Spring 2007
Three Rivers Community College
Norwich, Connecticut

Syllabus
General Biology I

BIO K121

Lecture: CRN 10228
MW 12:30 – 1:50
Room: Mohegan 210

Lab: CRN 10229
T 9 – 12
Room: Mohegan 205

Lab: CRN 10586
T 1 – 4
Room: Mohegan 205

Instructor: Tina Mendeloff, Associate Professor, Natural Science
Office: Mohegan 205
Phone: 892 – 5706
Email: tmendeloff@trcc.commnet.edu

Office Hours: MW 11 – 12, F 12 –1 and by appointment

Required Texts

- <u>Biology</u> by Sylvia Mader, McGraw-Hill Publisher, 9th Edition, 2007, Customized for Three Rivers
  Bring your text to all classes and labs.
- <u>Biology</u> Lab Manual by Sylvia Mader, McGraw-Hill Publisher, 9th Edition, 2007
  Some labs or parts of labs will be based on hand-outs that you will be given prior to the lab.

Course Description: This course is an introduction to the major principles and concepts of modern biology. Topics to be covered include molecular and cellular biology, cell division, cellular transport systems, cellular metabolism, specialization and differentiation of both plant and animal cells and modern genetics.

Course Rationale: The rationale of this course is to aid the student in developing an understanding of (1) biological science as it may be related to other disciplines, (2) life processes and interrelationships between man and other organisms, (3) the interdependence of all life forms and the natural laws operating that ensure the stability of life and (4) current biological concerns such as pollution, overpopulation, and genetic engineering.

Attendance

Instructional staff assigned to all sections of credit-bearing courses at Three Rivers are required to take attendance at each class meeting and retain records of attendance for at least three calendar years. The manner in which attendance is taken is determined by the professional discretion of the instructor. In certain instances attendance records are furnished to the Financial Aid Office and the International Student Advisor.

Course Objectives

The student will:

- Be able to describe the requirements of life
- Be able to describe the characteristics of life shared by all organisms
- Be able to describe the scientific method through examples
- Be able to identify the principle elements that make up the body and give their chemical symbols
- Demonstrate knowledge of atomic structure and its relationship to the interaction of atoms to form molecules
- Demonstrate knowledge of ionic, covalent, and hydrogen bonds and give examples of each
- Be able to describe the types of organic and inorganic compounds found in the body
- Be able to define pH in terms of hydrogen ion concentration and be able to identify any given pH as acid, alkaline or neutral; describe how pH changes are minimized by buffers
- Demonstrate knowledge of cell organelles and their functions
- Demonstrate knowledge of various mechanisms of active and passive transport relative to the plasma membrane
- Demonstrate knowledge of mitosis and meiosis
- Demonstrate knowledge of the types of tissues and their functions in both plants and animals
- Be able to define anabolic and catabolic metabolism
- Be able to explain the photosynthetic process
- Be able to define the term enzyme and explain the composition, classification and function of enzymes
- Be able to explain the role of genes in inheritance and how they are passed from one generation to the next
- Demonstrate knowledge of the Mendelian laws of genetics
- Demonstrate knowledge of the various forms of gene interaction
- Be able to discuss some common forms of human genetic disease
- Be able to explain the role of DNA and RNA in inheritance

Course Outline

I. The Cell, Chapters 2 - 8
   A. Basic Chemistry
   B. The Chemistry of Organic Molecules
   C. Cell Structure and Function
   D. Membrane Structure and Function
   E. Metabolism: Energy and Enzymes
   F. Photosynthesis
   G. Cellular Respiration

II. The Genetic Basis of Life, Chapters 9 – 16
   A. The Cell Cycle and Cellular Reproduction
   B. Meiosis and Sexual Reproduction
   C. Mendelian Patterns of Inheritance
   D. Chromosomal Patterns of Inheritance
   E. DNA Structure and Functions
   F. Gene Activity: How Genes Work
   G. Regulation of Gene Activity and Gene Mutations
   H. Biotechnology and Genomics

Methods of Evaluation

1. Lecture Quizzes
You will have four lecture quizzes, each with a maximum of 20 multiple choice and/or true-false questions. The lowest of the four grades will be dropped. The remaining three grades will be averaged and count as one lecture exam grade.

I use Scantron answer forms (bubble sheets) for quizzes. BRING #2 PENCILS AND ERASERS ON QUIZ DAYS.

2. Lecture Exams
You will have four lecture exams, each with a maximum of 100 multiple choice and/or true-false questions. The five lecture exam grades will be averaged and count as 75% of your grade for the course.

I use Scantron answer forms (bubble sheets) for exams. BRING #2 PENCILS AND ERASERS ON EXAM DAYS.

3. Lab Practicals
You will have four lab practicals, each with a maximum of 50 short answer questions. The four lab practical grades will be averaged and count as 25% of your grade for the course.

Lecture Quiz Dates:
- Wednesday January 31
- Wednesday February 28
- Wednesday April 4
- Wednesday May 2

Lecture Exam Dates:
- Wednesday February 14
- Wednesday March 14
- Wednesday April 18
- Wednesday May 16

Lab Practical Dates:
- Tuesday February 13
- Tuesday March 13
- Tuesday April 17
- Tuesday May 15

Make-ups will be determined on an individual basis. *If you do not call or email me you must take the make-up on the day you return to class.* The rationale for allowing a make-up is based on fairness to the rest of the class in terms of time for study.

Final Grade Scale:

92.56 – 100 = A
89.56 – 92.55 = A-
85.56 – 89.55 = B+
82.56 – 85.55 = B
79.56 – 82.55 = B-
75.56 – 79.55 = C+
72.56 – 75.55 = C
69.56 – 72.55 = C-
65.56 – 69.55 = D+
62.56 – 65.55 = D
59.56 – 62.55 = D-
0.00 – 59.55 = F

Academic Integrity Policy

Academic integrity is essential for a useful education. Failure to act with integrity severely limits a person's ability to succeed in the classroom and beyond. 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 best work, clearly document the sources of the material you use from others, and act at all times with honor.

Please see Three River's catalog and/or website for a fuller explanation of the school's academic integrity policy.

College Withdrawal Policy

Students have the option of withdrawing from a course prior to the 11th week of class without the instructor's signature and prior to the 14th week of class (April 23rd) with the instructor's or advisor's signature. A student must initiate the withdrawal by calling 892-5756 or submitting a withdrawal form to the Registrar's Office.

Disabilities Statement

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Disabilities Counseling Services at 383-5240. To avoid any delay in the receipt of accommodations, you should contact a 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.

Cellular Phones and Beepers

Cellular phones and beepers are allowed in class only if they are turned off or to *silent* mode. Under no circumstances are phones to be answered in class *nor should the student disrupt the class by leaving to answer the phone.*

When there are extenuating circumstances that require a student to be available by phone or beeper, the student must speak to the instructor prior to the class so that together they can arrive at an agreement.