

BIOL 1107L: Principles of Biology I Laboratory
Department of Biology, College of Science and Math
Valdosta State University
Fall 2022; Laboratory Syllabus

Instructor: Eric Chambers (Dr. Chambers) Office: BSC 2214 Phone: 229-249-2736

Lab: Bailey Science Center, Room 1083

Section A: (CRN#83331) M 9:00-11:50 AM

Section C: (CRN#83333) M 1:00 PM-3:50 PM

Email: ewchambers@valdosta.edu

Office Hours: Tuesday and Thursday 1:00-2:15 PM

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

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 in written formats used in peer-reviewed journals.
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

See Department of Biology Educational Outcomes and the University General Educational Outcomes as listed at the end of this syllabus

Required Materials:

1. **Textbook:** Goddard, R. H. 2010. Methods and Investigations in Basic Biology. 6th edition. Hayden-McNeil Publishing, Plymouth, Michigan.
2. **Composition Book:** 9 ¾ X 7 ½ in (Mead or similar is fine; Office Max, Office Depot, Walmart, Target, etc. – usually available for less than \$1.50)

Attendance: Lab will be held weekly. Our lab is scheduled for 2 hours and 50 minutes each session. Please plan on attending the full lab (not all labs will take 2 hrs. 50 min.).

Laboratory Assignments and Grading: Students will be graded on their performance in the laboratory based on attendance, quiz grades, selected homework assignments, and other assignments as specified by your instructor.

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 that you developed in the

lab. These quizzes and assignments will be administered through Blazeview. I will provide you with completion dates at a later time. A make-up assignment will be provided for those who have excused absences.

2. **Lab Reports (30%):** You will develop and complete an experiment and write a summary of the lab results in standard scientific format for two separate labs. Further information will be provided in the 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 (10%):** 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 in order to receive full credit for group participation. You will receive a grade for each lab. Your lowest group participation grade will be dropped.

Attendance Policy: This course follows the university policy on class absences:

“Whether online or face-to-face, a student who misses or does not participate in more than 20% of the scheduled course or course activities could be subject to receiving a failing grade in the course” – 2019-2020 Undergraduate Catalog

Also, as stated in the Undergraduate Catalog, “the University does not issue an excuse to students for class absences. In case of absences as a result of illness or special situations, instructors may be informed of reasons for absences, but these are not excuses”. I will consider all absences on a case-by case basis.

Students who miss 3 or more labs during the course of the semester could be subject to the stated policy. If you are absent from the lab or know you will be absent from the lab, please contact me within 24 hours with the reason. If I consider it an excused absence, I may be able to give you an opportunity to attend another lab session during that same week.

No labs can be made up once the week has ended.

Athletes and other University representatives: Please let me know in advance if you will be missing a lab due to an away game or other required event. We can make arrangements for you to attend an alternative lab section.

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 is allowed.**
4. You must take care of lab equipment. Notify the professor if something is not working properly or if something breaks during the course of the lab.
5. It is your responsibility to properly use the microscope assigned to your seat position. Please notify me if the microscope is not functioning properly.
6. 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.**
7. 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.

Academic Integrity: By taking this course, you agree that all required coursework may be subject to submission for textual similarity review to Turnitin, a tool within BlazeVIEW.

Mid-term, or in-progress grades: The instructor is required to submit in-progress grades prior to mid-term (October 6, 2022). 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. The deadline for withdrawal through Banner is Thursday, October 13, 2022.

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. Call 333-7570 to make an appointment, or visit their website at <https://www.valdosta.edu/asc/>

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 or over email because positive identification can't be made.

Accommodations Statement:

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 Christina Kidd, Student Conduct Coordinator at chkidd@valdosta.edu. Please note, you will be required to provide documentation from an appropriately licensed medical professional indicating the requested accommodations are medically necessary.

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 Mr. Darius Thomas. To view the full policy or to report an incident visit: <https://www.valdosta.edu/administration/student-affairs/title-ix/>

Campus Gun Carry Statement (HB 280): If you choose to carry a concealed weapon on campus, you are responsible for knowing and following the law. Refer here for FAQ: <https://www.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.

TENTATIVE SCHEDULE LABORATORY EXERCISES

Week	Date	Topic
1	Aug. 15-19	Syllabus and Course Introduction
2	Aug. 22-26	Exercise 1: Introduction to the Scientific Method and Primary Scientific Literature (PSL)
3	Aug 29 – Sept. 2	Exercise 2: Basic Light Microscopy
4	Sept. 5-9	Labor Day Week- NO LABS
5	Sept. 12-16	Lab 3: Microscopy of Living Organisms
6	Sept. 19-23	Exercise 5: Cellular Water Relations
7	Sept. 26 -30	Handout: Biochemical Spectroscopy
8	Oct 3-7	Exercise 6: Protein Extraction & Quantification from Living Tissues
9	Oct. 10-14	Fall Break – NO LABS
10	Oct. 17-21	Exercise 7: Enzymology Lab: Basics of Amylase Enzyme Activity
11	Oct. 24-28	Exercise 9: Photosynthesis: submit lab report 1 for enzyme activity lab
12	Oct. 31- Nov. 4	Exercise 10: Cell Reproduction: Mitosis, Meiosis and Cytokinesis
13	Nov. 7-11	Handout: Crime Scene RFLP and Gel Electrophoresis
14	Nov. 14-18	Handout: Bioinformatics Lab
15	Nov. 21-25	Thanksgiving Break- NO LABS
16	Nov. 28-Dec. 2	No lab; submit lab report 2 for Crime Scene Lab this week

Valdosta State University General Educational Outcomes (GEO)

1. Students will demonstrate understanding of the society of the United States and its ideals.
2. Students will demonstrate cross-cultural perspectives and knowledge of other societies.
3. Students will use computers and information technology when appropriate.
4. Students will express themselves clearly, logically and precisely in writing and in speaking, and they will demonstrate competence in reading and listening.
5. Students will demonstrate knowledge of scientific and mathematical principles and proficiency in laboratory practices.
6. Students will demonstrate knowledge of diverse cultural heritages in the arts, the humanities, and the social sciences.
7. Students will demonstrate the ability to analyze, to evaluate, and to make inferences from oral, written and visual materials.
8. Students will demonstrate knowledge of principles of ethics and their employment in the analysis and resolution of moral problems.
9. 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.

Department of Biology Educational Outcomes (BEO)

1. Develop and test hypotheses, collect and analyze data, and present the results and conclusions in both written and oral format used in peer-reviewed journals and at scientific meetings.
2. Describe the evolutionary process responsible for biological diversity, explain the phylogenetic relationships among the other 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 of form and function of the organism and to heredity
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.