and understanding.** You will gain the skills necessary to discern the differences between homologous and analogous structures and to determine what morphological characters

are primitive or derived. You will develop the skills necessary to broadly assess the vast diversity of vertebrates, both living and extinct, and to think critically about the proposed relationships between groups.

3. **Communicate** - Acquire, articulate, create and convey intended meaning using verbal and non-verbal methods of communication that demonstrate respect and understanding in a complex society.  
**Communicative proficiency.** Through group and individual work, you will acquire the ability to successfully articulate your understanding of evolution and organismal systems and to communicate your analysis to your peers.
4. **Clarify purpose and perspective** - Explore one's life purpose and meaning through transformational experiences that foster an understanding of self, relationships, and diverse global perspectives  
Throughout the entire semester, you will continually improve your proficiency at **Critical Thinking, Communication, and Analysis**. A broad examination of vertebrates, of which you are one, will enable you to explore your place in evolutionary history and gain appreciation for the significance of the morphological features that you possess.
5. **Practice citizenship** - Apply principles of ethical leadership, collaborative engagement, socially responsible behavior, respect for diversity in an interdependent world, and a service-oriented commitment to advance and sustain local and global communities.  
By working in small groups in lab and in class, you will develop the ability to collaborate, to lead, and to follow. You will learn to appreciate multiple points of view from your classmates and teachers and you will gain the skills to respectfully communicate your point of view.

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**Attendance and Make-up Policy:**

Attendance is not mandatory but is very strongly encouraged.

Only university-sanctioned events or emergency doctor visits will be accepted excuses for missed lecture exams. **Lab exams cannot be made up.**

University-sanctioned: If you are part of a university-approved (not Greek) group (i.e. athletics, ROTC, FAA, etc.) and you will be absent for a scheduled exam, you are responsible for completing the exam **PRIOR** to the scheduled date. No exceptions. See below for additional information.

Emergency doctor visit: If you are ill on the day of an exam, you **must** do the following:

1. Bring a signed doctor's note to class on the first day you return back to school. A make-up exam will be given within three days of your first day back.
2. Send an email to me ([cpmcgowan@uidaho.edu](mailto:cpmcgowan@uidaho.edu)) letting me know of your absence.

**Class Schedule:**

WEEK	Lecture Days	Reading	Lab Days
1	T: 8/25 TH: 8/27 Introduction; Phylogeny Origins	Ch. 1,2 Ch. 2	M W: 8/26 NONE Functional Morphology, Biomechanics
2	T: 9/1 TH: 9/3 Vertebrate Story Vertebrate Story, cont'd	Ch. 3 Ch. 3	M: 8/31 W: 9/2 Phylogeny; Survey of Fishes Integument; teeth
3	T: 9/8 TH: 9/10 Development Integument; Teeth	Ch. 5 Ch. 6	M: 9/7 W: 9/9 LABOR DAY Skull
4	T: 9/15 TH: 9/17 Cranial Anatomy Axial Skeleton	Ch. 7 Ch. 8	M: 9/14 W: 9/16 Skull Axial Skeleton / Limb Girdles
5	T: 9/22 TH: 9/24 Appendicular Skeleton <b>EXAM 1</b>	Ch. 9	M: 9/21 W: 9/23 Appendages REVIEW
6	T: 9/29 TH: 10/1 Myology - Form & Function Myology - Evolution	Ch. 10 Ch. 10	M: 9/28 W: 9/30 <b>LAB EXAM 1</b> ; skin cats Muscles: Shark, Necturus
7	T: 10/6 TH: 10/8 Digestive systems Digestive systems	Ch. 13 Ch. 13	M: 10/5 W: 10/7 Muscles: Necturus, Cat Muscles: Cat
8	T: 10/13 TH: 10/15 Coelom; Mesenteries Respiratory	Ch. 11	M: 10/12 W: 10/14 Digestive systems Digestive systems; Mesenteries
9	T: 10/20 TH: 10/22 Respiratory System Circulatory Systems: Hearts	Ch. 11 Ch. 12	M: 10/19 W: 10/21 Respiratory System Heart
10	T: 10/27 TH: 10/29 <b>EXAM 2</b> Circulatory systems: Arteries	Ch. 12	M: 10/26 W: 10/28 Review <b>LAB EXAM 2</b>
11	T: 11/3 TH: 11/5 Circulatory systems: Veins; Lymph Urogenital System	Ch. 12 Ch. 14	M: 11/2 W: 11/4 Circulation: Shark, Necturus Circulation: Necturus, Cat
12	T: 11/10 TH: 11/12 Urogenital System Reproductive System	Ch. 14 Ch. 14	M: 11/9 W: 11/11 Circulation: Cat Urinary/Kidneys
13	T: 11/17 TH: 11/19 Reproductive System Endocrine System	Ch. 14 Ch. 15	M: 11/16 W: 11/18 Adaptations Adaptations
14	<b>THANKSGIVING No Class</b>		
15	T: 12/1 TH: 12/3 Sensory systems <b>EXAM 3</b>	Ch. 17	M: 11/30 W: 12/2 Review Lab Exam 3
16	T: 12/8 TH: 12/10 <b>Deadweek - no exams</b> Nervous system Nervous system	Ch. 16 Ch. 16	M: 12/7 W: 12/9 PNS Brain
	<b>F: 12/18 FINAL EXAM 10 am – 12 pm</b>		

**Grading:**

Lecture Exams: 100 points each	300 points
Lab Exams: 100 points each	300 points
Readings, Assignments	40 points
Final Exam: 200 points	200 points
<b>Total</b>	<b>840 points</b>

The Final Exam will be 25% new material and 75% cumulative.

**THERE IS NO EXTRA CREDIT**

**Policy on Absences for University-related Activities.**

The absence policy is enforced by the Vice Provost for Student Affairs and Office of the Dean of Students, and no other written or verbal agreements preempt this policy.

1. Students are **not** to be excused from class sessions for any living group-related activities (including, but not limited to, residence hall meetings, fraternity or sorority house meetings, or other living group functions). This includes any function deemed “mandatory” by the living group officers that may carry with it fines or other penalties for non-attendance.
2. Only students with a written request signed by a university official will be granted an excused absence for university-sponsored activities, including, but not limited to, travel to sporting events in which the student is an official participant (not spectator) and participation in scheduled, university-sponsored class field trips.
3. Students who seek excused absences from class sessions because of other university-related activities must notify me in advance of their absence to request an excused absence. All work must be completed prior to the absence for full credit.

This policy is designed to help you, the students, achieve academic success and to remain a full and productive member of your classroom community. If you have questions, please contact the Office of the Dean of Students, 885-6757, TLC 232.

**University Disability Support Services**

Reasonable accommodations are available for students who have documented temporary or permanent disabilities. All accommodations must be approved through Disability Support Services located in the Idaho Commons Building, Room 306. Please meet with the staff of the DSS office at the beginning of each semester to set up accommodations for the semester so that you may notify your instructor(s) early in the semester regarding accommodation(s) needed for the course.

- **885-6307**
- [dss@uidaho.edu](mailto:dss@uidaho.edu)
- <http://www.uidaho.edu/studentaffairs/asap/dss>

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**Study Skills and Resources**

Remember, you should spend, on average, at least 3 hours of study time (textbook reading, reviewing class notes, etc.) for each hour you spend in class. There is additional time devoted to researching and writing papers, and to developing projects. Plan accordingly. If you need help with note-taking, strategies for studying, writing, time-management, or tutoring assistance, please do not hesitate to ask me.

**Honesty:**

- Adhere to the highest academic standards of honesty and integrity.
  - No cheating, no plagiarism. Plagiarism is the passing off someone else's work as your own, without citing the source. This includes direct copying, rephrasing, and summarizing, as well as taking someone else's idea and putting it in different words.
  - See the Academic Honesty Student Policy:  
<http://www.uidaho.edu/DOS/judicialaffairs/studentcodeofconduct/articleii>
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**Respect your fellow students**

- Respecting the rights of others to express their views, regardless of what you may think of them.
  - Respecting the rights of others by voicing your own observations in a clear, concise and precise manner, and by not dominating the conversation.
  - And adhering to common courtesies and civilities, such as coming to class on-time, turning off cell phones, listening and not talking while others "have the podium," etcetera.
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**University Classroom Learning Civility Clause:**

In any environment in which people gather to learn, it is essential that all members feel as free and safe as possible in their participation. To this end, it is expected that everyone in this course will be treated with mutual respect and civility, with an understanding that all of us (students, instructors, professors, guests, and teaching assistants) will be respectful and civil to one another in discussion, in action, in teaching, and in learning.

Should you feel our classroom interactions do not reflect an environment of civility and respect, you are encouraged to meet with your instructor during office hours to discuss your concern. Additional resources for expression of concern or requesting support include the Dean of Students office and staff (5-6757), the UI Counseling & Testing Center's confidential services (5-6716), or the UI Office of Human Rights, Access, & Inclusion (5-4285)

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