

BIOL 1107L: Principles of Biology Laboratory I (0-3-1)
Valdosta State University, Biology Department, College of Science & Math
Spring 2024: Laboratory Syllabus

Instructor: Dr. John G. Phillips (he/him)
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Office (Student) hours: **Wednesdays 1:00 PM – 2:00 PM** **Thursdays 10:00 AM – 2:00 PM**
Or by appointment (please send an email to my valdosta.edu account with “appointment” in the subject line and I will accommodate as time permits).

Laboratory Sections: **D (CRN # 24671): Wednesdays** 10:00am–12:50pm – **BC 1083**
F (CRN # 25091): Wednesdays 2:00pm– 4:50pm – **BC 1083**

Pre- or Corequisite: BIOL 1107: Unifying Principles of Biology I.

***A grade of C or higher is required in both lecture and lab!**

****Lecture and Lab are separate. Success or failure in one does not guarantee the same result in the other**

Course Description: A laboratory course to accompany BIOL 1107 lecture, with exercises dealing with the cellular nature of life.

This is a Core IMPACTS course that is part of the Technology, Mathematics & Sciences area.

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help master course content, and support students’ broad academic and career goals.

This course should direct students toward a broad Orienting Question:

- How do I ask scientific questions or use data, mathematics, or technology to understand the universe?

Completion of this course should enable students to meet the following Learning Outcome:

- Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems, and explain natural phenomena.

Course content, activities and exercises in this course should help students develop the following Career-Ready Competencies:

- Inquiry and Analysis
- Problem-Solving
- Teamwork

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

1. Develop and test hypotheses, collect and analyze data, and present the results and conclusions
2. Understand basic biological chemistry from elements to organic compounds to macromolecules.
3. Demonstrate an understanding of the cellular basis of life.
4. Relate the structure and the function of DNA/RNA to the development of form and function of the organism and to heredity
5. Understand energy transformation in biological systems through the study of photosynthesis and other metabolic reactions

Required Laboratory Manual: R. H. Goddard. *Methods and Investigations in Basic Biology* (Custom VSU manual). 7th Edition. ISBN: 978-1-5339-4342-2 (but if you find a copy of the 6th edition, you should be fine).

Required Laboratory Notebook & Brief Instructions: A dedicated bound notebook (e.g., “mead composition notebook”) must be maintained for deposition of each laboratory exercise following the guidelines in the above lab manual (see introduction for details). Each lab entry in the dedicated notebook must provide a title, introduction, materials and methods, results in the form of collected data (i.e., Tables) or drawings and graphs (i.e., Figures). This is followed by a summary of what principles or hypotheses were learned through experimentation in the conclusion of each laboratory entry. More instructions will be provided by your instructor, but this notebook must always be present with you during lab sessions for data collection and **surprise inspections** by your instructor.

Laboratory Assignments and Grading: Students will be graded on their performance in the laboratory based on participation, quizzes, lab reports, and other assignments as specified by your instructor. **UNLESS OTHERWISE SPECIFIED, ALL QUIZZES AND ASSIGNMENTS WILL BE DUE AT THE START OF THE FOLLOWING CLASS.** All late assignments will be subject to a 10% penalty every day the assignment is late.

1. **Lab Quizzes or Assignments (50%):** You will complete and submit a weekly lab quiz or assignment that will demonstrate your mastery of the skills, procedures, and concepts that you developed in the lab. All quizzes and some assignments will be administered through Blazeview. Unless otherwise specified, **these assignments are still required for students who have excused absences** (although due dates may be altered at the professor’s discretion).
2. **Lab Reports (20%):** Throughout the semester, students will learn how to develop and complete an experiment and write a summary of the lab results in standard scientific format. Further information will be provided during lab.
3. **Lab Notebook (10%):** A laboratory notebook is an important element for conducting scientific research. Each student will maintain a lab notebook for recording methods employed in the experiment as well as the experimental results. Students are **required** to have their notebook at every lab class.
4. **Group Participation/Attendance (20%):** You will be graded on your attendance and ability to work with the members of your group. You must be present for the **entire lab** to receive full credit for group participation.

Attendance Policy: Students arriving late to lab or leaving early may be counted as present, but the student must discuss the absence with the professor that day after/during/before class. **Absences resulting in >20% of missed laboratory time (i.e., three labs) may result in an automatic grade of F as per university policy.** Full absence regulations are available online at <http://catalog.valdosta.edu/undergraduate/academic-affairs/>

Lab Conduct:

1. Please arrive on time. **If you are more than 20 minutes late** without clearing it with me, you will not receive credit for participating in that lab.
2. Please bring your notebook to the lab each week and record data in your notebook.
3. **No eating or drinking in the lab.**
4. You must take care of lab equipment. Notify the professor if something is not working properly or if something breaks during the lab. It is your responsibility to properly use the equipment assigned to your seat position. Please notify the professor if equipment is not functioning properly.
5. Cell phones are not to be used in the lab. **This means no texting during the lab unless I give permission for cell phones to be out.**
6. A laboratory course is a collaborative effort. You will often work with your lab group or a lab partner. Please be prepared for the lab each week and be fully engaged in the lab experiments.

LABORATORY SCHEDULE (subject to change per professor's discretion)

Week	Date	Topic
1	Jan. 10	Syllabus and Course Introduction
2	Jan. 17	MLK Week – Lab is cancelled
3	Jan. 24	Exercise 2: Basic Light Microscopy (and what is a lab report?)
4	Jan. 31	Exercise 3: Microscopy of Living Organisms (write methods)
5	Feb. 7	Exercise 1: Introduction to the Scientific Method and Primary Scientific Literature (PSL) – MEET IN COMPUTER LAB
6	Feb. 14	Exercise 5: Cellular Water Relations (write results)
7	Feb. 21	Handout: Biochemical Spectroscopy (write introduction)
8	Feb. 28	Exercise 6: Protein Extraction & Quantification from Living Tissues (write discussion)
9	March 6	Exercise 7: Enzymology Lab: Basics of Amylase Enzyme Activity (FULL LAB REPORT ASSIGNED)
10	March 13	Spring Break – NO LABS
11	March 20	Exercise 8: Photosynthesis:
12	March 27	Exercise 9: Cell Reproduction: Mitosis, Meiosis and Cytokinesis. submit lab report 1 for enzyme activity lab
13	April 3	Exercise 10: Lab Report #1 is Due. Handout: Paternity and Gel Electrophoresis (FULL LAB REPORT ASSIGNED)
14	April 10	Exercise 11: Handout: Bioinformatics Lab
15	April 17	Exercise 14: Bacterial Transformation
16	April 24	TURN IN Paternity lab report (#2) AND Lab notebooks
17	May 1	NO LABS. FINALS WEEK

Academic Integrity: By taking this course, you agree that all required course work may be subject to submission for textual similarity review to Turnitin, a tool within Blazeview. Penalties for plagiarism will be at the discretion of the professor with a minimum of an automatic 0 for the assignment with possible failure of the course.

Mid-term, or in-progress grades: The instructor is required to submit in-progress grades prior to mid-term (**February 29th, 2024**). In theory, a mid-term grade is necessary for students to assess how they are doing in class by midterm. In this course, students will have feedback on several lab quizzes, lab assignments, and any homework or group assignments. Students will be assigned 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. The deadline for withdrawal is listed in Banner about a week later. *NOTE: Some significant graded components for this class won't be due until after mid-term grades are submitted. Therefore, poor performers will have the ability to improve upon these grades, while high performers are ill-advised to rest upon their laurels.

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 cannot be made by this manner. Grades will be posted through Blazeview course website.

Non-Discrimination and Title IX Statement: Valdosta State University (VSU) upholds all applicable laws and policies regarding discrimination on the basis of race, color, sex (including sexual harassment and pregnancy), sexual orientation, gender identity or expression, national origin, religion, age, veteran status,

political affiliation, or disability. The University prohibits specific forms of behavior that violate Title IX of the Education Amendments of 1972. Title IX of the Education Amendments of 1972 prohibits discrimination on the basis of sex in education programs and activities that receive federal funding. VSU considers sex discrimination in any form to be a serious offense. Title IX refers to all forms of sex discrimination committed against others, including but not limited to: sexual harassment, sexual assault, sexual misconduct, and sexual violence by other employees, students or third parties and gender inequity or unfair treatment based on an individual's sex/gender. The designated Title IX Coordinator for VSU is Ms. Selenseia Holmes. To view the full policy or to report an incident visit: <https://www.valdosta.edu/administration/student-affairs/title-ix/>

Access Office: Students with disabilities who are experiencing barriers in this course may contact the Access Office (<https://www.valdosta.edu/student/disability/>) for assistance in determining and implementing reasonable accommodations. The Access Office is located in University Center Room 4136 Entrance 5. The phone numbers are 229-245-2498 (V), 229-375-5871. For more information, please visit VSU's Access Office or email: access@valdosta.edu. To request reasonable accommodations for pregnancy and childbirth, contact Ms. Myia Miller, Title IX Compliance Officer, at maburden@valdosta.edu. Please note, you will be required to provide documentation from an appropriately licensed medical professional indicating the requested accommodations are medically necessary.

COVID-19 related policy: As the Blazer Creed articulates, members of the VSU community are expected to live by the high standards of civility, integrity, and citizenship and embrace their responsibility as a member of the Blazer community. In recognition of this responsibility, and in response to the best available science and current guidance from the Centers for Disease Control and Prevention and the Georgia Department of Public Health, while face coverings are no longer required, individuals are strongly encouraged to continue wearing a face covering indoors. **Unvaccinated individuals are strongly encouraged to get vaccinated. Vaccines remain available at no cost for all members of the university community by appointment at Student Health Services. For COVID Vaccines, please call ahead for an appointment at 229-333-5886.**

Biology Tutoring: The Academic Support Center (ASC) provides unlimited, in-person, free peer tutoring in core courses such as math, English/writing, sciences, social sciences, and languages. We also offer 8 hours of free online tutoring via Tutor.com (8 hours per student, available 24/7). Click the Free Tutoring link in any BlazeVIEW course to make appointments. Please drop by our space in Odum Library, 2nd floor, or call 229-333-7570, email asc@valdosta.edu, or visit the website www.valdosta.edu/asc for more information.

General Silliness: While I would be overjoyed if every student would read this far into the syllabus, I expect most of you will not. Therefore, I will give one bonus point to any student who randomly emails me an awesome photo of their favorite Hemipteran (what is that?) within the first two weeks of class. With the scientific name (*Genus species*) of said organism in the subject line.

Campus Gun Carry Statement (HB 280): If you choose to carry and concealed weapon on campus, you are responsible for knowing and following the law. Refer here for FAQ: valdosta.edu/administration/finance-admin/police/campuscarry/

SOI Statement: At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available through SmartEvals. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators, and they will be able to access results only after they have submitted final grades. Before final grade submission, instructors will not be able to see any responses, but they can see the percentage of students who have or have not completed their SOIs. While instructors will not be able to see student names, an automated system will send a reminder email to those who have yet to complete their SOIs. Students who withdraw or drop a course will also be sent invitations to complete the Dropped Course Survey. Complete information about the SOIs, including how to access the survey, is available on the SOI Procedures webpage.