

**BIOL 1107L PRINCIPLES OF BIOLOGY LAB 1
FALL 2019 SYLLABUS & COURSE POLICES**

Laboratory (BSC 1085): Section O (CRN# 83345) meets Wed. 1:00 – 3:50 pm
Section Q (CRN# 83347) meets Thurs. 2:00 – 4:50 pm

Instructor: Dr. Mark Blackmore
Office: Bailey Science Center 2218
Office Hours: MW 12-1:00 pm; Tue 2-3 pm,
or by appointment

Contact information
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Course description:

BIOL 1107L. Principles of Biology Laboratory 1. (1 Credit Hour)

Pre- or Co-requisite: BIOL 1107. A laboratory course to accompany BIOL 1107, with exercises dealing with the cellular nature of life.

Scope & Objectives: This course supports the Department of Biology Educational Outcomes 1 – 5 and VSU General Educational Outcome 5 as listed in the VSU Undergraduate Catalogue.

Course Objectives: The goal of this course is to assist students in learning, understanding, and implementing the scientific method using a variety of experimental techniques.

Learning Outcomes:

1. Develop and test hypotheses
2. Collect, analyze, and interpret data
3. Present data using graphs, tables and figures
4. Develop analytical skills necessary to interpret and explain graphs/figures
5. Acquire an understanding of basic biochemistry and enzymology
6. Develop an understanding of the cellular basis of life
7. Understand energy transformation in biological systems through the study of photosynthesis and metabolic reactions
8. Develop an understanding and appreciation for biotechnology and the molecular basis of life

Required Text:

Goddard, R. H. 2013. *Methods and Investigations in Basic Biology* 6e. Hayden-McNeil Publishing, Plymouth, Michigan

Other Required Materials:

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)

Laboratory Assignments and Grading: Students will be graded on their performance in laboratory based on attendance, quiz grades, group lab projects, selected homework assignments, and other assignments as specified by your instructor. **There are NO MAKEUP LABS.**

Lab Quizzes (100 points): Quizzes (worth 10 points each) are given weekly during the first 10 minutes of each laboratory. **ARRIVE ON TIME.** You will not be allowed extra time if you are late. If you miss the quiz completely, you will receive a zero for the quiz. Some of the questions will cover the procedures and results of the previous week's exercises. Other questions will pertain to procedures for the upcoming lab. **You may use your lab notebook for the quizzes.**

Lab Assignments (100 points): Information for each assignment will be provided in lab.

A1 Group Microscopy Project (50 points): Each lab group will develop and complete an experiment and write a summary of the group lab results in standard scientific format. Further information will be provided in lab. All students are required to complete this assignment.

A2 Enzymology report (25 points): Each student will complete a short report on data collected during Exercise 8 Enzymology: Investigation of the effects of temperature and pH on enzyme activity. This will be a data intensive project where you will create and interpret graphs. Further information will be provided in lab. All students are required to complete this assignment.

N1 Lab notebook (25 points): A laboratory notebook is an important element for conducting scientific research. Each student will maintain a lab notebook for recording methods and materials employed in the experiment as well as the experimental results. Students are required to have their notebook at every lab class. Lab notebooks will be submitted and graded at periodic intervals throughout the semester. I will provide additional details throughout the semester.

To assess your lab grade, divide the total points earned by the total possible points (200) & then multiply by 100. Cut this out and attach it to the first page of your lab notebook.

Table 1. Lab Points earned

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	A1	A2	N1	EC	Total
10	10	10	10	10	10	10	10	10	10	10	50	25	25	10	200

Q= Laboratory Quiz, **A1, A2 =** Laboratory Assignment, **N1 =** lab notebook, **EC =** Extra Credit Assignment. Use the empty second row in the table above to keep track of your individual points and lab percentage at any point in the semester. Lowest quiz will be dropped.

Attendance Policy: Attendance in lab is mandatory unless you are sick. Students should be seated at the beginning of class. If you are late, your attendance may not be acknowledged. The student is responsible for all material missed regardless of the reason for absences.

ABSOLUTELY NO LABORATORIES CAN BE “MADE UP.” Laboratories in particular are important not to miss as stated above. In the event that a student will miss a lab, s/he should notify the instructor in writing within 24 hours of the missed lab. It is the instructor’s prerogative to accept the excuse or not. Attendance will be recorded for lab sessions using the lab quiz. Students who miss two labs without an excuse or three labs total cannot receive a grade above a “D” in this lab course.

Lab Conduct:

1. Please arrive on time. If you are late and the quiz has started, you will not be given additional time to complete it.
2. You **MUST** maintain a laboratory notebook with drawings, descriptions, data, etc. of the laboratory exercises. Please bring your notebook to lab each week. You may use your lab notebook during lab quizzes.
3. No eating or drinking in the lab is allowed. You may step out of the lab if you need to eat or drink something.

Conduct (cont.)

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. You will be assigned a microscope. It is your responsibility to properly use the microscope. At the conclusion of the lab I will check each scope to make sure that it was put away properly. Please notify me if the microscope is not functioning properly.
6. Cell phones are not to be used in lab **unless** I give permission for cell phones to be out. This means no texting during the lab
7. A laboratory course is a collaborative effort. You will often work with your lab group or a lab partner. Please be prepared for lab each week and be fully engaged in the lab experiments.

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. You will need to make arrangements with me for you to attend an alternative lab section.

Academic Integrity:

Academic Honesty Policy: Cheating, and plagiarism (submitting another person's material as one's own, or doing work for another person which will receive academic credit) are impermissible. This includes the use of electronic devices, unauthorized books, notebooks, or other sources in order to secure or give help during an assignment or exam. If substantial evidence exists for a violation of this policy, the student(s) involved will receive a grade of 'F' for the course and an official record will be filed following the Academic Integrity Response along with a letter to the Dean of Students. See also:

<http://www.valdosta.edu/academic/AcademicHonestyPoliciesandProcedures.shtml>

<https://www.valdosta.edu/academics/academic-affairs/academic-honesty-at-vsua.php>

Special needs:

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. 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 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: The Director of the Office of Social Equity, titleix@valdosta.edu, 1208 N. Patterson St., N. Patterson St., Valdosta State University, Valdosta, Georgia 31698, 229-333-5463.

LABORATORY EXERCISES

Lab	Dates	Topic:
1	Aug. 21-22	Introduction to the Lab, Safety, and Laboratory Notebooks Exercise 1: Introduction to the Use of the Scientific Method
2	Aug. 28-29	Exercise 2: Basic Light Microscopy
--	Sept. 4-5	Labor Day- NO LABS
3	Sept. 11-12	Exercise 3: Light Microscopy Observations of cells and organisms Exercise 4: Independent Microscopy Project - Group Proposal Due (end of class)
4	Sept. 18-19	Exercise 4 Cont'd: Independent Microscopy Project: Experimental Set up Lab; Distribution of microscopic flora and fauna. Data collection See Appendix B
5	Sept. 25-26	Exercise 5: Cellular Water Relations
6	Oct. 2 - 3	Exercise 6: Protein Extraction & Quantification from Living Tissues Read Appendix C & D
--	Oct. 9-10	Fall Break- NO LABS THIS WEEK
7	Oct. 16-17	Exercise 7: Enzymology Lab: basics of α -amylase activity A1 Due: Group Research Paper Due (Exercise 4)
8	Oct. 23-24	Exercise 8: Enzyme Regulation: Investigation of the effects of temperature and pH on α -amylase
9	Oct. 30- 31	Exercise 9: Photosynthesis A2 Due: Enzymology Report Due (Exercise 8)
10	Nov. 6-7	Exercise 10: Cellular Reproduction: Cell Cycle, Mitosis & Meiosis
11	Nov. 13-14	DNA Forensic RFLP Lab (handout)
12	Nov. 20-21	Exercise 14: Transformation of pGLO plasmid
--	Nov. 26- 39	Thanksgiving Break- NO LABS THIS WEEK
13	Dec. 2-6	Finish Exercise 14- Analyze Transformations

Administration of online Student Opinion of Instruction (SOI):

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 on BANNER. 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. Instructors will be able to view only a summary of all responses after they have submitted final grades. While instructors will not be able to view individual responses or to access any of the data until after final grade submission, they will be able to see which students have or have not completed their SOIs. These compliance and non-compliance reports will not be available once instructors are able to access the results. Complete information about the SOIs, including how to access the survey and a timetable for this term is available at SOI Procedures and Timelines (located at <https://www.valdosta.edu/academics/academic-affairs/sois/> under "Information for Students - Directions for Accessing and Completing SOIs").