COMPARATIVE VERTEBRATE ANATOMY (BIOL 3443/3043)
FALL 2021

Instructor: DR. MATTHEW KWiatkowski  (it’s easier than it looks: kwee-at-kow-skee)
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Phone:  (936) 468-5986 (Sorry, but return calls will not be made to long distance numbers).
Office:  Miller Science 241
Office Hours: MW 9:30 – 10:30 am, T 1:30 – 3:30 pm, R 9:15 – 10:15 a.m or by appointment. Office hours may
get cancelled occasionally when unforeseen conflicts arise. Be assured Dr. Kwiatkowski will find a
time to meet with you.

*Lecture: TR 11:00 a.m. – 12:15 p.m., Miller Science 225
*Laboratory: MW 1:00 – 3:50 p.m., Miller Science 215

*BIOL 3443/3043 are planned to be face-to-face format for Fall 2021. Given the challenges posed by
COVID-19, the class format may change at any time to either a mixed face-to-face/online format
or entirely online format. These adjustments may affect how final grades are calculated (see
below).

COVID, Masks, and Vaccinations
Per Governor Abbot’s orders, masks will not be required in lecture or lab, but students can feel free to wear them
if desired. Students are highly encouraged to get vaccinated. You can find more information at
https://www.sfasu.edu/covid19.

Course Description: BIO 3443 is an anatomical study of the vertebrates, with emphasis on comparisons of organ
systems, vertebrate relationships, origins, and adaptations. BIO 3043 examines representative forms while
emphasizing both shared and derived characters.

Course Objectives:
• To familiarize students with the diversity and evolutionary relationships within and among major
  vertebrate taxa.
• To familiarize students with the differences and similarities in vertebrate organ systems among vertebrate
taxa.
• To familiarize students with the form and function of vertebrate morphological adaptations.

Student Learning Outcomes (Course Competencies):
1. Student performance will be assessed with lecture exams during the semester, a cumulative final exam,
   lecture and lab quizzes, and laboratory practicals
2. Students should be familiar with the form and function of vertebrate organ systems
3. Students should understand how homologous traits vary among vertebrate taxa
4. Students should be familiar with how morphological traits differ among vertebrate taxa and how these
differences affect the function of traits.
5. Students should be familiar with differences among taxa in organ systems that include, but are not limited
to: skeletal, muscular, nervous cardiovascular, respiratory, excretory, and reproductive

Program Learning Outcomes:
• PLO 1- Knowledge. Demonstrate a good knowledge base in biological concepts and be able to integrate
knowledge with critical thinking skills to become problem solvers. Knowledge base will include: levels of
complexity (molecular/cellular through population/communities/ecosystems), biological principles and
processes.
• The first PLO is achieved with each SLO listed above.
• PLO 2 – Communication Skills. Clearly communicate scientific information. Provide clear structure and transitions; demonstrate scientific tone, language, and form.
  • PLO 2 is addressed with SLO 1.

• PLO 3- Scientific Thinking. Students shall be able to think scientifically; this includes critical thinking/reasoning and explaining biological principles as well as analyzing and interpreting quantitative data sets. There are two main components to this PLO:
  a. Given qualitative observations or defined criteria in a biological system, students shall exhibit the ability to draw and clearly explain conclusions in context;
  b. Beginning with a quantitative data set, students shall be able to analyze and interpret the data and formulate a conclusion(s) supported by the analysis.
  • PLO 3 is achieved with SLO 1, 3, 4, and 5 listed above.

Prerequisite: “C” or better in BIO 133, BIOL 2371/2071, or equivalent.

Required Course Materials:


Attendance: Attendance at all lectures is essential to performing well in this course. Even though lectures will be posted to D2L, details that are discussed in class may not appear in the PowerPoint slides. It is the student’s responsibility to obtain information from missed lectures. Only one make-up exam is allowed. Pop quizzes cannot be made up no matter what the reason for the absence.

Withdrawal Policy: It is the student’s responsibility to withdraw from the course if necessary. The deadline to withdraw from a course is 29 November 2021. More information about add/drop policies can be found at https://www.sfasu.edu/policies/course-add-drop-6.10.pdf.

Assignments and Grading: Final grades will be based on student performance on exams and will be assigned according to the following scale:

100 – 90%: A (Exceptional)
89.9 – 80%: B (Above Average)
79.9 – 70%: C (Average)
69.9 – 60%: D (Below Average)
< 59.9%: F (Failing)

The following weights will be used to calculate an overall grade:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight (pts)</th>
</tr>
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<tbody>
<tr>
<td>Lecture Exams (3 @ 100 points each)</td>
<td>300 pts</td>
</tr>
<tr>
<td>Lecture Exam 4 (with cumulative section)</td>
<td>150 pts*</td>
</tr>
<tr>
<td>Lecture Quizzes, Lab Quizzes/Exercises, Lab Participation</td>
<td>100 pts*</td>
</tr>
<tr>
<td>Laboratory Exams (3 @ 100 points each)</td>
<td>300 pts</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>850 pts</strong></td>
</tr>
</tbody>
</table>

*NOTE: Points for this may change slightly depending on material (lecture exam 4), time constraints (lecture quizzes), or adjustments that have to be made to accommodate COVID-19 changes to the course format.

Lecture Exams: Lecture exams will include a variety of question types, which may include multiple choice, fill-in-the-blank, and short answer. A make-up exam will only be given in cases of excused absences (medical or personal emergency) with adequate documentation. Only **ONE** make-up exam is allowed. The optional
cumulative final exam will act as the make-up exam and will be given on Tuesday, 7 December 2021, 10:30 a.m. – 12:30 p.m., the same day as the regular 4th exam. If you are late to an exam, you will be allowed to take the exam as long as no one has turned it in yet. However, the class tardiness policy will still apply (see below), and you will have no extra time to finish the exam. If you are late to an exam and someone has already turned in the exam, you will not be allowed to take the exam.

Optional Cumulative Final Exam: An optional cumulative final exam can be used to replace a student’s lowest regular exam score if they decide to take it. It will be a cumulative exam where students will be expected to synthesize material presented throughout the semester. Realize this is NOT the same as the 4th exam, which will also have a cumulative section and is a required grade. If a student missed a regular exam, the optional cumulative final exam will act as the make-up exam.

Lecture Quizzes: Pop quizzes will be given during lecture throughout the semester (there will likely be 5 quizzes). These are pop quizzes so students must attend lecture to ensure that they are present to take the quizzes. Absolutely no make up lecture quizzes will be given. If the quiz happens to be a take home quiz, you must be present the day it is passed out. If you miss a quiz, you can complete an optional article review to replace the quiz (see Dr. Kwiatkowski). Only one quiz can be made up by doing an article review. Article reviews must be made up within 2 weeks of the original quiz date.

Laboratory Exams: Lab exams will be in practical form. Absolutely no make up lab exams will be given. Students will be responsible for any material covered in lab.

Laboratory Quizzes/Exercises/Participation: Quizzes and/or lab exercises will be assigned randomly throughout the semester. Although these are meant to be relatively straight forward, no lab quizzes/exercises can be made up if a student is absent from a lab. Students will be graded on how well they participate in lab. This will be based primarily on how much care and effort is put into the dissections.

Course Evaluations: A course evaluation during dead week is considered a mandatory part of course participation. If you do not participate in the evaluation, one percentage point will be deducted from your lecture grade.

Feeling Overwhelmed. SFASU values student mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support student mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
- SFASU Counseling Services
- www.sfasu.edu/counselingservices
- 3rd Floor Rusk Building
- 936-468-2401

SFASU Human Services Counseling Clinic
- www.sfasu.edu/humanservices/139.asp
- Human Services Room 202
- 936-468-1041

Crisis Resources:
- Burke 24-hour crisis line 1(800) 392-8343
- Suicide Prevention Lifeline 1(800) 273-TALK (8255)
- Crisis Text Line: Text HELLO to 741-741

Class Disruptions: Class disruptions will not be tolerated because they detract from other students’ learning. As adults, students should be able to sit through class without disturbing others. It is recommended that students regard lecture as practice for future professional meetings; they may be fun, interesting, or horribly boring. Regardless, the student has to get through lectures acting like an adult.
Dr. Kwiatkowski does NOT necessarily give you a warning or make an announcement that you are disrupting class. Instead, points will simply be deducted in the grade book. Students are free to inquire at any time whether they have had points deducted during office hours.

Tardiness: Tardiness to lecture will not be tolerated; it disrupts the lesson and the concentration of fellow students. Reasonable accommodations will be made in cases of emergency situations if documentation is provided. It is the student’s responsibility to provide the instructor with documentation of emergencies. (10 points deducted each time)

Sleeping: Sleeping during class can be distracting to other students and the instructor. If a student is so tired that they cannot stay awake for a lecture, as boring as it may be, the student should not be in class. (10 points deducted each time)

Cell Phones: Cell phones must be turned off during lecture. If a cell phone goes off, the student may be asked to leave lecture for that day. In cases of family health (pregnant spouse, hospitalized family member, etc.), the student must inform the instructor of the situation BEFORE class begins. In these cases, the cell phone ringer must remain off (i.e., phone set to vibrate). (10 points deducted each time)

Texting: Given that cell phones should be turned off during lecture (see above), there should be no texting in class. Texting may distract other students and the instructor. (10 points deducted each time).

Leaving Class: Leaving class is disruptive to other students who are trying to pay attention. Leaving the class for any reason will count against you. Hence, be sure to use the restroom before coming to class (a 5 minute break is given during lecture during the long summer lectures). If a student knows they will need to leave class early, notify the instructor well ahead of time. Points will not be deducted if the student has a legitimate excuse for leaving early. (20 points deducted each time)

Talking/Disruptive Behaviors: Dr. Kwiatkowski highly encourages students to ask questions or make relevant comments during a lecture. However, talking to a neighbor or other disruptive behaviors will not be tolerated because, again, it disrupts the learning environment of other students. (25 points deducted each time).

Laptop computers: Laptop computers are not allowed in lecture. In the past, too many students have used them for surfing the internet or working on other projects during lecture, which distracts other students. (15 points deducted each time).

Academic Integrity: Cheating will absolutely not be tolerated. Cheating on an exam can result in a failing grade for that exam, a failing grade for the course, or even expulsion from the university. Be sure to review the university’s academic integrity policy which can be found at https://www.sfasu.edu/policies/student-academic-dishonesty-4.1.pdf.

Below is SFA’s statement regarding academic integrity.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:
• using or attempting to use unauthorized materials on any class assignment or exam;
• falsifying or inventing of any information, including citations, on an assignment;
• helping or attempting to help other student(s) in an act of cheating or plagiarism.

Plagiarism is presenting the words or ideas of another person as if they were one’s own. Examples of plagiarism include, but are not limited to:
• submitting an assignment as one’s own work when it is at least partly the work of another person;
• submitting a work that has been purchased or otherwise obtained from the Internet or another source;
• incorporating the words or ideas of an author into one’s paper or presentation without giving
• the author credit.

Penalties for Academic Dishonesty
Penalties may include, but are not limited to, reprimand, no credit for the assignment or exam, resubmission of the work, make-up exam, failure of the course, or expulsion from the university.

Students with Disabilities. To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004/468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.
Lab Schedule: This schedule is tentative. Some topics may require more or less time to cover than what is scheduled below.

*NOTE: Practicals 2 and 3 may comprise up to 10-15% of cumulative material (i.e., material from previous practicals)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Aug 23, Mon</td>
<td>Lab Rules and Safety</td>
</tr>
<tr>
<td>Aug 24, Wed</td>
<td>Introduction; Amphioxus, Tunicate, &amp; Lamprey</td>
</tr>
<tr>
<td>Aug 30, Mon</td>
<td>Shark External Morphology &amp; Skeletal System</td>
</tr>
<tr>
<td>Sep 1, Wed</td>
<td>Shark Muscular,</td>
</tr>
<tr>
<td>Sep 6, Mon</td>
<td>Shark Muscular cont., Digestive, &amp; Respiratory</td>
</tr>
<tr>
<td>Sep 8, Wed</td>
<td>Shark Urogenital &amp; Circulatory</td>
</tr>
<tr>
<td>Sep 13, Mon</td>
<td>Shark Circulatory cont.</td>
</tr>
<tr>
<td>Sep 15, Wed</td>
<td>Shark Sense Organs &amp; Nervous System</td>
</tr>
<tr>
<td>Sep 20, Mon</td>
<td>Practical 1</td>
</tr>
<tr>
<td>Sep 22, Wed</td>
<td>Necturus (or Bullfrog) Skeletal, Bowfin skull, Anuran skeleton, Alligator skull</td>
</tr>
<tr>
<td>Sep 27, Mon</td>
<td>Necturus (or Bullfrog) Ext Morph &amp; Muscular</td>
</tr>
<tr>
<td>Sep 29, Wed</td>
<td>Necturus (or Bullfrog) Internal Anatomy &amp; Circulatory</td>
</tr>
<tr>
<td>Oct 4, Mon</td>
<td>Necturus (or Bullfrog) Circulatory &amp; Cat Skeletal</td>
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<tr>
<td>Oct 6, Wed</td>
<td>Cat Skeletal</td>
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<tr>
<td>Oct 11, Mon</td>
<td>Cat Skeletal</td>
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<tr>
<td>Oct 13, Wed</td>
<td>Cat Skinning</td>
</tr>
<tr>
<td>Oct 18, Mon</td>
<td>Practical 2</td>
</tr>
<tr>
<td>Oct 20, Wed</td>
<td>Cat Muscular</td>
</tr>
<tr>
<td>Oct 25, Mon</td>
<td>Cat Muscular cont.</td>
</tr>
<tr>
<td>Oct 27, Wed</td>
<td>Cat Muscular cont.</td>
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<tr>
<td>Nov 1, Mon</td>
<td>Cat Digestive, Respiratory, &amp; Urogenital</td>
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<tr>
<td>Nov 3, Wed</td>
<td>Cat Circulatory</td>
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<tr>
<td>Nov 8, Mon</td>
<td>Cat Circulatory cont.</td>
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<tr>
<td>Nov 10, Wed</td>
<td>Cat Circulatory cont.</td>
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<tr>
<td>Nov 15, Mon</td>
<td>Cat Nervous</td>
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<tr>
<td>Nov 17, Wed</td>
<td>Practical 3</td>
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<tr>
<td>Nov 22, Mon</td>
<td>Thanksgiving</td>
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<tr>
<td>Nov 24, Wed</td>
<td>Thanksgiving</td>
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