

COURSE OUTLINE
BIO 101 SECTIONS 003, 004, & 005
SPRING 2005

Instructor: **Dr. Michele Harmon**
Office: SBDG 221
Phone: (803) 641-3607
e-mail: micheleh@usca.edu
Lecture: 9:25 - 10:40 am TTh in SBDG 327
Lab: Section 003: 11:00 am - 1:40 pm, W in SBDG 107 (Dr. Harmon)
Section 004: 2:30 pm - 5:10 pm, M in SBDG 107 (Dr. Harmon)
Section 005: 10:50 am- 1:30 pm, TH SBDG 108 (Dr. Yates)
Credits: 4
Required text: **Biology, A Guide to the Natural World, 2ndEd.** by David Krough
Biology 101 Laboratory Manual by Jackson and Yates

Course Objectives: This course will introduce the student (majors and non-majors alike) to the underlying principles governing the science of biology. Its primary emphasis will be on cellular components and processes. Upon completion of this course students will be expected to understand the following:

1. The basic chemistry that governs biology
2. The major biological molecules used by cells
3. The structure of prokaryotic and eukaryotic cells
4. How materials get into and out of cells
5. How cells convert sunlight and food into energy
6. Cellular reproduction (mitosis and meiosis)
7. Mendelian Genetics and inheritance
8. The structure of DNA and how it is replicated
9. Synthesis of proteins
10. The basics concepts behind evolution and how species change over time

Methods of Presentation and Evaluation: Information will be presented through lectures along with appropriate visual aids. Traditional exams will be used to evaluate student progress in the class. The grading scale is summarized below.

The final course grade will be based on the following:

| | |
|-------------------------------------------------------|--------------------------|
| 4 Lecture exams @ 100 pts. each | 400 |
| 1 Final exam @ 200 pts. | 200 |
| <u>Laboratory quizzes, reports, and participation</u> | <u>300</u> |
| | 900 total pts. available |

GRADING SCALE: A (90-100%), B (80-89), C (70-79), D (60-69), F (0-59)

Schedule for BIO 101, Sections 003, 004, and 005 for spring 2005

| Week | Date | Topic | Chapter |
|------|---------------|----------------------------------------------------------|----------|
| 1 | Jan. 11 | The Science of Biology | 1 |
| 1 | Jan. 13 | Chemistry and Life | 2 |
| 2 | Jan. 18 | The Chemical Building Blocks of Life | 3 |
| 2 | Jan. 20 | The Chemical Building Blocks of Life | 3 |
| 3 | Jan. 25 | The Cell | 4 |
| 3 | Jan. 27 | The Cell | 4 |
| 4 | Feb. 1 | Exam 1: Chapters 1- 4 | |
| 4 | Feb. 3 | The Plasma Membrane | 5 |
| 5 | Feb. 8 | An Introduction to Energy | 6 |
| 5 | Feb. 10 | Deriving Energy from Food | 7 |
| 6 | Feb. 15 | Deriving Energy from Food | 7 |
| 6 | Feb. 17 | Photosynthesis | 8 |
| 7 | Feb. 22 | Photosynthesis | 8 |
| 7 | Feb. 24 | Exam 2: Chapters 5-8 | |
| 8 | Mar. 1 | An Introduction to Genetics: Mitosis | 9 |
| 8 | Mar. 3 | Meiosis | 10 |
| | Mar. 4 | Last Day to Drop without "WF" | |
| 9 | Mar. 8 | Spring Break | no class |
| 9 | Mar. 10 | Spring Break | no class |
| 10 | Mar. 15 | Mendelian Genetics | 11 |
| 10 | Mar. 17 | Mendelian Genetics | 11 |
| 11 | Mar. 22 | Chromosomes and Inheritance | 12 |
| 11 | Mar. 24 | Exam 3: Chapters 9-12 | |
| 12 | Mar. 29 | Election Day | no class |
| 12 | Mar. 31 | DNA | 13 |
| 13 | Apr. 5 | DNA | 13 |
| 13 | Apr. 7 | Protein Synthesis | 14 |
| 14 | Apr. 12 | Protein Synthesis | 14 |
| 14 | Apr. 14 | Biotechnology | 15 |
| 15 | Apr. 19 | Exam 4: Chapters 13-15 | |
| 15 | Apr. 21 | Evolution | 16-18 |
| 16 | Apr. 28 | Comprehensive Final Exam: Apr. 28 at 11:00 am | |

CHANGES: The instructor reserves the right to make changes in the lecture or laboratory schedule, # of exams given, and the contents of each exam as deemed necessary.

ATTENDANCE POLICY: Students should refer to the USCA Student Handbook regarding the number of absences permitted. Absences, *neither excused nor unexcused*, absolve the student from meeting class assignments. Lecture exam dates are clearly stated in the syllabus, and all students are expected to take the exam at the regularly scheduled time. Make-up lecture exams will be considered only for a **documented, excusable** reason. If there is an illness or emergency, you are expected to contact the instructor immediately. Be prepared to show documentation (doctor's excuse, etc.). Failure

to contact the instructor within 24 hours will forfeit any chance of making up the test.

Attending lecture and taking notes is the sole responsibility of the student. Under no circumstance will the instructor provide copies of lecture notes or slides for students.

LABORATORY ATTENDANCE: Because of their nature, **laboratory investigations cannot be made up** – therefore students must make every effort to attend laboratory sessions. If you miss a laboratory investigation, you will not be allowed to take the associated quizzes or turn in a lab report the following week. This also applies if you come in late, leave early, or do not participate fully. You cannot write a report on a laboratory investigation that you did not do.

ELECTRONIC DEVICES: Unless you can be responsible, do not bring cell phones into the lecture or the laboratory. Cell phones cause an unfair disruption to the entire class that cannot be tolerated. This includes leaving the room to answer silent rings or using the phone for text messages. Please plan to be out of touch and to have your cell phone stored out of sight during lecture and lab time.

DISABILITY STATEMENT: If you have a physical, psychological, and/or learning disability which might affect your performance in this class, please contact the Office of Disability Services, 126A B&E, (803) 641-3609, as soon as possible. The Disability Services Office will determine appropriate accommodations based on medical documentation.

Laboratory Schedule for BIO 101, Spring 2005

| Date | Topic |
|--------------|---------------------------------------------------------|
| Jan 10-13 | First week of class - no lab |
| Jan 17-20 | Monday Holiday - no lab |
| Jan 24-27 | Measurement Techniques: Investigation #1 |
| Jan 31-Feb 3 | in-class lab report for #1 |
| Feb 7-10 | Organic Molecules in Cells: Investigation #2 |
| Feb 14-17 | in-class lab report for #2 |
| Feb 21-24 | Cells and Microscopy: Investigation #3 |
| Feb 28-Mar 3 | in-class lab report for #3 |
| March 7-10 | Spring Break - no lab |
| March 14-17 | Enzymes: Investigation #4 |
| March 21-24 | in-class lab report for #4 |
| March 28-31 | Photosynthesis: Investigation #5 |
| April 4-7 | in-class lab report for #5 |
| April 11-14 | Chi Square and Mendelian Genetics: Investigation #7 & 8 |
| April 18-21 | in-class lab report for #7 & 8 |