Biol 323 **Comparative Anatomy of the Vertebrates** **Spring 2019**

Instructor: Jaap Hillenius RITA 213 Tel: 953-2297 email: hilleniusw@cofc.edu

Office Hours: TR 11:15 - 12:15

Texts: **Kardong**, 2019. Vertebrates: Comparative Anatomy, Function, Evolution; 8th ed (edns 5-7 also acceptable)
Walker & Homberger, 2004. Vertebrate Dissection, 9th ed

Student Learning Objectives

Biol 323 is a comprehensive course on vertebrate evolutionary morphology. In this course, students will:
- demonstrate an understanding of the functional anatomy of the major groups of vertebrates: why are these animals shaped the way they are, and what is the function of their parts?
- demonstrate an ability to integrate knowledge of anatomical form with understanding of physiological function and developmental processes;
- demonstrate an understanding of the evolutionary history of the vertebrates and of their organ systems: how have these animals changed over time, and as a result of what possible selective pressures?
- demonstrate an ability to identify anatomical structures in osteological and preserved specimens: you will dissect a primitive (shark) and a derived (cat) vertebrate.
- demonstrate an ability to make a reasoned reconstruction of 600 million years of vertebrate natural history.

Course Outline

Date	Lecture Topic	Reading (Kardong)	Lab Topic	Dissection Guide (Walker)
01/08	Origin & Phylogeny	1-211		
10	Axial Skeleton	294-324	Vertebrate Diversity	
15	Appendicular Skeleton	325-371		
17	"		Vertebrate Column	80-91
22	Skull	241-293		
24	"		**Quiz 1** Limb Girdles	92-114
29	Skull	"		
31	"		**Quiz 2** Skull (Anamniotes)	38-57
02/05	Musculature	372-412		
07	"		**Quiz 3** Skull (Amniotes)	58-79
12	Integument	212-240		
14	"		**Lab Midterm**	
19	Integument	"		
21	**Lecture Midterm**		Muscles	115-136, 144-154
26	Mouth & Pharynx	504-521		
28	"		Muscles	162-169, 173-183

03/05	Respiratory System	413-451		
07	"		Viscera	249-265, 273-286
12	Digestive System	521-545		
14	"		Viscera (cont.)	
19	**Spring Break**			
21	"		**(No Labs)**	
26	Circulatory System	452-503		
28	"		Circulatory System	290-308, 318-345
04/02	Circulatory System	"		
04	"		Circulatory System (cont.)	
09	Urogenital System	545-592		
11	"		Urogenital System	346-358, 361-379
16	Nervous System	626-671		
18	"		**Lab Final**	

Final Lecture Exam:
Thursday, 25 April, 8:00 – 11:00

Point Distribution:

Lab Quizzes	3 @ 10
Lab Midterm	50
Lecture Midterm	100
Lab Final	150
Lecture Final	200
total:	530

Grading Scale:

A	> 93%	B^-	80 – 83	D^+	67 - 70
A^-	90 – 93	C^+	77 – 80	D	63 - 67
B^+	87 – 90	C	73 – 77	D^-	60 - 63
B	83 – 87	C^-	70 – 73	F	< 60%

Dissecting Instruments & Gloves:

After the lab midterm, each student should have a set of dissecting instruments. Instruments from previous classes may be used, or new instruments may be purchased from commercial sources, such as the CofC or MUSC bookstores. Minimum equipment should include:

- a scalpel (with plenty of spare blades. Use #10 or #22 blades, depending on scalpel handle style)
- one or more blunt probes
- one sharp probe ("needle probe")
- medium forceps (*NOT* tooth-type tissue forceps or fine point "needle" forceps)

Students are expected to provide their own dissecting gloves (nitrile is recommended; latex gloves are not permitted!)

!! No Latex gloves !!

CougarAlert

The College of Charleston has an agreement with the Blackboard Connect Inc. [formerly The NTI Group, Inc. (NTI)] to use its Connect-ED communication software to provide an emergency notification system that is capable of reaching students, faculty, staff and parents within minutes of a campus crisis. This system is called **CougarAlert**.

Information for Students

The CougarAlert emergency notification system will contact up to six phone numbers for the student. Students may include family member numbers in their address and phone number information.

All students should log onto MyCharleston to review their address and telephone information and update as needed.

To access the address and telephone information, follow these steps:

1.Log on to MyCharleston
2.Click on the Academic Services tab
3.Click on the Banner Self-Service link in the third column
4.Click on the Personal Information link
5.Click on the Update Address and Phones and Cougar Alert link

The CougarAlert system will pull the phone number in the following order – cell phone with text messaging option, cell phone without text messaging option, residence hall room phone number, mailing phone number, home phone number, parent phone number and parent 2 phone number.
If you do not have one of these numbers in your student record, the system will select the next number on the list. To avoid issues related to timely communication of emergency messages to the proper places, every student must update his or her contact information in MyCharleston with current accurate information.

CougarAlert Display Information

When you receive an emergency message from the College of Charleston's CougarAlert System, the return e-mail address will be displayed as cougaralert@cofc.edu, and Caller ID will be displayed as 843.725.7246 (this is the College's Emergency Information Hotline).

Testing and Implementation

Testing will be conducted each semester to verify all systems are operating properly. The campus community will be notified via e-mail and web page postings when testing of the system will be conducted.

Blackboard Connect Software

Blackboard Connect is an emergency communication software that sends notification before, during and after an emergency. With this new system, the College will be able to communicate in many modes, including voice messages to home, work and cell phones; text messages to cell phones, PDAs and other devices; written messages to e-mail accounts; and messages to teletypewriters and telecommunication devices (TTY/TDD) for the hearing impaired. In combination with our existing communications methods and emergency response plans, this new notification system will significantly enhance the College of Charleston's ability to maintain a learning environment in which students are safe, secure and comfortable.

In an emergency, communications to the campus will be issued in the following priority order:

1.Message to the Blackboard Connect Emergency Notification System (phone and e-mail).
2.Recorded message to the College's Emergency Information Hotline, 843.725.7246.
3.Update to the Website.
4.Printed update sheets to be distributed and posted on campus (if necessary).

The CougarAlert system will only be used to notify you in the event of a campus crisis or emergency.

COLLEGE of CHARLESTON

SAFETY POLICY AND PROCEDURES

for Biol 323 Comparative Vertebrate Anatomy

1. You are responsible for knowing the biological, chemical, electrical, ergonomic, mechanical, and physical hazards associated with the equipment and materials that are being utilized in the laboratory. Listen to all instructions and ask questions about that which you do not understand.

2. Know the location of safety equipment: telephones, emergency shower, eyewash, fire extinguisher, fire alarm pull.

3. Know the appropriate emergency response procedures. If there is an injury or emergency, call 953-5611.

4. Do not work alone in the laboratory if you are working with hazardous materials or equipment.

5. Use hazardous chemicals, equipment, and biological agents only as directed and for their intended purpose.

6. Do not engage in horseplay, pranks or other acts of mischief while in lab.

7. Drinking, eating, and application of cosmetics is forbidden in the comparative anatomy lab. Smoking is forbidden in all College buildings.

8. During dissections, appropriate clothing shall be worn. The dress code for dissection laboratory work is as follows:

a) No exposed skin on arms, legs or torso; lab coats are recommended. Safety glasses or goggles are also recommended.
b) Gloves are required. Nitrile is recommended; latex is not permitted.
c) Closed-toe shoes are required. The heel and top of foot must be covered. High heeled shoes, sandals, and perforated shoes are not permitted.
d) Confine long hair and loose clothing.
e) Remove gloves and lab coat when exiting the laboratory.
f) Wash your hands, even if gloves were used, before leaving.

9. Never remove chemicals, biological samples, or laboratory equipment from a lab without proper authorization.

10. Properly and safely dispose of all waste materials. Three distinct categories of waste are generated during dissections, and designated containers are used for each:

a) paper, gloves, and other regular trash;
b) dissection parts, preserved materials;
c) sharps: used scalpel blades, broken glassware. Treat sharps and broken glass containers carefully.

11. Use good personal hygiene. Keep your hands and face clean. Wash hands thoroughly with soap and water after handling dissection or preserved materials, even if gloves were used.

12. Keep your work area clean and uncluttered. Before leaving the laboratory, you are responsible for making sure your lab area is clean and organized. Wash and stack your dissection tray, and clean & dry your table.

13. Always have your College of Charleston identification and insurance information with you when working in a laboratory. MedicAlert identification must be worn if you have any potential life-threatening chemical sensitivities or medical conditions.

14. Report any accident or injury, however minor, immediately to your instructor or teaching assistant. An accident report form must be completed and forwarded to the department chair, dean, and to the Director of Environmental Health and Safety.

If you have questions/concerns about safety in the lab please first consult your instructor. If these are not answered, please see the department chair. Finally, you may consult the director of Environmental Health and Safety, Randy Beaver at 3-6802 or beaverr@cofc.edu