BIOLOGY

Fall 2011 Course Syllabus for BIO 101

This course is a three credit hour introduction to biology. This class only includes a classroom portion; there is no lab section. The intention of the class is to provide a good background for subsequent science classes. Topics that will be covered include the scientific method, biochemistry, cell biology, bioenergetics, cell cycles, genetics, molecular biology, evolution and ecology.

Credit Hours: 3 (3 lecture)
Prerequisites: None
Lecture Times: Tuesday and Thursday from 10:30 – 11:50 a.m.
Text: Campbell, N. A., Reece, J. B., Taylor, M. R., Simon, E. J., & Dickey, J.L. (2009). *Biology*: C*oncepts and connections*, (6th ed.). San Francisco: Pearson Education, Inc. (recommended)
Instructor: James Bier, Ph.D.

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- **Web**: http://members.toast.net/bier/mercy.html
- **Office Hours**: Office hours are set up so that you can discuss concerns about the class, ask for clarification on the lectures or reading material, or just to talk about biology or life in general (pun intended). If the set hours are not convenient, call me so that we can set up a time that is mutually agreeable. Please visit the web site to see the current office hours.

Instructor reserves the right to make changes to the syllabus.

GRADING

Grades for this class will be based on the results from several quizzes, a comprehensive final, and a short group research presentation. **Note**: Additional assignments may be added if the instructor deems it necessary.

	Points
Quizzes (top six worth 30 points each)	180
Comprehensive Final Exam	120

Every quiz, worth 30 points each, consists of true-false, multiple choice and fill in or short answer questions. These quizzes will cover between one-half and two chapters of material and will be given about one week after a topic has been covered. Only the top six quiz scores will be counted and the lowest quiz scores will be dropped. The final is comprehensive, will consist of true-false and multiple choice, but may include any other types of questions I deem useful to determine your level of comprehension. It carries the weight of four quizzes.

There will be no makeup quizzes. However, missing a quiz will not be held against you. If you do not finish at least six quizzes, the missing points will be made up as part of the comprehensive final. That is, the final, which is worth 120 points, would now be worth 150 points (120 points normal weight + 30 points for the missed quiz). Taking only four quizzes would increase the value of the final exam to 180 points. Hypothetically, it is possible to not take any quizzes without suffering any adverse effects on your grade; however, the final exam would be worth 300 points.

The number of points that you achieve throughout the semester will determine your final grade. The table to the right lists the minimum percentage required for an A, B, C and D. You can determine your grade by dividing the points you have achieved by the total points available (300 at the end of the semester).

Course Grade	Percent Needed
A	90%
B	80%
C	70%
D	60%

COURSE OBJECTIVES

1. Describe and utilize the scientific method to answer novel scientific questions.
2. Describe the basic chemistry and important molecules involved in the biology of living organisms.
3. State the tenets of cell theory and describe the structure and function of subcellular structures.
4. Explain the biological mechanisms of energy gathering and utilization.
5. Draw and describe cell growth and reproduction.
6. Describe basic inheritance and genetics.
7. Explain the role of DNA in inheritance and development of living organisms.
8. Define evolution and discuss factors that cause populations to evolve.

CORE ABILITIES

Major Emphasis

1. **Critical thinking** – In this class, critical thinking is defined as the ability to apply, analyze, synthesize, and evaluate information. While all topics will involve a great deal of memorization, students are also expected to apply that information to answer questions, utilize information for earlier in the semester to answer questions later in the semester, and synthesize two or three pieces of information to determine the best answer.
2. **Science** – Students utilize the scientific method to describe the set up of experiments and discuss the conclusions from results of experiments. Term papers introduce students to current topics in biology.

Minor Emphasis

3. **Computer technology** – CD-ROM's are provided with the text to help students study. Internet connections in the library allow students to discover information for their paper. Papers will be written utilizing word processors and presentations can utilize special presentation software.
4. **Mathematics** – Students will perform simple mathematical calculations when analyzing data from chemistry, genetics and population genetics.
5. **Social and Global Consciousness** – The class will periodically discuss the implications of biological advances on the world at large.