

## **BIO100 Biology Concepts**

**Syllabus – Fall 2011  
(27823, 27824, 27825)**

Prof. Gregory Hocutt

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Office Hours: Monday and Wednesday: Online and by appointment  
Tuesday and Thursday: 8:00 a.m. to 8:50 a.m.  
Friday by appointment only

**These sections meet in the Life Science Building at MCC's at Southern and Dobson campus.**

Lecture: LS201 TR 9:00 a.m. to 10:15 a.m.

Laboratory: LS209 Tuesday OR Thursday 10:30 a.m. to 1:20 p.m.

**Books:** Campbell Essential Biology (3<sup>rd</sup> or 4<sup>th</sup> Edition)  
Simon, Reece and Dickey

Introduction to Biology for Non-Majors – FALL 2011 PRINTING  
Baldwin, Hocutt and Bricker

**BIO100** is a one-semester introductory course covering basic principles and concepts of biology. Methods of scientific inquiry and behavior of matter and energy in biological systems are explored. Field trips may be required at students' expense.

The goals of this course include, but are limited to, developing general and biological science skills in students which will allow them:

- (1) to describe and utilize the Scientific Method;
- (2) to describe the basic characteristics shared by all living things including basic cell theory;
- (3) to describe some biochemical properties of life's structure, processes, and energy and matter usage;
- (4) to describe the arrangement and function of tissues, organs, and organ systems in multicellular organisms;
- (5) to identify and describe the processes of organismic reproduction including the genetic mechanisms of inheritance and basis of mutation, or genetic change;
- (6) to describe and analyze the processes of gene expression and its influence on

organismal survival and reproduction;  
(7) to describe and analyze the processes involved in evolution and their impact on all living things;  
(8) to identify and describe the basic concepts of taxonomy and how they relate to the classification of all living things; and,  
(9) to identify and analyze the basic principles of ecology and man's role in the environment as a whole.

**Laboratory Safety:** Recently, BIO100 has begun to incorporate some illustrative exercises in biotechnology. For these labs, and any others which may require use of specialized equipment, you will be required to *strictly* follow the safety instructions of your lab instructor.

Arizona Revised Statutes § 15-151 specifies that every student, teacher and visitor in community colleges must wear appropriate protective eye wear while participating in or when observing vocational, technical, industrial arts activities involving exposure to: molten metals; molten materials; cutting, shaping, and grinding of materials; heat treatment; tempering or kiln firing of any metal or other materials; welding fabrication processes; explosive materials; caustic solutions; and radioactive materials.

**Attendance Policy:** This course entails both a lecture and a lab. You must attend lecture and lab with the *same instructor*. **The laboratory is a required portion of this course.** Attendance is mandatory in lab. If you miss two labs unexcused, your grade for the course will drop a full letter grade - that is for the entire course, not just your lab grade. If you miss three labs for any reason, the instructor may withdraw you from the entire course. Bottom line - do not miss labs.

Attendance at lecture is also required, however, the main point is for you to engage and learn the material. If you miss lectures consistently, you should not expect to do well on lecture exams. Your instructor will have little reason to give your grade the benefit of the doubt if you are not attending lectures consistently. Don't be late. If you are going to be late, do not disturb the lecture as you enter. Once you are in lecture, you need to stay until the end of class. **Don't get up and leave class in the middle of lecture.**

**Grading Policy:** The grade for the course will be determined based upon 400 points:

|                      |   |      |
|----------------------|---|------|
| 360 points and above | = | A    |
| 320 - 359 points     | = | B    |
| 280 - 319 points     | = | C    |
| 240 - 279 points     | = | D    |
| 239 and less         | = | Fail |

Lab will entail 100 total points (1/4 of total course) based upon attendance (30 points), assignments (30 points), and a lab practical exam (40 points). Unless otherwise noted, lab assignments will be due at the beginning of the following lab period. Late lab assignments will not receive full credit.

Lecture grading will be based upon two mid-term exams and one final exam of 100 points each (total of 300 points, 3/4 of course grade). Exams will be either exclusively or predominantly multiple choice. Some math will be required. MATERIAL PRESENTED IN LAB IS FAIR GAME FOR YOUR EXAMS. If you miss an exam, you MAY be able to make it up IF you contact me ahead of time. You will then be eligible for only 90% of the points on the missed exam. Plan to attend the scheduled final exam.

**Disability Statement:** The college will make reasonable accommodations for persons with documented disabilities. Students should notify Student Services and their instructors of any special needs.

EARS (Early Alert Referral System): MCC is committed to the success of all students. Numerous campus support services are available to assist you in achieving your educational goals. MCC has adopted an Early Alert Referral System as part of a student success initiative to aid students in their educational pursuits. Faculty and staff participate by alerting and referring students to campus services for added support. Students may receive a follow up call from various campus services as a result of being referred to EARS. Students are encouraged to participate, but these services are optional.

**<http://www.mesacc.edu/students/ears>**

## Bio100 - Biology Concepts Fall 2011 Tentative Schedule

| Week of | Lecture   | Lab  |
|---------|---|--|
| Aug 22  | Ch.1: What is science,<br>Ch.19: Earth, Biomes,<br>Ecosystems   | Exercise 1: The Scientific Process;<br>Prisoner's of Silence (Video)   |
| Aug 29  | Community and Population<br>Ecology   | Exercise 2: Scientific Views of Global<br>Warming  |
| Sept 5  | Ch.13: Evolution<br><b>Sept 5<sup>th</sup>, Labor Day – No<br/>Class</b>                                | Exercise 15: (Independent Field Trip)<br>Gilbert Riparian Area. <b>No on-campus<br/>lab this week. Must be completed by<br/>week of Sept. 19<sup>th</sup>.</b>   |
| Sept 12 | Ch. 2-3: Chemistry and<br>Organic Molecules   | Exercise 3: Natural Selection  |
| Sept 19 | Ch.4-5: Cells   | Exercise 4: Cells  |
| Sept 26 | Ch.6-8: Energetics  | Exercise 5: Photosynthesis   |
| Oct 3   | Ch.10: Mendelian Genetics<br><b>EXAM I</b>  | Exercise 16: (Independent Field Trip)<br>Desert Botanical Garden. <b>No on-<br/>campus lab this week. Must be<br/>completed by week of Oct. 17<sup>th</sup>.</b> |
| Oct 10  | Ch.8: Cell Division;<br>Ch.12: Molecular Genetics   | Exercise 6: Mendelian Genetics   |
| Oct 17  | Ch.12: Molecular Genetics;<br>Biotechnology   | Exercise 7: DNA Extraction<br>Exercise 11: DNA, RNA, Expression  |
| Oct 24  | Ch. 13: Population Genetics   | Exercise 10: Acquiring<br>Bioluminescence through<br>Transformation  |
| Oct 31  | Ch. 13: Population Genetics;<br>Speciation  | Exercise 9: What Causes Populations to<br>Change Over Time?  |
| Nov 7   | Biodiversity / Kingdoms<br><b>EXAM II</b><br><b>Nov 11, Veterans' Day, No<br/>Classes</b>               | Exercise 14: Darwin and the Tree of<br>Life  |
| Nov 14  | Biodiversity / Kingdoms   | Handout: Comparative Anatomy   |
| Nov 21  | Phylogenetics<br><b>Nov 24<sup>th</sup> through Nov 27<sup>th</sup> –<br/>Thanksgiving – No Classes</b> | <b>NO LABS THIS WEEK</b>   |
| Nov 28  | Behavior; Sexual Selection  | Exercise 12: Classification<br>Exercise 13: Cladistics   |
| Dec 5   | Sociobiology<br>Finish Up   | <b>Lab Exam</b>  |
| Dec 12  | <b>FINAL EXAMS</b>  | <b>NO LABS THIS WEEK</b>   |