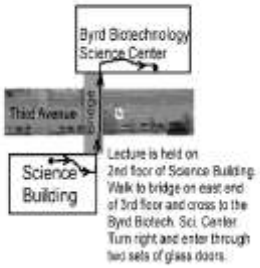
Syllabus: Introduction to Biology (BSC 104)

Semester: Fall, 2016 (Sections 103, 107, 108)
Lecture Location: Room 374 Science Building (S374)
Lecture Time: Tuesday/Thursday 11:00-12:15AM
Lab: Room S212; Day/Time depends on section; please attend the section for which you are registered:
Sec 103: Wed, 10:00-11:50; Sec 107: Mon, 10:00-11:50; Sec 108: Mon, 2:00-3:50
Instructor: Elmer M. Price, Ph.D.
Credit Hours: 4
Office: 241Q Byrd Biotechnology Science Center (BBSC) *Office Phone*: 304-696-3611

Email: pricee@marshall.edu (Please use the Subject Line: "BSC 104" so I'll know it's an important email; I get dozens of less important emails every day)

Office Hours: Tuesday/Thursday, 9:00-10:45 **or** by appointment (please use email to arrange) **or** just drop by my office (241Q BBSC) or research lab (219 BBSC) anytime and I'll probably be able to chat, (unless I'm in the middle of creating bizarre new life forms or performing brain surgery). Every year, students get lost trying to find my office. So, here's a map----------→→→



Course Description: This course focuses on the basics of biology, providing the student fundamental knowledge that will help them understand and apply this science in their everyday life, especially in terms of health, disease, and the links between microbes, plants and animals. For many students, this course may be the *only* biology class they ever take. Every day there are new deadly diseases, vaccines, human clones, stem cells, genetically modified plants and animals, cancer therapies, environmental disasters, performance-enhancing drugs, and other biological phenomena in the news. This course will enable the student to understand, and react to, these potentially life-altering events.

Required Text

- *Campbell Essential Biology*, 6th Edition, by Simon, Dickey, and Reece. Published by Pearson.
- *BSC 104 Laboratory Manual, Introduction to Biology for Non-Majors 17th Edition*, by Weinstein

Suggested Internet Site: Go to: http://www.masteringbiology.com/ (click, or "cut and paste" into your browser's address line)

- Using the Mastering Biology access code that came with your book, you can register and enter the site for this particular class. The course ID is: MBPRICE85445
- If you do not have an access code, you can buy access via the instructions provided when you click on "Register Students" on the above site.

Course Description: Biology is simply the study of life. This class teaches the fundamentals of biology with emphasis on the unity of life, energetics, genetics and the world of living things. Intended for non-science majors.

Course Objectives

- Understand the themes that run through biology
- Recognize biomolecule structures and functions
- Understand the scientific method of research and discovery
- Relate biological form to function
- Integrate metabolic pathways into cellular function
- Understand the genetic basis of diversity and heredity

Student Learning Outcomes:

Course Outcomes	Opportunities to Practice Course Outcome	Course Outcome Assessment(s)
Articulate and describe the basic biological principles common to all organisms	In-class discussions and laboratory exercises	Examinations and quizzes
Discuss and use the scientific approach to solve problems within the field of biology	In-class discussions and laboratory experiments	Examinations, quizzes and laboratory reports
Read and analyze charts, graphs, and tables conveying scientific information	In-class discussions and laboratory exercises and experiments	Examinations, quizzes and laboratory reports
Collect, interpret, present and discuss scientific data	Laboratory experiments	Formal written laboratory report

Lecture Attendance Policy: Attendance is not mandatory. But you will probably fail the class if you miss a lot of lectures. Test questions will be derived from material found in the text, BUT some questions will be from material that is presented in class and *nowhere else*. ***It's not a novel concept: attend class plus read the text!***

Please try to arrive on time. *If the student arrives late, they should quietly enter via the back of the room. It is disrespectful to the class to arrive late and noisily.*

Make-up examinations will be offered in the case of a family emergency, illness, or other university excused absence. Please make every effort to contact Dr. Price prior to the test (email will be fine) to inform him that you'll miss the test. ***Students have ONE week to make-up a missed test; not doing so will result in a zero for that test.*** The make-up test may not be the same exact exam as that given on the regularly scheduled exam day. University-excused absences are obtained through the Office of Student Affairs. 2W38 Memorial Student Center. 304/696-6422; studentaffairs@marshall.edu.

Lab Attendance Policy

The laboratory component of this class is a critical part of the learning objectives for Principles of Biology. The lab provides a "hands-on" experience that enables the student to appreciate the applicability of basic biology to scientific discovery. The labs cannot be made up if they are missed. If a student misses a lab due to a university excused absence, that particular lab grade will be excluded from the final grade calculation, but *only up to three*. If a student misses more than three labs, excused or not, they will receive a "zero" for the additional labs that are missed and these "zeros" will be included in the final grade calculation. ***If a student misses five labs in total they will automatically fail the course***. The rationale behind this policy is that if a student misses five labs it stands to reason that they are in a situation that warrants withdrawal from the class, and possibly from the university.

Cell Phone/Electronics Policy: Use your Smartphone to text and surf social media all you want during class. Yes, that's right. I give up. But, if you use your Smartphone excessively, and I deem it is a distraction, there will be consequences too horrible to put into writing.

The inappropriate use of laptops is a different story. Using a laptop to surf the 'net, look at Facebook, etc., is very distracting to those around you (unless you are in the back row). You'll be caught and asked to leave. Period.

Note: *No electronic devices, EVER, during tests.*

Grading Policy: There will four multiple choice exams which includes a comprehensive final exam. You will be tested on material from the lectures and the book; all four tests comprise 80% of your final grade. Laboratory performance will contribute the remaining 20% of your course grade. Quizzes will not be given unless attendance begins to drop.

Tests will be given on the dates listed on the Schedule. All tests (except the final exam) will be administered during the regular class time. Not all tests are weighted the same:

- Test 1 = 15% of final grade
- Test 2 = 20% of final grade
- Test 3 = 20% of final grade
- Test 4 (Comprehensive Final Exam) = 25%
- Laboratory = 20% of final grade

The final grade: A: 90-100%; B: 80-89.4%; C: 70-79.4%; D: 60-69.4%; F: <59.4%

Students have 1 week after the test scores have been returned to discuss issues with the exam.

GENERAL POLICIES

By enrolling in this course, you agree to the University Policies. Please read the full text of each policy be going to http://www.marshall.edu/academic-affairs and clicking on "Marshall University Policies." Or, you can access the policies directly by going to http://www.marshall.edu/academic-affairs/?page_id=802

In the case of a fire alarm, students are to leave the building quickly and orderly. In the case of a tornado, students are to move to the hallway, away from windows and doors. MUPD phone number is 696-4357 (696-HELP). Please add this number to your phone's contacts list.

Students are encouraged to sign up for the automatic Marshall University emergency text messaging system to be notified of emergency situations and other important announcements. To sign up, go to: myMU; log in; click on MU Alert (a red triangle in the Launchpad), and complete the information.

Learning Objectives

The instructor has several objectives for his students during this semester. They are listed below in order of increasing significance to the student's long-term success in careers and in personal life.

1. The gain of simple *knowledge*, and any student can achieve this modest objective by simply memorizing the material.

2. A more significant objective is the actual *comprehension* of the material. Does the student actually understand the material, or are they only parroting the material during the tests. One who comprehends the material can answer test questions using information learned in class, even if the exact question was never discussed.

3. In order to use the information learned in class in future years, the student must be capable of *applying* the knowledge to new events. An ability to *apply* new knowledge is a sign of creativity that leads to exceptional careers.

4. Finally, the best and brightest have the capacity to *synthesize* new paradigms, new theories, and new designs that advance their chosen field. Students must learn to create new ideas, design new experiments, and actually perform the work that yields a new information, discoveries, or technologies.

LECTURE SCHEDULE

The tests will be held on the indicated dates, *but the instructor reserves the right to deviate from the indicated chapters*.

WEEK 1: August 22-26
Chapter 1. Introduction: Biology Today
Chapter 2. Essential Chemistry for Biology
WEEK 2: August 29-September 2
Chapter 2. Essential Chemistry for Biology
Chapter 3. The Molecules of Life
WEEK 3: September 5-9
Chapter 3. The Molecules of Life
Chapter 4. A Tour of the Cell
WEEK 4: September 12-16
Chapter 5. The Working Cell
Chapter 6. Cellular Respiration: Obtaining Energy from Food
WEEK 5: September 19-23
Chapter 6. Cellular Respiration: Obtaining Energy from Food
Chapter 7. Photosynthesis: Using Light to Make Food
********TEST 1****** Thursday, September 22**

WEEK 6: September 26-30
Chapter 8. Cellular Reproduction: Cells from Cells
WEEK 7: October 3-7
Chapter 8. Cellular Reproduction: Cells from Cells
Chapter 9. Patterns of Inheritance
WEEK 8: October 10-14 (Fresh./Soph. getting a D or F will have a letter sent to home address)
Chapter 10. The Structure and Function of DNA
Chapter 11. How Genes are Controlled
WEEK 9: October 17-21
Chapter 11. How Genes are Controlled
********Test 2******Thursday, October 20**

WEEK 10: October 24-28 (Oct. 28 is the last day to drop a class)
Chapter 12. DNA Technology
WEEK 11: October 31-November 4
Chapter 13. How Populations Evolve
Chapter 14. How Biological Diversity Evolves
WEEK 12: November 7-11
Chapter 15. The Evolution of Microbial Life
WEEK 13: November 14-18
Chapter 16. The Evolution of Plants and Fungi
Chapter 17. The Evolution of Animals
********Test 3******Thursday. November 17**

WEEK 14: November 21-25 (*No classes this week due to Thanksgiving break*)
WEEK 15: November 28-December 2
Chapter 18. An Introduction to Ecology and the Biosphere
WEEK 16: December 5-9 (Dec.9 is last day of class)
Chapter 19. Population Ecology
Chapter 20. Communities and Ecosystems
WEEK 17: December 12-16
Final Exam Week
*********FINAL EXAM (comprehensive): Thursday, Dec. 15, 10:15-12:15***