

## Bergen Community College

<b>Course Title:</b>	Vertebrate Anatomy & Physiology I
<b>Course Number:</b>	BIO-115
<b>Credits:</b>	4
<b>Classroom Hours:</b>	3
<b>Laboratory Hours:</b>	3
<b>Prerequisites:</b>	none

### Course Description:

This course focuses on structure and function of vertebrate organ systems, with primary emphasis on mammals. After a brief overview of vertebrate development and evolutionary history and taxonomy, the major portion of the course reviews each system, across all principle groups. Study of basic cellular biology and of skeletal, muscle, and nervous systems, along with the special sense organs are included. Normal homeostatic mechanisms are emphasized with some reference given to pathological conditions, as well as the interrelationship of organs and organ systems. Dissection is required.

### Course Goals:

- To introduce the student to the concept of taxonomy and relationships between vertebrates
- To familiarize the student with the types of cells and the basic make up and physiology of the cell
- To familiarize the student with basic tissue types of the body
- To introduce the student to the names of tissues and structures that make up the various body systems
- To enable the student to locate and identify the various body tissues and organs
- To teach the student the ways in which organs and body systems function and interact

## **Performance Objectives:**

Upon completion of this course, the student will be able to:

- Discuss vertebrate characteristics, origins and relationships
- Explain the various processes that enable substances to move in and out of cells
- List the structural and functional characteristics of the four primary body tissues and their subtypes
- Define and use all directional terms
- List and explain six classes of bones according to their gross appearance
- Describe osteogenesis and the process of bone growth
- Identify the parts of a long bone
- Identify bones of the axial and appendicular skeleton
- Identify the major projections and depressions of bones
- Identify the bones of the equine limbs
- Describe the process of fracture healing
- State and describe the three structural and three functional classifications of joints
- Identify types of joints and where they are found
- Identify the three types of muscle and state the distinct characteristics of each
- Identify the major muscles of the cat
- Describe the sequence of events from neuromuscular synapse through contraction and relaxation of a single muscle cell
- Describe the relationship between connective tissue and muscle
- Describe the divisions of the nervous system and state how they relate to each other
- Describe the general function of the major parts of the central and peripheral nervous system
- Describe the protective covering on the brain and spinal cord and explain their functions
- Describe the production, pathway and function of cerebrospinal fluid
- List the parts of the brain and state their function
- List and describe the function of the cranial nerves
- Diagram a cross section of the spinal cord, including the functional parts of a spinal nerve
- Describe the components of a three neuron reflex
- Describe the parts of a neuron
- Describe the physiology of neuron transmission
- Diagram the anatomy of the eye and describe the physiology of sight
- Diagram the anatomy of the ear and describe the physiology of hearing
- List the major differences between the sympathetic and parasympathetic branches of the autonomic nervous system and the effect on organ responses to stimulation of each branch

## Course Materials:

Required:

- Colville & Bassert: *Clinical Anatomy & Physiology for Veterinary Technicians*, 2<sup>nd</sup> edition, St. Louis, Missouri, 2008; Mosby-Elsevier
- Colville & Bassert: *Clinical Anatomy & Physiology Laboratory Manual for Veterinary Technicians*, St. Louis, Missouri, 2009; Mosby-Elsevier

Supplemental: Additional handouts and Moodle sites (as indicated by the instructor)

## Teaching Methodologies:

Lecture topics are covered by a series of power point based lectures with accompanying reading assignments, quizzes, and selected classroom discussion assignments. Laboratory is a combination of laboratory practical exercises and demonstrations. Models and comparative anatomy skeletons will be utilized, as well as dissection of cat cadavers, for teaching purposes. Additionally, the viewing of videotapes and computerized web sites will be incorporated into the teaching methods.

## Course Website

This section of BIO-115 is a web-enhanced class. The class has its own website, and each member of the class has an account for the website. The BCC online course management system is known as "Moodle."

To access your course in Moodle open a browser and go to the Portal site <http://my.bergen.edu>. You can find instructions on how to login to the Portal and connect to Moodle via Portal listed on the [Portal Help Site](#) (<http://www.bergen.edu/portalhelp/Pages/StudentHelp.aspx>).

- 1) Your user name is the same as your WebAdvisor username.
- 2) For your initial password, users logging into <http://my.bergen.edu> (the Portal) for the first time will use the first 2 letters of their last name with the first letter capitalized, plus the last 6 digits of your Bergen Community College Identification number. For example,  
Name = Pat O'Shaunessy    BCC ID = 354210    Initial Password = Os354210  
Name = Nancy McDouglas    BCC ID = 0054532  
Initial Password: Mc054532

Please note that after logging in, you will be forced to change your password. Your password must be at least 8 characters long. It must contain a number, and an UPPER case letter and a Lower case letter. Your password cannot be any of your previous 6 passwords.

After you login to the portal site, you will find your Moodle course listed under MyClass sites. If you are logging in for the first time, you will be prompted to enter your username and password again. Follow the on-screen instructions to complete onetime setup of your password.

Unless you are on campus, you are responsible for supporting your own Internet access and email account throughout the course.

If you still have difficulty logging in, please call the help desk at **1-877-612-5381**.

### **Lecture Grading Criteria:**

There will be at least three written unit tests and a final comprehensive examination given at times selected and announced in advance by the instructor. Assignments will be given in advance and will encompass individual and/or group activities. Unit exams will cover lecture material, handouts, and required readings. Exams are in any format including multiple choice, fill-in, short answer and/or essay style. Students are expected to take exams as scheduled. Failure to attend a scheduled examination requires the student to contact the instructor within 3 days of the scheduled exam date and provide a written bona fide excuse for the absence. For a verifiable excused absence (e.g. medical), the instructor may provide a make-up exam, which will be given in a format of instructor's choice—oral, essay, fill-in, short answer, etc. at a time indicated by instructor (on or by the day of the comprehensive final exam). Make up exams are given in the testing center. Failure to contact the instructor within this given time frame will result in a grade of 0 for that exam. Lecture grades will be averaged as follows for **50%** of the final course grade:

Lecture Quizzes (4)	5%
Unit Exam #1	10%
Unit Exam #2	10%
Unit Exam #3	10%
Comprehensive Final Exam	15%

### **Lecture Quizzes:**

Lecture quizzes will be given during the semester with a due date:

- Online quizzes (category on Moodle) will be posted on the lecture outline and on Moodle with opening and closing dates. You may work on these quizzes as often as you like prior to the due date (by clicking on “SAVE WITHOUT SUBMITTING” tab). When you have completed the quiz, you will click on “SUBMIT ALL AND FINISH” tab, which will then be graded and posted in the

Moodle gradebook. **No online quizzes will be available after the closing date, so check the site frequently to avoid a zero.**

- Classroom discussion assignments will also be posted on Moodle. You should be prepared to give an oral presentation on the assigned due date. This is a participatory assignment for your learning experience—there will be no grade assigned.

### **Laboratory Grading Criteria:**

**50%** of final course grade: details to be announced by the laboratory instructor

### **BCC Attendance Policy:**

All students are expected to attend punctually every scheduled meeting of each course in which they are registered. Attendance and lateness policies and sanctions are to be determined by the instructor for each section of each course. These will be established in writing on the individual course outline. Attendance will be kept by the instructor for administrative and counseling purposes.

#### **BIO 115 Lecture Attendance Policy:**

Attendance and classroom participation are of utmost importance. Students are expected to be present and on time for all classes. Attendance will be taken each session. Whether you are late or absent for a particular class, you are responsible for all material covered in your absence. This material should be obtained from a classmate. More than two lecture absences or repeated lateness may result in the lowering of your final lecture grade for this course. If you are late, I expect you to enter the classroom quietly and without interruptions. You can contact me at the break or after the lecture for any announcements you may have missed.

#### **BIO 115 Laboratory Attendance Policy:**

Attendance is mandatory. Missing more than two lab sessions will result in an automatic failure for the course. Labs cannot be made up.

### **Student Accommodations:**

Students who require accommodations by the Americans with Disabilities Act (ADA) can request support services from the Office of Specialized Services of Bergen Community College, Room L-116, Pitkin Education Center, 201-612-5270 or [oss@bergen.edu](mailto:oss@bergen.edu). Deadline for accommodations is posted on this site.

## Rules and Regulations Governing Conduct

Each student is expected to obtain a copy of the Bergen Community Student Handbook and is responsible for knowing the information included in the Handbook. Copies are available in the Office of Student Life, the Welcome Center, evening office, and on the Bergen Web site.

All students and faculty are governed by college rules and regulations. Please refer to the Student Handbook for information regarding codes of conduct.

## Academic Integrity

Bergen Community College is committed to academic integrity. Please refer to the current Student Handbook for details related to academic integrity/discipline.

## Topical Outline\*:

WEEK	LECTURE DATE	LECTURE TOPIC	LECTURE READING ASSIGNMENTS	LABORATORY TOPIC
1	1/22/13	Intro to A & P Taxonomy Cellular Biology <i>Online Quiz #1 (opens 1/22; closes 2/12)</i>	Chapter 1,3	Chapter 1,2
2	1/29/13	Cellular Biology Exploring Tissues <i>Taxonomy Classroom Assignment due</i>	Chapter 4	Chapter 3
3	2/5/13	Exploring Tissues	Chapter 4	Chapter 4
4	2/12/13	Skeletal System <i>Online Quiz #2 (opens 2/12; closes 3/5)</i>	Chapter 6	Chapter 6
5	2/19/13	Unit Exam #1 (lectures 1,2,3)		
6	2/26/13	Skeletal System <i>Comparative Anatomy of Bones &amp; Joints Classroom Assignment due</i>	Chapter 6	Chapter 6

7	3/5/13	Muscular System <i>Online Quiz #3 (opens 3/5; closes 3/26)</i>	Chapter 7	MIDTERM
8	3/12/13	Muscular System	Chapter 7	Chapter 7
9	3/26/13	Nervous System <i>Online Quiz #4 (opens 3/26; closes 4/16)</i>		Chapter 7
10	4/2/13	Unit Exam #2 (skeletal & muscular systems)	Chapter 13	Chapter 7
11	4/9/13	Nervous System	Chapter 13	Chapter 11
12	4/16/13	Nervous System <i>Nervous System Classroom Assignment due</i>	Chapter 13	Chapter 11
13	4/23/13	Unit Exam #3 (nervous system)		Chapter 12
14	4/30/13	Special Sense Organs	Chapter 14	Final Lab Exam
15	5/7/13	Comprehensive Final Exam		Review

\*outline schedule is subject to change (check Moodle for any updates)

**Lecture Contact Information:**

Dr. Cynthia Rockafellow

Program Veterinarian

Associate Professor

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Office Phone: 201-493-5016

E-mail: [crockafellow@bergen.edu](mailto:crockafellow@bergen.edu)

Office hours: Mondays, Tuesdays, Wednesdays: 12:30-1:30pm

or by appointment: please call or e-mail in advance

**Lab Contact Information:** to be announced

**Student and Faculty Support Services:**

Distance Learning Office	Room C-334	201-612-5581 psimms@bergen.edu
Smarthinking Tutorial Service	On-line	<a href="http://www.bergen.edu/library/learning/tutor/smart/index.asp">www.bergen.edu/library/learning/tutor/smart/index.asp</a>
Tutoring Center	Room L-125	201-447-7908
Writing Center	Room L-125	201-447-7908
Online Writing Lab (OWL)	On-line	<a href="http://www.bergen.edu/owl">www.bergen.edu/owl</a>
Office of Specialized Services	Room S-131	201-612-5270 <a href="http://www.bergen.edu/oss">www.bergen.edu/oss</a>
Sidney Silverman Library	Room L-226	201-447-7436

*Last revised 12/12*