

Valdosta State University

BIOL 1108K: Principles of Biology II Spring 2013

Lecture (BC 1023): Tuesday and Thursday 11:00 AM – 12:15 PM
Laboratory (BC 1073): Section A: Monday 8:30 AM-11:20 AM
Section B: Monday 12:00 PM – 2:50 PM
Section C: Monday 3:00 PM – 5:50 PM

Instructor: Dr. Eric W. Chambers
Office: Bailey Science Center, Room 2114
Phone: 249-2736
E-mail: ewchambers@valdosta.edu
Office hours: Thursday 1:00 PM – 2:00 PM

Text:

- Sadava, A., H. C. Heller, G. H. Orians, W. K. Purves, D. M. Hillis. 2011. Life: The Science of Biology. 9th edition. W.H. Freeman & Co. Gordonsville, VA.
- Grove, T. 2011. Principles of Biology Laboratory Manual for BIOL 1108. McGraw Hill, Boston, MA.

Course Description: An introduction to physiological processes in plants and animals. The course will explore topics in organismal structure, nutrition, transport, coordination, reproduction, and development.

Course goals: The purpose of this course is to provide you with a broad introduction to the study of biology. The course is introductory and topical in nature but upon completion of this course you will be prepared for advanced specialized courses in biology. It will also provide you with a background to better understand many of the technological issues and challenges confronting our nation and the world.

This course will focus on understanding the physiology of major systems in plants and animals. You will learn common experimental tools and techniques used in physiology. An emphasis will be placed on learning how to analyze basic biological data using quantitative tools such as Excel.

This course will assist you in developing communication skills as well as information processing skills. These abilities are critical for all students, both those who wish to attend professional school (medical, dental, etc.) and graduate school as well as those who will move directly into the job market following graduation. Your critical thinking skills will be enhanced through analysis of lab exercises, class assignments, and test questions.

Educational outcomes: Listed at the end of syllabus

Attendance: Attendance in lecture is **EXPECTED** by all students. Attendance in laboratory is **MANDATORY**; see lab policy below.

Lecture Conduct:

- Arrive on time.
- Turn off/silence cell phones during class and lab.
- Don't talk during lecture; if you don't understand something or didn't hear something ask.
- Unless it's an emergency (and using your cell phone does not constitute an emergency) do not get up in the middle of lecture, leave and come back.
- **Do not leave class early** unless it's an emergency.
- During exams **NOBODY** can leave the exam and re-enter the exam room. If a student leaves, their exam will be graded as is; the student will not be allowed to finish the exam.

Biology Tutoring: The Student Success Center (SSC) at Valdosta State University is located in Langdale Residence Hall above the Tech Shop and is available to all students. The SSC provides free peer tutoring in core curriculum courses, including biology, chemistry, math, writing, and foreign languages. The SSC also provides free professional academic advising and on-campus job information in one location. Call 333-7570 to make an appointment, or visit the website: www.valdosta.edu/ssc.

Withdrawing from the course: The last day to withdraw without penalty is **Thursday, Feb. 28, 2013**. If you don't officially withdraw, and instead just stop coming to class, you will receive an F for the course.

Academic conduct: Cheating and plagiarism will not be tolerated and may result in a failing grade for the assignment, exam or the class. The Department of Biology has a plagiarism policy, which will be handed out during the first lab period.

Student identification: Students should have in their possession at all times their VSU student identification card. In order to verify the identification of students officially enrolled in the course, it is the instructor's prerogative to request official student photo identification cards at any time during lecture. During examinations, students will routinely be asked to display their VSU student identification cards visibly on the desktop and to make them available for inspection by their instructor and/or assistants.

Privacy Act (FERPA): The Family Educational Rights and Privacy Act (FERPA) prohibits the public posting of grades by social security number or in any manner personally identifiable to the individual student. No grades can be given over the telephone or over email because positive identification can't be made.

Students with disabilities: Students requiring special accommodations because of disability should discuss their needs with me as soon as possible. Those needing accommodations that are not registered with the Special Services Program must contact the Access Office for Students with Disabilities located in Farber Hall. The phone numbers are 245-2498 (voice) and 219-1348 (tty).

Procedure for exams:

- No books, electronic devices, or notebooks will be allowed during exams and students using such items will be asked to leave and will receive a zero for the exam.
- No talking will be allowed during the exam, but students are permitted to ask the instructor questions.
- Each student will be given an exam to be completed and handed back to the instructor.
- Students must bring a pencil and will take the exam during the stated lecture time only.
- **NOTE:** You will have the class time only to complete each lecture exam.

Grade Assessment: Your final grade will be based on your performance on lecture examinations and the laboratory.

Lecture: (500pts)

Unit Exams (300 pts). There will be four lecture exams. Each exam will cover the material for a specific unit. Each exam is worth 100 points and will consist of a variety of types of questions that may include matching, multiple choice, labeling, fill in the blank and short answer. **The lowest exam grade will be dropped. There will be NO make-up exams.** Only students with a University related excuse may take an exam early. Your best policy: **DO NOT MISS EXAMS!**

Final Exam (100 pts): The final will be cumulative and will be worth 100 points. The format will be similar to that of the unit exams. The date of the final is Friday, May 4, 2012 (8:00-10:00 am). **No Early exams will be given!**

Homework (80 pts): Homework (HW) assignments will be made periodically throughout the semester. HW will be assigned as a pdf file on Blazeview. These assignments will be posted no later than Friday at 5:00pm and will be due the following Wednesday at the beginning of lecture. No HW will be accepted after 10:10 am, per the discretion of the GA. Your HW must be handwritten on the assignment printout, unless otherwise stated.

Attendance (20 pts): Students will earn up to 20 points by attending lectures. Following lecture students will sign roll.

Grade Scale:

For Biology majors, a grade of C or higher is required for this course.

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

To Calculate your Final Grade:

Final grades will be based on both the lecture and laboratory components of the course.

Lecture is worth 75% of your final grade, and lab is worth 25% of the final grade.

Lecture component (total 500 points): 4 lecture exams (each worth 100 points; one dropped; total 300 points) + Homework (80 points total) + attendance (20 points) + Cumulative final (worth 100 points)

Lab component (305 points)

Lab assignments (105 points) + 2 lab practicals (200 points)

To calculate your final grade:

1. Lecture component: Add points earned from each of the Homework assignments, exams and final and divide by 500 (remember your lowest exam will be dropped).
2. Multiply this number by 75
3. Laboratory component: Add points earned from each of the laboratory assignments and practicals and divide by total points possible (320 points)
4. Multiply this number by 25
5. Finally, do the following: Take the lecture component and laboratory component numbers you just calculated and add them together. This will give you the final percentage you earned for the course.

Example: Student earns 430 lecture points and 275 lab points

Lecture: $430/500 = 0.86$ and $0.86 \times 75 = 64.5$

Lab: $275/305 = 0.90$ and $0.90 \times 25 = 22.5$

Course grade = $64.5 + 22.5 = 87$ which equals a B grade.

Date	Topic	Chapter
Jan. 8	Course Intro; Phylogeny	22
Jan. 10	Homeostasis and Animal Tissues	40
Jan. 15	Animal Hormones	41
Jan. 17	Animal Hormones	41
Jan. 22	Animal Reproduction	43
Jan. 24	Animal Reproduction; Nervous system	43, 45
Jan. 29	Nervous system; Mammalian nervous	45, 47
Jan. 31	Mammalian Nervous system	47
Feb. 5	Exam #1	22,40,41,43,45,47
Feb. 7	Muscles	48
Feb. 12	Gas Exchange	49
Feb. 14	Gas Exchange; Circulatory System	49,50
Feb. 19	Circulatory System	50
Feb. 21	Nutrition and Digestion	51
Feb. 26	Salt and Water Balance	52
Feb. 28	Exam #2	48,49,50,51,52
Mar. 5	Seedless Plants	28
Mar. 7	Seedless plants; plants with seeds	28,29
Mar. 12	Plants with seeds	29
Mar. 14	The Plant Body	34
Mar. 19	The Plant Body	34
Mar. 21	Spring Break	NA
Mar. 26	Spring Break	NA
Mar. 28	Transport in Plants	35
Apr. 2	Exam #3	28,29,34,35
Apr. 4	Plant Nutrition	36
Apr. 9	Regulation of Plant Growth	37
Apr. 11	Regulation of Plant Growth; Plant reproduction	37,38
Apr. 18	Reproduction in Flowering Plants	38
Apr. 23	Plant responses and Environmental Challenges	39
Apr. 25	Exam #4	36,37,38,39
May. 3	Final Exam	Cumulative

BIOL 1108 Principles of Biology II Laboratory Syllabus

Lab (BC 1073)

Text: Grove, T. 2011. Principles of Biology Lab Manual for BIOL 1108.

Lab Conduct:

- Arrive on time. Assignments are due at the start of lab. Students arriving 10 minutes late will not be able to turn in assignments and will receive a zero (0) on those assignments
- It is strongly advised to maintain a laboratory notebook with drawings, descriptions, data etc. of the laboratory exercises. The only requirements of the notebook are that it be a spiral bound notebook. The notebook will help you study for the practical exams.
- No eating or drinking during the lab.
- **Attendance to lab is mandatory. Excused absences are usually given for medical emergencies and documentation must be provided; the professor determines whether or not an absence is "excused" or not. If a student misses three labs for any reason the student cannot earn higher than a "D" for his/her final grade. Except under extenuating circumstances, labs cannot be made up outside of scheduled laboratory sessions. Students are still responsible for all lab content even if they received an excused absence.**
- Students must take care of lab equipment. Notify the professor if something is not working properly or if something breaks during the course of the lab
- Each student will be assigned a microscope. It is the student's responsibility to properly use the microscope. After lab the professor will check each scope to make sure that it was put away properly. Failure to do so will result in one point being subtracted from the student's total lab points (not the final percentage) each week it is not put away properly. Notify the professor if your microscope is not functioning properly.
- Cell phones are not allowed to be used in lab with the exception of using them as timers when necessary.

Lab assignments and Lab Practical Exams:

Seven laboratory assignments (15 pts each) will be given throughout the course of the semester. These assignments are due at the start of the following lab period. No late assignments will be accepted (see above).

Two lab practical exams (100 pts each), one covering animals and one covering plants will be given. Questions may include microscope slides, powerpoint slides, whole specimens and a written component. Lab practical exams can only be taken the week they are scheduled.

The lab grade will be based on a total of 305 points. The lab portion of the course is 25% of the total course grade.

TENTATIVE LAB SCHEDULE AND TOPICS – The instructor reserves the right to modify this schedule

LAB SCHEDULE AND TOPICS SPRING 2013		
Week of	Lab Exercise (Pages)	Assignment or Quiz
7 Jan	Week One—No labs	
14 Jan	Introduction and Learn to Use Excel (Pg 1-10) Diversity: Porifera and Cnidaria (Pg 60-69) Vertebrate Animal Tissues (Pg 70-77)	Data analysis using Excel
21 Jan	MLK Holiday—No labs	
28 Jan	Diversity: Platyhelminthes (Pg 78-83)) Vertebrate Anatomy (Pg 84-91)	Chemotaxis in Dugesia
4 Feb	Diversity: Annelida and Mollusca (Pg 92-97) Sensory Systems (Pg 98-104)	Sensory System
11 Feb	Diversity: Nematoda and Arthropoda (Pg 105-110) Cardiovascular System (Pg 111-115)	Cardiovascular System
18 Feb	Diversity: Echinodermata and Chordata (Pg 116-118) Digestive System and Excretory Systems (Pg 119-120)	
25 Feb	LAB PRACTICAL #1	
4 Mar	Diversity: Non-Tracheophytes (Seedless Plants) (Pg 11-18)	
11 Mar	Diversity: Tracheophytes (Vascular Land Plants) (Pg 19-27) Plant Anatomy-Roots, Stems and Leaves (Pg 28-36)	Sex ratio fern gametophytes
18 Mar	Spring Break— No Labs	
25 Mar	Angiosperm Development (Pg 37-45)	
1 Apr	Growth, Tropism, Transpiration, Environmental Responses (Pg 46-53)	Stomata/Transpiration
8 Apr	Pollution: Effects of Chemical, Thermal & Acid Pollution (Pg 54-59)	Effects of pollution on organisms
15 Apr	LAB PRACTICAL #2	
22 Apr	No Lab	

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 modern 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.

9. 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.

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