

BIOZ 151 - Introduction to Biological Science I Laboratory

1 credit

LAB SCHEDULE – Spring 2017

Virginia Commonwealth University

Week	Lab Dates	Topic/Activity	Homework
1	Jan 17th – 20th	Lab Safety and Orientation Academic Integrity Module	•Academic Integrity Module •Read Chapter 1 in “A Student Handbook for the Biological Sciences” for an in-class quiz *online safety training modules
2	Jan 23rd – 27th	Microscopes and Cells What is Primary Literature?	•Primary Research Article Assignment on salt and germination •Microscope and Cell Quiz •Scientific Inquiry Module
3	Jan 30th – Feb3rd	Diffusion and Osmosis Think Pair Share (re: articles) Discuss Germination Experiment	•Diffusion and Osmosis Quiz •Find an additional article about germination, write introduction for experiment, and submit.
4	Feb 6th – 10th	Start Germination Experiment Writing Methods and Materials	•Submit Materials and Methods for Seed Germination experiment. •Record data for Seed Germination experiment
5	Feb 13th – 17th	Comparing Results and Analyzing Data In class Peer Evaluations Writing Results and Discussion Null Hypothesis	•Complete graphs, write results and discussion for Seed Germination Experiment, and submit. • Read Article and write a summary.

6	Feb 20th – 24th	Macromolecules	<ul style="list-style-type: none"> • Submission of Experiment summary • Protein Module
7	Feb 27th – Mar 3rd	Effect of Environmental Conditions on Enzyme Activity	<ul style="list-style-type: none"> • Turn in revised and complete seed germination paper (Monday, March 14th by 11:59pm) • Submission of Enzyme Lab Summary • Photosynthetic Machinery Module
8	Mar 6th – 10th	SPRING BREAK	
9	Mar 13th – 17th	Photoactive Macromolecules Introduction to Experiment II	<ul style="list-style-type: none"> • Settling an Argument Write-up, submission and bring in hard copy • Designing an Experiment <p>Photosynthesis movie and quiz</p>
10	Mar 20st – 24th	Photosynthesis	<ul style="list-style-type: none"> • Reviewing Cellular Respiration • Outline of proposed experiment • Photosynthesis lab summary
11	Mar 27th – Mar 31st	How Does Temperature Affect Cellular Respiration? Experimental Design II	<ul style="list-style-type: none"> • Cellular Respiration Post-Lab Quiz • Exploring Fruit Fly Genetics Assignment • Begin Experimental Lab Notebook

12	Apr 3rd – 7th	Genetics	<ul style="list-style-type: none"> •Application of Genetics Quiz *Building DNA Module •Continue Experimental Lab Notebook •Read Molecular Biology I Lab in your lab book
13	Apr 10th – 14th	Molecular Biology I	<ul style="list-style-type: none"> • Read Molecular Biology Article • Summary of Molecular Biology article
14	Apr 17th –21st	Molecular Biology II	<ul style="list-style-type: none"> •Molecular Biology Quiz •Prepare Presentation of Project
15	Apr 24th – 28th	Project Presentations	

**Syllabus is subject to change.*

Course Overview:

This lab focuses on first-hand experience in employing scientific methods for experimental design. Emphasis is placed on developing skills and experience in experimental design, data analysis, and written and oral communication in the sciences. As part of the course, key concepts in the biological sciences will be explored.

Course Objectives (what you should be able to do by the end of the semester):

- Ø Explain the basic principles of experimental design, including the use of controls and experimental variables
- Ø Research peer reviewed articles and discuss how select literature is relevant to an experiment
- Ø Demonstrate basic methods for collecting, graphing and analyzing data
- Ø Construct a basic scientific research paper, including the introduction, methods, results and discussion sections
- Ø Present experimental results in both written and oral formats
- Ø Apply core biological concepts to experimental design and interpretation

Required Material for Lab

Textbook: A Student Handbook for Writing in the Biological Sciences by Karin Knisely 4th edition, Sinauer and Freeman Publishers, 2014)

Lab Book: Introduction to Biological Science Laboratory Workbook available in the Barnes and Noble VCU Bookstore. The new edition was printed August 2016. You must have the new edition for this class.

Chemical safety goggles and a lab coat

Scientific articles: Throughout the semester you will be assigned all or part of selected scientific articles to read. These will be made available in PDF form on the course Bb page

Course Expectations:

- Ø You are expected to arrive for lab before the schedule time and to stay for the entire lab period.
- Ø Prior to lab, you are expected to read over the lab materials in your lab book and complete all homework assignments.
- Ø For each 3hrs in lab, you can expect to spend between 3-6 hours/week completing homework assignments.
- Ø Writing is an essential component of lab work so you can expect at least one written assignment every week. It is essential that all written work be in your own words and **printed out** (hand written assignments are not acceptable)
- Ø Any assignments that are unable to be evaluated by SafeAssign will not be graded.
- Ø Homework assignments need to be turned in at the beginning of the laboratory session on the date indicated by the course schedule. Any late work will not be accepted.
- Ø Course assignments, announcements and grades will be posted on Blackboard. It is your responsibility to check Blackboard regularly for announcements, assignments and due dates.

Attendance:

- Ø Attendance is mandatory.
- Ø **No credit for assignment or lab work will be given in the event of an unexcused absence, nor will any make-up work be accepted.** In special circumstances, such as a death in the family or

illness, excused absences may be accepted but must be accompanied with documentation of reason (Doctor's note, obituary, police report), and be provided within 24hrs of the absence. At the discretion of the instructor, such absences, may result in an Incomplete for the course and the assignment/lab must be completed the next semester.

Ø Tardiness is NOT acceptable. Arriving late will result in missed opportunities to take quizzes and/or to turn in assignments. Tardiness will count as a lab absence.

Ø **Missing more than two laboratories will automatically result in a grade of “F.”**

Ø **In addition**, leaving after a quiz, assignment submission or without completing the entire lab exercise will result in a 0 for that day's assignments and will also count as an absence. This includes arriving late for lab.

Grading:

· Research Experiment Assignments (15%): Each item counts equally

- o Final Paper of first experiment
- o Poster Presentation of second Experiment

· Lab assignments (85%): Each item counts equally

- o Pre-Lab Modules/Assignments
- o Data sheets
- o Class discussion participation
- o Experiment Summaries
- o Article Summaries
- o Other Assignments
- o Introduction Draft
- o Methods and Materials Self-Peer Assessment
- o Results and Discussion Draft
- o Outline of Second Experiment

Letter	Point
Grade	Value
A	100 – 90
B	90 – 80
C	80 – 70
D	70 – 60
F	< 60

Important Dates:

First week of Lab: Jan 17th-20th

Add/Drop Period: Jan 17th-23rd

Notification of intent to Observe Religious Holiday: Friday, Jan 27th, 2017

Last day to withdraw is Friday, March 24th.

VCU Email Policy

Email is considered an official method for communication at VCU because it delivers information in a convenient, timely, cost-effective, and environmentally aware manner. Students are expected to check their official VCU email on a frequent and consistent basis in order to remain informed of university-related communications. The university recommends checking email daily. Students are responsible for the consequences of not reading, in a timely fashion, university-related communications sent to their official VCU student email account. This policy ensures that all students have access to this important form of communication. It ensures students can be reached through a standardized channel by faculty and other staff of the university as needed. Mail sent to the VCU email address may include notification of university-related actions, including disciplinary action. Please read the policy in its entirety:
<http://www.ts.vcu.edu/kb/3407.html>.

VCU Honor System: Upholding Academic Integrity

The VCU Honor System policy describes the responsibilities of students, faculty and administration in upholding academic integrity, while at the same time respecting the rights of individuals to the due process offered by administrative hearings and appeals. According to this policy, "Members of the academic community are required to conduct themselves in accordance with the highest standards of academic honesty and integrity." In addition, "All members of the VCU community are presumed to have an understanding of the VCU Honor System and are required to:

- Agree to be bound by the Honor System policy and its procedures;
- Report suspicion or knowledge of possible violations of the Honor System;
- Support an environment that reflects a commitment to academic integrity;

- Answer truthfully when called upon to do so regarding Honor System cases;
- Maintain confidentiality regarding specific information in Honor System cases."

More information can be found at in the VCU policy library at <http://www.policy.vcu.edu/sites/default/files/Honor%20System%20-%20Interim.pdf>.

Student Conduct in the Classroom

According to the Faculty Guide to Student Conduct in Instructional Settings (http://www.policy.vcu.edu/sites/default/files/Faculty%20Guide%20to%20Student%20Conduct%20in%20Instructional%20Settings_0.pdf), "The University is a community of learners. Students, as well as faculty, have a responsibility for creating and maintaining an environment that supports effective instruction. In order for faculty members (including graduate teaching assistants) to provide and students to receive effective instruction in classrooms, laboratories, studios, online courses, and other learning areas, the university expects students to conduct themselves in an orderly and cooperative manner." Among other things, cell phones and beepers should be turned off while in the classroom. The Student Code of Conduct also prohibits the possession of or carrying of any weapon. For more information see <http://register.dls.virginia.gov/details.aspx?id=3436>.

Students with Disabilities

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, as amended, require that VCU provide "academic adjustments" or "reasonable accommodations" to any student who has a physical or mental impairment that substantially limits a major life activity. To receive accommodations, students must request them by contacting the Disability Support Services Office on the Monroe Park Campus (828-2253) or the Division for Academic Success on the MCV campus (828-9782). Please also visit the Disability Support Services website at www.students.vcu.edu/dss and/or the Division for Academic Success website at healthsciences.vcu.edu/DAS/ for additional information.

Any student who has a disability that requires an accommodation should schedule a meeting with the instructor at the student's earliest convenience. Additionally, if coursework requires the student to work in a lab environment, the student should advise the instructor or a department chairperson of any concerns that the student may have

regarding safety issues related to a disability. Students should follow this procedure for all courses in the academic semester.

Statement on Military Short-Term Training or Deployment

If military students receive orders for short-term training or for deployment/mobilization, they should inform and present their orders to Military Student Services and to their professor(s). For further information on policies and procedures contact Military Services at 828-5993 or access the corresponding policies.

Excused Absences for Students Representing the University

Students who represent the university (athletes and others) do not choose their schedules. Student athletes are required to attend games and/or meets. All student athletes should provide their schedules to their instructors at the beginning of the semester. The Intercollegiate Athletic Council strongly encourages faculty to treat missed classes or exams (because of a scheduling conflict) as excused absences and urges faculty to work with the students to make up the work or exam.

Campus Emergency Information

What to Know and Do to Be Prepared for Emergencies at VCU:

- Sign up to receive VCU text messaging alerts. Keep your information up-to-date. Within the classroom, the professor will keep his or her phone on to receive any emergency transmissions.
- Know the safe evacuation route from each of your classrooms. Emergency evacuation routes are posted in on-campus classrooms.
- Listen for and follow instructions from VCU or other designated authorities. Within the classroom, follow your professor's instructions.
- Know where to go for additional emergency information.
- Know the emergency phone number for the VCU Police (828-1234).
- Report suspicious activities and objects.
- Keep your permanent address and emergency contact information current in eServices.

Important Dates

You can view important dates for the Spring 2017 semester in the university calendar

http://academiccalendars.vcu.edu/ac_fullViewAll.asp?term=Spring+2017

VCU Mobile

The VCU Mobile application is a valuable tool to get the latest VCU information on the go. The application contains helpful information including the VCU directory, events, course schedules, campus maps, athletics and general VCU news, emergency information, library resources, Blackboard and more. To download the application on your smart phone or for more information, please visit <http://m.vcu.edu>.

Class Registration Required for Attendance

Students may attend only those classes for which they have registered. Faculty may not add students to class rosters or Blackboard. Therefore, if students are attending a class for which they have not registered, they must stop attending.

Withdrawal from Classes

Before withdrawing from classes, students should consult their instructor as well as other appropriate university offices. Withdrawing from classes may negatively impact a student's financial aid award and his or her semester charges. To discuss financial aid and the student bill, visit the Student Services Center at 1015 Floyd Avenue (Harris Hall) and/or contact your financial aid counselor regarding the impact on your financial aid. Contact information for the University Financial Aid Office is available at <http://www.enrollment.vcu.edu/finaid/contact-us/>.

Student Financial Responsibility

Students assume the responsibility of full payment of tuition and fees generated from their registration and all charges for housing and dining services, and other applicable miscellaneous charges. Students are ultimately responsible for any unpaid balance on their account as a result of the University Financial Aid Office or their third party sponsor canceling or reducing their award(s).

Mandatory responsibility of faculty members to report incidents of sexual misconduct

It is important for students to know that all faculty members are mandated reporters of any incidents of sexual misconduct/violence (e.g., sexual assault, sexual exploitation and partner or relationship violence). This means that faculty cannot keep information about sexual misconduct/violence confidential if you share that information with them and they must report this information immediately to the university's Title IX Coordinator. In addition, department chairs, deans, and other unit administrators are required to report incidents of sex or gender-based discrimination to the university's Title IX Coordinator.

Confidential reporting sources include staff in Sexual Assault and Domestic Violence at the Wellness Resource Center, University Counseling Services and University Student Health Services. The Policy on Sexual Misconduct/Violence and Sex/Gender Discrimination - Interim, can be found at

<http://www.policy.vcu.edu/sites/default/files/Sexual%20Misconduct%20Violence%20and%20Sex%20Gender%20Discrimination.pdf> .