

Campbellsville University
Biological Concepts, Biology 200, 4.0 semester hours

MWF 11:00 a.m., SB 111
Lab- Tue 2:00-4:30, SB 114

OR
Wed 2:00-4:30, SB 114

Professor: Mr. Glenn McQuaide, SB 208, 789-5044
ggmcquaide@campbellsville.edu

Textbook: Biology, 8th ed.
by Sylvia Mader
McGraw Hill, publishers, 2003

Laboratory Manual: Laboratory Manual: Biology, 8th ed.
by Sylvia Mader
McGraw Hill, publishers, 2003

1. Description of Course:

This is a foundation course for a Biology major or minor. The class will have two hours of lecture per week and two and a half hours of lab per week. There is no prerequisite for this course; high school Chemistry and Biology is recommended.

2. Course Objectives:

This course will provide the student with a foundation of knowledge in the Biological Sciences. This foundation will prepare the student to successfully complete a science major that may open many career doors. An understanding of the Sciences is critical in making responsible decisions in many facets of our lives. This course will provide a basis for thinking about these areas. It will focus on molecular properties, biomolecules, cell structure and function, genetics, and population dynamics.

3. Course Outline:

Broad topics to be covered in this course are:
What is Science?
Overview of Tools and Technologies used in Science
Carbohydrates, Lipids and Oils, Proteins, and Nucleic Acid
Introduction
Plasma Membrane Structure and Function
Enzyme Function (Rates and Affecting Factors)
Cell Structure and Organelle Function
Metabolism and Aerobic Respiration
Reaction of Photosynthesis
Cell Cycles (Mitosis and Meiosis)
Chromosome Structure and Function
DNA and Biotechnology
Mendelian Genetics
Microevolution
Macroevolution and Mass Extinctions
Survey of Life
Overview of Behavior and Ecology

4. Evaluation:

There will be three hour exams (100 points) and one comprehensive final (125 points) in addition to two lab exams (75 points each) given in this course. A journal/notebook will be required in laboratory and will be worth 75 points. Throughout the course, 200 points worth of periodic chapter assignments (such as quizzes or in-class writings), homework, &/or oral quizzes will be given. The final grade will be based on a percentage of the points earned on the exams and other assignments.

90-100% = A, 80-90% = B
70-80% = C, 60-70% = D, below 60% = F

5. Requirements:

The University Attendance Policy will be followed in this class. Regular and punctual attendance is expected of each student. There are no "excused" absences. Class roll will be taken each meeting. At my discretion, tardy attendance will be recorded as 1/2 absence. Students absent for more than two weeks worth of lectures and/or labs will be assessed a penalty of 3 points (subtracted from the final grade average) for each additional absence.

Students are to bring their textbooks to lecture. They are to have read the assigned topic(s) and be prepared to participate in discussions. It is the student's responsibility to borrow notes and to make up all missed work. Additionally, the student is responsible for the relevant material presented in the textbook, all handouts, and all videos. Tape recorders are not permitted in class.

Exam dates will be announced a minimum of two weeks prior to the date the exam is to be administered. The final examination will be given Monday, December 8, 11:00 a.m., in accordance to the schedule available in the Academic Dean's office.

Cheating will not be tolerated. Punishment will be severe and could result in dismissal from the University. See the University Catalog and Handbook for details. At my discretion, a statement of academic honesty may be required of students on any given class assignment.

There is no excuse for missing a scheduled exam without contacting me ahead of time. With prior notification, arrangements can usually be made to take the scheduled exam. There will be NO MAKEUP EXAMS. If you miss a scheduled exam, for a valid reason, the value of the comprehensive final is increased proportionately. For example, if a student missed one exam, the final would be worth 225 points.

6. Reference Book List

Allen, R. D. 1995. *Biology: A Critical Thinking Approach*.

WCB/McGraw-Hill, Boston, MA.

Stern, Kingsley. 2003. Introductory Plant Biology, 9th ed., McGraw Hill, publishers. Boston, MA.

National Academy of Sciences. 1998. *Teaching about Evolution and the Nature of Science*. Washington, DC: National Academy Press.

Wynn, C. M. and A. W. Wiggins. 2001. *Quantum Leaps in the Wrong Direction*. Joseph Henry Press, Washington, D. C.

Tentative Schedule of Laboratories

Course: Biology 200-91

Instructor: Glenn McQuaide, SB 208

Time\Location: SB 114, Tue. 2:00-4:30 p.m.

August 26----- #1: Survey, Journal Intro., "What is Science?", & Logic Cube
September 2 --- #2: Topic 2 - Basic tools of science, measurements,
microscopy, animal observations
September 9 --- #3: Topics 3 & 4 - Chemical composition of cells; Cell
Structure and Function
September 16--- #4: Topics 6 & 7 - Photosynthesis and cellular respiration
September 23--- #5: Topic 8 - Mitosis and Meiosis
September 30--- #6: Topics 9 - 11 Genetics
October 7 ----- Field Trip (Clay Hill Memorial Forest)
October 14 ----- MID-TERM EXAM
October 21 ----- Fall Break (No Lab); Homework Assignment
October 28 ---- #7: Topics 17 & 18 - Bacteria, Protists, & Fungi
November 4 ---- #8: Topics 18 & 19 - Overview of Seedless & Seed Plants
November 11 --- #9: Topic 12 - Evidence of Evolution
November 18 --- #10: Topic 13 - Mechanism in Evolution: Genetic Drift and
Natural Selection
November 25 --- #11: Topics 29.7, 30 & 32 - Human A&P, Homeostasis
December 2 ---- Final Lab Exam- complete journal/notebook due.
December 9 (if not 12/2) Final Lab Exam- complete journal/notebook due.

Other Laboratory Information/Requirements

Students are to bring their lab manuals and textbooks to lab; additional reference books will be available in the laboratory. Students are to consult the text and/or reference books to assist with making accurate observations and drawings.

- A. Tests: There will be two lab exams, each with a practical component. One exam will be given at mid-term, and the other exam will be given during finals week. The second lab exam will not be comprehensive.
- B. Notebook: It is highly recommended you complete all lab exercises and drawings before leaving the lab. Individual laboratory write-ups may be due at the end of any lab. Others may be due at the beginning of the next lab. All lab exercises are to be assembled into a notebook due December 2 (or at laboratory final).

The notebook will contain all lab exercises plus all handouts, notes, problems, drawings and any additional items covered in lab such as notes on videos. This notebook will be graded on completeness, NEATNESS, attention to detail and accuracy. One exercise will be chosen at random to be graded more carefully. Due Date: December 2.