

**BIO 4350K / 6350K – Comparative Vertebrate Anatomy**  
**Course Syllabus and Schedule**  
**Kennesaw State University – Spring 2021**  
**Instructor: Nicholas S. Green, Ph.D.**

## 1. Communication

### 1.1. Contact info

- **E-mail:** [ngreen62@kennesaw.edu](mailto:ngreen62@kennesaw.edu) (best contact method)
- **Phone:** (470) 578-6546
- **Office:** Science Building (SC) 331. We can also meet virtually using Microsoft Teams.
- **Office hours:** Monday 1-3 pm; Wednesday 9-11 am; other times by appointment

### 1.2. Course communication

- The best way to get in touch with me is by KSU e-mail: [ngreen62@kennesaw.edu](mailto:ngreen62@kennesaw.edu).
- Use your KSU e-mail for all course-related communication—not a personal or non-KSU account.
- You can also contact me using Microsoft Teams.
- We will use **D2L** extensively for content delivery and testing.

## 2. Course description

### 2.1. Catalog description—BIOL 4350K (undergraduate)

**Prerequisites:** *BIOL 1108 and 1108L; CHEM 1211 and 1211L*

Students will explore a survey of representative vertebrates and related chordates emphasizing phylogeny and anatomical adaptations. Students will investigate evolutionary trends in the context of large-scale environmental changes that have occurred over geologic time. Using a comparative, systems-based approach, students will explore the relationships between structure and function. In the lab, students will learn to dissect selected vertebrate organisms and study anatomical adaptations among these representative models to recognize the relationships between form and function.

### 2.2. Catalog description—BIOL 6350K (graduate)

**Prerequisites:** *Admission and enrollment in the Master of Science in Integrative Biology program, or permission of the coordinator of the graduate program; BIOL 1108/1108L or equivalent.*

A survey of representative vertebrates and related chordates emphasizing phylogeny and anatomical adaptations. Evolutionary trends are examined in the context of large-scale environmental changes that have occurred over geological time. Lab component will have students dissecting selected vertebrate organisms and experimentally determining the physical forces acting on the evolution of vertebrates.

## 3. Course objectives

- Use knowledge of anatomy to recognize and diagnose various taxa of chordates
- Develop an understanding of "the vertebrate story" and the relationships among chordates
- Recognize patterns in vertebrate evolution, including convergent evolution, historical constraints, and adaptive radiation.
- Describe the challenges and solutions related to invasion of land by vertebrates
- Describe how morphological variation facilitates adaptation to a diverse array of lifestyles
- Dissect, recognize, and identify anatomical structures of major vertebrate organ systems

## 4. Textbooks and other materials

- *Vertebrates: comparative anatomy, function, evolution* by Kenneth Kardong, published by McGraw-Hill. Older editions (6<sup>th</sup> or 7<sup>th</sup>) can be found at reduced cost at online retailers. In the unlikely event of a discrepancy between editions, the most recent edition (8<sup>th</sup>) will be considered authoritative.

## 5. Class meetings

Meeting type	Location	Day(s)	Time
Lecture	D2L Brightspace (online)	TR	9:30 am - 10:45 am
Lab 1	Science Building 247	T	11:00 am - 1:45 pm
Lab 2	Science Building 247	R	11:00 am - 1:45 pm

## 6. Testing and grading

### 6.1. General information

- Course grades are determined by the number of points that **you** earn. Neither course grades nor grades on individual assignments will be curved.
- There is no extra credit available in this course.
- All exams, including lab exams, are cumulative. Later exams will emphasize more recent material but all course material up to that point is considered fair game for an exam.

### 6.2. Grades and assignments

Item	Points	% of total	Date	Day
Mini-exam	20	5%	January 26	T
Lecture exam 1	40	10%	February 9	T
Lecture exam 2	40	10%	March 23	T
Final exam	80	20%	May 6	R
Lab practical exam 1	40	10%	February 23 or 25	T or R
Lab practical exam 2	40	10%	April 27 or 29	T or R
Course project	80	20%	May 6	R
Lab assignments (4)	60	15%	Various	Various
<b>Total:</b>	<b>400</b>	<b>100%</b>		

### 6.3. Letter grade point ranges

Grade	Range (%)	Range (points)
A	≥89.5	≥358
B	79.5 – 89.4	318 – 357
C	69.5 – 79.4	278 – 317
D	59.5 – 69.4	238 – 277
F	≤59.4	≤237

## 6.4. Grading policies

### 6.4.1. Missed exams and assignments

- If you miss a mid-term lecture exam or lab practical exam for an excused reason (see section 7), and you provide me with acceptable written documentation for the absence (if applicable), then your percentage score on the Final Exam will be used to replace the missed exam. Only **one** lecture exam and **one** lab practical exam can be made up this way.
- Assignments must be turned in on time to be eligible for full credit. Late assignments will be accepted but with a score penalty: 20% for up to 24 hours late; 40% for up to 48 hours late, and so on. The late penalty is waived if you miss the deadline for an excused reason (see section 7).
- If you miss an assignment deadline for an excused reason and provide acceptable written documentation for the absence, the assignment will be due at 5:00 PM on the day you return to class (virtually or in person).

### 6.4.2. Exam review

- Keep your graded work. You must have these materials in order to contest an assignment grade.
- The review period for an exam, during which you can request score corrections related to question content, is 7 days from the time that exam grades are posted. After this period, you can view your exam but no further changes will be made.

- Challenges to the content of exam questions must be made during the 7-day review period described above. Any challenges should be accompanied by a written explanation of the issue with the question. The explanation should include appropriate documentation (e.g., a recent textbook or journal article citation). One to three sentences per question is usually enough explanation.
- Score corrections for reasons not related to exam content (e.g., arithmetic error in grading) can be requested at any time up until 5:00 PM on Thursday May 6, 2021.

### 7. Attendance and excused absences

- Attendance is not required but will be taken at each class meeting. This means that “excused absences” apply to assignment deadlines rather than routine class meetings.
- Excused absences as referred to in this syllabus include the following reasons:
  - Quarantine resulting from COVID-19 exposure
  - Serious illness of self or a close loved one
  - Death of a close loved one
  - Travel or other commitment related to official KSU business (including another course)
  - Interviews for graduate or professional programs
  - Military service
  - Jury duty
  - Closure of the university
- Appropriate documentation of an excused absence must be provided upon request.
- If you can foresee an absence, please contact me as soon as possible ahead of time so we can make arrangements for assignments, exams, or activities you might miss.

### 8. Conduct policies

- Students must abide by the KSU Student Code of Conduct at all times ([https://scai.kennesaw.edu/KSU\\_Codes\\_of\\_Conduct\\_2019-2020.pdf](https://scai.kennesaw.edu/KSU_Codes_of_Conduct_2019-2020.pdf)).
- **Disruptive, disrespectful, inappropriate, or unsafe behavior will not be tolerated.** Upon a student’s first offense they will receive a verbal warning from the instructor. Subsequent occurrences will result in expulsion from the classroom and, depending on severity, referral of the case to appropriate KSU authorities.
- Children may not accompany parents into the classroom without the explicit permission of the instructor. Disruptive children will not be allowed to remain in the classroom.

### 9. Lab policies

- Please review the laboratory safety guidelines posted here, particularly pages 11-13: <http://ksuweb.kennesaw.edu/~jhendrix/regs/Laboratory%20Handbook%20for%20Faculty.pdf>
- Do not eat or drink anything in the lab. There are no exceptions to this rule.
- Smoking, vaping, or use of any tobacco product is prohibited.
- Wash your hands after leaving the lab.
- You must wear appropriate lab attire: shirt (no bare midriffs or shoulders), long pants or dress/skirt, and closed-toed shoes. Leg coverings (pants or dress/skirt) must reach your shoes (e.g., capri-length pants are not acceptable). Sandals, open-toed shoes, open-heeled shoes, and shorts are not permitted in the lab. ***If you are not dressed appropriately for lab then you will be required to leave.***
- Follow all instructions both written and verbal.
- Know the locations of emergency exits, fire extinguishers, eye wash stations, and the first aid kit.

### 10. COVID-19 related course policies

- **Check the KSU Coronavirus page for up to date information on the university’s policies and procedures for responding to the COVID-19 pandemic:** <https://coronavirus.kennesaw.edu/>

- Effective July 15, 2020, University System of Georgia (USG) institutions will require all faculty, staff, students, and visitors to wear an appropriate face covering while inside campus facilities/buildings where six feet social distancing may not always be possible. Face covering use will be in addition to and is not a substitute for social distancing.
- Students must maintain social distancing (6 feet) whenever possible.
- Refusal to wear a face covering and/or maintain social distancing will result in you being required to leave the classroom.
- Shared equipment (e.g., microscopes) should be disinfected between students.

### 11. Accommodations

Any student with a documented disability or medical condition needing academic accommodations of class-related activities or schedules must contact the instructor immediately. Written verification from the KSU disabled Student Support Services is required. No requirements exist that accommodations be made prior to completion of this approved University documentation. All discussions will remain confidential.

### 12. Academic integrity

Every KSU student is responsible for upholding the provisions of the Student code of Conduct, as published in the Undergraduate and Graduate catalogs. Section II of the Student Code of Conduct addresses the University's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to University materials, misrepresentation/falsification of University records or academic malicious/intentional misuses of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the University Judiciary Program, which includes either an "Informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement.

The Kennesaw State University College of Science and Mathematics encourages our students to use technology to help them learn. However, it is important for students to understand the difference between appropriate collaboration and inappropriate uses of technology for plagiarism and cheating. Students who participate in group texts or other group conversations through mobile apps such as GroupMe or WhatsApp are subject to consequences if any member of that group is found to plagiarize material or facilitate cheating. By virtue of membership in the conversation or participation in the group, any student who is part of a group conversation where cheating or plagiarism occurs may receive the same penalty as students who actively cheat within the group. Additionally, any students who are found to purchase, sell, or otherwise distribute or collect existing course material are also subject to academic dishonesty hearings. This includes the use of Quizlet, Hero, and student organization test files.

### 13. Course modality

- This is a **Hybrid – 66% Online** course.
- Lecture sections meet synchronously in D2L Collaborate Ultra via **streaming video**. Students will need stable internet capable of handling streaming video demands, a computer with a microphone (internal or external), and optionally a webcam for in-class discussions.
- Lab sections meet in person. Students will rotate between in person lab and virtual lab experiences each week according to a schedule established by the instructor (see section 17).
- All lecture exams, including the final exam, will be delivered using D2L and the Respondus Lockdown browser.
- Lab practical exams will be delivered in person according to the lab rotation (see section 17).

### 14. Useful KSU sites

- COVID-19 information: <https://coronavirus.kennesaw.edu/>

- Academic calendar: <https://registrar.kennesaw.edu/academic-calendars/spring-2021-academic-calendar.php>
- Final exam policies: <https://registrar.kennesaw.edu/academic-calendars/spring-21-final-exam-sch.php>

### 15. Assignment descriptions

- **Mini-exam:** This is a low-stakes, “practice” exam designed to give you an early sense of what later, larger exams will be like.
- **Lecture exams (including final exam):** These are exams designed to evaluate your knowledge and understanding of course material. Some question will test simple recall while others will require synthesis and application of information. Lecture exams consist of a mix of multiple choice, matching, true-false, and short answer/essay questions.
- **Lab practical exams:** Practical exams test your ability to put theory into practice through identification of organisms, anatomical structures, and interpretation of experimental data.
- **Lab assignments:** Four of the lab activities will have assignments that you turn in for credit. Details and due dates for each assignment will be provided when they are assigned.
- **Course project:** Working with your lab group, you will assemble a “lab manual” using your experiences in lab. A comprehensive assignment guide will be provided early in the semester.

### 16. Schedule flexibility

- If the University officially cancels classes on a day or time when we are scheduled to meet, everything will shift back one class meeting (including exams). If that happens, an updated schedule will be posted on D2L.
- The schedule in this syllabus assumes that the university does not go back into COVID-19 lockdown. If it does, then the schedule will be adapted.

### 17. Lab rotation

- Part of the KSU response to COVID-19 is mandating social distancing in all labs and classrooms. As a result, only half of this course’s students can be in our teaching lab at any given time.
- At the beginning of the semester you will be assigned to lab group A or B. Groups will be assigned randomly, but you can trade with someone in the other group if you both agree.
- Each week, either group A or B will attend lab in person while the other group completes a take-home lab activity. Both groups will have experienced all of the same activities by the end of the semester.
- Both groups will take the lab practical exams on the same day but at different times.

### 18. Open lab

- In order to facilitate your success in this course, the teaching lab (SC 247) will be available during off-hours so that you can complete dissections, examine specimens, or study with other students (while maintaining social distancing).
- **Open access to the teaching lab is a privilege and good stewardship is expected.** This means that each student is expected to maintain the cleanliness, organization, and security of the lab. Issues with lab condition or theft will result in access privileges being revoked.
- Cases of theft or destruction (negligent or intentional) of KSU property will be referred to the KSU police department.

### 19. Schedule of topics (tentative)

Week	Date	Day	Lecture topic(s) (Kardong 8 <sup>th</sup> ed. chapter)	Lab topics (Note Lab Group A or B!)
1	Jan 12	T	Syllabus; Intro/History (1)	A: Protochordates and Vertebrates ( <i>f2f</i> )
	Jan 14	R	Intro/History (1)	B: Vertebrate phylogeny ( <i>virtual</i> )
2	Jan 19	T	Protochordates (2)	A: Vertebrate phylogeny ( <i>virtual</i> )
	Jan 21	R	The Vertebrate Story (3)	B: Protochordates and Vertebrates ( <i>f2f</i> )
3	Jan 26	T	<b>Mini-exam</b>	A: Integument ( <i>f2f</i> )
	Jan 28	R	Integument (6)	B: Biological design ( <i>virtual</i> )
4	Feb 2	T	Integument (6)	A: Biological design ( <i>virtual</i> )
	Feb 4	R	Biological design (4)	B: Integument ( <i>f2f</i> )
5	Feb 9	T	<b>Lecture Exam 1</b>	A: Skulls ( <i>f2f</i> )
	Feb 11	R	Cranial skeleton (7)	B: Skull morphology ( <i>virtual</i> )
6	Feb 16	T	Cranial skeleton (7)	A: Skull morphology ( <i>virtual</i> )
	Feb 18	R	Axial skeleton (8)	B: Skulls ( <i>f2f</i> )
7	Feb 23	T	Axial skeleton (8)	<b>Lab Practical Exam 1</b>
	Feb 25	R	Appendicular skeleton (9)	
8	Mar 2	T	Appendicular skeleton (9)	A: Postcranial skeleton ( <i>f2f</i> )
	Mar 4	R	Appendicular skeleton (9)	B: Vertebrate Movement ( <i>virtual</i> )
9	Mar 9	T	<b>Spring Break</b>	
	Mar 11	R		
10	Mar 16	T	Muscles (10)	A: Vertebrate Movement ( <i>virtual</i> )
	Mar 18	R	Muscles (10)	B: Postcranial skeleton ( <i>f2f</i> )
11	Mar 23	T	<b>Lecture Exam 2</b>	A: Muscles and circulation ( <i>f2f</i> )
	Mar 25	R	Respiration (11)	B: TBD ( <i>virtual</i> )
12	Mar 30	T	Respiration, Circulation (11,12)	A: TBD ( <i>virtual</i> )
	Apr 1	R	Circulation (12)	B: Muscles and Circulation ( <i>f2f</i> )
13	Apr 6	T	Digestive systems (13)	A: Internal anatomy ( <i>f2f</i> )
	Apr 8	R	Digestive systems (13)	B: Nervous and sensory ( <i>virtual</i> )
14	Apr 13	T	Nervous, sensory (16, 17)	A: Nervous and sensory ( <i>virtual</i> )
	Apr 15	R	Nervous, sensory (16, 17)	B: Internal anatomy ( <i>f2f</i> )
15	Apr 20	T	Urogenital systems (14)	Open Lab
	Apr 22	R	Endocrine systems (15)	
16	Apr 27	T	Conclusions (18)	<b>Lab Practical Exam 2</b>
	Apr 29	R	Conclusions (18)	
17	May 4	T	No Class (Dead Week)	
	May 6	R	<b>Final Exam: 10:30 AM – 12:30 PM; Course Project due 11:59 PM</b>	

Lab rotation: “*f2f*” is in-person, in lab; “*virtual*” denotes lab activities done outside of lab. Remember which lab group (A or B) you are assigned to!