Valdosta State University, BIOL 1107K, Sections H-N (4 Credit Hours)
Principles of Biology I – FALL 2015
Syllabus & Course Policies

Lecture Location: BSC 1011 – MW 3:30-4:45pm

Instructor: Joshua S. Reece Office: BSC 1213
Email: jreece@valdosta.edu
Office hours: W 1:30-3:30pm
Graduate Assistant (GA): See Blazeview for details

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. This syllabus is subject to modification at the discretion of the instructor.

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.

A Note from Dr. Reece: I wrote a grant and secured $30,000 from the University of Georgia to be able to provide you with free textbooks. You are welcome. In exchange, I want your pledge to come to class prepared, this means reading the chapters in your free book, and doing the practice questions in your book and on Blazeview. I do not give extra credit, I do not give homework, I do not give you points for showing up to class. My lectures are not a replacement for reading the book. The lecture period is your opportunity to hear additional and/or clarifying information on the material from the book, and for you to see how this material links across chapters. College is about more than memorizing facts (but memorizing facts is still important). You will get facts from the book and application and critical thinking skills from lecture. That means that if you do not read the book but come to every class and memorize every word I say, you STILL WILL NOT DO WELL IN THE CLASS. You have to read the book, plain and simple.

Required Resources:

- **Lucky you! Your e-textbook is free and a print version is available at very low cost! The book is available in a wide variety of free online formats via the website listed below. You can use the book in whichever format(s) you want; we recommend that you download the entire .pdf so that you always have access to your book. Biology from OpenStax College, ISBN 1-938168-09-7, https://openstaxcollege.org/textbooks/biology**
    - **Printed copies at a significantly reduced textbook rate are also for sale via your college bookstore or www.openstaxcollege.org**
- 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)

Item	Point value	Number	Total Points	Portion of final grade
Unit Exams and Final	100	4+1 (one dropped)	400	67%
Blazeview Quizzes	5	20	100	17%
Pooled Clicker Grade	A little	A lot	50	8%
Primary Literature Assignments	25	2	50	8%
Total			600	100%

Grade 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.

Primary Literature. Primary literature will be used throughout the course. Two scientific papers will be given out as assignments. The rubric for reading and summarizing/critiquing these papers will be provided to you (about a 1 page summary/critique).

Blazeview Quizzes. Blazeview quizzes will be available for completion prior to class. With the exception of the first few lectures, they will not be available after lecture, so you MUST read the chapters and complete the quizzes prior to that material being covered in class. Quizzes are typically 10 multiple choice questions.

Final Exam. The final exam will be cumulative, and is weighed the same as the unit exams. Students may choose to not take the final, but in this case, none of the previous exam 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 using the following equation:

$\sum$ ((individual clicker grades converted to a percentage) – (lowest individual clicker grade percentage + any clicker grades where the absence was excused and documented by TA))/# of individual clicker grades used.

** The lowest individual clicker grade is dropped from the pooled grade to allow for a forgotten clicker or malfunctioning clicker. Students are therefore allowed one pass for unintended errors. It is your responsibility to fix any clicker issues in a timely manner.*

** It is your responsibility to get my approval for an excused absence and to make sure that the GA receives documentation of my approval.*

** 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.*

IMPORTANT: You are no longer in high school. I will not take attendance, and I will not give you daily homework. But, I promise you, you will only do well in this course if you read the chapters BEFORE class and do practice questions to make sure you understand the material. You have two resources for practice questions. The first is a set of practice questions and answers on Blazeview. The second is the set of practice questions at the end of each chapter in your book. The answers to the questions in your book can be found in the appendix of your book. On average, 50% of the students in this course Fail or Withdraw. Do not be a statistic. If you read the book, come to class, and do the practice questions, 90% of you will pass with an A or a B. It's that simple. Do the work, you do well- don't do the work, and you will fail. There is no trick to success without work in this class, don't be foolish. Science is difficult and requires hard work. Welcome to adulthood.

All lecture grades will be posted on the Blazeview cross-listed page **Arts and Sciences Cross-Listed-Fall2015-BIOL-1107K for sections H through N.** 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)

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.

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 be used in labs, but check with 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, including photographing slides, are not allowed for note taking without my permission.
- Recording devices are not permitted to be used without my permission.

– You will only use your clicker and only you will use your clicker. If you are seen holding two clickers, that is cheating. If you have a clicker that is not registered to you, you are cheating. Cheating is grounds for dismissal from the course with a failing grade. Cheating is not worth it!

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.

Tentative Lecture Schedule, BIOL 1107K, Sections H-N, Fall 2015

Date	Subject	Chapters
Aug 17	Introduction and first Chapter: What is Biology?	1
Aug 19	The chemical foundation of life	2
Aug 24	Biological macromolecules	3
Aug 26	Biological macromolecules (cont.)	3
Aug 31	Cell structure	4
Sept 3	**Exam 1**	-
Sept 7	*Labor day, no class*	
Sept 9	Structure and function of plasma membranes	5
Sept 14	Metabolism	6
Sept 16	Cellular respiration	7
Sept 21	Photosynthesis	8
Sept 23	Cell communication	9
Sept 28	Cell reproduction	10
Sept 30	**Exam 2**	-
Oct 5	Meiosis and sexual reproduction	11
Oct 7	Meiosis and sexual reproduction (cont.)	11
Oct 12	Mendel and Heredity	12
Oct 14	Modern understanding of inheritance	13
Oct 19	DNA structure and function	14
Oct 21	DNA structure and function (cont.)	14
Oct 26	Genes and protein	15
Oct 28	Genes and protein (cont.)	15
Nov 2	Gene expression	16
Nov 4	Biotechnology and genomics	17
Nov 9	**Exam 4**	-
Nov 11	Evolution and origin of species	18
Nov 16	Evolution of populations	19
Nov 18	Evolution (cont.)	18-19
Nov 23	Thanksgiving week – no class	-
Nov 25	Thanksgiving week – no class	-
Nov 30	Phylogenies and the history of life	20
Dec 2	**Exam 5 (Dec 8)**	-
Dec 7	**Final Exam (Dec 10, 8-10am)**	-

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.

Rubric for Primary Literature Assignments

Read the assigned paper. Type up a 500 word paper that addressing the following five components:

1) What did the authors' study, or what was the question being addressed?
2) How was the study conducted, or how did they address their question?
3) What was their major finding?
4) What is the significance of the finding?
5) How is this paper relevant to the material we have covered in class?

There is a maximum of 5 points available for each of the give components listed above, for a maximum of 25 points for each 500 word paper. There will be two of these throughout the semester.