

**BIOZ 151 - Introduction to Biological Science I Laboratory**  
**1 credit**

**LAB SCHEDULE - Fall 2019**

**Virginia Commonwealth University**

<b>Week</b>	<b>Dates</b>	<b>Topic/Activity</b>	<b>Homework</b>
<b>1</b>	[Removed]	No labs this week	
<b>2</b>	[Removed]	(Online)VCU Fundamentals of Lab Safety Quiz (Online)Syllabus Quiz (Online)Academic Integrity Quiz	Complete lab safety quiz Complete Syllabus quiz Complete Academic Integrity Quiz Read Chapter 1 in "A Student Handbook for the Biological Sciences" for an in-class quiz
<b>3</b>	[Removed]	Microscopes and Cells What is Primary Literature?	Primary Research Article Assignment Microscope and Cell Quiz
<b>4</b>	[Removed]	Diffusion and Osmosis	Diffusion and Osmosis Quiz
<b>5</b>	[Removed]	Germination Experiment Part I Writing Methods and Materials	Record data for seed germination experiment Write Materials and Methods for Seed Germination experiment
<b>6</b>	[Removed]	Analyzing Data, Graphs and writing assignments for germination experiment Writing Results and Discussions	Write introduction and for seed germination experiment Complete graphs, write results and discussion for Seed Germination Experiment, and submit
<b>7</b>	[Removed]	Macromolecules	•Macromolecules summary
<b>8</b>	[Removed]	Effect of Environmental Conditions on Enzyme Activity	Turn in revised and complete seed germination paper Submission of Enzyme Lab Summary •Photosynthetic Machinery Module
<b>9</b>	[Removed]	Photoactive Macromolecules	Settling an Argument write-up Photosynthesis movie and quiz
<b>10</b>	[Removed]	Photosynthesis Introduction to Experiment II	Photosynthesis Lab summary Outline of proposed experiment
<b>11</b>	[Removed]	Cellular Respiration	Cellular Respiration Lab summary
<b>12</b>	[Removed]	Experimental Design II	•Begin Experimental Lab Notebook • Exploring Fruit Fly Genetics Assignment
<b>13</b>	[Removed]	Genetics	•Continue Experimental Lab Notebook •Read Molecular Biology I Lab in your lab book Post lab quiz on Genetics
<b>14</b>	[Removed]	Molecular Biology I	Turn in Data analysis sheet for MB I •Prepare Presentation of Project
<b>15</b>	[Removed]	NO LABS, HOLIDAY	
<b>16</b>	[Removed]	Project Presentations	

*Syllabus is subject to change due to availability of living materials.*

## **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):**

- Explain the basic principles of experimental design, including the use of controls and experimental variables
- Research peer reviewed articles and discuss how select literature is relevant to an experiment
- Demonstrate basic methods for collecting, graphing and analyzing data
- Construct a basic scientific research paper, including the introduction, methods, results and discussion sections
- Present experimental results in both written and oral formats
- 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 5<sup>th</sup> edition, Sinauer and Freeman Publishers, 2017)

**Lab Book:** Introduction to Biological Science Laboratory Workbook available in the Barnes and Noble VCU Bookstore. The new edition was printed August 2019. *You must have the new edition for this class.*

## **Chemical safety goggles, lab coat**

**VCU Fundamentals of Laboratory Safety: Quiz in blackboard must be completed with a score of 80% or higher before you will be permitted to enter the classroom.**

- Minimum required PPE that must be worn at all times in a laboratory or technical area is full-length pants (or equivalent).
- Minimum required PPE that must be worn at all times in a laboratory or technical area is closed toe/heel shoes to protect feet from chemical spills and sharp objects.
- Remove all additional required PPE before leaving your workplace.
- Never wear lab coats, gloves, coveralls or other potentially contaminated PPE to public locations such as cafeterias, restrooms, elevators, offices, or other off-site areas.
- Always wash your hands after removing protective equipment and before leaving the work area.
- Do not reuse disposable gloves.

### Course Expectations:

- You are expected to arrive for lab *before* the scheduled time and to stay for the entire lab period.
- Prior to lab, you are expected to read over the lab materials in your lab book and complete all homework assignments.
- For each 3hrs in lab, you can expect to spend between 3-6 hours/week completing homework assignments.
- 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 ***typed*** (hand written assignments are not accepted)
- Any assignments that are unable to be evaluated by SafeAssign will not be graded.
- Homework assignments need to be turned in at the beginning of the laboratory session on the date indicated by the course schedule. Late work will not be accepted.
- 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:

- Attendance is mandatory.
- **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.** Documentation provided within 24hrs of the absence may be used to allow a student to attend another lab section during the same week. Labs are set up and run for multiple sections on a weekly schedule.
- Tardiness is NOT acceptable. Protocols and safety are discussed at the beginning of lab. Arriving late will result in an absence.
- **Missing more than two laboratories will automatically result in a grade of “F.”**
- **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 (20%): Each item counts equally
  - Final paper of first experiment
  - Poster and poster presentation of second experiment
  - Experimental lab notebook
- Lab assignments (80%): Each item counts equally
  - Pre-Lab Modules/Assignments
  - Online lab
  - Online lab graded questions
  - Data sheets
  - Experiment Summaries
  - Article Summaries
  - Other Assignments
  - Introduction, Methods and Materials Draft
  - Results and Discussion Draft
  - Outline of Second Experiment

Letter	Point
Grade	Value
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

**Important Dates:**

**Add/Drop Period:** [Removed]

**Notification of intent to Observe Religious Holiday:** [Removed]

**Last day to withdraw is** [Removed]

**Required Syllabus Content:**

The required syllabus statements originally included here are maintained by the Office of the Provost and are regularly updated. To prevent the dissemination of information which may no longer be accurate or complete, the full text of the required syllabus statements have been removed from this document.

Students should visit <http://go.vcu.edu/syllabus> and review all syllabus statement information. The full university syllabus statement includes information on safety, registration, the VCU Honor Code, student conduct, withdrawal and more.