

Department of Biology Course Outline

SC/BIOL 3150 4.00, Microbiology
Fall 2024

Course Description (Subject to change until September 18, 2024)

Fundamentals of microbiology; microbial organisms; microbe-host interactions; microbial genetics and evolution; microorganisms and human disease; environmental and applied microbiology (four credits).

The course is in person. The course consists of 2 x 90 min weekly Lectures and weekly 3 hours Laboratory sessions (7 sessions in total).

Prerequisites

Prerequisites: One of the following: (1) SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00; SC/BIOL 2021 4.00 or SC/BCHM 2021 4.00; SC/BIOL 2040 4.00; (2) if the 3 credit course is taken in either one or more of SC/BIOL 2020, SC/BIOL 2021, SC/BIOL 2040 3.00, then SC/BIOL 2070 3.00 is required.

Course credit exclusion: SC/BIOL 3150 3.00.

Course Instructors and Contact Information

Course Director

Dr. Dasantila Golemi-Kotra

E-mail(*): biol3150@yorku.ca

Office hours: By appointment over ZOOM

(* Please send any correspondence to this **email** or through **eClass** to ensure a response. When making an appointment for meeting, please include your questions/concerns in the email. A response will be received within 48 hours.

Schedule

Lectures Day/Time: **Tue/Thr 8:30 to 10 am**

Lectures will be delivered in person, and via zoom (no recordings).

Lecture Location: LAS B (Lassonde Building)

Tests/Exam: In-Person

Labs are In-person: Be on-time, or better be early

In-Person Lab Venue: Farquharson Rooms 124 and 126.

(* For more details on labs you can refer to the course website.

Evaluation

Test 1: 10%

Test 2: 13%

Test 3: 13%

Final Exam: 30%

Laboratory: 30%

In class Iclickers: 4%

Tests and Final Exam:

1. Tests and the exam will include questions based on the lecture material and reading assignments
2. Tests will be administered in-person.
3. The final exam will be comprehensive (the entire course material provided during the semester will be covered). The Final exam will be administered in-person.

4. The format of tests and final exam will be multiple choice, YES/NO, select the correct answer and short answer questions.
5. To view the test results an appointment is required within one week of the marks being released on eClass.
6. Test/exam **reviewing** will be done on a case by case base in-person. An appointment is required within one week of the marks being released. Measures are taken to eliminate human errors in marking. However, if marking error are found they will be fixed, and **this may result is lower or higher marks.**
7. In class Iclickers assessment:
You have to **participate on the 75%** of the Iclicker sessions in order to receive 2% for the participation (otherwise you receive 0%); Also you must answer 75% of the questions in order for Iclicker session to be considered attended.
You have to answer correctly 50% of the **total** Iclicker questions to receive 2% for correct responses (otherwise you receive 0%).
8. **The Lecture and Labs must be passed independently to pass the course. A total Lab mark of <15% denotes a failure for the Lab component.**
9. **Important dates for Fall 2024:** For accurate info follow the link below frequently:
<https://registrar.yorku.ca/enrol/dates>

Important Dates

First day of Class: Sept 5

First Week of Lab: Sept 23

Last day of Class: Dec 3

NOTE: for additional important dates such as holidays, refer to the "Important Dates" section of the Registrar's Website at <https://registrar.yorku.ca/enrol/dates>

The following dates are tentative only. They are subject of change. Do not schedule trips and/or important events on these dates. Tests/Exam are in person.

Test #1 (10%): TBD

Reading week Oct 12 - 18

Test #2 (13%): TBD

Course Drop date: <https://registrar.yorku.ca/enrol/dates>

Test #3 (13%): TBD

Last date to submit Winter term work: Dec 3

Final Exam (30%): Will be scheduled by the University Registrar

Resources

1. Lecture Materials

- The lecture notes will be bases on the Madigan et al. Brock Biology of Microorganisms 16th ed Pearson Publishing.
- Earlier editions of this text are acceptable, but onus is on the student to match the lecture material with the text on these editions.
- Any Lecture material that is not in the textbook will be posted on eClass.

2. Lab Materials (Mandatory)

- Lab coat + Safety googles
- **Lab Manual will be posted on eClass.**

- Lab Notebook (**NO loose leaf paper or binder**). You can purchase a Lab Notebook at York Bookstore. You can use a Lab Notebook from a previous course as long as this course's lab notes are well separated and the note book is tidy. **No loose printed lab notes.**

3. Course Website

- Any course material other than the text book will be posted on eClass, including lecture slides, virtual lab recordings, Lab manuals, exam results, and supplementary information.
- Announcements related to the course will be posted on eClass.
- Any discussion related to the course material should be made on eClass.

Learning Outcomes

LECTURE LEARNING OUTCOMES:

- Explain major concepts, methodologies and issues in microbiology, demonstrating detailed knowledge in certain topics (i.e. planned course topics).
- Gather, review, evaluate and interpret microbiology information (in reviews, primary sources and mass media articles).
- Apply learning from other areas (e.g. biochemistry, genetics) to microbiological problems/situations.
- Solve basic microbiological problems.
- Design simple microbiological experiments.
- Predict the outcome of microbiological experiments.
- Identify problems and suggest possible solutions in terms of microbiology and society.
- Communicate (orally and in writing) microbiological concepts clearly to peers and a scientific audience.
- Discuss and debate current issues relating to microbiology.
- Effectively and collegially work with others in the microbiology laboratory and class setting.

LABORATORY LEARNING OBJECTIVES:

- The laboratory exercises have been designed to support and develop concepts from the lectures, text and related scientific literature. The exercises will also:
- Introduce aseptic techniques and basic microbiological methodology.
- Carry out microbiological laboratory activities with safety, reliability and a good understanding of aseptic technique.
- Provide opportunities to observe and practice microbiological concepts, and determine the importance of microorganisms in the environment, food industry, and in human health.

Course Content

LECTURE TOPICS

Chapters correspond to Madigan, 16th ed. E-Books are ordered for this course to avoid having to come to the campus. Coverage of chapters will not necessarily be complete. We will also not necessarily be working linearly through the textbook. Students are advised to attend all lectures and study those sections of the text relevant to the lecture topics. Midterm and exam questions will relate primarily to the topics covered during lecture but some self-study will also be required.

COURSE TOPICS: The following topics will be covered during this Semester.

- The fundamentals of microbiology
 - Microbial growth and regulation
 - Bacterial regulation/ signal transduction (e.g. chemotaxis, quorum sensing)
 - Genetics/ genomics of bacteria
 - Evolution/ systematics/ taxonomy of bacteria and archaea
 - Human-Microbe interactions
 - Diagnostic Microbiology
 - Infection diseases and their transmission
- Please see Moodle for more detailed lecture schedule.

Experiential Education and E-Learning

Experiential Education:

- Laboratory work

E-learning:

- eClass website
- Supplemental videos and presentations for laboratories

Course Policies

1. MISSED MIDTERMS:

- 1.1 If you miss any of the tests the weight of that test will be shifted automatically to the final exam.
- 1.2 Students that require **accommodation for religious reasons** should inform the instructor by **September 18th** via email at biol3150@yorku.ca. Please get more information regarding religious accommodation at <https://registrar.yorku.ca/pdf/exam-accommodation.pdf>.
- 1.3 Students that have an accommodation letter from OPD should provide this letter to the Instructor no later than **September 18th**. **Those that may think need a letter from OPD should do so before the beginning of the semester.**
 - Students are responsible to contact the OPD if needed. The instructor will not make arrangements on their behalf, or in the middle of the semester.

2. MISSED FINAL EXAM:

- 2.1 **All students** who miss the final examination **must petition within one week** in their home Faculty/Department if they are seeking for deferred standing. It will be the Petition Committee's decision whether deferred standing is granted and, if deferred standing is granted, this committee will also set the deadline for writing the deferred examination. **The instructor will not make arrangements for a missed Final Exam.**

3. TEST AND EXAM REAPPRAISALS:

- 1.1 For written answers on midterms and the final exam: if you believe that a written answer on a test was marked incorrectly, you **must submit a written rationale** that is based on academic grounds (*) with your test to the Instructor within **ONE week** of the test/exam mark being made available to you.

Note: Regrading can result in the grade being raised, confirmed or lowered.

() Academic grounds means you make an academic argument for why your answer is correct – statements such as “this grade does not reflect my knowledge” or “I really studied hard and I deserve a better grade” are not academic grounds.*

- 1.2 In order to be fair and consistent with regards to the entire class, individual grades are not negotiable. **We cannot provide “extra credit” assignments. Marks for assignments and tests will not be “rounded” or “bell-curved”.**
- 1.3 Contact the Course Director about marks if there is a clear error in your grade (calculation, clerical, etc.) within **ONE week** of the test score being made available to you.

4. MISSED in-person LABORATORY SESSIONS

- If you miss one lab session, we will try to arrange for a make-up. If you miss a second lab session, you will receive a 0 mark for the second missed lab.

5. RECORDING LECTURES:

- The course is administered in-person and will be live on zoom. However, no recordings of the lectures will be made.

6. E-MAIL POLICIES AND ETIQUETTE: The contact address for this course is biol3150@yorku.ca

- 6.1 Before you send an e-mail with an inquiry regarding the course or course material, please check the Course Outline document and other documentation posted on Moodle for answer. No response will be provided to inquiries for which the response is already provided on Moodle.
- 6.2 A response will be provided within two working days, but this is not always possible. I may also answer to your question in the next class meeting if appropriate. Questions and

answers that I deem of interest to the entire class will be posted on the appropriate discussion board or sent via course announcements if urgent.

6.3 Emails that do not meet the requirements below will not receive a response:

- Use your @yorku.ca email address when emailing instructors and others within the university. Email from other sources may be filtered out and not reach the intended recipient.
- SUBJECT LINE - Include the course code, course section and brief indication of topic. For example: BIOL3150 – Question Regarding Gram Staining
- **Include your NAME and STUDENT NUMBER at the end of each email.** This is the only way I can access your course information is via your student number.
- Remember, you are in a professional environment and thus all your written correspondence, including emails, should be professional. This means full sentences, proper grammar, NO text message lingo.

7. eClass DISCUSSION BOARDS: Students are encouraged to participate in the online Moodle forums to discuss course concepts, organize study groups, and ask questions relating to Biology. The discussion on the forums has typically been polite and respectful, and we hope this will continue. Students are expected to follow the code of conduct when using the Moodle forums:

- Be sure to read the other threads before you post a question to see if your question has already been answered. If your question hasn't already been asked, please post in the most appropriate area. (e.g., if your question is about a lab submission, your post should be in the "Laboratory" forum.)
- When posting, use a clear, informative subject line and be clear specific and professional.
- Post comments appropriate to the particular discussion. Off-topic posts may be moved or deleted.
- Post only material relevant to BIOL 3150. Other posts will be deleted.
- While it is appropriate to engage in debate/ discourse on biological topics, such discussions should be respectful and evidence-based. Evidence should be from trusted sources – consult with the library if you are not sure! (See: <http://www.yorku.ca/webclass/module4a.html>)
- Discussions are monitored. Messages containing personal attacks, inappropriate language, or other disrespectful contents will be removed. Irrelevant material will also be removed. Follow the York University Student Code of Conduct <http://www.yorku.ca/oscr/codeofrr.html>
- If you notice any inappropriate threads please contact the Course Director.
- Any posts which appear to violate our code of conduct may be edited, moved or deleted at the discretion of instructors/moderators. If posts give indications of violations of academic honesty or the York University student code of conduct, further action will be taken.

Disclaimer: While Moodle moderators / instructors will attempt to remove (or edit) objectionable/inappropriate material as quickly as possible, it is not always possible to review every post. All posts made on the forums express the views and opinions of the author and not the moderators / instructors (except for posts by these people) and they cannot be held liable.

8. ACCOMMODATION STATEMENT:

Students who feel that there are extenuating circumstances that may interfere with their ability to successfully complete the course requirements are encouraged to discuss the matter with the Course Instructor as soon as possible (**deadline by September 18th**). Students with physical, learning or psychiatric disabilities who require reasonable accommodations in teaching style or evaluation methods are encouraged to consult with the Office for Persons with Disabilities (OPD) and ensure that requests for appropriate accommodations are arranged with the course instructor (**deadline by September 18th**). Please note: "Senate policy states that students are expected to monitor their progress in courses, taking into account their personal and academic circumstances, and to make the necessary adjustments to their workload to meet the requirements and deadlines." (From Senate Policy of Students' Responsibilities in the Petition/Appeal Processes:

<http://www.yorku.ca/univsec/senate/committees/sac/sturesp.htm>)

- Please submit CDS Accommodation letters to the Instructor (**biol3150@yorku.ca**).
- Please also inform instructor of any religious observance conflicts occurring at any point during the semester, for which accommodation will be required, by **September 18th**. Please email these dates to biol3150@yorku.ca.

University Policies

1. Academic Honesty and Integrity

York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (<http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/>). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards.

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students' research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - http://www.yorku.ca/spark/academic_integrity/index.html

VERY IMPORTANT- A note from the Faculty of Science Committee on Examinations and Academic Standards

Numerous students in Faculty of Science courses have been charged with academic misconduct when materials they uploaded to third party repository sites (e.g. Course Hero, One Class, etc.) were taken and used by unknown students in later offerings of the course. The Faculty's Committee on Examinations and Academic Standards (CEAS) found in these cases that the burden of proof in a charge of aiding and abetting had been met, since the uploading students had been found in all cases to be willfully blind to the reasonable likelihood of supporting plagiarism in this manner. Accordingly, to avoid this risk, students are urged not to upload their work to these sites. **Whenever a student submits work obtained through Course Hero or One Class, or previous students course work, the submitting student will be charged with plagiarism and the uploading student will be charged with aiding and abetting.**

Note also that exams, tests, and other assignments are the copyrighted works of the professor assigning them, whether copyright is overtly claimed or not (i.e. whether the © is used or not). Scanning these documents constitutes copying, which is a breach of Canadian copyright law, and the breach is aggravated when scans are shared or uploaded to third party repository sites."

2. Access/Disability

York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University.

Student's in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs.

Additional information is available at the following websites:

Counselling & Disability Services - <http://cds.info.yorku.ca/>

Counselling & Disability Services at Glendon –

<http://www.glendon.yorku.ca/counselling/personal-counselling/what-is-counselling/>

York Accessibility Hub - <http://accessibilityhub.info.yorku.ca/>

3. Ethics Review Process

York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants*. In particular, students proposing to undertake research involving human participants (e.g., interviewing the director of a company or government agency, having students complete a questionnaire, etc.) are required to submit an *Application for Ethical Approval of Research Involving Human Participants* at least one month before you plan to begin the research. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately.

4. Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first week of the class. Similarly, should an assignment to be

completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at http://www.registrar.yorku.ca/pdf/exam_accommodation.pdf

5. Student Conduct in Academic Situations

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at - <http://secretariat-policies.info.yorku.ca/policies/disruptive-andor-harassing-behaviour-in-academic-situations-senate-policy/>.