

MICB 322: MOLECULAR MICROBIOLOGY LABORATORY

COURSE COORDINATOR

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COURSE DESCRIPTION AND GOALS

The primary goal of MICB 322 is to introduce students to the laboratory practices that are used in the Microbiology and Immunology laboratory program while familiarizing students with some classical, molecular, and bioinformatics techniques commonly used in a microbiology laboratory.

Upon completion of MICB 322 students will be able to:

1. Demonstrate **competency** in laboratory safety.
2. Demonstrate **competency** in effective bench setup, organization and the application of aseptic technique.
3. Demonstrate familiarity with standard equipment and laboratory techniques regularly used in a microbiology laboratory.
4. Maintain detailed and effective scientific records (lab notebooks).
5. Collect, interpret and present experimental data.
6. Organize written and oral forms of communication to convey scientific information to a general audience in a clear, concise and professional manner.
7. Explain the theory associated with the lab equipment and laboratory techniques used and/or discussed in MICB 322.

TEXTBOOK/POWERPOINT LECTURE MATERIAL

There is no commercial textbook required for MICB 322. Weekly lab protocols and other materials (lecture slides, theory, etc.) will be posted on the MICB 322 Canvas site.

COURSE STRUCTURE

This course consists of a series of lab sessions which have been designed to introduce you to the common techniques performed in a Microbiology lab. The weekly lab sessions will be held in room 3145 in the Biological Sciences building. Lab sessions are scheduled from 1 – 5 pm and will follow the schedule outline below.

The lecture sessions will occur on Fridays from 2 – 4 pm in P. A. Woodward Instructional Resources Centre, room 3 (Wood 3).

MICB 322 COURSE SCHEDULE, FALL 2022

Dates	Lab #	Lecture
Sept 6 - 9	Online prep, NO in person labs	Sept 9
Sept 13, 14, 15	Lab 1	Sept 16
Sept 20, 21, 22	Lab 2	Sept 23
Sept 27, 28, 29	Lab 3	Sept 30 NO lecture
Oct 4, 5, 6	Lab 4	Oct 7
Oct 10 (Thanksgiving) - labs Oct 11,12, 13	Lab 5	Oct 14
Oct 18, 19, 20	Lab 6	Oct 21
Oct 25, 26, 27	Lab 7	Oct 28
Nov 1, 2, 3	Lab 8	Nov 4
Nov 7 - 11 (Midterm break, Remembrance Day)	NO labs this week.	Nov 11 NO lecture
Nov 15, 16, 17	Lab 9	Nov 18
Nov 22, 23, 24	Lab 10	Nov 25
Nov 29, 30, Dec 1	Lab 11	Dec 2

* Detailed descriptions of weekly tasks are posted on Canvas.

COURSE CONTENT

LABS: The lab sessions will focus on course goals 1 – 5 outlined above. Weekly preparation for the lab sessions require the reproduction (diagrams are helpful) of posted lab protocols into lab notebooks. Weekly lab protocols and lab notebook guidelines are posted on Canvas.

In preparation for your first lab session, you will need to read and understand all the safety documents posted in the **Prep Work** folder on Canvas. Your understanding of all the safety documents will be assessed via a Canvas safety exam and your continued demonstration of working safely while in the lab.

CLASS (Lecture) SESSIONS: Class sessions will consist of a mixture of traditional lecture, group exercises and worksheets. The lecture sessions will focus on course goals 5 – 7 outlined above. This is your opportunity to connect with both your peers and the teaching team as we review our completed lab work and also discuss the goals for subsequent lab work.

PRACTICAL ASSESSMENTS: There will be **two** practical assessments that provide you with the opportunity to demonstrate your level of competency with some standard microbiological skills. The dates of the practical assessments are provided in the grade distribution table below. More details regarding each assessment will be posted on Canvas closer to the assessment dates.

LABORATORY NOTEBOOKS: Please see the lab notebook guidelines posted on Canvas. Feedback regarding your lab notebook documentation will be provided during the lab sessions. Notebooks will be collected for detailed grading in the final week of the course.

GENERAL LAB PERFORMANCE AND PROFESSIONALISM: You are expected to arrive on time and be fully prepared to complete the scheduled lab work efficiently, safely, and responsibly. A lab performance and professionalism grade will be assigned based on the following criteria:

- Punctuality.
- Preparation.

- Safety/responsibility.
- Time management/efficiency.
- Common courtesy.
- Ability to follow directions.
- Acquisition of manual dexterity.
- Ability to clean up after oneself!

An assessment of lab performance/citizenship will occur every time you are in the lab. A lab performance/professionalism grade of 100% means that by the end of the lab sessions you have demonstrated a mastery of all of the above criteria.

CANVAS QUIZZES: The purpose of the canvas quizzes is to provide feedback regarding your understanding of the principles behind the techniques practiced and discussed in MICB 322. Questions will test your ability to recall facts, to synthesize and critique material, and to apply your knowledge to new situations.

FINAL EXAM: Please consult the course learning objectives (Canvas) as a study guide for the final exam. Questions will test your ability to recall facts, to synthesize and critique material, and to apply your knowledge to new situations.

GRADE DISTRIBUTION

	% Final grade	Content	Date/Location
Practical Assessment 1	12.5%	Bench Setup and Aseptic Transfer.	Assessed during lab 6.
Practical Assessment 2	12.5%	Bench Setup and Aseptic Transfer.	Assessed during lab 11.
Laboratory Notebook	10%	See lab notebook guidelines on Canvas.	Hand in during last lab session.
Performance/Professionalism	5%	See above description.	Assessed during ALL lab sessions
Canvas Quizzes	10% (2% per quiz)	Weekly material posted on Canvas and discussed in lecture.	Completed on Canvas.
Assignment 1	5%	STAPH Introduction	Sept 26
Assignment 2	5%	STAPH Results Table	Oct 17
Assignment 3	5%	Restriction Digest Protocol	Nov 4
Assignment 4	15%	Complete STAPH Report	Dec 5
Final Exam	20%	All course materials.	TBD, scheduled by UBC enrollment services.

CENTRE FOR ACCESSIBILITY

Students who are registered with UBC's Centre for Accessibility should contact the Centre as soon as possible to discuss and plan how your accommodations will be met.

COMMUNICABLE DISEASE PREVENTION

As of May 1, 2022, UBC has updated COVID-19 Safety Plans into a single Communicable Disease Prevention Framework. Highlights from this document are outlined below and the complete document can be found here: <https://riskmanagement.sites.olt.ubc.ca/files/2022/04/Communicable-Disease-Prevention-Framework.pdf>

1. **Complete a daily health check.** If you are experiencing **ANY** illness symptoms, stay at home and contact Jen at sibleyj@mail.ubc.ca as soon as possible so it is known that you will not be attending your lab or lecture session. **Do your part and stay home.** There is **NO** penalty for missed lab or classwork. Your precautions will help reduce risk and keep everyone healthy. In this class, the marking scheme and schedule have been designed to provide flexibility so that you can prioritize your health and still be able to succeed. Arrangements will be made for you to make up missed lab or classwork.

If you are sick or self-isolating on a final exam day, do not attend the exam. You must apply for deferred standing (an academic concession) through Science Advising no later than 48 hours after the missed final exam/assignment. Students who are granted deferred standing write the final exam/assignment at a later date. Learn more and find the application online:

<https://science.ubc.ca/students/advising/concession>

For additional information about academic concessions, see the UBC policy here:

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,329,0,0>

The MICB 322 teaching team will also be completing a daily health assessment. Back up Instructors and TAs will be available, in the event that members of the teaching team can't attend class. Depending on the individual affected or the particular situation, one or all of the following solutions may apply and will be communicated to the class as soon as possible:

- Another Instructor and/or TA will fill in for the lab sessions.
 - You may receive a message from me to participate in an online lab session.
 - The class/lecture session may be held online (Zoom) for a session or two. If this happens, you will receive both a class email and Canvas notification indicating how to join the Zoom session.
 - You may receive a message from me with a recording of the lecture material for you to watch on your own time.
2. Follow specific hygiene protocols, which include:
 - Washing hands with soap and warm water for at least 20 seconds before, during (as necessary), and after using the lab spaces.
 - Avoid touching your face with unwashed hands.
 - Cover your nose and mouth when coughing or sneezing and then immediately wash your hands.

3. Follow the measures outlined in the COVID-19 Campus Rules. You can learn more at <https://srs.ubc.ca/covid-19/ubc-campus-rules-guidance-documents>.
4. UBC does not currently **require** students, faculty or staff to wear non-medical masks but the University continues to **recommend** that masks be worn in indoor public spaces. For now, it will be left to your discretion to wear or not wear a mask in the MICB 322 lab and/or lecture sessions. The MICB 322 teaching team will support each individuals' decision regarding mask usage and will promptly update the class of any UBC mandated changes regarding mask usage.
5. Ensure that you keep up with all recommended vaccines. The higher the rate of vaccination in our community overall, the lower the chance of spreading disease. You are an important part of the UBC community. Please arrange to get vaccinated if you have not already done so. A list of vaccines recommended for adults can be found here: <https://immunizebc.ca/>

ACADEMIC MISCONDUCT

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences. A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at <http://calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,0>.

The following explanation regarding academic integrity was adapted from Dr. C. Rawn, Dept. of Psychology, UBC.

In the academic community—a community of which you are now a part—we deal in ideas. That's our currency, our way of advancing knowledge. By representing our own and others' contributions in an honest way, we are (1) respecting the rules of this academic community, and (2) showcasing how our own novel ideas are distinct from but relate to their ideas. This gives us a formal way to indicate where our ideas end and where others' begin.

But academic integrity goes well beyond formal citation. **Welcome to the academic community. You are expected to act honestly and ethically in all your academic activities, just like the rest of us.**

What does academic integrity look like in MICB 322?

At any time: if you are unsure if a certain type of assistance is authorized, please ask. If you have a need that is unmet by existing course materials, course structure, and/or our learning community members, please ask.

DO your own work. All individual work that you submit should be completed by you and submitted

by you. All assessments, large and small, are designed to help you learn and understand the concepts in the course and apply your knowledge to solve problems.

- It is *unacceptable* to buy/sell/swap/share assignment questions or answers on any platform.
- It is *unacceptable* to misrepresent your identity by using someone else to complete any portion of a course (e.g., comment on a discussion board, complete a quiz question).
- It is *unacceptable* to help someone else cheat.

AVOID collusion. Collusion is a form of academic integrity violation that involves working too closely together *without authorization*, such that the resulting submitted work gains unfair advantage over other students because it is a measurement of the *group/pair/others'* understanding rather than the *individual* understanding. For example, collusion on an open book assignment or test includes working together to write answers or answering someone else's question in any forum. Assignments that are explicitly the product of group collaboration *have authorization*, so don't count as collusion. **Preparing** to individually complete an assignment or test by studying together (e.g., discussing concepts, quizzing each other and giving feedback on each others' answers) doesn't count as collusion. In this course, **your assignments and tests must be individually written.**

Can I work with a classmate to co-create study notes? Yes, you can create your own original collaborative notes, but it is *unacceptable* to post them on file-sharing websites (e.g., CourseHero, GoogleDocs). I recommend using the features in Canvas groups to ensure your work remains protected. Send me a message using Canvas Inbox, and I'll create a Group just for you. That will allow you to upload and share notes, and to work collaboratively on Pages. I also recommend starting your collaboration with a written agreement that addresses integrity issues, such as these: *Who else can see/use/contribute to these notes? How will we ensure we are not violating copyright?*

Reach Out for Success: University students often encounter setbacks from time to time that can impact academic performance. Discuss your situation with your instructor or an academic advisor. Learn about how you can plan for success at: www.students.ubc.ca

For help addressing mental or physical health concerns, including seeing a UBC counsellor or doctor, visit: www.students.ubc.ca/livewelllearnwell

NOTE: UBC Policy V-130: Content and Distribution of Course Syllabi, requires the following statement to be included in syllabi distributed to students.

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available here (<https://senate.ubc.ca/policies-resources-support-student-success>)