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Texts: **Kardong**, 2015. Vertebrates: Comparative Anatomy, Function, Evolution; 7<sup>th</sup> ed  
**Walker & Homberger**, 2004. Vertebrate Dissection, 9<sup>th</sup> ed

### Course Learning Objectives

Biol 323 is a comprehensive course on vertebrate evolutionary morphology. In this course, you will:

- learn 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?
- integrate knowledge of anatomical form with understanding of physiological function and developmental processes;
- learn 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?
- gain first-hand experience with anatomical structure: you will dissect a primitive (shark) and a derived (cat) vertebrate.

At the end of the course, you will be able 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)
08/25	Origin & Phylogeny	1-127:161-211		
27	Axial Skeleton	294-324	Vertebrate Diversity	
09/01	Appendicular Skeleton	325-371		
03	“		Vertebral Column	80-91
08	Skull	241-293		
10	“		<b>Quiz 1</b> Limb Girdles	92-114
15	Skull	“		
17	“		<b>Quiz 2</b> Skull (Anamniotes)	38-57
22	Musculature	372-412		
24	“		<b>Quiz 3</b> Skull (Amniotes)	58-79
29	Integument	212-240		
10/01	“		<b>Lab Midterm</b>	
06	Integument	“		
08	<b>Lecture Midterm</b>		Muscles	115-136, 144-154
13	Mouth & Pharynx	503-520		
15	“		Muscles	162-169, 173-183

20	<b>Fall Break</b>			
22	Respiratory System	413-450	Viscera	249-265, 273-286
27	Respiratory System			
29	“		Viscera	
11/03	Digestive System	520-544		
05	“		Circulatory System	290-308, 318-345
10	Circulatory System	451-502		
12	“		Circulatory System	
17	Urogenital System	545-592		
19	“		Urogenital System	346-358, 361-379
24	Urogenital System	“		
26	<b>Thanksgiving Holiday</b>		<b>No Labs</b>	
12/01	“			
03	Nervous System	625-670	<b>Lab Final</b>	

**Final Lecture Exam:**  
Saturday, 12 December, 8:00 – 11:00 am

<b>Point Distribution:</b>		
Lab Quizzes		3 @ 10
Lab Midterm		50
Lecture Midterm		100
Lab Final		150
Lecture Final		<u>200</u>
total:		530
<b>Grading Scale:</b>		
A > 93%	B <sup>-</sup> 80 – 83	D <sup>+</sup> 67 - 70
A <sup>-</sup> 90 – 93	C <sup>+</sup> 77 – 80	D 63 - 67
B <sup>+</sup> 87 – 90	C 73 – 77	D <sup>-</sup> 60 - 63
B 83 – 87	C <sup>-</sup> 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 >>**