### Course Description (Subject to change until January 20, 2020)
Fundamentals of microbiology; microbial organisms; microbe-host interactions; microbial genetics and evolution; microorganisms and human disease; environmental and applied microbiology. Three lecture hours, three laboratory hours. One term. Four credits.

### 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 Moodle to ensure a response.

### Schedule
- **Lectures Day/Time:** Mon/Wed 8:30 – 10:00 am
- **Lectures will be delivered asynchronously- and synchronously**
- **Lecture Venue:** ONLINE-ZOOM
- **Tests/Exam:** On Moodle. No Proctortrack
- **Labs will be a mixture on virtual (asynchronous) and in-person labs (*)**
  - In-Person Labs : Tue/Wed/Thu 2:30 – 5:30 pm; Tue/Wed(Thur) 6:30 -9:30 pm; Mon 2:30 pm and Fri:10:00 am.
  - In-Person Lab Venue: Farquharson Rooms 124 and 126.
  - **Asynchronous lab-video will be posted on Moodle**
  - (*) For more details on labs you can refer to the course website.

### Evaluation
- **Test 1:** 10%
- **Test 2:** 13%
- **Test 3:** 13% (*)
- **Final Exam:** 25% (**)
- **Laboratory:** 35% (Virtual asynchronous Lab 25%, Lab in-person, 10%)
- **Clickers (***):** 4%

(*) If you miss more than two tests you have to take a verbal/oral make-up test for the second missed test. The weight of the first missed test will be shifted automatically to the final exam.

(**) If you miss the Final exam you must apply for Deferred Standing and wait for approval by the home Faculty. The instructor WILL NOT administer a make-up Final Exam.

(***) Make sure that you have an account on “IClicker Cloud”.

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**Test and final exams:**

1. Tests and the exam will include questions based on the lecture material and reading assignments.
2. Midterms will be administered online on MOODLE during class time.
3. The final exam will be comprehensive (the entire course material provided during the semester will be covered) and it will be administered on MOODLE.
4. No Proctortrack for the tests/exam.
5. The format of tests and final exam will be multiple choice, YES/NO, select the correct answer and short answer questions.
6. Clickers assessment will include 2% for participation and 2% for correctness.
   You have to attend 75% of the Iclicker sessions in order to receive 2% for the attendance, and answer correctly 50% of the total Iclicker questions to receive 2% for correct responses.
7. **The Lecture and Labs must be passed independently to pass the course.**
8. **Important dates for Fall 2020:** For accurate info [https://registrar.yorku.ca/enrol/dates/fw20](https://registrar.yorku.ca/enrol/dates/fw20)
   - **Course Drop deadline:** Last date to drop a course without receiving a grade (also see Financial Deadlines): Nov. 6, 2021
   - **Course Withdrawal Period** (you receive a grade of “W” on transcript if you withdraw from a course on this period): Nov 7 – Dec 8 2020.
   - **Last Date to submit a course work** (e.g. Lab Report): Dec. 9 2020.

**Important Dates**

First day of Class: September 9

First Week of Lab: September 16

Last day of Class: Dec. 8

Last week of Lab: Nov. 16 - 20

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/fw20](https://registrar.yorku.ca/enrol/dates/fw20)

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

Test #1 (10%): Sept. 30

**Reading week** Oct. 10 - 16

Test #2 (13%): Oct. 26

**Course Drop date:** Nov. 6

Test #3 (13%): Nov. 18

Final Exam (25%): 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 15th 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.
   - There may be copies of the textbook on reserve (2 h) in the Steacie Library
   - Any Lecture material that is not in the textbook will be posted on Moodle.

2. **Lab Materials (Mandatory)**
   - Lab coat + Safety googles + Face coverings (no bandana or neck gaitor)
Lab Manual will be posted on Moodle at least one week before the lab date. Lab Notebook (NO loose leaf paper or binder). You can purchase a Lab Notebook at York Bookstore.

3. Course Website
- Any course material other than the textbook will be posted on Moodle, including lecture slides, exam results, and supplementary information.
- Announcements related to the course will be posted on Moodle.
- Any discussion related to the course material should be made on Moodle (http://moodle.yorku.ca)

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, 15th 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 the Fall 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:
- Moodle website
- Supplemental videos and presentations for laboratories

Course Policies

1. MISSED MIDTERMS:
   1.1 Due to the COVID-19, for this term (Fall 2020), I will not ask for doctor’s note to document the reason of the missed term.
   - If you miss one test the weight of that test will be shifted automatically to the final exam.
   - The second missed test will be verbal/oral and arranged by the Instructor within one week of the missed second test.
   1.2 Students that require accommodation for religious reasons should inform the instructor by September 20th 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 20th. **Those that may think need a letter from OPD should do so before the beginning of the Fall 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 If you miss the final exam for a valid reason (e.g. medical emergency, death of an immediate family member) you must submit proper documentation within 48 hours of missing the exam at biol3150@yorku.ca
   2.2 **All students** who miss the final examination must petition within one week if they are seeking deferred standing. Students will have to seek deferred standing by submitting a petition to their home faculty. 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:
   3.1 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 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
   - Due to COVID-19 and the mixed format of Lab delivery, If you miss a Lab session no make-up will be possible. If you miss more than one in-person Lab session you will not receive the 10% allotted to the in-person labs.

5. RECORDING LECTURES:
   - For this semester, the Biol3150 synchronous lectures will be recorded over ZOOM. Images and material posted on Moodle are subject to Canadian copyright law.
• Remember the lectures are the intellectual property of the professor and cannot be distributed or reproduced without permission of the Instructor.

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 an 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. **MOODLE 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](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](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 (i.e. the 1st week of term). 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 (in the 1st week of term). 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 20, 2020. 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, 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](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-and-or-harassing-behaviour-in-academic-situations-senate-policy/](http://secretariat-policies.info.yorku.ca/policies/disruptive-and-or-harassing-behaviour-in-academic-situations-senate-policy/)