

**BIOL 1107K, Principles of Biology I**  
**Summer Semester, 2019; May 16, 2019 - Jun 20, 2019; Section A**

<b>Lecture (BC 2022; CRN 50697):</b>	<b>MTWRF</b>	<b>9:35 am - 11:05 am</b>
<b>Laboratory (BC 1083):</b>	<b>MTR</b>	<b>11:30 am - 2:20 pm</b>

**Instructor:** Dr. Russ Goddard, BC 2090. (Phone 249-2642; or Dept. office 333-5759)  
(**Office hours:** Generally available before and after class times)  
**Official Contact email:** [rgoddard@valdosta.edu](mailto:rgoddard@valdosta.edu)

**Course Catalog Description:** BIOL 1107K Principles of Biology I; 3-3-4; Co-requisite for biology majors: BIOL 1100. 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.

**Required Materials:**

**Text:** Sadava, D., D.M. Hillis, H.C. Heller, and M.R. Berenbaum. 2016. Life: The Science of Biology. 11<sup>th</sup> edition. Sinauer Associates Inc., Sunderland, MA.

(<https://www.macmillanlearning.com/Catalog/product/lifethescienceofbiology-eleventhedition-sadava>):

**Laboratory Manual:** Goddard, R.H. 2013. Methods and Investigations in Basic Biology, 6<sup>th</sup> ed. Hayden-McNeil Publishing, Plymouth, MI.

**General Objectives:** This course provides an introduction to basic principles of biology. An emphasis on topics encompassing cell structure and function, metabolism, cell reproduction, gene structure and function, genetics, and evolution as unifying principles of all life. The goal of this course is to stimulate student learning of these basic concepts and to encourage contemplation of the significance of each concept to the complexity of life.

**Attendance:** Attendance in this course absolutely is required. Students should be seated at the beginning of class. Arriving late disrupts class and the student may be asked to leave. The student is responsible for all material missed regardless of the reason for absences. **ABSOLUTELY NO LECTURES OR LABORATORIES CAN BE "MADE UP."** Laboratories in particular are important not to miss. In the event that a student will miss a class, s/he should notify the instructor in writing by email BEFORE the missed class. Students should be advised that any points assessed during the missed class will be forfeit.

**Graded Course Components:** Your final grade will be based on your performance in the following course components: Additional unannounced in-class assignments may count toward the final grade during the semester.

**Lecture** (500 pts): There will be 4 lecture exams and a comprehensive final exam. Each exam is 100 pts. Students are required to know the lecture material and the readings from the text. Information presented in the laboratory may also be included in these exams.

**Dropped grade:** The lowest score you receive among the four lecture exams and the final exam will be excluded (dropped) and will not be used for computing your final grade. Therefore, although there are 500 possible points available from these assignments, only 400 of those points will count toward your final grade.

**Laboratory:** (150 pts) Students will be graded on their performance in laboratory based on attendance, daily quiz grades, selected homework assignments, and other miscellaneous 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 unexcused 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	A = 90-100%
Cumulative Final Exam	<del>100 pts</del> (dropped)	B = 80-89.9%
Laboratory (mandatory):	<u>150 pts</u>	C = 70-79.9%
Total:	550 pts	D = 60-69.9%
		F = ≤ 59.9%

Guaranteed grade distribution is as follows:

**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.

**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**.

**EXAM SCHEDULE:**

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

Exams will consist of multiple choice questions (usually between 60 – 75 questions for exams, 120 questions for the final).

**NOTE: YOU MUST BRING TWO SHARPENED #2 PENCILS WITH YOU TO EACH EXAM IF YOU WANT YOUR EXAM GRADED ACCURATELY**

Exam 1: 24 May 2019

Exam 2: 4 June 2019

Exam 3: 12 June 2019

Exam 4: 20 June 2019

Final Examination: (Tentative): Monday, 24 June 2019; 9:35 – 11:35 a.m.

**Procedure for exams:**

- No books, electronic devices (including cell phones), or notebooks will be allowed during exams. 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 welcome to come to the instructor's desk to ask questions about the exam. If a cell phone rings during an exam, disrupting the exam, the student will be asked to leave. ***Turn off your cell phones during exams!***
- Every student should bring their University ID.

**Student identification.** Students should have in their possession at all times their VSU student identification card (OneCard). 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 routinely will 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 or writing and analytical skills, 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:

<https://www.valdosta.edu/biology/documents/resources/PlagiarismPolicy.pdf> and read and understand the University policy on Academic Integrity:

<https://www.valdosta.edu/academics/academic-affairs/academic-honesty-policies-and-procedures.php>

**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 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 with Disabilities:** 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) and 229-375-5871 (VP). For more information, please visit <http://www.valdosta.edu/access> or email: [access@valdosta.edu](mailto:access@valdosta.edu).

**TENTATIVE COURSE LECTURE MATERIAL OUTLINE:**

<b>Lecture:</b>				<b>Laboratory:</b>	
<b>Lecture</b>	<b>Date:</b>	<b>Topic :</b>	<b>Chapter Reading(s) - pages</b>	<b>Day(s)</b>	<b>Exercise</b>
1	16 May	Introduction, What is science? What is Biology?	1-21	16 May	No Lab.
2	17 May	Additional Reading (Browse): Genomes: 486-506; Evolution: 424-447; Phylogeny: 448-466; Species concept: 467-485; Biological Nomenclature: 9, 462, 463.			
3	20 May	What is Biology: Unifying principles of life, cont'd		20 May	Lab Safety and General Lab Introduction <b>Exercise 1:</b> "The Black Box" - Scientific Method;
4	21 May	<b>Characterization of Life, Evolution and Diversity</b> Origin of life	70 – 78		
5	22 May	Chemistry of Life; Organic molecules, Macromolecules and the origin of life	22 – 69	21 May	<b>Exercise 2:</b> Basic Light Microscope Operation and Microscope checkout: Use of the Light Microscope
6	23 May	Cell Structure & Function	81 - 109		
7	24 May	<b>Exam 1</b>		23 May.	<b>Exercise 3:</b> Observation of living cells with Light Microscopy; Basic cellular organization; Independent microscopy lab proposals discussed.
8	27 May	<b>Memorial Day Holiday</b>		27 May	
9	28 May	Origin of Eukaryotic cells	105 -106		<b>Memorial Day Holiday, No Class</b>
10	29 May	Biological Membranes; Osmosis, Diffusion, Water Potential, and Transport mechanisms; Water, pH	110 – 129	28 May	
11	30 May				<b>Exercise 4:</b> Independent Microscopy Projects; Project proposal lab; how to collect useful data
12	31 May	Cell Communication	131 - 149	30 May	
	3 June	Basic Metabolism: Energy, Enzymes; Biochemistry	150 - 163		<b>Exercise 4:</b> Independent Microscopy Projects: Distribution of microscopic flora and fauna; Data collection lab
13	4 June	<b>Exam 2</b>		3 June	
					<b>Exercise 5:</b> Cellular Water Relations

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14	5 June	Cellular Respiration	172 – 192	4 June	<b>Exercise 6:</b> Protein extraction from biological tissues and determination of total protein, Spectrophotometry and Standard Curves
15	6 June				
16	7 June	Photosynthesis	193 – 212	6 June	<b>Exercise 7:</b> Enzymology Lab: basics of $\alpha$ -amylase activity;
17	10 June	Cell Division Cycle, Mitosis, Meiosis, Sexual life histories	213 – 239	10 June	<b>Exercise 8:</b> Enzyme Regulation: “Investigation of the effects of temperature and pH on enzyme activity”
18	11 June			11 June	<b>Exercise 9:</b> Photosynthesis Maybe an additional exercise
19	12 June	<b>Exam 3</b>		13 June	<b>Exercise 10: Mitosis and Meiosis</b>
20	13 June	DNA Structure and Replication;	266 – 279		
21	14 June	Protein Synthesis	288 - 311	17 June	<b>Exercise 14: Transformation of the pGLO plasmid into bacteria.</b>
22	17 June				
23	18 June	Recombinant DNA technology; Restriction Enzymes, Vectors, and Hosts	380 – 398	18 June	Analyze transformation experiment.
24	19 June	Mendelian Genetics	240 - 265		
25	20 June	<b>Exam 4</b>		20 June	No Lab
Fri	21 June				
Mon.	24 June	<b>Final Exam: 11:30 a.m.</b>			