Microbiology Lab

BIOL2065

Instructor Information

Communication Plan

Communication Information:

The BEST way to reach me is via the Canvas email system. I will attempt to respond to all emails within 24 hours, excluding holidays and weekends. Similarly, please make sure that you set your email preference in the Canvas system. I will be posting Canvas announcements regarding weekly expectations, exam or practical reminder dates and any changes to this syllabus or the course. Please be sure to check announcements frequently.

The Microbiology Hallway (Discussion Board)

Any questions you have about classwork, assignment due dates, and overall any general questions for the class should be posted in the ‘The Microbiology Hallway Discussion Board'.

PLEASE DO NOT EMAIL!

This will be a pinned Discussion on our Canvas site as a source for students to ask questions throughout the semester. This is particularly good for

questions the entire class can benefit from receiving an answer. Students can post their question(s) and/or answer someone else's question(s) on this discussion forum in addition to the instructor answering questions.

This board will be checked daily.

Course Description

Introduces practical aspects of microbiology. Lab activities include: microscopy, cell culture, staining, and techniques for characterizing and identifying bacteria.

Pre-Requisite(s): BIOL 2060 w/C grade or better or BIOL 2060 must be concurrent.

Semester(s): All

BIOL 2065 - Microbiology Laboratory

Credits: 1

Introduces practical aspects of microbiology. Lab activities include:

Microscopy, cell culture, staining, and techniques for characterizing and identifying bacteria.

One Laboratory session per week.

Additional course fee required.

Required Textbook or Materials

Title: Microbiology Lab Manual
OID: https://slcc.pressbooks.pub/microbiologylabmanual/

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

Course Prerequisites

Prerequisite: BIOL 2060 w/C grade or better or BIOL 2060 must be concurrent.

Course Presentation

This is an **in-person lab** that meets once every week on Tuesday at the Taylorsville-Redwood Campus and on Thursday at the Jordan Campus.

The schedule for all Lab Instructors, times and locations is listed below:

Section Number	CRN #	Instructor	Meeting Times	Class Building and Room #:
301	40547	Arshia Kergaye	TR- 1-3:50PM	JHS 243
302	40548	Nicole Pearson	TR: 4-6:50PM	JHS 243
303	40549	Arshia Kergaye	TR: 10-12:50PM	JHS 243
304	42800	Thomas Perry	TR: 7-9:50PM	JHS 243
401	42466	Arshia Kergaye	T: 10- 12:50PM	SI 398
402	42501	Arshia Kergaye	T: 1-3:50PM	SI 398
403	42801	Hannah Covington	T: 7-9:50PM	SI 398
404	42977	Hannah Covington	T: 4-6:50PM	SI 398

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. I want to be a resource for you and help you learn these materials without adding to anyone's level of stress and I promise to treat everyone with compassion.

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

Course Student Learning Outcomes

- Demonstrate basic microbiological techniques and precautions.
- Isolate and culture microorganisms and identify them using their culture characteristics.
- Use different staining techniques to differentiate bacteria.
- Use differential and selective media to isolate different bacteria.
- Demonstrate the ability to perform an immunoassay such as ELISA and understand its use in analyzing patient samples.

General Course Policies

Attendance: Attendance at the first lab meeting is **MANDATORY!** If you do NOT attend the lab the first week, YOU RISK BEING DROPPED from the course by the end of the first week. **This may also result in you being dropped from the lecture if BIOL2060 is to be taken concurrently.** You must attend each week in order to complete the activities for that week on which your grade will be based.

Lab Safety: Safety is the #1 priority in the laboratory. Students will be introduced to safety information on the first meeting of the semester. Specific safety procedures for each lab exercise will be discussed throughout the semester prior to performing the lab. Students are responsible for the safety of *themselves and others* in the lab session; therefore, they are required to adhere to safety policies and procedures in the laboratory. *Lab safety protocols can be found in the lab manual in Lab #1.*

Face Coverings: While face coverings are not required at SLCC, the college has adopted a "mask-friendly" approach and encourages everyone to evaluate their situation and act accordingly. Face coverings provide a guard against spreading potentially infected droplets to other individuals and discourage people from touching their faces and possibly infecting themselves with unclean hands. Though optional, the use of face coverings by everyone, regardless of vaccination status, is strongly recommended while on campus. Please see the CDC's website for the latest guidelines on face coverings.

Makeup Labs: **Students are permitted to make-up ONE lab during the semester but only during the week that the specific lab is being conducted.** In other words, if you miss YOUR lab one week you can go to another lab section in the same week, that is teaching that same topic to make it up. Please check the syllabus schedule for lab topics and days. You may only do this once per semester. The lab schedule for the Fall 2024 semester is found above under course presentation.

Please fill out the Make-up Quiz if you need to use a Make-up day. This is found under Quizzes in the Navigation tool bar in canvas.

Academic Dishonesty: Academic Dishonesty is absolutely NOT tolerated and includes all forms of cheating and plagiarism as outlined in the Code of Student Rights and Responsibilities and outlined here. There is NO

tolerance for dishonesty. ***Academic dishonesty includes, but is not limited to, claiming another person's work or words as one's own, accessing answers to lab reports, quizzes and exams from the Internet, completing quizzes or exams with other individuals, etc. Students must put any answers in their own words. Exams are to be completed individually by the student.*** Penalty for first offense may include a grade of "0" on the assignment or exam and second offense may result in an "E" for the course.

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.

Electronic Devices: Electronic devices can be used for note-taking and course-related purposes ONLY but should not be used during class for working on other tasks (e.g. answer emails, Facebook, other classes, texting, etc.). Cell phones, pagers are to be on mute during class to minimize disruption. Cell phones MUST be turned completely OFF and put away during exams. You may be asked to leave if your electronic device disrupts the class in anyway.

Classroom recordings: Students may not record or publish information from the class without written authorization from the instructor. If used without authorization you have violated Privacy/Intellectual Property Rights.

Drop, Withdraw or Incomplete Grade: Last day to drop from class with refund is September 12th, withdraw without refund is October 24th. **It is the responsibility of the student to drop/withdraw from this class, not the instructors.** 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. ~70%) with a passing grade.

Emergency Evacuation Procedures: We will follow school guidelines in case of an emergency at: https://i.slcc.edu/emergency-prepare/emergency-procedures.aspx

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

Description of Assignments/Exams

Laboratory performance will be assessed on the basis of lab participation, lab assignments, and lab exams. Students are expected to attend and participate in laboratory each week. Students should read the lab manual prior to lab so as to use their limited time in lab to full advantage. Laboratory methodologies will vary from week to week, depending upon the nature of the laboratory exercise, but will include both individual and collaborative efforts. The laboratory includes both quantitative and qualitative exercises.

See the Final Grade Assessment, Lab Assignment Point Distribution, and BIOL 2065 Final Grading Scale tables below for more specific grading information.

Laboratory Assessment System:

**** Final Grade Assessment for BIOL2065 ****

Performance Item	**Possible Points**
Midterm Lab Practical Exam	100
Final Lab Practical Exam	100
Assignment Points	100
Total Possible Lab Points	**300**

Assignments: Students will be asked to submit a Pre-Lab Assignment each week prior to the lab to be conducted and a post Lab Worksheet related to labs #1-8, as well as complete a PARE project worth a total of 20 points, including PARE Pre-Survey, PARE Post-Survey, PARE Lab Results and Report presentation, and uploading of PARE data for labs #9-12.

While students will be working in groups to conduct the experimental protocols in lab, all assignments must be completed and submitted individually for the student's grade.

Lab Worksheets can only be completed by attending the lab day itself as in-class data are used to complete any post-lab materials; therefore, students must be present to obtain the corresponding data and results to receive credit for these worksheets.

Exams: Practical exams are designed to check for student understanding of the experiments and information covered in the laboratory; therefore, exam questions will only come from material covered and discussed in the laboratory. Both laboratory exams shall consist of a total of 50 questions, each question worth 2 points. Each exam will be composed of 25 stations with 2 questions per station. Students will be given 2 minutes per station to answer the questions located there and will rotate around the room during the first round, moving forward from one station to the next. Following one round of rotation through all of the questions, there will be a 10 minute period where students will be allowed to revisit any station(s) they wish to, limited only in regard to the number of students per station. **As the midterm and final exams are practical in nature, they must be taken in an SLCC Microbiology Lab room; therefore, it will not be possible to take exams at any other time than when scheduled during their respective, specified weeks.**

Grading Scale

** BIOL 2065 Final Grading Scale **		
Point Range	**Grade**	**Final %**
278-300	A	93-100
269-277	A-	90-92
260-268	B+	87-89
248-259	B	83-86
239-247	B-	80-82
230-238	C+	77-79
218-229	C	73-76
209-217	C-	70-72
200-208	D+	67-69
188-199	D	63-66
179-187	D-	60-62
Below 178	E	Below 60

Microbiology Lab Schedule

Fall Semester 2024 Microbiology Lab Schedule:

Lab #	*Week of*	*Assigned Experiment*	*Assignments*
1	Aug 20th	Microbiology Lab Introduction: Review Course Info, Syllabus, and Laboratory Safety Rules Microscopy and Prepared Slides	Safety Agreement (5 points) Lab Worksheet #1 (5 points) Pre-Lab #2 (5 points) Lab Worksheet #2 (5 points)
2	Aug 27th	Gram Staining	Pre-Lab #3 (5 points) Lab Worksheet #3 (5 points)
3	Sept 3rd	The Gut Check Game (Microbiome Activity)	Pre-Lab #4 (5 points) Lab Worksheet #4 (5 points)
4	Sept 10th	Metabolic Activities of Bacteria	Pre-Lab #5 (5 points) Lab Worksheet #5 (5 points)
5	Sept 17th	Bacterial Growth Curve	Pre-Lab #6 (5 points) Lab Worksheet #6 (5 points)
—	**Sept 24th**	**MIDTERM EXAM**	Practical Exam (100 points)
6	Oct 1st	Bacteriophage Plaque Assay	Pre-Lab #7 (5 points) Lab Worksheet #8 (5 points)
7	Oct 8th	Innate Immunity – the Complement System	Pre-Lab #8 (5 points) Lab Worksheet #8 (5 points)
Fall Break Oct 17-18 – no BIOL2065 Labs this week			
8	Oct 22nd	PARE Project Part I (Serial dilutions, plating)	PARE Pre-Survey (2.5 points)
9	Oct 29th	PARE Project Part II (Colony counting, calculations, PCR)	PARE Results, Data and Oral Report and Enter PARE Data into Database (15 points)
10	Nov 5th	PARE Project Part III (Gel electrophoresis, sequencing)	
11	Nov 12th	Work on PARE Project	
12	Nov 19th	PARE Project Part IV (Presentations)	PARE Post-Survey (2.5 points)
Thanksgiving Nov 28-30 – no BIOL2065 this week			
—	**Dec 3rd**	**FINAL EXAM**	Practical Exam (100 points)

Syllabus Last Updated: Thursday, August 1, 2024

Lab Course Schedule

Fall Semester 2024 Microbiology Lab Schedule:

Lab #	*Week of*	*Assigned Experiment*	*Assignments*
1	Aug 20th	Microbiology Lab Introduction: Review Course Info, Syllabus, and Laboratory Safety Rules Microscopy and Prepared Slides	Safety Agreement (5 points) Lab Worksheet #1 (5 points) Pre-Lab #2 (5 points) Lab Worksheet #2 (5 points)
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Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points

Due Date	Assignment Name	Assignment Type	Points
	"Further Questions: The Microbiology Hallway"	Discussion	0
	Required Makeup Lab Info (ONLY USE IF YOU ATTEND MAKEUP LAB!)	Quiz	0
8/23	Lab 1 Worksheet: Foundations	Assignment	5
8/23	Lab 2 Worksheet: The Compound Light Microscope	Assignment	5
8/23	Microbiology Lab Safety Agreement	Assignment	2.5
8/23	Microbiology Lab Syllabus Quiz	Quiz	2.5
8/23	PreLab 2: The Compound Light Microscope	Assignment	5
8/28	PreLab 3: Gram Staining	Assignment	5
8/29	Lab 3 Worksheet: Gram Staining	Assignment	5
9/4	Pre-Lab 4: Gut Check Game	Assignment	5
9/5	Lab 4 Worksheet: Gut Check Game	Assignment	5
9/11	PreLab 5: Metabolic Activities of Bacteria	Assignment	5

Due Date	Assignment Name	Assignment Type	Points
9/12	Lab 5 Worksheet: Metabolic Activities of Bacteria	Assignment	5
9/18	PreLab 6 Assignment: Bacterial Growth in the Lab	Assignment	5
9/19	Lab 6 Worksheet: Bacterial Growth in the Lab	Assignment	5
9/26	Midterm Exam	Quiz	100
10/2	Micropipette Activity	Assignment	2
10/2	PreLab 7: Bacteriophage Plaque Assay	Assignment	3
10/3	Lab 7 Worksheet: Bacteriophage Plaque Assay	Assignment	5
10/9	PreLab 8 Assignment: Innate Immunity - Complement System	Assignment	5
10/23	PARE Pre-Survey	Assignment	5
10/24	Lab 8 Worksheet: Innate Immunity - Complement System	Assignment	5
10/31	PARE Data Calculation Worksheet	Assignment	10
11/21	PARE Group Lab Report	Assignment	10
11/21	PARE Post Survey	Assignment	5

Due Date	Assignment Name	Assignment Type	Points
12/5	Final Exam -JORDAN	Quiz	100

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

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!

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

How to Navigate to Canvas

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.