College Biology I Lab

BIOL1615

Instructor Information

Course Description

Laboratory observations and experimentation to enhance understanding of biological chemistry, cell structure, metabolism, genetics, and evolution. One 3-hour laboratory session per week.

Pre-Requisite(s): BIOL 1610 with C grade or better or BIOL 1610 must be concurrent.

Semester(s): All

Course Presentation

This is a lab course.

Prior to each lab session, students will complete a pre-lab assignment for which answers can be found in the lab manual.

During each lab session, students will:

take a quiz regarding the previous week's lab

pay attention to instructions regarding the day's lab procedures

complete various lab procedures

hand in a post-lab assignment

Course Student Learning Outcomes

- Demonstrate an understanding of principles and applications of the scientific method.
- Demonstrate an understanding of basic microscopy.
- Demonstrate an understanding of the metric system.
- Demonstrate an understanding of the chemical and physical nature of life and the applicability of physical laws.
- Demonstrate an understanding of the inheritance and continuity of life.
- Demonstrate an understanding of structure, function, and development at the molecular, cellular, and organismal levels.
- Demonstrate an understanding of the patterns and processes of evolution and the resulting diversity of life.
- Demonstrate an understanding of the interactions of organisms with each other and with their environment.
- Demonstrate an understanding of the consequences of interactions between humans and the biosphere.

Course Prerequisites

BIOL 1610 with a grade of C or better OR concurrent enrollment with BIOL 1610

Communication Plan

- I will respond to email within 2 business days I will offer feedback on major assignments within 1 week. The best way to contact me is via the Canvas Inbox, as I will prioritize this email over other modes of communication.
- In this course I will occasionally post announcements.
- Please communicate with me during lab time whenever you have questions about lab procedures and lab results. Also be sure to communicate with lab group members to make sure everyone understands the procedures and results. Everyone will take each lab quiz individually.

Required Textbook or Materials

Title: College Biology I Lab Manual, SLCC 12th Custom Edition.
Authors: Vodopich/Moore
Publisher: McGraw Hill Publishers
Edition: SLCC custom edition of the 12th edition

For more information on textbook accessibility, contact Accessibility & Disability Services at ads@slcc.edu.

Textbook and required course materials

Required Course Materials:

A computer with Internet access - All content for this course will be available via the SLCC Canvas Learning Platform and the lab manual indicated below.

Lab manual - College Biology I Lab, 12th Custom Edition. Vodopich /Moore. McGraw Hill Publishers

This is a custom textbook that only includes those chapters we will use during the semester. Using a custom textbook saves you money.

You have two options to purchase the SLCC custom lab manual for BIOL 1615.

1) Preferred option but a little more money: purchase a hard copy at the SLCC bookstore. This will make it easier for you to view lab protocols, write notes and write

answers to questions during the lab session itself.

2) Second option: an electron version of the manual - purchase directly through McGraw Hill and save some money. You will need to have access to this during the lab session since it provides directions for each procedure.

You can locate and purchase this electronic manual online by following these simple steps:

1. Go to https://www.mheducation.com/highered/custom/product/9781307875898.htmlLinks to an external site.
2. Add the book to your cart and pay using a credit card or access code.
3. Follow on screen instructions to checkout.

Keys to Success

Attend and participate in lab every week.

Arrive on time to take the lab quiz at the beginning of the lab session.

Safety is the number one priority. Please be considerate of others in the lab at all times. We will occasionally use hazardous materials during the course of the semester.

Please take good care of lab equipment

Help clean up before leaving the lab room.

Even though you will work in a group, each person should participate fully in all lab activities.

Each lab group should complete all lab work independently of other groups unless specifically instructed otherwise by their lab instructor. Failure to do so could result in a 50% score in participation and the post-lab assignment.

All students within a lab group are to discuss lab procedures and outcomes with one another to ensure that everyone understands and is prepared for the quiz.

Description of Assignments/Exams

Every Week, each student is expected to complete a

1. prelab assignment prior to arriving for lab: 5 points each

2. postlab assignment: 10 points each

3. a lab quiz based on the previous week's lab: 10 points each

A student will earn 5 points each week for participating in the lab activity.

General Course Policies

Attendance:

Attendance is expected during the entire lab session each week. Every student can miss one lab session during the semester without penalty. If necessary, a make-up lab during the last week of the semester will be held for those who have a legitimate excuse for missing a second lab session.

Academic Integrity:

Generative artificial intelligence (AI) software is a rapidly emerging tool that students may be interested in using. If doing so, SLCC students are expected to adhere to the same standards as the Code of Student Rights and Responsibilities statement on plagiarism. Presenting generative AI software content as your own is a violation of academic integrity. If you use generative AI in your work, you must indicate that you have done so.

Due Dates and Late Work Policy:

Each pre-lab assignment must be completed prior to the beginning of the lab session

Each post-lab assignment must be completed by 11:59 pm on the day of the lab session

Each lab quiz must be completed during the lab session held one week after the lab was conducted.

Late work will not be accepted.

Drop, Withdraw or Incomplete Grade: Last day to drop from class with refund is September 10, withdraw without refund is October 22. A grade of "I" (Incomplete) is at the instructor's discretion and can be given if a student is facing extenuating circumstances preventing them from finishing the semester. In order to receive an incomplete, most of the course work must be completed (e.g. ~75%) with a passing grade.

SLCC Academic Policies: SLCC academic policies may be found in the SLCC 2023-2024 Catalog, and the Code of Student Rights and Responsibilities.

Grading Scale

Distribution of Points

Element	Points
Safety Quiz	15 pts
Syllabus Quiz (take home)	10 pts
Pre-lab Assignments	55 = 5 pts x (12-1) labs*
Participation	60 = 5 pts x (13-1) labs*
Quizzes	110 = 10 pts x (12-1) quizzes*
Post-lab Assignments	110 = 10 pts x (12-1) labs*
Total Possible Points	360 pts

*lowest score to be dropped

Grades will be assigned based on the following scale:

A: 334 – 360	A-: 324 – 333	B+: 313 – 323
B: 302 – 312	B-: 288 – 301	C+: 277 – 287
C: 262 - 276	C-: 252 – 261	D+: 234 – 251
D: 216 – 233	E: < 216	

Course Schedule

Fall 2024 Schedule

Week #	WEEK OF:	EXPERIMENT TITLE:
1	August 20	Syllabus and Safety
2	August 26	Exercise 3: Microscopes
3	September 2	Exercise 4: The Cell
4	September 9	Chemistry Models and Exercise 5: pH
5	September 16	Exercise 6: Biomolecules
6	September 23	Exercise 11: Enzymes
7	September 30	Exercise 9: Diffusion and Osmosis
8	October 7	Exercise 7: Separating Organic Compounds
9	October 14	No Lab: Fall Break
10	October 21	Exercise 8: Spectrophotometry
11	October 28	Exercise 14 and 15: Mitosis and Meiosis
12	November 4	DNA Isolation and Micropipettes
13	November 11	Exercise 17: Genetics
14	November 18	Exercise 12 and 13: Cell Respiration and Photosynthesis
15	November 25	Thanksgiving Holiday - No Lab
16	December 2	Make-Up Lab Exercise 14:Evolution

Course Learning Environment

My hope is that all of us together will create a learning environment that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, etc.) To help accomplish this:

- No discrimination is tolerated based on anyone's race, gender, sexuality, religion, abilities, English language proficiency or socio-economic circumstances. Please

always choose kindness and patience in our class communications, there is space for all of us here.

- If you have a name and/or set of pronouns that differ from those that appear in your Canvas handle, please let me know so I can address everyone in a way that makes them feel comfortable and safe.

- I (like many people) am still in the process of learning about diverse perspectives and identities. If something was said in any of the class materials and discussions (by anyone) that made you feel uncomfortable, please talk to me about it. You can email me directly or send feedback via the anonymous open survey on our Canvas site.

- If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to let me know and request extra time on your course work. You will need to let me know in advance of the due date to receive extra time.

How to Navigate to Canvas

College Wide Student Learning Outcomes

SLCC has identified nine essential capacities all students should strengthen, regardless of academic major or career plans, that will serve students in all aspects of life.

- Acquire substantive knowledge in the intended major and throughout General Education

- Communicate effectively

- Develop quantitative literacies necessary for the chosen field of study

- Think critically
- Express themselves creatively
- Develop civic literacy and the capacity to be community-engaged learners who act in mutually beneficial ways with community partners
- Develop the knowledge and skills to work with others in a professional and constructive manner
- Develop information literacy
- Develop computer literacy

Free STEM Tutoring

STEM Learning provides free tutoring services and textbook checkout to students enrolled in various courses offered by the School or Science, Math, and Engineering.

Tutoring is provided as a drop-in service only, except in certain circumstances.

Please visit https://www.slcc.edu/stem/tutoring/index.aspx for more information!

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

You can access the document by clicking on the following link:
https://slcc.instructure.com/courses/530981/pages/institutional-syllabus

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, please visit the Institutional Syllabus under the Tutoring and Learning Support tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

SLCC Student Academic Calendar

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, please visit the Institutional Syllabus under the Advising and Counseling Support Services tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Genetics Q & A	Discussion	0
	Introduce Yourself	Discussion	0

Due Date	Assignment Name	Assignment Type	Points
	Post-Lab_DNA isolation	Quiz	10
	Practice Quiz-Genetics	Quiz	0
	Practice Quiz-Mitosis & Meiosis	Quiz	0
	Pre-Lab_DNA isolation	Quiz	5
	Quiz: DNA isolation and Micropipette usage	Quiz	10
8/20	Week1 participation	Assignment	5
8/27	Pre-lab_Microscopes	Quiz	5
8/27	Quiz: Safety	Quiz	15
8/27	Quiz: Syllabus_Fall 2024	Quiz	10
8/27	Post-lab_Microscopes	Quiz	10
8/27	Week2 partic	Assignment	5
9/3	Pre-lab_Cell	Quiz	5
9/3	Quiz: The Microscope	Quiz	10
9/3	Post-lab_Cell	Quiz	10
9/3	Week3 partic	Assignment	5
9/10	Pre-Lab_Chemistry_ Models and pH	Quiz	5
9/10	Quiz: The cell	Quiz	10

Due Date	Assignment Name	Assignment Type	Points
9/10	Post-Lab_Chemistry Models and pH	Quiz	10
9/10	Week4 partic	Assignment	5
9/17	Pre-lab_Biologically_ Important Molecules	Quiz	5
9/17	Quiz-Chemistry_ Models and pH	Quiz	10
9/17	Post-lab_Biologically_ Important Molecules	Quiz	10
9/17	week5 parti	Assignment	5
9/24	Pre-Lab_Enzymes	Quiz	5
9/24	Quiz-Biologically_ Important Molecules	Quiz	10
9/24	Post-lab_Enzymes	Quiz	10
9/24	Week6 parti	Assignment	5
10/1	Pre-lab_Diffusion and Osmosis	Quiz	5
10/1	Quiz-Enzymes	Quiz	10
10/1	Post-lab_Diffusion and Osmosis	Quiz	10
10/1	Week7 parti	Assignment	5
10/8	Pre-lab_Separating_ Important Molecules	Quiz	5
10/8	Quiz-Diffusion and Osmosis	Quiz	10

Due Date	Assignment Name	Assignment Type	Points
10/8	Post-lab_Separating_ Important Molecules	Quiz	10
10/8	Week8 parti	Assignment	5
10/22	Pre-lab_Spectrophotometry	Quiz	5
10/22	Quiz-Separating_ Organic Compounds	Quiz	10
10/22	Post-lab_Spectrophotometry	Quiz	10
10/22	Week10 parti	Assignment	5
10/29	Pre-lab_Mitosis and_ Meiosis	Quiz	5
10/29	Quiz-Spectrophotometry	Quiz	10
10/29	Post-lab_Mitosis and_ Meiosis	Quiz	10
10/29	Week11 parti	Assignment	5
11/5	Quiz-Mitosis &_ Meiosis	Quiz	10
11/5	Week12 parti	Assignment	5
11/12	Pre-lab_Genetics-Sp2022	Quiz	5
11/12	Post-lab_Genetics	Quiz	10
11/12	Week13 parti	Assignment	5

Due Date	Assignment Name	Assignment Type	Points
11/19	Pre-lab_Respiration & Photosynthesis	Quiz	5
11/19	Quiz-Genetics	Quiz	10
11/19	Post-lab_Respiration & Photosynthesis	Quiz	10
11/19	Week14 parti	Assignment	5
12/3	Pre-lab_Evolution	Quiz	5
12/3	Quiz-Evolution	Quiz	10
12/3	Quiz-Cell Respiration and Photosynthesis	Quiz	10
12/3	Evol partic	Assignment	5
12/3	Post-lab_Evolution	Quiz	10