SYLLABUS: BIO K212 - ANATOMY & PHYSIOLOGY II

Three Rivers Community College (860) 886 - 0177
574 New London Turnpike
Norwich, Connecticut 06360
Fall Semester 2017

Wed Lecture:	CRN 33156,	Section T1,	6:00 PM – 8:45 PM	Rm. D226
Mon Lab:	CRN 33157,	Section T1A,	6:00 PM – 8:45 PM	Rm. A219

Instructor: Daryl Simmons
e-mail: dsimmons@trcc.commnet.edu < - - BEST Method of Contact!
Hours: Before or after class or by appointment.

COURSE: BIO K212 - Anatomy & Physiology II is the second semester of a two semester sequence. Biology 211 - Anatomy & Physiology I must be taken and passed with a grade of "C" or better prior to this course. 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 program. BIO 212 presents the students with a lecture/laboratory study of endocrinology, reproduction, hematology, cardiovascular, respiratory, digestive, and excretory systems, and acid-base balance.

PREREQUSITE FOR THE COURSE Bio 211 with a grade of C or better.

CREDIT; 4 credit hours consisting of 3 contact 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 II 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; labcoat Landau 3178 full length.

GENERAL COURSE OBJECTIVES:

1. Provide students with a transferable 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 Rivers Community College sciences 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:

C. Points are obtained by the following methods of evaluation:

1. **Lecture (possible 670 points):**

a. Major Exams (400 points): 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. Comprehensive Final Exam (200 points): A student who has achieved a 95% or higher on every test, every quiz (including dropped quizzes), every lab test, and every lab report, might be considered for exemption from the comprehensive final exam. Students will be confidentially notified by the instructor if they are exempt from the final exam.

c. Weekley quizzes (70 points): Each week, quizzes worth 10 points will be given, on the previous week's lecture material. The best 7 quiz grades of approximately 10 quizzes, will be added to the student's points.

Missed Quizzes cannot be made-up and count as the lowest scores to be dropped

2. **Laboratory (possible 220 points):**

a. Laboratory Practical exams (120 points):

(1) Laboratory Practical Exam 1 - 30 points, will be given on the identification of organs and tissues of the endocrine and digestive systems from the listed laboratory objectives

(2) Laboratory Practical Exam 2 – 30 points, will be given on the identification of the circulatory organs and tissues, and the heart from the listed laboratory objectives

(3) Laboratory Practical Exam 3 – 30 points, will be given over the identification of the organs and tissues of the male and female reproductive systems, as listed on the laboratory objectives.

b. Lab reports and quizzes (175 points): The following written reports will be required:

(1) renal regulation of osmolarity (100 points)
(2) cardiovascular physiology (25 points)
(3) pulmonary function (25 points)
(4) reproduction (25 points)

D. Exam and quiz questions for lecture and/or laboratory material may consist of multiple choice, true/false, fill in the blank, matching, identification, or essay questions.

E. Absence on examination days:

STUDENTS ARE REQUIRED TO TAKE EXAMS AS SCHEDULED.

ANY MAKE-UP EXAMS WILL BE TAKEN ON THE SAME DAY AS THE COMPREHENSIVE FINAL EXAM

THERE ARE NO MAKE-UPS FOR MISSED QUIZZES

Laboratory Safety

Food, drink, and chewing gum are not permitted to be brought into the laboratory for any reason. Students are expected to wear appropriate attire which may require

safety eyewear, laboratory gloves, and full length labcoat.

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

BOARD OF REGENTS FOR HIGHTER EDUCATION AND CONNECTICUT STATE COLLEGES AND UNIVERSITIES POLICY REGARDING SEXUAL MISCONDUCT REPORTING, SUPPORT SERVICES AND PROCESSES POLICY

Statement of Policy for Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus:

"The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking. It is the intent of the BOR and each of its colleges or universities to provide safety, privacy and support to victims of sexual misconduct and intimate partner violence."

UNITED STATES DEPARTMENT OF EDUCATION AND OFFICE OF CIVIL RIGHTS TITLE IX STATEMENT OF POLICY:

"Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex in education programs and activities in federally funded schools at all levels. If any part of a school district or college receives any Federal funds for any purpose, all of the operations of the district or college are covered by Title IX.

Title IX protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students (as well as other persons) at recipient institutions are protected by Title IX – regardless of their sex, sexual orientation, gender identity, part-or full-time status, disability, race, or national origin-in all aspects of a recipient's educational programs and activities."

If any student experiences sexual misconduct or harassment, and/or racial or ethnic discrimination on Three Rivers Community College Campus, or fears for their safety from a threat while on campus, please contact Edward A. Derr, the Diversity Officer and Title IX Coordinator: at the TRCC Admissions Welcome Center * Office A116
860.215.9255 * EDerr@trcc.commnet.edu

Topical OUTLINE: BIO 212 - HUMAN ANATOMY & PHYSIOLOGY II

I. Endocrinology
   A. Hormonal action and control
   B. Hormones, function, control, structures, and disorders of endocrine glands
      1. Adenohypophysis
      2. Neurohypophysis
      3. Thyroid
      4. Parathyroid
      5. Adrenal cortex
      6. Adrenal medulla
      7. Testes
      8. Ovaries
      9. Pancreas

II. Digestive system
   A. Purpose and overview
   B. Chemical hydrolysis of food
   C. Anatomy of the G-I tract and accessory structures
   D. Biliary system
   E. G-I motility
   F. Secretion and absorption

III. Cardiology
- A. General path of circulation
- B. Anatomy of the heart
- C. Path of blood flow through the heart
- D. Electrophysiology
- E. Pumping action and cardiac cycle
- F. Control of cardiac output

IV. Circulation
- A. Major systemic arteries
- B. Major systemic veins
- C. Physiology of circulation
  1. Physics of blood flow
  2. Blood pressure

V. Hematology
- A. General functions and characteristics of blood
- B. Formed elements
  1. Erythrocytes
     a. characteristics; Lab values
     b. hemoglobin
     c. formation of
     d. iron metabolism
     e. destruction of
  2. Leukocytes
     a. characteristics; Lab values
     b. role in immunity and inflammation
  3. Platelets
- C. Plasma
- D. Hemostasis
- E. Immunity

VI. Respiratory system
- A. Functions and overview
- B. Anatomy of the airway
- C. Pulmonary ventilation
- D. Gas exchange
- E. Gas transport

VII. Excretory system
- A. Functions and overview
- B. Chemicals excreted
- C. Macro and microscopic anatomy of the kidneys
- D. Urinary tract
- E. Urine formation
- F. Renal regulation of fluid and electrolytes

VIII. Acid-Base Balance
- A. pH and normal ranges
- B. Regulatory mechanisms
  1. Acid-base buffers
  2. CO_2 - bicarbonate ion ratio
  3. Respiratory regulation
  4. Renal regulation
- C. Metabolic and respiratory acidosis/alkalosis

IX. Reproductive system
- A. Male reproductive system
- B. Female reproductive system
- C. Female reproductive cycle
- D. Fertilization and development

Fall Semester, 2017, Tentative Academic Lecture Schedule

Week	Lecture Topics, Text Chapters
1 8/30	Course Introduction, Endocrinology: Chap. 18
2 9/2	Endocrinology: Supplements and Chap. 18
3 9/13	Digestive System: Chap. 24, 25
4 9/20	Digestive System: Chap. 24, 25
5 9/27	**Exam 1** Cardiovascular (Circulatory) System: Heart Chap 19 - 21
6 10/4	Cardiovascular (Circulatory) System: Chap 19 - 21
7 10/11	Cardiovascular (Circulatory) System: Chap 19 - 21
8 10/18	Cardiovascular (Circulatory) System: Chap 19 – 21: Start Lymphatic System and Immunity: Chap 22
9 10/25	Lymphatic System and Immunity: Chap 22
10 11/1	**Exam 2** Respiratory System: Chap. 23
11 11/8	Respiratory System: Chap. 23, Urinary System: Chap. 26
12 11/15	Urinary System & Acid/Base Balance: Chap 26, 27
13 11/22	**Exam 3** College open, no classes Reproductive System: Chap. 28, 29
14 11/29	Reproductive System: Chap. 28, 29
15 12/6	Reproductive System: Chap. 28, 29 **Exam 4**
16 12/13	**Comprehensive Final Exam**
17 12/18	**Last day of the Semester**

Tentative Academic Lab Schedule – Lab Room A219

Week	Topic
1 9/11	Lab Introduction & Endocrinology
2 9/18	Renal Regulation of Osmolarity – Urinanalysis
3 9/25	* dissection – Identification of Endocrine System Organs
4 10/2	* dissection – Identification of Digestive System Organs
5 10/9	**Lab Practical 1**: Endocrine and Digestive Systems
6 10/16	*Hematology and Blood Analysis
7 10/23	*Hematology and Blood Analysis
8 10/30	**Lab Quiz** on Hematology Lab followed by * dissection – Identification of major Blood Vessels
9 11/6	* dissection – Identification of major Blood Vessels and Heart Anatomy
10 11/13	* dissection – Identification of major Blood Vessels and Heart Anatomy
11 11/20	**Lab Practical 2:** Heart Anatomy and Blood Vessels
12 11/27	ECG, Cardiovascular Physiology
13 12/4	Respiration, Spirometry
14 12/11	* dissection - Reproduction **Lab Practical 3**
15	

*dissection tools, safety glasses, and gloves required