

ALS 2304: Animal Physiology and Anatomy, 2009 (CRN #90281, 90282, 902783, 90283, 90285)

Instructor: D. M. Denbow (3250 Litton-Reaves Hall; 231-6843; DenbowDM@vt.edu)

Graduate Teaching Assistants: Chasity Cox (LR 214; 231-7616; ccox1@vt.edu); Marissa Smith (LR 2670; 231-1933; mlsmith7@vt.edu); Pingwen Xu (LR 2699; 231-1933; pingwenx@vt.edu)

Class Meetings: Lecture (LR 1870): Tuesday and Thursday 11:00 a.m. to 12:15 p.m.
Labs (LR 280): Tuesday Chasity Cox 2:00 to 3:50 p.m.
Wednesday Chasity Cox 2:30 to 4:20 p.m.
Wednesday Pingwen Xu 4:30 to 6:30 p.m.
Thursday Marissa Smith 1:00 to 2:50 p.m.
Thursday Marissa Smith 3:30 to 5:20 p.m.

MUST BE ENROLLED IN LECTURE AND ONE OF THE LAB SECTIONS

Required Textbook: Anatomy & Physiology of Domestic Animals, 2008 by R. M. Akers and D. M. Denbow.

Dissecting Kit: A moderately priced kit from one of the bookstores will be sufficient.

Insurance: You are expected to have medical insurance. You will be responsible for any medical expenses that may occur as a result of injuries in the laboratory.

Web Page: <http://www.apsc.vt.edu/Faculty/denbow/als2304/als2304.htm>

Purpose and Goals: The purpose of taking this course is to learn the basic concepts and principles of physiology and anatomy. These concepts and principles are essential for understanding how animals survive and function. The concepts, principles, and vocabulary learned in this course are essential for success in reproductive physiology, nutrition, 4000-level production courses, and a variety of science and agriculture elective courses. Thus, an important goal for this course is to gain the necessary knowledge for success at Virginia Tech.

Attendance: Make-up of lecture exams will **NOT** be given without a University Approved excuse. Lab practicals must be taken as scheduled. Make-up lab practicals will not be given.

Scores and Grading: Final grades will be based on the total number of points accumulated during the semester. The point system listed below will be used.

<u>Item</u>	<u>% of Grade</u>
LECTURE EXAMS I	10
LECTURE EXAM II	10
LECTURE EXAM III	10
LECTURE EXAM IV	10
LAB PRACTICAL I	10
LAB PRACTICAL II	10
LAB PRACTICAL III	10
LECTURE QUIZZES	15
LAB QUIZZES	<u>15</u>

Lecture exams: Lecture exams will be given during class period, or the regularly scheduled final exam period. The final exam will not be “cumulative,” but principles that overlap exams and topics will be included (i.e., you will be expected to understand basic physiological concepts and use those concepts to answer questions.).

Lab Practical: Lab practicals will be given at night so that everyone sees the same material. Attendance is mandatory. Make-up practicals will not be given.

Lecture Quizzes: There will be quizzes covering lecture material. **Quizzes will not be announced.** Total points for quizzes will be based on the five (5) best quiz grades. Make-up quizzes will not be given.

Lab Quizzes: There will be a quiz during each laboratory session, except the first one. The ten (10) best quiz grades will be used to calculate your total points. Make-up quizzes will not be given.

THE HONOR CODE WILL BE STRICTLY ENFORCED IN THIS COURSE. ALL EXAMS, ASSIGNMENTS, ETC. MUST BE YOUR OWN WORK. THE HONOR SYSTEM PERTAINS TO ALL ASPECTS OF THIS COURSE.

The Virginia Tech Honor Pledge is: "I have neither given nor received unauthorized assistance on this assignment." You will be asked to sign this statement for all assignments. For details, see the following Web page:.

<http://www.honorsystem.vt.edu/constitution.html>. The honor code can be found at:
<http://courses.cs.vt.edu/~cs3604/support/Policies/HonorCode.html>

Disability Accommodations:

If you need adaptations or accommodations because of a disability (learning disability, attention deficit disorder, psychological, physical, etc.), if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible.

ALS 2304
LECTURE SCHEDULE

Date	Topic	Reading
Aug. 25	Introduction to Anatomy and Physiology	Chapters 1
27	The Cell: The Common Physiological Denominator	Chapters 2
Sept. 1	The Cell: The Common Physiological Denominator	Chapters 2
3	Muscular Tissue	Chapter 7
8	Muscular Tissue	Chapter 7
10	Introduction to the Nervous System	Chapter 8
11	REVIEW FOR EXAM 1: 1870 Litton-Reaves Hall, 4:00 to 5:00 p.m.	
15	Introduction fo the Nervous System	Chapter 8
17	Central Nervous System	
22	Exam 1	Chapter 9
24	Peripheral Nervous System	Chapter 10
29	Autonomic Nervous System	Chapter 10
Oct. 1	Special Senses	Chapter 11
6	Endocrine System	Chapter 12
8	Endocrine System	Chapter 12
8	REVIEW FOR EXAM 2: 1870 Litton-Reaves Hall, 5:30 to 6:30 p.m.	
13	Exam 2	
15	Blood	Chapter 13
20	Cardiovascular System: Heart	Chapter 13
22	Cardiovascular System: Blood Vessels	Chapter 13
27	Lymphatic System	
29	Immunology	Chapter 15
30	REVIEW FOR EXAM 3: 1870 Litton-Reaves Hall, 4:00 to 5:00 p.m.	
Nov 3	Immunity	Chapter 15
5	Exam 3	
10	Respiratory System	Chapter 14
12	Digestion System	Chapter 17
17	Digestive System	Chapter 17
19	Metabolism	Chapter 3
Nov. 21 to Nov. 29, THANKSGIVING BREAK		
Dec 1	Urinary System	Chaptes 16
3	Urinary System	Chapter 16
8	Fluid, Electrolytes and Acid-Base Balance	Chapter 16
Dec. 9, CLASSES END		
17	FINAL EXAM: Monday December 14, LR 1870, 1:05 p.m. – 3:05 p.m.	

LABORATORY SCHEDULE

Read all laboratory exercises before lab each week! If the exercises contain questions that can be answered before lab, please answer them before coming to lab.

Aug. 25-27

Warning!!! During this lab we will dissect a pig and a sheep. Everyone will be expected to participate fully. Please wear appropriate clothing.

1. Language of Anatomy
2. Organ Systems Overview. We will not dissect a rat in this lab, but the vocabulary and pictures will serve as good references for the dissections of the sheep.
3. Sheep Dissections

Sept. 1 – 3

1. Transport Mechanisms in Lab: We will conduct experiments on diffusion of a dye through an agar gel, and diffusion through living membranes.
2. The Microscope.
3. Classification of Tissues. The material will be discussed in a lecture during lab, and microscopes will be available to examine each of the types of tissues.

Sept. 8-10

1. Anatomy of the Musculoskeletal System I. Skeletal Anatomy.
2. Bones

Sept. 15-17

1. Microscopic Anatomy, Organization, and Classification of Skeletal Muscle.
2. Anatomy of the Musculoskeletal System I. Muscular Anatomy.
3. The Mighty Mink.

Sept. 22-24

1. Muscle Physiology: Feelin' froggy.
2. Complete Exercise Two in PhysioEx 4.0

Sept. 27, REVIEW FOR LAB PRACTICAL 1, LR 280, 2:00-5:00 p.m.

Sept. 28, LAB PRACTICAL 1, LR 280 & 290, 6:30 to 8:30 p.m. or 8:30 to 10:30 p.m.

Sept. 29- Oct. 1

1. Histology of the Nervous System
2. Gross Anatomy of the Brain and Cranial Nerves
3. Spinal Cord, Spinal Nerves, and the Autonomic Nervous System
4. **NOTE: A take-home quiz will be distributed in class. You must be present to receive quiz.**

Oct. 6-8

1. Human Reflex Physiology
2. General Sensation
3. Special Senses: Hearing and Vision

Oct. 13-15

1. Blood

Oct. 20-22

1. Cannulation and blood pressure recording.
2. Pharmacological effects on blood pressure

Oct. 25, REVIEW FOR LAB PRACTICAL 2, LR 280, 2:00-5:00 p.m.

Oct. 26, LAB PRACTICAL 2, LR 280 & 290, 6:30 to 8:30 p.m. or 8:30 to 10:30 p.m.

Oct. 27-29

1. Anatomy of the Blood Vessels
2. Human Cardiovascular Physiology – Blood Pressure and Pulse Determinations
3. **NOTE: A take-home quiz will be distributed in class. You must be present to receive quiz.**

Nov. 3-7

1. Sheep red blood cell titers
2. Heterophil/lymphocyte ratio

Nov. 10- 12

1. Anatomy of the Digestive System.

Nov. 17-19

1. Anatomy of the Urinary System
2. Urinalysis

Week of Dec. 1, REVIEW FOR LAB PRACTICAL DURING REGULAR LABORATORY CLASSES, LR 280, 2:00-5:00 p.m.

Dec 3, LAB PRACTICAL 3, LR 280 & 290, 6:30 to 8:30 p.m. or 8:30 to 10:30 p.m.