

Valdosta State University, BIOL 1107K, Sections M-R (4 Credit Hours)
Principles of Biology I – FALL 2013
Syllabus & Course Policies

Lecture: BC 1011 – Mondays, Wednesdays, & Fridays – 11:00-11:50

Instructor: Dr. Emily Cantonwine (Dr. Cantonwine)

Office: BC 2031

Phone: (229) 333-5337

Office hours: Tuesdays 10-12 & 2-4, or by appointment (arrange by email).

Graduate Assistant:

Welcome to Principles of Biology I. This is the first course in a series designed to help you develop a strong foundation in the biological sciences to build on throughout your studies at VSU and beyond.

BIOL 1107 Course Description. An introduction to the principles of biology for science majors, with an emphasis on the cellular nature of life. Concepts covered include the origin and early evolution of cellular life; cell structure, function, metabolism, and reproduction; cell signaling; and gene regulation in bacteria and eukaryotes. There are no prerequisites for this course. BIOL 1100 is a co-requisite for Freshman Biology majors.

Required Resources:

- Sadava, D., Hillis, D.M., Heller, & Berenbaum, M.R. 2009. LIFE: The Science of Biology. Ninth Edition. Sinauer Associates, Inc., Sunderland, MA, and W.H. Freeman & Co., Gordonsville, VA.
- Turning Technologies Clicker NXT
- R.H. Goddard. 2011. Methods and Investigations in Basic Biology. Sixth Edition. Hayden-McNeil Publishing, Plymouth, MI. (Lab manual)

Learning Goal

Students will demonstrate understanding of the physical universe and the nature of science, and they will use scientific methods and/or mathematical reasoning and concepts to solve problems.

Course Objectives and Outcomes (refer to Outcome section at end of syllabus for more information)

By the end of this course, students will be able to

- 1) answer questions that demonstrate an understanding of fundamental concepts of biology, including the scientific method and experimental design; cellular structure, function, metabolism, and reproduction; the nature of the gene and its action; and the mechanisms of evolution (GEO 5; BEO 1-4)
- 2) perform a variety of standard lab techniques used in biological research (GEO 5)
- 3) use critical thinking skills and written communication skills to present the results and conclusions of data collected in the lab in standard scientific writing format (GEO 4 & 7; BEO 1)

Assessments:

Lecture (75% of final grade)

- Lecture grade (100% of lecture grade; 75% of final grade)
7 of 8 - the lowest of these grades will be dropped
 - Unit Exams (5)
 - Cumulative Final Exam (1)
 - Pooled Clicker Grade (1)
 - Average quiz grade (pre-lecture & post-lecture) (1)
- Bonus (up to + 5% added to final grade)
 - Learning logs (in class & blazeview)

SCALE

A ≥ 90.0%

B ≥ 80.0%

C ≥ 70.0%

D ≥ 60.0%

F ≤ 59.99%

Lab (25% of final grade)

- Refer to your lab syllabus for assessment details

Explanation of Lecture Assessments:

Unit Exams. A percentage score will be determined for each unit exam. There are no make-up exams, regardless of excuse. If you miss an exam, this will be the grade that is dropped. Students may not take exams early, with the exception of students with a university-related or religious excuse. The unit exams are not cumulative.

Final Exam. The final exam will be cumulative, and is weighed the same as the unit exams and the pooled clicker grade. Students may choose to not take the final, but in this case, none of the previous lecture grades will be dropped.

Pooled Clicker Grade. Beginning in the second week of class, lectures will include an assessment using clicker questions. Each correct answer will count 2 points, incorrect answers will count 1 point, and questions that are not answered will count 0 points. *Individual clicker assessments* will be posted to Blazeview immediately following the lecture. At the end of the semester, a *Pooled Clicker Grade* will be calculated as the average percentage of all but the lowest *individual clicker assessments*. The lowest individual clicker assessment will be dropped from the pooled grade to allow for an absence or forgotten clicker.

** The Pooled Clicker Grade will be the lecture grade that is dropped if you allow someone to use your clicker in your absence, or if you use someone's clicker in his or her absence.*

Average Quiz Grade. This grade will be an average of all quiz grades posted to Blazeview. There are 2 types of quizzes you will see, post-lecture practice quizzes and pre-lecture vocabulary quizzes (see below). When quizzes are assigned, they will be posted on Fridays and must be completed before lecture on Mondays (11am). Each quiz may be attempted twice, and the highest score will be recorded.

- **Pre-Lecture Vocabulary.** A list of vocabulary words related to the upcoming week's material will be posted to blazeview on Wednesdays to get a head start on Friday's quiz (when assigned). Students are expected to define vocabulary words before attempting the quiz! These definitions should be added to your lecture notes so they may be easily accessed during lecture as needed.
- **Post-Lecture Practice Quizzes.** A set of practice questions related to the week's material will be posted to blazeview as an assessment on Fridays (when assigned).

Learning Logs. These bonus opportunities may be assigned during lecture or via blazeview and will consist of either written reflections related to your knowledge and learning, or short reports on a cell type of interest. Each LL will count up to 2 points, and will be graded as follows: 0 – not turned in, log is not relevant to question, or log is written too poorly to understand; 1 – log addresses question at a superficial level only (providing little insight), 2 – log is thoughtful/contemplative, and provides useful and relevant insight.

All lecture grades will be posted on the blazeview cross-listed page **Arts and Sciences Cross-Listed-Fall2013-BIOL-1107K-M_N_O_P_Q_R**. Your grade can be computed at any time using the following equation (see me during office hours if you would like help with this calculation):

Grade = ((average % lecture grade after lowest grade is dropped) x 0.75) + (average % lab grade x 0.25) + (% learning log grade x 0.05)

General Rules:

Attendance Policy. Attendance is not required in lecture. The attendance policy in the laboratory is per the discretion of the laboratory instructor and may significantly impact your potential grade. Refer to the lab syllabus for details.

Assigned seats. Assigned seats will be used (beginning the second or third week of class) to keep track of student attendance for the purpose of monitoring clicker usage. **You may change seats (temporarily or permanently) during the semester, but it is your responsibility to inform the graduate assistant of this change prior to making the move; otherwise, your pooled clicker grade may be dropped if you are counted absent but your clicker is detected!**

Lecture Notes. Powerpoint slides with fill-in blanks will be provided for printing at least 48-hours before the lecture (beginning the second week of class). Students are expected to print the slides and fill in the blanks during lecture.

Student conduct

- Arrive on time and have all the materials you need (including your clicker) when class begins.
- Your full attention should be on the course material. If this is not possible, please be respectful of your fellow students by not being disruptive.
- You do not need my permission to leave class early. Please do so in the least disruptive way.
- Disruptive students may be asked to leave the classroom. I consider listening to music, surfing the internet, obvious texting, and talking to your neighbor while material is being presented to be disruptive.

Food and Drink

- Drinks and snacks are allowed in the lecture hall as long as their consumption and storage are not a disturbance to yourself or other students. Each student must clean up after him or herself; otherwise, this privilege will be revoked. Drinks and snacks are not allowed in lab!

Electronic Devices

- Bring your clicker to lecture every day! Clickers will not be used in labs, unless otherwise stated by your lab instructor.
- Turn off your cell phone during class!
- Turn off your MP3 player and remove your earbuds/headphones during lecture.
- Laptops & related tools are allowed for note taking as long as its use is not disruptive (see above).

Special Needs: If you have need for special arrangements to allow you to meet the requirements of this course, please contact the Access Office for Students with Disabilities in Nevins Hall, 245-2498. Also, please discuss this need with me before the end of the second week of class.

Academic Integrity: I follow the Academic Honesty Policies and Procedures of the University and the Department of Biology's Policy on Plagiarism. For more information, refer to www.valdosta.edu/academic/AcademicHonestyPoliciesandProcedures.shtml and www.valdosta.edu/biology/documents/biologyplagiarism.doc. "Academic Integrity/ Honesty" means performing all academic work without plagiarism, cheating, lying, tampering, stealing, receiving unauthorized or illegitimate assistance from any other person, or using any source of information that is not common knowledge.

Important information:

- For Biology majors, a grade of C or higher is required in this course before additional biology courses can be attempted.
- Midterm, October 3rd, is the last day for withdrawing without penalty.

Tentative Lecture Schedule, BIOL 1107K, Sections M-R, Fall 2013

| Week | Subject | Chapters | Due following Monday |
|-------------|---|--------------------|-----------------------------|
| Aug 12 | What is Biology? The cell theory; Main types of cells & organisms | 1.1, 1.2 | |
| Aug 19 | Cells: structure & function | 5 | Vocabulary, Practice quiz |
| Aug 26 | Cells: structure & function; EXAM 1 (Aug 28) ; Cellular membrane structure & function; lipids; covalent bonds & chemistry of hydrophobic molecules | 5; 6.1, 3.4, 2.2 | |
| Sept 2 | <i>Labor day, no class (Sept 2)</i> ; Cellular membrane structure & function; lipids; covalent bonds & chemistry of hydrophobic molecules | 6.1, 3.4, 2.2 | Vocabulary, Practice quiz |
| Sept 9 | Proteins; covalent, hydrogen, & ionic bonds; chemistry of hydrophilic molecules; condensation reaction | 3.1, 3.2, 3.3, 2.2 | Vocabulary, Practice quiz |
| Sept 16 | Membrane transport | 6.3-6.5 | |
| Sept 23 | EXAM 2 (Sept 23) ; Energy, Enzymes, & Metabolism | 8 | Vocabulary, Practice quiz |
| Sept 30 | Carbohydrates; hydrolysis reaction; Pathways that harvest chemical energy | 8, 3.1, 9 | Vocabulary, Practice quiz |
| Oct 7 | Pathways that harvest chemical energy; photosynthesis | 9, 10 | Practice quiz |
| Oct 14 | Photosynthesis; Exam 3 (Oct 16) ; Nucleic acids | 10; 4 | Vocabulary |
| Oct 21 | DNA and its role in heredity; From DNA to protein | 13.2, 14 | Vocabulary, Practice quiz |
| Oct 28 | From DNA to protein; The cell cycle; DNA replication | 14, 11 13.3 | |
| Nov 4 | Exam 4 (Nov 4) ; Inheritance, genes, and chromosomes | 12 | Vocabulary, Practice quiz |
| Nov 11 | Gene mutation and molecular medicine | 15 | Vocabulary, Practice quiz |
| Nov 18 | Cell signaling and communication | 7 | |
| Nov 25 | Thanksgiving week – no class | | |
| Dec 2 | Exam 5 (Dec 2) Final Exam (Dec 6, 12:30-2:30pm) | | |

Valdosta State University General Educational Outcomes (GEO)

1. Students will demonstrate understanding of the society of the United States and its ideals.
2. Students will demonstrate cross-cultural perspectives and knowledge of other societies.
3. Students will use computer and information technology when appropriate.
4. Students will express themselves clearly, logically and precisely in writing and in speaking, and they will demonstrate competence in reading and listening.
5. Students will demonstrate knowledge of scientific and mathematical principles and proficiency in laboratory practices.
6. Students will demonstrate knowledge of diverse cultural heritages in the arts, the humanities, and the social sciences.
7. Students will demonstrate the ability to analyze, to evaluate, and to make inferences from oral, written and visual materials.
8. Students will demonstrate knowledge of principles of ethics and their employment in the analysis and resolution of moral problems.

Department of Biology Educational Outcomes (BEO)

1. Develop and test hypotheses, collect and analyze data, and present the results and conclusions in both written and oral format used in peer-reviewed journals and at scientific meetings.
2. Describe the evolutionary process responsible for biological diversity, explain the phylogenetic relationships among the other taxa of life, and provide illustrative examples.
3. Demonstrate an understanding of the cellular basis of life.
4. Relate the structure and function of DNA/RNA to the development of form and function of the organism and to heredity
5. Interpret ecological data pertaining to the behavior of the individual organism in its natural environment; to the structure and function of populations, communities, and ecosystems; and to human impacts on these systems and the environment.