VALDOSTA STATE UNIVERSITY
BIOLOGY 1108: Principles of Biology II
Fall 2016

INSTRUCTOR: Dr. J. A. NIENOW
OFFICE: 2089 Biology/Chemistry Building; 249-4844
Office hours: MT 3:00 to 5:00, Th 1:00 to 2:00 or by appointment
EMAIL: jnienow@valdosta.edu

TEXTS:

- REQUIRED: Grove, T. 2015. Biology Pre Lab Manual (Access card only). GreatRiverLearning.com.
- RECOMMENDED: Sadava, A., H. C. Heller, G. H. Orians, W. K. Purves, D. M. Hillis. 2014. Life: The Science of Biology. 10th edition. W.H. Freeman & Co. Gordonsville, VA.

OTHER RESOURCES:

- http://www.grtep.com
- BlazeView
- www.aamc.org/students/mcat/preparing/bstopics.pdf--contains information concerning biology topics covered by the MCAT

PREREQUISITES: A grade of C or better in Biology 1107.
COURSE DESCRIPTION: An introduction to physiological processes in plants and animals. Structure, nutrition, transport, coordination, reproduction, and development will be addressed.

GENERAL COURSE GOALS: The primary goal of this course is to introduce you to the underlying principles of biology. Because this is an introductory course, no one topic will be studied in great detail. However, you should have sufficient background at the end of the semester to pursue interesting topics in higher level courses. You should also gain the background necessary to understand the biology behind many of the problems and issues facing this country. It is also hoped that you will gain an understanding of how biologists and other scientists approach problems.

The biology program also seeks to develop some of your general college skills, in particular, your communication skills, your information processing skills, and your ability to think. Your communication skills will be exercised primarily through library assignments and written and/or oral reports of lab activities. Your information processing skills will be developed because of the nature of biology. You will be supplied with a large quantity of information in a very short time, which you must learn in some detail or you will not do well in this course. This will not be wasted effort, however. The ability to digest and incorporate large amounts of information quickly is a valuable skill in most fields of endeavor. Your ability to think will be involved in the analysis of lab exercises, class assignments, and test questions.

SPECIFIC COURSE GOALS: By the end of this course, students will be able to:

- answer questions that demonstrate an understanding of fundamental concepts of biology, including the scientific method and experimental design; the role of evolution in shaping the modern world; and commonalities in the ways multicellular organism deal with basic biological problems (GEO 5; BEO 1-4)
- perform a variety of standard lab techniques used in biological research (GEO 5)
- use critical thinking skills and written communication skills to analyze and evaluate the content quality of written and visual media relating biological knowledge (GEO 4 & 7)
- present the results and conclusions of data collected in the lab in standard scientific writing format (GEO 4 & 7; BEO 1)

ATTENDANCE: Students are responsible for attending class and for the material presented in all classes. There will be no make-ups of missed labs, quizzes, and other assignments. Students who have missed

20% of regularly scheduled class meetings, especially labs, are subject to a failing grade for the course; student's missing 4 or more labs cannot and will not receive a grade higher than a D.

LECTURE EXAMS: (GEO 5; BEO 1-5): There will be five unit exams. The first four are each worth 125 points. These will consist of a combination of short answer and multiple choice questions. The dates of these exams are included in the attached schedule of lectures. DO NOT MISS THESE EXAMS WITHOUT PRIOR PERMISSION. The final unit exam will take place during the final exam period, and will be worth 200 points. About half of the questions on this exam will cover new material, the rest will cover important concepts the appeared on the earlier exams. If you are caught cheating on any exam you will receive no points and your name will be submitted to the honor board. Estimated total from exams--800 points.

LAB EXERCISES/LAB QUIZZES/LAB EXAMS (GEO 5 & 7; BEO 1): Each lab exercise comes with a pre-lab, a post-lab, and embedded lab assignments. All must be completed and submitted for a grade—the pre- and post-lab assignments are on-line, the embedded assignments are not. You lab instructor will give r you more information. They may also schedule lab quizzes to help prepare you for the lab exams. There will be two lab practical exams. The dates of the exams are listed in the syllabus. Due to the nature of these exams, they cannot be made up—If you miss the exam you will receive a zero. If you need to reschedule because of a prior appointment, be sure to check with your lab instructor well in advance of the exam. Your lab grades will be combined and weighted to make them equivalent to 30% of your grade in the class

OTHER ASSIGNMENTS: Your instructor will periodically assign some tasks to be completed either during or outside of class. These will be based on lab exercises. Be prepared. Your grade will be determined by how well you complete the assignment. The estimated total from miscellaneous assignments is 100 points.

PLAGIARISM: Be sure you read the plagiarism document available on the Biology Department webpage. Single violations will be punished with a zero for the assignment. Multiple violations could result in much more serious consequences, including a failing grade in the course and, possibly, expulsion from the University. You should also be aware that all members of the biology faculty well aware of Google and know how to use it if plagiarism is suspected. You might also want to look at www.valdosta.edu/academic/AcademicHonestyPoliciesandProcedures.shtml

GRADING: Your grade will depend on how well you do on the exams, quizzes, and reports. Expect the following grading scale (based on the total number of points actually assigned:

A = 90 - 100 %
B = 80 - 89 %
C = 70 - 79 %
D = 60 - 69 %
F < 60 %

DROPPING A COURSE WITHOUT PENALTY: In order to officially drop a course without penalty, a student must obtain and fill out a drop/add form from the Registrar's Office, acquire appropriate signatures, and return the completed form to the Registrar's Office before the designated date (published in the academic calendar). If you don't officially withdraw, and instead just stop coming to class, you will receive an F for the course. It will then take three A's in science classes cancel out that F and bring your GPA back up to 3.0 so you can maintain your scholarship.

SPECIAL NOTE 1: Grades will be neither posted nor given out over the telephone.

SPECIAL NOTE 2: Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including pregnancy status, sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, national origin, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws and regulations such as Title IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator: Maggie Viverette, Director of the Office of Social Equity, titleix@valosta.edu, 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31608, 229-333-5463.

SPECIAL NOTE 3: Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is located in Farbar Hall. The phone numbers are 229-245-2498 (V), 229-375-5871 (VP) and 229-219-1348 (TTY). For more information, please visit VSU's Access Office or email: access@valdosta.edu.

STUDY TIPS

1. Take good notes during lecture. Then, as soon as you can after class, sit down and rewrite the notes in a logical outline. Use your book to fill in the gaps and clarify the places where the lecture did not make any sense. It also helps if you write your outline in complete sentences. Note: this technique is so valuable, it is actually part of your grade for this course.
2. Form small study groups and study together on a regular basis someplace without TV, stereo or other distractions.
3. Read the relevant sections of the textbook--someone spent a lot of time and energy writing the book and you spent a lot of cash buying it. As you read, think about how the material fits in with lecture. Add the material to your lecture outlines.
4. Answer the review questions at the ends of the chapters. Make sure you understand why the correct answer to the multiple choice questions is the correct answer and the other answers are not.
5. If you don't understand something ask questions, either in class or during office hours.

VALDOSTA STATE UNIVERSITY GENERAL EDUCATIONAL OUTCOMES (GEO)

1. Students will demonstrate understanding of the society of the United States and its ideals. They will possess the requisite knowledge of the society of the United States, its ideals, and its functions to enable them to become informed and responsible citizens. They will understand the connections between the individual and society and the roles of social institutions. They will understand the structure and operational principles of the United States government and economic system. They will understand United States history and both the historical and present role of the United States in the world.
2. Students will demonstrate cross-cultural perspectives and knowledge of other societies. They will possess sufficient knowledge of various aspects of another culture, including the language, social and religious customs, aesthetic expression, geography, and intellectual and political history, to enable them to interact with individuals within that society from an informed perspective. They will possess an international viewpoint that will allow them to examine critically the culture of their own nation and to participate in global society.

3. Students will use computer and information technology when appropriate. They will demonstrate knowledge of computer concepts and terminology. They will possess basic working knowledge of a computer operating system. They will be able to use at least two software tools, such as word processors, spreadsheets, database management systems, or statistical packages. They will be able to find information using computer searching tools.
4. Students will express themselves clearly, logically and precisely in writing and in speaking, and they will demonstrate competence in reading and listening. They will display the ability to write coherently in standard English; to speak well; to read, to understand, and to interpret the content of written materials in various disciplines; and to listen effectively and to understand different modes of communication.
5. Students will demonstrate knowledge of scientific and mathematical principles and proficiency in laboratory practices. They will understand the basic concepts and principles underlying scientific methodology and be able to collect, analyze, and interpret data. They will learn a body of scientific knowledge and be able to judge the merits of arguments about scientific issues. They will be able to perform basic algebraic manipulations and to use fundamental algebraic concepts to solve word problems and equations. They will be able to use basic knowledge of statistics to interpret and to analyze data. They will be able to evaluate arguments based on quantitative data.
6. Students will demonstrate knowledge of diverse cultural heritages in the arts, the humanities, and the social sciences. They will develop understanding of the relationships among the visual and performing arts, literature and languages, and history and the social sciences. Students will be versed in approaches appropriate to the study of those disciplines; they will identify and respond to a variety of aesthetic experiences and engage in critical thinking about diverse issues. They will be able to identify the components of and respond to aesthetic experiences in the visual and performing arts. They will develop knowledge of world literature within its historical and cultural frameworks. They will understand modem issues within a historical context and the role of the individual in various forms of societies and governments.
7. Students will demonstrate the ability to analyze, to evaluate, and to make inferences from oral, written and visual materials. They will be skilled in inquiry, logical reasoning, and critical analysis. They will be able to acquire and evaluate relevant information, analyze arguments, synthesize facts and information, and offer logical arguments leading to creative solutions to problems.
8. Students will demonstrate knowledge of principles of ethics and their employment in the analysis and resolution of moral problems. They will recognize and understand issues in applied ethics. They will understand their own value systems in relation to other value systems. They will judge values and practices in a variety of disciplines.

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.

VALDOSTA STATE UNIVERSITY
SCHEDULE OF LECTURES AND LABS
BIOLOGY 1108, FALL 2016

Note: Pacing and testing dates may be changed if the need arises. Attend class regularly.

WEEK 1		
8-16-2016	LECTURE—Introduction /Review unifying principles of biology	Chapters 1/5/7
8-18-2016	LECTURE—Review unifying principles of biology	Chapters 5/7
	LAB – Labs will not meet this week	
WEEK 2		
8-23-2015	LECTURE—Mechanisms of Evolution	Chapter 21
8-25-2015	LECTURE—Reconstructing and using phylogenies	Chapter 22
	LAB—Basic statistics via Excel	exercise 1
WEEK 3		
8-30-2016	LECTURE—Brief history of life on Earth	Chapters 25/26/27
9-01-2016	LECTURE—Early stages in the movement to land (plants)	Chapters 28/29
	LAB—Non-vascular plants	exercise 2
WEEK 4		
9-06-2016	LECTURE—Early stages in the movement to land (plants)	Chapters 28/29
9-08-2016	**LECTURE EXAM I**	
	LAB— Vascular plants (ferns, gymnosperms, angiosperms)	exercise 3
WEEK 5		
9-13-2016	LECTURE—Body plans of seed plants	Chapter 34
9-15-2016	LECTURE— Plant nutrition & transport	Chapters 35/36
	LAB— Angiosperm anatomy and morphology	exercise 4
WEEK 6		
9-20-2016	LECTURE—Evolution of plant reproductive systems	Chapters 28/29
9-22-2016	LECTURE—Reproduction in seed plants/plant development	Chapters 19/38
	LAB— Angiosperm development	exercises 5
WEEK 7		
9-27-2016	LECTURE— Controlling plant development/plant responses	Chapter 37/39
9-29-2016	**LECTURE EXAM II**	
	LAB— Angiosperm physiology	exercises 6
WEEK 8		
10-4-2016	LECTURE—Origins of animal body plans	Chapters 31/32/33
10-6-2016	LECTURE—Basic physiology (animal)	Chapter 40
	FIRST LAB EXAM	
WEEK 9		
10-11-2016	**FALL BREAK—NO CLASSES**	
10-13-2016	LECTURE— Reacting to the environment—signal systems	Chapter 41
	LAB— NO LABS	
WEEK 10		
10-18-2016	LECTURE— Reacting to the environment—sensory systems	Chapters 45/46
10-20-2016	LECTURE— Reacting to the environment—sensory systems	Chapters 45/46
	LAB—Vertebrate anatomy	exercises 9 & 10
WEEK 11		
10-25-2016	LECTURE— Reacting to the environment--movement	Chapters 47/48
10-27-2016	**LECTURE EXAM III**	
	LAB— Vertebrate sensory systems	exercise 11

WEEK 12		
11-01-2016	LECTURE—Hormonal regulation II	Chapter 41
11-03-2016	LECTURE—Circulatory systems	Chapter 49
	LAB— Vertebrate circulatory, excretory, respiratory systems	exercises 12 & 13,
WEEK 13		
11-08-2016	LECTURE—Gas exchange	Chapter 50
11-10-2016	LECTURE—Digestion and excretion	Chapters 51/52
	LAB— Animal diversity I (Porifera, Cnidaria, Platyhelminthes, Annelida)	exercise 7
WEEK 14		
11-15-2016	LECTURE –Internal defense systems	Chapter 42
11-17-2016	**LECTURE EXAM IV**	
	LAB—Animal diversity II (Nematoda, Mollusca, Arthropoda, Echinodermata, & Chordata)	exercise 8
WEEK 15		
11-22-2016	LECTURE—Animal reproduction	Chapter 43
11-25-2016	**THANKSGIVING HOLIDAY—NO CLASSES**	
	NO LABS THIS WEEK—LAB AVAILABLE FOR REVIEW	
WEEK 16		
11-29-2016	LECTURE—Animal development	Chapter 44
12-01-2016	LECTURE—Control of development	Chapters 19/20
	LAB EXAM II	
WEEK 17		
12-7-2016	**FINAL EXAM (LECTURE EXAM V + REVIEW) @ 10:15 AM**	