

**BIOL 1107L: Principles of Biology Laboratory I (0-3-1)**  
**Valdosta State University, Biology Department, College of Science & Math**  
**Fall 2021: Laboratory Syllabus**

**Instructor:** Dr. Brian C. Ring, Professor of Biology

**Office Hours (BC 2084):** M & W 1:00-3:00 p.m. **Phone:** 249-4841, Email: [bcring@valdosta.edu](mailto:bcring@valdosta.edu)

**Laboratory Sections:** B (CRN # 83332): M / 9:00 -- 11:50 a.m. – BC 1085

K (CRN # 83341): W / 9:00 -- 11:50 a.m. – BC 1085

**Pre- or Corequisite:** BIOL 1107 Unifying Principles of Biology I. Note a grade of C or higher is required in both these lectures and labs.

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

**Required Laboratory Manual:** R. H. Goddard. *Methods and Investigations in Basic Biology* (Custom VSU manual). 6<sup>th</sup> Edition.

**Required Laboratory Notebook & Brief Instructions:** A dedicated 3-Ring or spiral or bound notebook must be maintained for deposition of each laboratory exercise following the guidelines in the above lab manual (see introduction for details). Students must include a table of contents with numbered pages for each lab exercise. In addition, 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 note this notebook must always be present with you during lab sessions for data collection and inspection by your instructor.

**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.

**Laboratory Grading:** The laboratory course schedule and grading is found in the table below. Your laboratory grade is computed as a percentage of your total points (x) from the total possible (y), where  $(x/y) \times 100 =$  laboratory percentage. Use the empty third row in the table to keep track of your individual points and lab percentage at any point in the semester. Quizzes are given weekly at the beginning of lab during the first 10 minutes. You will have only the time allotted at the beginning of lab to take the quiz. Additional graded assignments are listed in the above Laboratory Exercises as A1-A3 along with a short description. Notebook checks are listed thrice during the semester and are performed either during class time as indicated or at the discretion of your instructor(s) in or outside of laboratory time (e.g. collected by your instructor for grading and return).

**Attendance Policy:** Students arriving late to lab will be counted as present but will receive a zero for the lab quiz. However, you must sign and date your quiz indicating you were late or you will be considered absent. Absences resulting in >20% of missed laboratory time (i.e. 3 labs) will result in an automatic grade of F as per University policy. **No make-up labs or quizzes are allowed.** The full absence regulations are available in the online catalog at <http://catalog.valdosta.edu/undergraduate/academic-affairs/>

**Student Conduct:** Cellular Phone usage is not allowed during laboratory sessions. One point will be taken off your quiz if your cell phone is observed during lab for any unapproved purpose (e.g. text messaging). Refer to your lab manual introduction for further lab rules.

**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.

**Mid-term, or in-progress grades:** The instructor is required to submit in-progress grades prior to mid-term (**10/7/2019**). 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 several lab quizzes, lab assignments, and any homework or group 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. The deadline for withdrawal is listed in Banner about a week later.

### TENTATIVE LABORATORY EXERCISES:

Lab	Week of:	Topic:
1	Aug.16-20	Introduction to the Lab, Safety, and Laboratory Notebooks
2	Aug. 23-27	<b>Exercise 1:</b> Introduction to the Use of the Scientific Method & Basic Stats
3	Aug. 30-Sept. 03	<b>Exercise 2:</b> Basic Light Microscopy
4	Sept. 06-10	Labor Day- <b>NO LABS</b>
5	Sept. 13-17	<b>Exercise 3:</b> Light Microscopy Observations of cells & organisms; Basic "5 Kingdom" levels of organization. <b>Exercise 4:</b> Independent Microscopy Project; Experimental Set Up & Distribution of microscopic flora and fauna. <b>A1 Due: Group Proposal (end of class) Read Appendix A</b>
6	Sept. 20-24	<b>Exercise 4 Cont'd:</b> Independent Microscopy Project: Collection of Experimental Data <b>A2 Due: Exercise 4, Summary of Group Results (end of class)</b> <b>Read Appendix B</b> <b>N1: Notebook check # 1</b>
7	Sept. 27 -Oct. 01	<b>Exercise 5:</b> Cellular Water Relations <b>Read Appendix C &amp; D</b>
8	Oct. 04-08	<b>Exercise 6:</b> Protein extraction & Quantification from living tissues <b>Oct. 10- Midterm</b>
9	Oct. 11-15	Fall Break- <b>NO LABS</b>
10	Oct. 18-22	<b>Exercise 7:</b> Enzymology Lab: basics of $\alpha$ -amylase activity
11	Oct. 25-29	<b>Exercise 9:</b> Photosynthesis <b>N2: Notebook check # 2</b>
12	Nov. 01-05	<b>Exercise 10:</b> Cellular Reproduction: Cell Cycle, Mitosis & Meiosis <b>A3 Due: Group Research Paper (Exercise 4)</b>
13	Nov. 08-12	<b>DNA Forensics, RFLP &amp; Gel Electrophoresis</b> (handout)
14	Nov. 15-19	<b>Exercise 14:</b> Transformation of pGLO plasmid <b>DNA Forensics Cont'd</b>
15	Nov. 22- 26	Thanksgiving Break- <b>NO LABS</b>
16	Nov. 29-Dec. 03	<b>Ex. 14 Cont'd-</b> Analyze pGLO Transformations Lab Assessment Exercise <b>N3: Notebook check # 3</b>

### Summary of Laboratory Grade (100% points):

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	A1	A2	A3	N1	N2	N3	Total
20	20	20	20	20	20	20	20	20	20	20	20	20	20	45	25	25	25	400

Q= Laboratory Quiz, A= Laboratory Assignment in or outside of class, N= Laboratory Notebook Checks

**Note:** Your instructor may use this format for grade book reporting on the course BlazeView website. Please check for accuracy.

**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 Success Center (ASC) at Valdosta State University is located in the Odum Library and is available to all students. The ASC provides free peer tutoring in core curriculum courses, including biology, chemistry, math, writing, and foreign languages. The SSC also provides free professional academic advising and on-campus job information in one location. Call 333-7570 to make an appointment, or visit the website: [www.valdosta.edu/asc](http://www.valdosta.edu/asc).

**Access Office:** Students requesting classroom accommodations or modifications due to a documented disability must contact the Access Office for Students with Disabilities located in the Farber Hall. The phone numbers are 245-2498 (VVP) and 219-1348 (TTY) or visit the website or email [access@valdosta.edu](mailto: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, 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](mailto:titleix@valdosta.edu), 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31698, 229-333-5463.

**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: <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 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.