

SYLLABUS: BIO K211 - ANATOMY & PHYSIOLOGY I

Three Rivers Community College
574 New London Turnpike
Norwich, Connecticut 06360
Spring Semester 2014

Daytime

Wed Lecture:	CRN 12823, Section T2,	6:30 PM – 9:30 PM	Rm. D212
Mon Lab:	CRN 12824, Section T2A,	6:30 PM – 9:30 PM	Rm. A219

Instructor: Daryl Simmons

e-mail: dsimmons@trcc.comnet.edu < - - BEST Method of Contact!

Hours: **Before or after class** or by appointment.

COURSE: BIO K211 - Anatomy & Physiology I is the first semester of a two semester sequence whose purpose is to facilitate the learning of body structure and function needed to serve as requirement for nursing and other allied health professions, as well as satisfy the lab science requirements for the Liberal Art/Sciences and General Studies major. In order to receive knowledge of all body systems, the student should complete this course along with BIO 212 - Anatomy & Physiology II. BIO 211 presents the students with a lecture/laboratory study of basic biological chemistry, cell, tissue, organ, body fluid and cavity organization and nervous, skeletal, and muscular. This is especially important if transferring to a four-year institution with a major requiring a full academic year of anatomy and physiology or if the student is enrolled in Three River's nursing.

PRE-REQUISITE FOR THE COURSE: General Biology I (BIO 121) and Concepts of Chemistry (CHE 111) or equivalent with a minimum grade of C or instructor's permission

CREDIT: 4 credit hours consisting of 3 hours of lecture and 3 hours of laboratory per week during the semester.

REQUIRED TEXTS:

Fundamentals of Anatomy and Physiology by Martini/Nath/Bartholomew, 10th , 9th or 8th , ed., Benjamin-Cummings Publishers.

The Study Guide may be helpful.

Human Anatomy & Physiology I Laboratory Manual by Kirkpatrick, W., Copeland, J.E., Simmons, D., Skiba, J., Ricker, N., Charette, R. Academx Publishing Services, Inc., P.O. Box 208, Sagamore Beach, MA 02562.

OTHER REQUIRED MATERIALS: Dissecting kit and disposable non-latex gloves, and Full length lab coat with cuffs that is available online or from Alexander's Uniform; Suggested labcoat: Landau 3178 full length.

ADDITIONAL REFERENCE TEXTS: (optional)

Applications Manual for Fundamentals of Anatomy and Physiology, by Martini, et al., Benjamin Cummings Publishers. (included free with the textbook)

A Photographic Atlas for the Anatomy & Physiology Laboratory, by K.M. Van De Graaff & J.L. Crawley, Morton Publishing Co. 6th ed.

Fundamentals of Anatomy and Physiology, The Study Guide, by Charles Seiger, Benjamin Cummings Publishers, 7th ed.

Outline of Cat Anatomy with Reference to Human, by Stephen Gilbert, Univ. of Washington Press 2000, ISBN: 0-295-97818-x

GENERAL COURSE OBJECTIVES:

1. Provide students with a laboratory science to satisfy the science requirements of Three River's LAS or GS Associate Degree.
2. To fulfill pre-requisite and co-requisite anatomy and physiology requirements for Three River's Community College in science and the allied health fields.
3. Provide students with an undergraduate level study of human body systems.
4. Provide students with a foundation for study of the medical, biological, or physical sciences.
5. Provide students with critical thinking and problem solving skills.
6. Demonstrate the biological sciences and how they relate to other disciplines.
7. Illustrate the interdependence of all life forms operating on natural laws with the physical environment.
8. Encourage not only awareness of the student's natural uniqueness but also their role as an interrelated biological organism of this planet.

CLASS ATTENDANCE:

Attendance of class is required. Attendance is taken. Absences can be very detrimental due to the nature of the material. An explanation of all absences is very much appreciated, especially if presented in advance when possible. It is the student's responsibility to obtain materials and notes for any classes that they miss.

COLLEGE CLOSING: For weather related closings call the college at **(860) 215 - 9000**

METHODS OF STUDENT EVALUATION; GRADING POLICIES

- A. The student's grade for the course represents their ability to master course objectives, attitude, rate of improvement, proficiency and knowledge of course material.
- B. Final course letter grades are determined by the total points accumulated. Students can estimate their progress toward a letter grade during the semester by using the table below after calculating their point percentage:

Table 1. Percentages of points accumulated by students and the corresponding letter grades.

Letter Grade*	Percentages for Letter Grade	
A	100	94
A-	93.999...	90
B+	89.999...	87
B	86.999...	84
B-	83.999...	80
C+	79.999...	77
C	76.999...	74
C-	73.999...	70
D+	69.999...	67
D	66.999...	64
D-	63.999...	60
F	59.999...	0

* *The instructor reserves the right to use subjective evaluation, especially in cases where the final percentage score is on a borderline between grades.*

C. Points are obtained by the following methods of evaluation and are shown tabulated below:

1. **Lecture:**

a. **Major Exams:** Four major exams worth 100 points each will be given. Each will evaluate the student's knowledge of the material given since the last major exam.

b. **Weekly Quizzes of Lecture Materials :**

A lecture quiz is given each week. Each quiz is on the previous week's lecture. The best 7 quiz scores count (70 points). The remaining lowest quizzes and any missed quizzes will be dropped.

The pretest will count as an 8th quiz that cannot be dropped (10 points).

****Missed Quizzes will not be made-up for any reason.
Missed quizzes count as the lowest scores to be dropped***

Pretest of Basic Biology & Chemistry background: If a score of 75% or better is attained, then the student will receive a score of 10 out of 10 points for Quiz 1 (the Pretest). If you *do not* score 75% or better, a re-test **MUST** be taken before the first unit test is given. On the re-test, the student will receive the actual score as the grade for Quiz 1. *This pretest will count as part of your semester's average and will not be one of the dropped quizzes.*

2. **Laboratory:**

Missed labs cannot be made up for logistical reasons.

a. **Quizzes:** A lab quiz over anatomical terminology worth 20 points will be given.

- b. **Practical exams:** Four identification type exams will be given: tissue identification (40 points), bone identification (40 points), muscle identification (40 points) and the parts of the brain, ear and eye (40).
- c. **Lab reports:** Three short written lab reports are required and will assigned in the lab.

Table 2. Distribution of points for lecture and lab. .

Lecture (580 points)		
Major Exams	Best 7 Quizzes (plus pretest)	Scientific Report
400 points	80 points	100 points
Lab (240 points)		
Anatomical Terms Lab Quiz	4 Lab Practical Exams	3 Lab Reports
20 points	160 points	60 points
Total Course Points = 820		

D. Exam and quiz questions for lecture and/or laboratory material may consist of multiple choice, true/false, fill in the blank, matching, or identification. Some questions might be reserved as an extra credit option.

E. Absence on examination days:

Students are required to take exams as scheduled

Any missed exams will be made up on the day of the final exam.

F. Final letter grades for the course are determined by the percentage of the total course points shown in Table 1 above. For example if a student accumulates 621 points during the course, then:

$$100 \times (621/820) = 85.0\% \text{ which is a grade of "B".}$$

Procedure for Withdrawing from the Course(s):

A student who finds it necessary to discontinue a course must complete a withdrawal form obtained from the Registrar's Office. The student may need to have the instructor's or their advisor's signature in order to withdraw and receive a "W" grade for the course. **Students who do not withdraw but stop attending will be assigned a "F" grade**, signifying failure and no credit. F grades count as courses attempted and may adversely affect the good standing status of the student receiving the grade.

Academic Integrity at Three Rivers

Academic integrity is essential to a useful education. Failure to act with academic integrity severely limits a person's ability to succeed in the classroom and beyond. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. In this class and in the course of your academic career, present only your own best work; clearly document the sources of the material you use from others; and act at all times with honor. (taken from the Academic Integrity policy of Three Rivers Community College)

Disabilities:

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact the Disabilities Counseling Services. To avoid any delay in the receipt of accommodations, you should contact the counselor as soon as possible. Please note that I cannot provide accommodations based upon disability until I have received an accommodation letter from the Disabilities Counselor. Your cooperation is appreciated.

Revisions to the Syllabus

The instructor reserves the right to revise the academic schedule, objectives, and/or topical outline contained in this syllabus

Pre-Requisite Competencies

It is expected that the student be competent in knowledge of basic biology and chemistry so that a study of the human body's structure and functions can be undertaken. This may be accomplished by a variety of means, the preferred being that the student review selected content they have learned in BIO 121 (General Biology I) and CHE 111 (Concepts of Chemistry) or equivalent taken as the pre-requisite courses for Anatomy & Physiology I.

At the beginning of the semester, students will be given a "pre-test"***

At the beginning of the semester, students in BIO 211 will be given a "pre-test" to determine the status of their basic biology knowledge base. If a score of 75% or better is attained, then the student will receive a score of 10 out of 10 points for Quiz 1. If you do not score 75% or better, you will be given several days to review basic biological and chemical principles at self-paced, self-instruction and be able to take a re-test that **MUST** be taken before the first unit test is given. If a score of 75% or better is obtained on the re-test, then the student will receive 9.5 points out of 10 on Quiz 1. If the re-test score is less than 75% then the student will receive that percentage of 10 points for Quiz 1. Quiz 1 will count as part of your semester's average and will not be one of the dropped quizzes.

****Failing the "pre-test" is not justification for withdrawal from the course.*

Some of the competencies that are included in the pre/post testing deal with basic chemistry and cell biology which are covered in Chapters 2 and 3 of the textbook

TOPICAL OUTLINE - BIO 211 - HUMAN ANATOMY & PHYSIOLOGY I

- I. Review of chemical organization of Life
 - A. Matter and energy
 - 1. Elements of life
 - 2. Atoms, ions, and molecules
 - 3. Chemical bonding
 - B. Chemical makeup of life
 - 1. Water, solutions, and measurement
 - 2. Biological organic compounds
 - C. Chemical reactions
 - 1. Types of metabolic reactions
 - 2. ATP
 - 3. Role of enzymes and nucleic acids

- II. Review of cellular structure and organization
 - A. Cell theory
 - B. Cellular structure and function
 - 1. Organelles and inclusions
 - 2. Respiration
 - 3. Movement
 - 4. Mitosis

- III. Organization of the Human Body
 - A. Structural interrelationships
 - B. Homeostasis and feedback regulation
 - C. Respiration
 - D. Body cavities
 - 1. Dorsal cavity
 - a. subdivisions
 - b. contents
 - c. meninges
 - 2. Ventral cavity
 - a. subdivisions
 - b. contents
 - c. pleura and peritoneum
 - E. Anatomical directions, planes, and regions

- IV. Tissues
 - A. Definition and types of tissues
 - B. Organization of epithelium
 - C. Organization of connective
 - D. Muscle and nervous

- V. Skin as an example of an organ
 - A. Functions of skin
 - B. Epidermal and dermal structures

VI. Fluid compartment organization

- A. Fluid compartments
 1. Definitions and quantities
 2. Chemical compositions
 3. Intake and output
- B. Cell membrane physiology
 1. Molecular structure
 2. Transport across cell membranes
 3. Membrane electrical potentials
- C. Capillary dynamics
 1. Structure
 2. Pressures
- D. Lymphatic system

VII. Skeletal system

- A. Organization and general structure
- B. Ossification
- C. Vertebral column curvatures
- D. Joint organization and movements
- E. Anatomy of the skeleton

VIII. Nervous system

- A. Overall construction, organization and terminology
 1. Neurons
 2. Nerves
- B. Nerve impulses
- C. Synapses
- D. Central nervous system
 1. Brain
 2. Spinal cord
 3. Meninges
 4. Cerebrospinal fluid
- E. Peripheral nervous system
 1. Cranial nerves
 2. Spinal nerves and nerve plexus
 3. Major peripheral nerves
 4. Sense receptors
 5. Reflex arcs
 6. Autonomic nervous system
 7. Eye and ear and other special senses

IX. Muscular system

- A. Organization, structure, and characteristics of muscle tissue
- B. Anatomy of a typical skeletal muscle
- C. Microstructure of skeletal muscle fibers
- D. Physiology of contraction
- E. Location of major skeletal muscles

Tentative Academic Schedule – Wed. Lecture - Spring Semester, 2016

Week	Lecture Topics, Text Chapters
1 1/27	Pretest Review of Biological & Chemical Organization , Tissues & Fluids, Chap 1, 2, 4
2 2/3	Compartmentalization, Anatomical references Chap 1, 2, 4
3 2/10	Integumentary System Chap 4 & 5
4 2/17	Integumentary System Chap 4 & 5
5 2/24	Test 1 (Wednesday) then Lecture: Skeletal System, Chap 6, 7, 8, 9
6 3/2	Skeletal System, Chap 6, 7, 8, 9
7 3/9	Skeletal System, Chap 6, 7, 8, 9
8 3/16	Test 2 (Wednesday) then Lecture: Muscle, Chap 10, 11
3/23	SPRING BREAK
9 3/30	Muscle, Chap 10, 11
10 4/6	Muscle, Chap 10, 11
11 4/13	Test 3 (Wednesday) then Lecture: Nervous System, Chap 12, 13, 14, 15, 16, 17
12 4/20	Nervous System, Chap 12, 13, 14, 15, 16, 17
13 4/27	Nervous System, Chap 12, 13, 14, 15, 16, 17
14 5/4	Nervous System, Chap 12, 13, 14, 15, 16, 17
15 5/11	Test 4

Tentative Academic Schedule – Mon. Lab Spring Semester, 2016

Week	Activity
1 1/25	Laboratory Safety and Anatomical Terminology: show completed handout at the end by lab period
2 2/1	Quiz on Anatomical Terms from Previous lab followed by Principles of Diffusion and Osmosis
3 2/8	Care and Use of the Microscope / Gross Anatomy of the Typical Cell Begin Tissue Anatomy
2/15	College is Closed
4 & 5 2/22 & 2/29	Tissue anatomy; microscopic examination; Prepared slides
6 3/7	Lab Practical 1: Identification of tissues then Begin study of Bones and markings with Human Skull
7 3/14	Anatomy of the Skeleton: Bones and Markings
3/21	S P R I N G B R E A K
8 3/28	Anatomy of the Skeleton: Bones and Markings
9 4/4	Lab Practical 2: Bones of the Human Body followed by Beginning Cat Dissection
10 4/11	Cat muscle dissection (cont't.)
11 4/18	Cat muscle dissection (cont't.)
12 4/25	Lab Practical 3: 1:1 on Muscles of the Cat
13 5/2	Central Nervous System (Sheep Brain) / Mammal Eye – models of the eye Lab Practical 4: 1:1 at end of lab
14 5/9	Ear Model and Special Senses (Report turned in at end of lab)