

BIOL 1108K, Principles of Biology II **Summer II Semester, 2013** **Section A**

Lecture (BC 1025): **MTWR** **9:35 - 10:59 a.m.**
Laboratory (BC 1073): **MW** **11:30 a.m. – 2:25 p.m.**

Instructor: Dr. Russ Goddard, BC 2090. (Phone 249-2642; or Dept. office 333-5759)
(Office hours: MTWR 8:30 – 9:20 a.m.)

Email: rgoddard@valdosta.edu **Note: This is the official contact method and address for Dr. Goddard!**

Course Catalog Description: BIOL 1108 Principles of Biology II; 3-3-4; An introduction to physiological processes in plants and animals. Structure, nutrition, transport, coordination, reproduction, and development are addressed.

Required Materials:

Text: Sadava, D., D.M. Hillis, H.C. Heller, and M.R. Berenbaum. 2011. Life: The Science of Biology. 9th edition. Sinauer Associates Inc., Sunderland, MA and W.H. Freeman & Co. Gordonsville, VA.

Laboratory Manual: Grove, T.J. 2013. Principles of Biology Laboratory Manual for BIOL 1108, 2e. McGraw Hill

General Objectives: This course continues the introduction to basic principles of biology started in BIOL 1107.

Where BIOL 1107 focused on cellular structure and function addressing how life is similar through unifying cellular mechanisms, BIOL 1108, in concept, was designed as a comparative organismal physiology course to address organismal function and the diversity seen in life. One way of interpreting how we study life (organisms) is that we really ask two basic questions; 1) how do organisms form (development), and 2) how do organisms function (physiology). This course is designed to present the basics of development and physiology along two evolutionary lines in particular; those giving rise to multicellular plants and animals. Additionally, comparisons will be made on how organisms obtain energy, how they get their nutrition, how gas exchange is handled, how wastes are managed, how circulation connects many systems, as well as how these systems are regulated, particularly through hormones.

Specific course learning objectives addressed in this course that are aligned with Department and University learning objectives (listed at the end of this syllabus) include BIOL objectives 2, 3, and 5 and VSU objectives 5.

Additionally, as aligned with our new core curriculum (<http://www.valdosta.edu/academic/VSUCore.shtml>), 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.

Attendance: Attendance in this course absolutely is required. Students should be seated at the beginning of class. If you are late, your attendance may not be acknowledged. Additionally, anyone arriving late could miss points from clicker or quiz questions (no make-ups!). Likewise, if a student leaves class early, points can also be missed. The student is responsible for all material missed regardless of the reason for absences. **ABSOLUTELY NO LECTURES OR LABORATORIES CAN BE "MADE UP."** In the event that a student will miss a class, s/he should notify the instructor in writing by email BEFORE the missed class. The student will miss any points assessed during the missed class, but penalty points assessed for absences may be waived at the discretion of the instructor.

Graded Course Components: Your final grade will be based on your performance in the following course components:

Lecture Exams: (400 pts): There will be 4 lecture exams and a comprehensive final exam given on the dates listed below. Students are required to know the lecture and laboratory material and the readings from the text for exams and quizzes. Information presented in the laboratory will also be included in these exams. Each exam is 100 pts.

Lecture Quizzes: (100 pts): During the course, short quizzes will be given in class, sometimes at the beginning of a lecture and sometimes at the end. At the end of the semester, your lecture quiz grade will be combined as one (100 pt) exam.

Dropped grade: The lowest score you receive among the four lecture exams, the combined lecture quiz grade, or the final exam will be excluded (dropped) and will not be used for computing your final grade. Therefore, although there are 600 possible points from these grades, only 500 of those points will count toward your final grade.

Students will know their guaranteed score prior to taking the final exam.

Laboratory: (200 pts) The laboratory will cover mostly biological diversity over the entire semester. The lab is not

fully integrated with the lecture material because diversity in lecture is glossed over 2 – 3 lecture periods. Some PowerPoint lecture material will be presented at the beginning of each lab and you will be responsible for this material for the exams. The major points towards your grade assessed in the laboratory will be through two laboratory practicals. Each practical is worth 80 points; the remainder of your laboratory grade (40 points) is assessed based on attendance, occasional in lab quizzes, and selected homework assignments. As the laboratory is considered an extremely important part to learning “hands-on” biology, any student will automatically *lose* points from their final lab grade for any absence from laboratory.

Final grades will be based on a percentage of your cumulative points relative to the total points possible:

Lecture Exams:	400 pts	} (low dropped)
Lecture Quiz Grade	100 pts	
Final Exam	100 pts	
Laboratory:	<u>200 pts</u>	
Total:	700 pts	

Guaranteed grade distribution is as follows:

A = 90-100% (630-700 points)
B = 80-89.9% (560-629 ")
C = 70-79.9% (490-559 ")
D = 60-69.9% (420-489 ")
F = \leq 59.9% (\leq 419 points)

Notes on grading philosophy: Students should note that a grade of "A" in this course represents an exemplary command of the material covered. To obtain this grade of excellence, it is recommended that students study daily and clarify with the professor any problems regarding course information, as they arise. Advice for students on studying is provided at the URL: <http://www.valdosta.edu/~rgoddard/Study.htm>

MAKE-UP EXAMS: The exam schedule is posted below. It is assumed that because students are registered for this course at the scheduled time and exams are given during this time, all students will be able to attend. Additionally, since one exam grade is dropped, absolutely **NO make-up exams are given**. If you cannot make it to a test at the assigned time for ANY reason, your exam grade will be zero and this will be the grade that is dropped in the computation of your final grade. In no circumstance should a student registered for this course miss two exams. If you know you will miss more than one exam time, you should **DROP THIS COURSE NOW**.

EXAM SCHEDULE:

NOTE: YOU MUST BRING YOUR CLICKER WITH YOU FOR ALL EXAMS FOR YOUR EXAM ANSWERS TO BE RECORDED!

You will have one hour of class time only to complete each lecture exam and 2 hours for the final.

Exams will consist of multiple choice questions. The exam schedule is as follows:

Exam 1:	17 June 2013	
Exam 2:	27 June 2013	Mid-term Lab Practical 26 June 2013
Exam 3:	11 July 2013	Final Lab Practical 22 July 2013
Exam 4:	23 July 2013	

Final Examination: **Friday, July 26, 2013: 10:15am-12:15pm** in BC 1025.

Procedure for exams:

- ***Turn off your cell phones during exams!***
- ***Bring a #2 pencil with you to the exams!*** No books, electronic devices (including cell phones), or notebooks will be allowed during exams. ***Students using such items, including cell phones that ring during the exam, will be asked to leave and will receive a zero for the exam.***
- No talking will be allowed during the exam, but students are welcome to come to the instructor’s desk to ask questions about the exam.
- Every student should bring their University ID.

Mid-term, or in-progress grades: The instructor is required to submit in-progress grades prior to mid-term (6/27/2013). In this course, students will have feedback on at least one major exam by midterm, several clicker questions, one major laboratory practical, etc. Even a failing mid-term grade can be changed to a grade of excellence by the end of the course if students adjust their time and performance in the class appropriately. Students should therefore carefully evaluate their option of dropping this course by midterm without academic penalty.

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 desk top and to make them available for inspection by their instructor and/or assistants.

Academic Integrity: Any behavior suggestive of academic dishonesty will lead to a reprimand, failure of an assignment, or failure of the course at the discretion of the instructor, but based on the severity of the infraction(s). Cooperative learning and group interactions are common and necessary to scientists and this activity is encouraged in the form of laboratory work and discussions about data and information. However, on assignments designed to assess individual learning of material in the class, work must be completed totally independently. Behavior contrary to this principle constitutes cheating. Students should fully understand that plagiarism is not tolerated in this department or by the instructor and full appreciation for the intellectual property of others should be respected completely.

Plagiarism is the representation of someone else's work as your own. You may not blatantly copy phrases, paragraphs, or ideas from another's work. You cannot paraphrase someone else's ideas and use them as your own. You must analyze all data and work by others and then integrate this information with new data and conclusions that you independently synthesize, properly citing past work that supports your conclusions.

Students should read and be familiar with the Biology Department policy on plagiarism:

<http://www.valdosta.edu/biology/documents/biologyplagiarism.doc> and read and understand the University policy on Academic Integrity:
<http://www.valdosta.edu/academic/AcademicHonestyPoliciesandProcedures.shtml>

Disruptive behavior: No disruptive behavior of any kind will be tolerated in this course. Talking during lectures is disruptive due to the nature of the acoustic design of the room. Students should restrict talking and discussion to pertinent questions related to course material and these questions should be directed toward the instructor. Entering a classroom late is discouraged, particularly from the front of the room, because it is disruptive, as is leaving early. Any student disrupting lectures will be required to leave the classroom. Use of cellular telephones, pagers, or any similar remote communication device is prohibited during scheduled lectures, laboratories, or examinations. If students bring cellular telephones or similar devices to lecture, it is their responsibility to switch them off prior to the beginning of the lecture period. Ringing, buzzing, or any other sounds emitted from such devices will be treated as disruptive behavior on the part of the owner/possessor, and the owner/possessor will be asked to leave lecture immediately (including during exams!).

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, as positive identification cannot be made by this manner. Students may check their grades and unreturned papers/exams any time during the instructor's office hours (BC 2090).

Students with Disabilities: Students requesting classroom accommodations or modifications due to a documented disability must contact the Access Office for Students with Disabilities located in Farber Hall. The phone numbers are 245-2498 (V/VP) and 219-1348 (TTY). <http://www.valdosta.edu/access/>.

TENTATIVE COURSE LECTURE MATERIAL OUTLINE:

Lecture #	Date:	Topics:	Text Readings (pgs):
1	5 June	Introduction; How is comparative physiology used to study organisms? History of Life on Earth	PowerPoint lecture 1 Pg. 518 – 535
2	6 June	Phylogeny Bacteria and Archaea	Pg. 464 – 480 Pg. 536 – 559
3	10 June	Origin and Diversification of Eukaryotes	Pg. 560 – 587
4	11 June	Evolution of Plants 1: Nonvascular to vascular plants	Pg. 588 – 606
5	12 June	Evolution of Plants 2: evolution and diversification of seed plants	Pg. 607 – 625
6	13 June	Animal Origins and Evolution of Body Plans: Phylogeny of Animal Phyla	Pg. 645 – 665
7	17 June	EXAM 1	
8	18 June	Animal Development Protostome animals	Pg. 922 - 942 Pg. 666 – 691
9	19 June	Deuterostome animals	Pg. 692 – 718
10	20 June	The Plant Body	Pg. 719 – 738
11	24 June	Plant Nutrition	Pg. 755 – 770
12	25 June	Gas Exchange & Transport in Plants	Pg. 739 – 754
13	26 June	Regulation of Plant Growth	Pg. 771 – 793
14	27 June	EXAM 2	
	27 June	<i>Midterm date: Last day to drop without academic penalty</i>	
15	1 July	Plant Responses to the Environment	Pg. 814 – 831
16	2 July	Reproduction in Flowering Plants	Pg. 794 – 813
17	3 July	Physiology, Homeostasis, Temperature Regulation	Pg. 832 – 850
	4 July	Holiday, no classes	
18	8 July	Animal Nutrition, digestion, absorption	Pg. 1067 - 1090
19	9 July	Gas Exchange in Animals	Pg. 1025 - 1044
20	10 July	Salt and Water Balance and Nitrogen Excretion	Pg. 1091 - 1112
21	11 July	EXAM 3	
22	15 July	Animal Circulatory Systems	Pg. 1045 – 1066
23	16 July	Musculoskeletal Systems:	Pg. 1006 - 1024
24	17 July	Neurons and Nervous Systems	Pg. 943 – 963
25	18 July	Animal Hormones	Pg. 851 – 872
26	22 July	Animal Reproduction	Pg. 899 – 921
27	23 July	EXAM 4	
	26 July	Comprehensive Final Exam: 10:15am-12:15pm in BC 1025.	

Tentative Schedule: LABORATORY EXERCISES

Date:	Topic:
5 June	Introduction to MS Excel (Pg 1-10) Meets in BC 3018 (Biology Computer Lab)
10 June	Diversity: Porifera and Cnidaria (Pg 60-69) Vertebrate Animal Tissues (Pg 70-77)
12 June	Diversity: Platyhelminthes (Pg 78-83)) Vertebrate Anatomy (Pg 84-91)
17 June	Diversity: Annelida and Mollusca (Pg 92-97) Sensory Systems (Pg 98-104)
19 June	Diversity: Nematoda and Arthropoda (Pg 105-110) Cardiovascular System (Pg 111-115)
24 June	Diversity: Echinodermata and Chordata (Pg 116-118) Digestive System and Excretory Systems (Pg 119-120)
26 June	Mid-term LAB PRACTICAL –
1 July	Diversity: Non-Tracheophytes (Seedless Plants) (Pg 11-18)
3 July	Diversity: Non-seed Tracheophytes (Vascular Land Plants) (Pg 19-27)
8 July	Diversity: Seed Plants
10 July	Plant Anatomy-Roots, Stems and Leaves (Pg 28-36) Angiosperm Development (Pg 37-45)
15 July	Growth, Tropism, Transpiration, Environmental Responses (Pg 46-53)
17 July	
22 July	Final LAB PRACTICAL --

VSU administration has required that certain elements be included in all class syllabi. One of these requirements is that relevant course learning outcomes must be linked to the VSU General Educational Outcomes (see below) and to the Biology Department educational outcomes listed on page 131 of the current undergraduate catalog (2012-13). Students should be aware that the Biology department learning outcomes are extremely general and a more appropriate detailed outline of the learning outcomes we expect are represented by the ETS Biology Major Fields Test that we require seniors to complete and pass with a minimally acceptable score before graduating (see:http://www.ets.org/Media/Tests/MFT/pdf/mft_testdesc_biology_4bmf.pdf).

VSU General Education Outcomes (only mission outcomes addressed in BIOL 1108 are listed).

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.
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.

Biology Department Educational Outcomes (as outlined in the Undergraduate catalog)

The program of study in the Department of Biology has numerous desired outcomes. Examples of these outcomes include the following:

1. Develop and test hypotheses, analyze data, and present the results and conclusions in both written and oral formats corresponding to those used in peer-reviewed journals and at scientific meetings.
2. Describe the evolutionary processes responsible for biological diversity, explain the phylogenetic relationships between the major 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, functioning and reproduction of living organisms.
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.