

BIOL 1107K: Principles of Biology I
Fall Semester 2022, 3 Credit hours (weekly: 3 hr lecture)
Department of Biology, College of Science & Math, Valdosta State University

Lecture (BC 1011): Section B (CRN# 83329) M & W 2:00 p.m. – 3:15 p.m.

Instructor: Dr. Brian C. Ring

Office: BC 2084

Office hours: **M & W** 12:00 p.m. – 2:00 p.m. (before lecture or by appointment)

Phone: 229-249-4841 (Dept. office 229-333-5759)

email: bcring@valdosta.edu (**please use D2L first**)

Pre-Requisites: None. Note this course is for science majors.

Co-Requisites: BIOL 1107 Laboratory. BIOL 1100, Biology Freshmen Seminar for Biology Majors.

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.

Course Objectives: Upon completion of this course the student should be able to:

- 1) Exhibit a broad perspective on the principles unifying various biological disciplines from evolution to molecular biology (DBEO 2 & 5);
- 2) Understand basic biological chemistry from elements to organic compounds to macromolecules;
- 3) Comprehend basic principles of biology at the cellular level to include structure, function, metabolism, communication, reproduction, molecular biology, and gene expression (DBEO 3 & 4);
- 4) Perform, analyze, interpret, and report laboratory experiments (DBEO 1);
- 5) Develop and test a hypothesis using experimental microscopy and quantitative skills acquired in the laboratory (DBEO 1 & 5).

These objectives support the Department of Biology Educational Outcomes # 1-5 listed above (DBEO 1-5) and the University General Educational Outcomes # 5 as listed in the VSU Undergraduate Catalogue.

Required Materials:

Text: We will be using a textbook provided by OpenStax, a 501(c)(3) nonprofit charitable corporation associated with Rice University in Texas. The goal of this organization is to make higher education accessible to all students. To achieve this goal, they provide textbooks that are completely free online, or they provide low cost print versions of the textbook through the student bookstore or Amazon.com. You should choose any ONE of the options below.

A. Free online version: <https://openstax.org/details/books/biology-2e>. In addition, a quick access point to the text is provided in BV through MacMillan Achieve below.

B. Hardcover version: ISBN: 978-1947172517. You can purchase a hardcover version through Amazon.com or the VSU Bookstore.

C. Paperback version: Purchase this version from Amazon.com. They use a third-party vendor to print a two-volume, shrink-wrapped bound softcover version of the textbook. The content is the same as the digital and hardcover versions. The text and graphics are printed in B&W.

Online Achieve: Assignments require a subscription to MacMillan Achieve. More information available on course BlazeView (BV) site. Access should be available through the Day 1 program or you can directly register.

Graded Course Components: Your final grade will be based primarily on your performance on online MacMillan Achieve assignments, lecture assignments, and exams. Additional summative exercises will be executed during lecture requiring individual and group effort to prepare you (the student) for lecture exams (formative assessment).

Exams: (75%) There will be **4 lecture exams** covering sequential material as outlined below and a **final summative exam**. Students are required to read assigned text to prepare for lecture assignments before coming to class. Lecture and in class assignments are designed to prepare you for exams. Exams will be primarily composed of multiple choice and short answer. Each of the exams are scaled to 100 points and averaged. The final exam is scheduled during finals week based on set schedule (see below). **There are NO MAKEUP EXAMS.** At the instructor's discretion, the lowest exam grade may be dropped. If the lowest exam is dropped you may have the option of not taking the final exam.

Online Achieve Assignments: (15%) Weekly assignments covering the OpenStax textbook material will be

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assigned in BV. Quizzes covering the readings and other tutorials are assigned here to help you prepare for exams.

Lecture Assignments: (10%) In class assignments termed “study guides” will be presented during lecture time and either practice BV quizzes or attendance will be utilized. So your attendance in lecture is imperative to your success.

Grade Assessment: Calculate your overall grade as follows:

(Online & Lecture Assignments X .25) + (Lecture exam average X .75) = Overall percentage grade.

Overall letter grades will be assigned on a 10 point scale: 90-100% = A, 80-89% = B, 70-79% = C, 60-79% = D and, 59% and below = F.

Notes on grading philosophy: Students should note that a grade of "A" in this course represents an exemplary command of the material. 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. Additionally, the instructor may implement a curve based on the overall class performance at the end of the course.

Mid-term, or in-progress grades: The instructor is required to submit in-progress grades prior to mid-term (10/6/2022). In theory, a mid-term grade is necessary for a student to assess how s/he is doing in class by midterm. In this course, students will have feedback on graded course components above. I will, in general, assign an overall average grade at this point on the normal scale of A-F viewable on Banner. Students receiving a grade of “D” or lower should therefore carefully evaluate their option of dropping this course by midterm withdrawal date (10/13/2022) without academic penalty.

Attendance: Attendance in this course is absolutely required. Students should be seated at the beginning of class. If you are late, your attendance may not be acknowledged. Attendance may be taken at any time during the lecture and/or by assignments.

EXAM SCHEDULE:

Exam 1:	Wednesday, September 7, 2022
Exam 2:	Monday, September 26, 2022
Exam 3:	Monday, October 24, 2022
Exam 4:	Monday, November 21, 2022
Final Exam:	Tuesday, December 6, 2022; 2:45 – 4:45 p.m.

NOTE: You will have the class time only to complete each lecture exam.

Privacy Act (FERPA): The Family Educational Rights and Privacy Act (FERPA) prohibit the public posting of grades by social security number or in any manner personally identifiable to the individual student. No grades can be given by email or over the telephone, as positive identification can not be made by this manner. Grades will be posted through BlazeView course website.

Biology Tutoring: The Academic Support Center (ASC) at Valdosta State University is located on the second floor of the Odum Library. The ASC provides free peer tutoring in core curriculum courses, including biology, chemistry, math, writing, and foreign languages. The ASC also provides periodic workshops covering topics such as time management and study skill development. Call 333-7570 to make an appointment, or visit their website at <https://www.valdosta.edu/asc/>

Access Statement: 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 Access office will be moving to University Center Room 4136 Entrance 5 while Farber Hall is being renovated. 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.

Title IX Statement: 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, 229-333-5463.

TENTATIVE LECTURE OUTLINE:

Week	Date	Lecture Topics	Chapter
1	Aug. 15 (M)	Course Introduction, Attendance & Syllabus	BlazeView & Achieve Register
	Aug. 17 (W)	Prior Knowledge Assessment	TBA in class
2	Aug. 22 (M)	What is science? What is Biology? Unifying Principles... Evolution & Cell Theory	1.1-1.2 18.1, Suggest (18.2)
	Aug. 24 (W)	Basic Chemistry, Water, pH & Carbon Organic Synthesis	2.1-2.3 3.1
3	Aug. 29 (M)	Major Macromolecules: Carbs & Lipids Proteins & Nucleic Acids	3.2-3.3 3.4-3.5
	Aug. 31 (W)	Catch-up & Review	--
4	Sep. 05 (M)	Labor Day- NO CLASS	--
	Sep. 07 (W)	Lecture Exam 1 BC 1011 2:00-3:15	--
5	Sep. 12 (M)	The Study of Cells & Prokaryotes Eukaryotic Cells & Endomembrane System	4.1-4.2 4.3-4.4
	Sep. 14 (W)	Cytoskeleton & Cellular Connections Cell Membranes & Passive Transport Active Transport & Bulk Transport	4.5-4.6 5.1-5.2 5.3-5.4
6	Sep. 19 (M)	Energy & Metabolism Thermodynamics, ATP, & Enzymes	6.1-6.2 6.3-6.5
	Sep. 21 (W)	Catch-Up & Review	--
7	Sep. 26 (M)	Lecture Exam 2 BC 1011 2:00-3:15	--
	Sep. 28 (W)	Cellular Reproduction I: Glycolysis, Pyruvate Oxidation, & TCA Cycle	7.1-7.3
8	Oct. 03 (M)	Cellular Respiration II: Anerobic vs. Oxidative Phosphorylation	7.4-7.5
	Oct. 05 (W) Oct. 06	Photosynthesis I: Light Reactions Midterm- last day to drop Oct. 13	8.1-8.2
9	Oct. 10 (M)	Fall Break- NO CLASS	--
	Oct. 12 (W)	Photosynthesis II: Dark Reactions & Adaptation	8.3
10	Oct. 17 (M)	Cellular Communication	9.1-9.3
	Oct. 19 (W)	Catch-Up & Review	--
11	Oct. 24 (M)	Lecture Exam 3 BC 1011 2:00-3:15	--
	Oct. 26 (W)	Cellular Reproduction: Mitosis & Meiosis	10.1-10.2 11.1-11.2
12	Oct. 31 (M)	Basic Introduction to Genetics	12.2
	Nov. 02 (W)	Discovery of DNA Structure	14.1-14.2
13	Nov. 07 (M)	DNA Replication & Repair	14.3-14.6
	Nov. 09 (W)	Genetic Code & RNA Transcription	15.1-15.3
14	Nov. 14 (M)	RNA Processing & Protein Synthesis	15.4-15.5
	Nov. 16 (W)	Catch-Up & Review	--
15	Nov. 21 (M)	Lecture Exam 4 BC 1011 2:00-3:15	--
	Nov. 23 (W)	Thanksgiving Break- NO CLASS	--
17	Nov. 28 (M)	Post Knowledge Assessment	TBA in class
	Nov. 30 (W)	Final Exam Review & M 12/5/22 (optional)	--
18	Dec. 06 (R)	Final Exam BC 1011 2:45-4:45	

NOTES: To be most successful with the above lecture schedule, you must read the text prior to lecture and complete the Achieve Assignments. Other in class assignments will be provided to help you learn the material at the required level of cognition so you will be well prepared!