

Department of Biology Course Outline

SC/BIOL 2900 3.00 Clinical Microbiology for Nurses Fall 2021-2022

Course Description

An introductory course in medical microbiology designed for nursing students. Topics include: structure/function relationships of viruses, bacteria and fungi; physical and chemical control of microbial growth; human/microbe interactions; immunology; major infectious diseases of humans; epidemiology and public health.

Prerequisites (strictly enforced)

Entry in the collaborative Nursing program. Course credit exclusions: SC/BIOL 2905 3.00, SC/BIOL 3150 4.00. Note: Not eligible for biology credit towards a Biology/Biochemistry /Environmental Biology program. Not open to students who have taken SC/BIOL 3150 4.00.

Course Instructor(s) and Contact Information

Dr. Motti Anafi
E-mail: moanafi@yorku.ca

Office hours: Please send me an e. mail to set an appointment.

Schedule

This course will be offered through remote/online delivery. Throughout the course, approximately 27 hours of lectures will be posted for you on the eClass. The direct face to face sessions portion will be offered on Mondays (section A) or Wednesdays (section B) at 2:30 pm using remote teaching technologies (ZOOM). The remote teaching sessions will be used as an opportunity for discussion based mainly on questions-answers of the material covered in the lectures. The ZOOM session will be opened each Monday (section A) and Wednesday (section B) at 2:30 pm and will stay open as long as students are in attendance.

All mid-term exams will take place on Sundays at 4:30pm for both sections.

Evaluation

Mid-Term Exam 1 10%

Date: Sunday, Oct. 3, 2021

Time: 4:30pm

Duration: 40 minutes

This exam will be on Parts 1 of the course (Introduction to basic biology).

Mid-Term Exam 2 20%

Date: Sunday, Oct. 24, 2021

Time: 4:30pm

Duration: 60 minutes

This exam will be on :

Part 2: Introduction to microbiology and bacteriology

Part 3: Medical Bacteriology

Mid-Term Exam 3 20%

Date: Sunday, Nov. 21, 2021

Time: 4:30pm

Duration: 60 minutes

This exam is cumulative but it will concentrate on Part 4 of the course (Immunology).

Final Exam 50%

Duration: 180 minutes

Date: will be published by the Office of the Registrar.

The final exam is cumulative. Everything covered during the course is a "fair game" on the exam.

However, I will concentrate a bit more on the material that was not covered by the mid-terms (Part 5: Human Virology).

Important:

- All exams are sequential: The student must progress in order. You cannot go back to the previous question or skip ahead.
- all exams are based on a CLOSED BOOK environment. Students SHOULD NOT use any notes or textbooks. The duration of exams is designed for a closed book format, with no time provided for referring to other resources.
- You must start the exam on time.
- Students are responsible for having appropriate internet connections to write the exam without interference.
- For a student who will not be able to write a mid-term/ final exam for any reason whatsoever (technical: computer or internet-related problem of all kinds, health-related, family matter. Just anything), the student will be able to write a regular in-class deferred exam to be arranged when the university reopens during the deferred exam time (to be announced). The level of difficulty and the material covered will be similar to the original exam. However, the format of all deferred mid-terms/final exams is likely to be different from the original exam (e.g. short answer questions or oral exam). If this deferred exam is missed the student must petition their home faculty for permission to write a second deferred exam. If the petition will be graded the student will be evaluated on an oral exam.
- No doctor notes or any other documentation are required for missed exams.
- It is your responsibility as a student to ensure that you are available to sit for final examinations during the entire exam period for the Fall term (Dec 9-23, 2021)

Learning Outcomes

Clinical Microbiology for Nurses course is an introductory course in medical microbiology designed for nursing students. Upon completion of this course, students will

- Be able to explain concepts related to different types of disease-causing pathogens, transmission of pathogenic microorganisms, host responses and how pathogens attempt to evade the body's immune system.
- build a practical, patient-focused understanding of microbiology, allowing them to evaluate and accurately communicate with patients, their families, physicians and other members of the health care team in the interest of quality patient care.
- Develop and use critical thinking skills.
- Use the scientific process and scientific data as a basis for evaluating nursing interventions.

Important Dates

Important Dates: For updates check <https://registrar.yorku.ca/enrol/dates/fw21>

EVENT	FALL (TERM F)	YEAR (TERM Y)	WINTER (TERM W)
Classes start	Sept. 8	Sept. 8	Jan. 10
Last date to announce components of final grades	Sept. 21	Sept. 21	Jan. 23
Fall Reading Week ¹	Oct. 9-15	Oct. 9-15	
Last date to submit Fall term work	Dec. 7	Dec. 7	
Fall classes end	Dec. 7	Dec. 7	
Fall Study Day ²	Dec. 8	Dec. 8	
Fall examinations ³	Dec. 9-23	Dec. 9-23	
Winter Reading Week ¹		Feb. 19-25	Feb. 19-25
Last date to submit Winter term work		April 11	April 11
Winter classes end ⁴		April 10	April 10
Winter Study Days ²		April 11	April 11
Winter examinations ⁵		April 12-29	April 12-29

✓ Add/Drop Deadlines

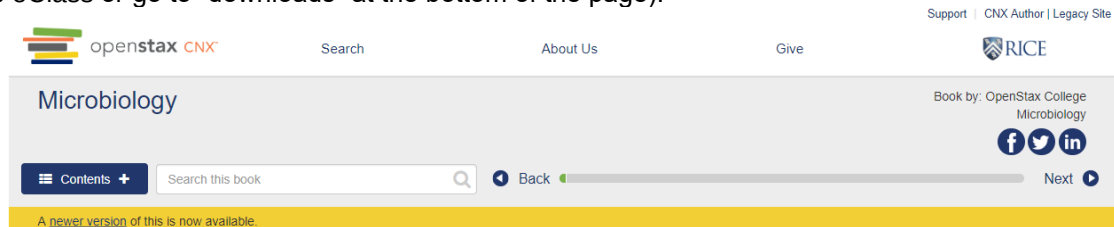
	FALL (TERM F)	YEAR (TERM Y)	WINTER (TERM W)
Last date to add a course without permission of instructor (also see Financial Deadlines)	Sept. 21	Sept. 21	Jan. 23
Last date to add a course with permission of instructor (also see Financial Deadlines)	Oct. 5	Oct. 26	Feb. 7
Drop deadline: Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov. 12	Feb. 11	March 18
Course Withdrawal Period (withdraw from a course and receive a grade of "W" on transcript – see note below)	Nov. 13 - Dec. 7	Feb. 12 - April 10	March 19 - April 10

Resources

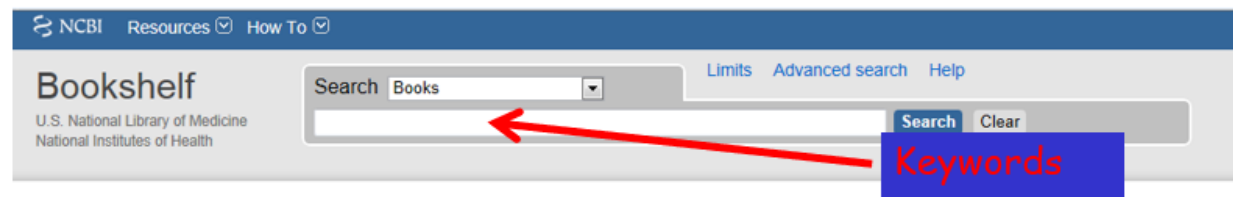
Optional textbook:

Recommended (optional) Readings:

1) Free online textbook: Microbiology by OpenStax College. This textbook can be used online <https://cnx.org/contents/5CvTdmJL@5.28:rFziotaH@5/Introduction> and offline (as a PDF file, link on the eClass or go to “downloads” at the bottom of the page).



3) Use the search box in <http://www.ncbi.nlm.nih.gov/sites/entrez?db=Books> with keywords specified in class and the course eClass web site.



3) Other possible textbooks:

Any “Microbiology” text you can find in the library (there are quite a few over there) is likely to be a good reference. Three examples:

- Microbiology: A Human Perspective by Nester.
- Microbiology, by Jacquelyn Black Microbiology: Principles and Explorations.
- Microbiology with Disease by body system by Robert Bauman

4) Many online resources on the course outline.

Course Content

Course Outline (+optional reading)

Part 1: Introduction to basic biology

Tips on studying for the course

Cell structure and function

OpenStax chapter 3-4

From the DNA to the organism

<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=cooper.TOC&depth=2> Ch. 4-7

<http://ghr.nlm.nih.gov/handbook>

OpenStax chapters 10-12

Mid-term 1

Part 2: Introduction to microbiology

Diversity of living organisms

OpenStax chapters 4-5

An overview of viruses, prokaryotic and eukaryotic cells

<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=cooper.TOC&depth=2> Ch. 1-3

Emerging infectious diseases

<http://emergency.cdc.gov/bioterrorism/>

OpenStax: Search the text with keywords

OpenStax chapters 4-6

Part 3: Medical Bacteriology

(A lot of material at:

- 1) <http://www.ncbi.nlm.nih.gov/books/NBK7627/>
- 2) <http://www.textbookofbacteriology.net/index.html>
- 3) OpenStax Microbiology (see below)

Structure of bacteria

OpenStax chapter 4

Bacterial genetics

OpenStax chapters 10-13

Antibacterial agents and bacterial resistance

<http://www.merck.com/mmpe/sec14/ch170/ch170a.html>

<http://www.cdc.gov/drugresistance/>

OpenStax chapters 13-14

Mid-term 2

Part 4: The Immune System

A lot of reading material at:

- 1) <http://www.ncbi.nlm.nih.gov/books/> (use the search box)
- 2) <http://www.merck.com/mmpe/sec14.html>
- 3) OpenStax chapters 17-19

Basic concepts in immunology

<http://virology-online.com/general/Immunology.htm>

The specific immune response

Vaccination and passive immunization

Acceptance and rejection of vaccination

<http://www.merck.com/mmpe/sec14/ch169/ch169a.html>

<http://www.cdc.gov/vaccines/>

<http://virology-online.com/general/vaccines.htm#Vaccines>

OpenStax chapter 18

Mid-term 3

Part 5: Human Virology

Basic concepts in human virology

<http://virology-online.com/general/Replication.htm>

<http://www.cdc.gov/std/hpv/default.htm>

OpenStax chapter 6

HIV: epidemiology, treatment and prevention

<http://www.cdc.gov/hiv/>

OpenStax chapter 25

Influenza: epidemiology, complications, treatment and prevention

<http://www.cdc.gov/h1n1flu/>

http://www.cdc.gov/flu/?s_cid=internal6

<http://www.who.int/csr/disease/influenza/en/>

OpenStax chapter 22

Human Papilloma Virus (HPV)

<https://www.cdc.gov/hpv/index.html>

OpenStax chapter 25

Final exam

Copyright protection of the posted videos

- 1) The material presented in the pre-recorded lectures has been developed from a large variety of resources, including websites and textbooks.
- 2) I am doing my best to post the credit for the developers of each external resource that was included in my lectures. However, in many cases, the original material is no longer available on the web, and my ability to find the person or organization deserved the credit might not be possible despite my efforts.
- 3) The prerecorded lectures are copyright protected to the course director and many third parties, private people, and organizations.
- 4) The prerecorded lecture will be available for you through the course on the eClass. You can use them in the eClass, but if you wish, **From the eClass** you can go to the source of the lectures on YouTube by clicking the YouTube link on the lower right of each video lecture on the eClass. On YouTube you will find some closed captions and some other functions. The prerecorded lectures are “unlisted” on YouTube- **do not share the link with others and do not use the link directly. You need to go to eClass first and to sign in with your York Password, and from the eClass you will be able to go to the source on YouTube if you wish to do so.**
- 5) Students are NOT allowed to copy the videos and/or to post them elsewhere, directly or as an embedded link.
- 6) **Not complying with any of the above will be considered an infringement of copyright law.**

Academic honesty

From the Dean of Science Office:

“Numerous students in Faculty of Science courses have been charged with academic misconduct when materials they uploaded to third party repository sites (e.g. Chegg.com, 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.”**

Academic honesty code for BIOL2900

- 1) You and only you should be involved with writing the exams.
- 2) Do not make any contacts (online or physical) with anybody during the exams.
- 3) Do not contact services such as Chegg.com during the exams and do not upload into such services any information from the exams during or after the exams.
- 4) Do not take any screenshot of the exams or copy-paste any information. **Any Copy-paste is by itself is a violation of the academic honesty code.**
- 5) Do not share any information from the exam/quiz with anybody else. Not during the exam and not after.
- 6) Do not use textbooks, notes, or internet resources during the exams.

Experiential Education and E-Learning

The Course eClass (A.K.A. MOODLE) web site

To access e. clas, please follow the instructions below.

1. Go to: <https://eclass.yorku.ca/eclass/my/>
2. Log in with your Passport York account.

Here you will find

- An updated course outline with optional reading
- Discussion Forum
- Announcements
- Grades
- Pre-recorded lectures
- Documentation
- Online test and exams
- Free textbook

The course will be delivered remotely using the application Zoom and pre-recorded lectures on eClass. Exams will be delivered online using the “Quiz” format on the eClass or in-class (deferred exams).

Students must be familiar with the program ZOOM as a prerequisite for this course. I will not be able to solve personal technical problems during the lecture or at any other time. Please make sure your audio and video are set properly before the session.

If you have technical problems using ZOOM or eClass-related questions, please direct them to UIT Client Services at 416-736-2100 x55800 or email helpdesk@yorku.ca.

Several platforms will be used in this course (e.g., eClass, Zoom, etc.) through which students will interact with the course materials, the course director / TA, as well as with one another. Please review the syllabus to determine how the class meets (in whole or in part), and how office hours and presentations will be conducted.

Please note the following:

- Zoom is hosted on servers in the U.S. This includes recordings done through Zoom.
- If you have privacy concerns about your data, provide only your first name or a nickname when you join a session.
- The system is configured in a way that all participants are automatically notified when a session is being recorded. In other words, a session cannot be recorded without you knowing about it.

Other Information

Tips on studying for this course:

- For the exams, you must know and understand the material presented in the lectures.
- The online resources (specified in the course outline) and textbooks can help you consolidate and expand your understanding of the material. However, much of the online resources and textbooks will not be covered in class. **For the exams, you are NOT expected to know the material from the online resources and textbooks which has not been covered in the lectures.**

Course Policies

Emailing the TAs and Course Director

Your email will be read and answered as soon as possible. However, we will open only emails that fulfill the following requirements:

- Your email must be sent from your regular yorku.ca email account (**not from the eClass server**). As much as possible, do not use non-yorku.ca accounts (such as Hotmail or personal Gmail). Emails from non-yorku.ca accounts or eClass will likely languish in a spam folder that is checked only intermittently.
- Be sure to include your full name and student number in your email text.
- Your email must include "BIOL/2900" and indicate section A or B in the subject line.
- Your email must NOT include an attachment.

Disclaimers

The information presented in the lectures is provided for educational purposes only and should not be considered as medical advice.

University Policies

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/academicintegrity/>

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 wilfully 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.

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.

Students 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 - <https://www.glendon.yorku.ca/counselling/>

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

Religious 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 three weeks of 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 and submit an [Examination Accommodation Form](#) at least 3 weeks before the exam period begins. The form can be obtained from Student Client Services, Student Services Centre or online at https://registrar.yorku.ca/sites/registrar/files/pdf/exam_accommodation.pdf

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/>