BIOL 1107K: Principles of Biology I

Summer II Semester 2022, 3 Credit hours (weekly: 3 hr lecture)
Department of Biology, College of Science & Math, Valdosta State University

Lecture (BC 1023): **T & R 2:20 p.m. – 5:20 p.m.**
Laboratory (BC 1083): **Section B (CRN #50526): M & W / 2:30 p.m. - 5:20 p.m.**

Instructor: Dr. Brian C. Ring
Office: BC 2084
Office hours: **T & R** 12:00 p.m. – 2:00 p.m. (before lecture or by appointment)
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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 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. Due to the accelerated pace of the summer semester this exam schedule equates to one exam every other week. Students are required to read assigned text to prepare for lecture quizzes 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. Lecture Exam 4 will be taken during the allotted Final Exam time specified for summer session II (see below). **There are NO MAKEUP EXAMS**. At the instructor's discretion, the lowest exam grade may be dropped.

Online Achieve Assignments: (15%) Weekly assignments covering the OpenStax textbook material will be assigned in BV. Quizzes covering the readings and other tutorials are assigned here to help you prepare for exams.

Lecture Assignments: (10%) In class quizzes or group assignments will be given during lecture time and will also serve as study guide material for exams. 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 (**7/5/2022**). 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 at least one major exam by midterm, several lab quizzes, lab assignments, and any homework or writing assignments. 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 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:	**Tuesday, June 21, 2022**
Exam 2:	**Tuesday, July 5, 2022**
Exam 3:	**Tuesday, July 19, 2022**
Exam 4:	**Wednesday, July 27, 2022; 3:00 p.m. – 5:00 p.m.**

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

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 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.

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, 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31608, 229-333-5463.

TENTATIVE LECTURE OUTLINE:

Lecture:	Date:	Topics:	Text Readings (pgs):
1	June 09 (R)	Course Introductions & Syllabus What is science? What is Biology? Unifying Principles…	**Chpt. 1** (1.1-1.2) **Chpt. 18.1**, Suggested: Species Concept (18.2)
2	June 14 (T)	Basic Chemistry, Water, pH & Carbon Organic Synthesis	**Chpt. 2** (2.1-2.3) **Chpt. 3** (3.1)
3	June 16 (R)	Major Macromolecules: Carbs & Lipids Proteins & Nucleic Acids Catch Up & Review	**Chpt. 3** (3.2-3.3) **Chpt. 3** (3.4-3.5)
--	June 21 (T)	**EXAM # 1**	**Lecture material 1-3**
4	June 23 (R)	The Study of Cells & Prokaryotes Eukaryotic Cells & Endomembrane System	**Chpt. 4** (4.1-4.2) **Chpt. 4** (4.3-4.4)
5	June 28 (T)	Cytoskeleton & Cellular Connections Cell Membranes & Passive Transport Active Transport & Bulk Transport	**Chpt. 4** (4.5-4.6) **Chpt. 5** (5.1-5.2) **Chpt. 5** (5.3-5.4)
6	June 30 (R)	Energy & Metabolism Thermodynamics, ATP, & Enzymes Catch Up & Review	**Chpt. 6** (6.1-6.2) **Chpt. 6** (6.3-6.5)
--	July 05 (T)	**EXAM # 2** **Midterm July 5; Last day to drop without penalty**	**Lecture material 4-6**
7	July 07 (R)	Glycolysis, Pyruvate Oxidation, &TCA Cycle Anerobic vs. Oxidative Phosphorylation	**Chpt. 7** (7.1-7.3) **Chpt. 7** (7.4-7.5)
8	July 12 (T)	Photosynthesis, Light vs. Dark Reactions	**Chpt. 8** (8.1-8.3)
9	July 14 (R)	Cellular Communication Catch Up & Review	**Chpt. 9** (9.1-9.3)
--	July 19 (T)	**EXAM # 3**	**Lecture material 7-9**
10	July 21 (R)	Cellular Reproduction: Mitosis & Meiosis Molecular Biology I: DNA Structure and Replication	**Chpt. 10** (10.1-10.2) **Chpt. 11** (11.1-11.2) **Chpt. 14** (14.1-14.6)
11	July 26 (T)	Molecular Biology II: RNA Transcription & Protein Synthesis Catch Up & Review	**Chpt. 15** (15.1-15.5)
--	July 27 (R)	**EXAM # 4; 3:00 – 5:00 (BC 1023)** **Please let me know of conflicts with other courses!**	**Lecture material 10-11**

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!