

Division of Natural Science

<http://natsci.info.yorku.ca/>

Course Outline

**SC/NATS 1670 (Section A)
CONCEPTS IN HUMAN HEALTH AND DISEASE
F/W 2018-9**

Lectures: Tuesdays, Thursdays 10:00-11:30am

Tutorial: Tuesdays 9:00am-10:00pm

Location: CLH L

Course Instructor(s) and Contact Information

Course Director

Dr. Motti Anafi,

E-Mail: moanafi@yorku.ca

In general, I will be available to speak with students before/after lecture and tutorials

Office hours: E-mail to set an appointment

Sending e-mail to the Course Director

Your e-mail will be read and answered as soon as possible. However, I will open only e-mails that fulfill the following requirements:

- Your e-mail must be sent from your YorkU formal e-mail account (not from the Moodle, hotmail, gmail etc.) – emails from the moodle or from other non- yorku.ca e-mail accounts 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 e-mail must include “NATS/1670” in the subject line
- Your e-mail must NOT include an attachment

Expanded Course Description

The course will be given with three hours of lectures and one tutorial hour per week.

Note: This course is not open to any student who has passed SC/BIOL 1010 6.00 or who have passed or are taking BIO 1000 3.00 or BIO 1001 3.00.

Upon successful completion of this course students should be able to understand important concepts and principles related to susceptibility to diseases: These concepts will consist of variety of health threats from a biological perspective, with a focus on issues that are relevant to the 20-30 age group, approaching immunological, bacterial, viral and genetic diseases from a multi-disciplinary perspective. The course gives students who are not majoring in biology an overview of medical biology, consolidating knowledge on basic and applied biology with social and ethical issues related to human health, in a manner that is applicable and relevant to practical health decisions made by young people.

Course Learning Outcomes

GOAL:

Understand the importance of microbes for our health and their abilities to cause diseases.

After completing the materials of this course, you should be able to...

1. evaluate the ability of emerging diseases to affect the health of human population around the globe.
2. compare and contrast bacterial and eukaryotic cell structure and function.
3. describe the central dogma and its applications for human health.
3. understand the importance of vaccination.
4. summarize the effect of viruses on human health.
5. describe the role of HIV in the development of AIDS and the effect of the disease on the society.
6. predict the effect of viruses such as Influenza on the possibility of major pandemics.
7. describe the importance of vaccination in preventing cervical cancer by HPV.

Evaluation

- | | |
|--|------------|
| 1) Mid-Term Exam 1 | 20% |
| Date: Tuesday, October 30, 2018 | |
| Time: 9:00am | |
| Location: CLH L | |
| 2) Mid-Term Exam 2 | 20% |
| Date: Tuesday, November 27, 2018 | |
| Time: 9:00pm | |
| Location: CLH L | |
| 3) Mid-Term Exam 3 | 20% |
| Date: Tuesday, Feb 26, 2019 | |
| Time: 9:00pm | |
| Location: CLH L | |
| 4) Final Exam | 35% |
| Date and location: During Winter formal exam period. More information will be published by the registrar office. | |
| 5) Participation | |
| A. Attendance to lectures | 5% |
| B. Contribution to the wiki | 2% (bonus) |

Please note that this information is subjected to update on the Moodle announcements

All the exams and tests are cumulative (you need to know all the material from the beginning of the course).

Tutorial

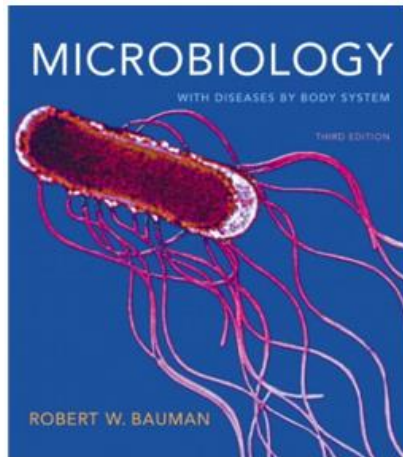
The course will be given with one tutorial hour per week on Tuesdays 9:00-10am in CLH L.

The tutorial will present students with an opportunity to review material taught in the preceding lectures, along with providing a flexible forum for an expanded and more in-depth understanding of the material.

Course Materials

Recommended Readings:

If you want to use a hardcopy the recommended textbook for the course is:



In the bookstore you will find the last edition (5th) in a form of loose leaf plus e-text for \$100 (ISBN-9780134883182). However, any edition is fine. You will also find the text (Editions 2-5) on reserve in Stacie Libraby.

Other Recommended Readings:

1) Other possible textbooks:

- Any other "Microbiology" text you can find in the library (there are quite a few over there) is likely to be a good reference. Such as:
 - Microbiology: A Human Perspective by Nester.
 - Microbiology, by Black.

2) Free online resources on the course outline.

3) Free online resources

- <http://ghr.nlm.nih.gov/handbook>
- <https://www.nigms.nih.gov/education/cells/>

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

Course Outline (+optional reading)

Recommended reading from the above list is indicated. You are NOT expected to know material in the textbooks and websites that has not been covered in the lectures.

Part 1: Introduction

How to study for the course

Emerging infectious diseases

http://www.learner.org/channel/courses/biology/support/5_infect.pdf

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

Bauman Microbiology: Check the index

Cell structure and function

http://publications.nigms.nih.gov/insidethecell/pdf/inside_the_cell.pdf

Bauman Microbiology Ch. 3

Diversity of microorganisms

(http://www.learner.org/channel/courses/biology/support/4_microb.pdf)

Bauman Microbiology Ch. 11

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

(Bauman- check the index of the text for relevant keywords)

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>

Bauman Microbiology Chs. 2 & 7

Mutations and cancer

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

Part 2: The Immune System

(A lot of free material at:

<http://www.ncbi.nlm.nih.gov/bookshelf/picrender.fcgi?book=infdis&blobtype=pdf>

<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=imm.TOC&depth=2>

Bauman Microbiology Ch. 15-18

Basic concepts in immunology

<https://www.merckmanuals.com/professional/immunology-allergic-disorders>

The non-specific (innate) immune system

<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=imm.TOC&depth=2> (Part I)

Bauman Microbiology Ch. 16

The specific immune response

<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=imm.TOC&depth=2> (Part II)

Bauman Microbiology Ch. 17

Vaccination

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

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

Bauman Microbiology Ch. 17

Allergy and hypersensitivity

http://www.merckmanuals.com/professional/immunology_allergic_disorders.html

Bauman Microbiology Ch. 18

Part 3: Infectious Diseases

Basic concepts in human virology

<http://www.microbiologybook.org/book/virol-sta.htm>

Bauman Microbiology Ch. 13

Sexually transmitted infections (HIV and HPV)

http://www.learner.org/channel/courses/biology/support/6_hiv.pdf

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

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

Bauman Microbiology Ch. 18 & 24

Infections of the respiratory system (Influenza)

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

<http://virology-online.com/general/Outbreak3.htm>

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

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

Bauman Microbiology Ch. 22

What's next?

The Course MOODLE web site

To access Moodle, please follow the instructions below.

1. Go to: <http://moodle.yorku.ca>
2. Log in with your passport York account.

Here you will find

- An updated course outline
- Wiki
- Announcements
- Grades
- Forum

Please note that in-class updates and/or my announcements on the Moodle take precedent over any other information posted on the course MOODLE web site.

The Course Wiki

The wiki enables documents to be written collaboratively. Students are invited to add/ combine their lecture notes and related material. Lecture notes is not just about the words I put as a summery on my slides. The most important part is the discussion of concepts and ideas expressed in class including questions/ answers we have in class. You can make the wiki into a multimedia document by linking/embedding relevant videos, figures, relevant articles or anything else you think can help your peers. You can also act as an "editor", and arrange the material posted by others to reduce redundancies and to put the material in an appropriate order. You can also try to make the material to look better (appropriate font, color, titles etc.).

In general, in all my courses, the wiki serves as a great tool for the class to function as a community. As I would like to encourage students to use it, I decided to add a bonus participation mark, up to 2 points of the final grade of the course, for contributors on the wiki.

We will evaluate the level of the contribution by checking the "compare selected" on the "History". Only

contributions made within two weeks after the lecture will be counted for the bonus, and the grade will be according to the significance of the contribution. As for the lectures during the last week of the course, the last time to contribute to the wiki for the bonus is two days after the last class.

In general students who are active at least once a week with strong contributions will get the full 2 extra points. From here we will use 1.5, 1, 0.5 bonus according the contribution and the frequency of your contributions.

The course director is not responsible for the accuracy of the notes posted by students in the Wiki. The exam is not restricted to the material posted on Wiki.

Math Content

No significant background in math is required

Course Policies

Tips on studying for this course:

- For the exams, you must know and understand the material presented in the lectures.
- You are NOT expected to know material from the online resources and textbooks which has not been covered in the lectures.
- The online resources and textbooks can help students consolidate and expand their understanding of the material. However, much of the online resources and textbooks will not be covered in class, and other material that will be covered in class will not be discussed in the above reading material. Hence, it is important to attend the lectures, and, in addition, to read the readings related to each topic as it is covered in the course.
- Use the texts as auxiliaries to the lecture material.
- Students need to attend all lectures on time in order to do well in the course. The discussions in class are critical for the understanding of the material. The center of the course is the class. It is your responsibility to attend lectures as my multimedia presentations will not be provided outside the classrooms. The attendance grade (up to 5% of the course) will be calculated from taking attendance in class.
- In general, it is best that students who were unable to attend a lecture borrow the relevant notes from a classmate. You may also wish to check the course Moodle website for additional relevant material. Here, you can find an updated course outline with many on-line resources, as well as the corresponding keywords file for each chapter that can be used to search the internet for more information. In addition, you can use the wiki of the course. Furthermore, you have my permission to use an audio tape-recorder in class (or to arrange with a classmate to do it for you).
- I shall usually be available after each lecture to address individual questions.

Tests and Exams:

Attendance for all exams is mandatory. Exams missed on the ground of medical circumstances must be supported by an Attending Physician's Statement, which can be downloaded from the registrar's office web site or a statement by a psychologist or counselor. The documentation must be dated on the same day as the exam or earlier, or it will not be accepted. The Course Director must be notified by email within 24 hours in the case of a missed test or exam. Appropriate documentation must be submitted to the Course Director within one week after the test or exam. No opportunities to make up missed mid-term exams will be offered. However, after acceptable justification for a missed exam has been received, the percentage value of the missed mid-term will be added to the final exam. If the final exam is missed, the student must petition the Registrar for permission to write the final exam.

All approved deferred exams will be consisting of short-answer questions (no multiple-choice).

Students which are interested to view their exams are requested to set an appointment with the course TAs (E. mail TBA) by three weeks after the exam.

Copyright and Intellectual Property

The material presented in my lectures and other components of the course have been developed from large variety of resources, including web sites, textbook supplements and the material mentioned above.

The Copyright Policy for NATS1670 is based on Copyright Act (s. 29.4) which states: "It is not an infringement of copyright for an educational institution or a person acting under its authority (a) to make a manual reproduction of a work onto a dry-erase board, flip chart or other similar surface intended for displaying handwritten material, or (b) to make a copy of a work to be used to project an image of that copy using an overhead projector or similar device for the purposes of education or training on the premises of an educational institution.

The interpretation of York University to s. 29.4 is expressed in the following FAQ from York University Web site <http://copyright.info.yorku.ca/> . Here the questions/answers are directed to instructors:

“1.Q Can I include copyrighted content in a class presentation without permission of the rights holder?”

Answer:

Yes, if you stay within the limits of the Copyright Act. The educational exceptions allow you to

- “make a manual reproduction of a work onto a dry-erase board, flip chart or other similar surface intended for displaying handwritten material, or”
- “make a copy of a work to be used to project an image of that copy using an overhead projector or similar device”

The display must be on campus, there can be no commercial version available that is appropriate for that use and **you are not able to distribute copies in either paper or electronic form.**

2.Q Can I post that same presentation on my Course website?

Answer:

No, the educational exceptions do not allow you to distribute copies in either paper or electronic form.”

According to the above policy and the Copyright Act (s. 29.4), my multimedia presentations will not be provided out of the class. No exceptions.

Photographing slides during lecture is not allowed. I will give you enough time to pick up all the important information by taking notes.

You have my permission to use an audio tape-recorder in class (or to arrange with a classmate to do it for you).

Before publishing any material from online resources as digital (e.g. moodle) or hard copy, make yourself aware to the applicability of the copyright law.

University Policies

Important Sessional Dates

SESSIONAL DATES

	FALL (F)	YEAR (Y)
Classes start	Sept. 5	Sept. 5
Last date to announce components of final grades	TBA	TBA
Fall Reading Week ¹ (no classes, University open)	Oct. 6-12	Oct. 6-12
Last date to submit Fall term work	TBA	TBA
Fall classes end	Dec. 4	Dec. 4
Fall Study Day ² (no classes; University open)	Dec. 5	Dec. 5
Fall examinations ⁴	Dec. 6-21	Dec. 6-21
Winter Reading Week ¹ (no classes, University open)		Feb. 16-22
Last date to submit Winter term work		TBA
Winter classes end ³		April 3
Winter Study Days ² (no classes; University open)		April 4
Winter examinations ^{4, 5}		April 5-20

	FALL (F)	YEAR (Y)
Last date to add a course without permission of instructor (also see Financial Deadlines)	Sept. 18	Sept. 18
Last date to add a course with permission of instructor (also see Financial Deadlines)	Oct. 2	Oct. 23
Drop deadline: Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov. 9	Feb. 8
Course Withdrawal Period (withdraw from a course and receive a grade of "W" on transcript – see note below)	Nov. 10 - Dec. 4	Feb. 9 - Apr. 3

See the Office of the Registrar website at <https://registrar.yorku.ca/enrol/dates/fw18>

Academic Honesty and Integrity

Academic honesty requires that persons do not falsely claim credit for the ideas, writing or other intellectual property of others, either by presenting such works as their own or through impersonation. Similarly, academic honesty requires that persons do not cheat (attempt to gain an improper advantage in an academic evaluation), nor attempt or actually alter, suppress, falsify or fabricate any research data or results, official academic record, application or document. Finally, academic honesty requires that persons do not aid or abet others to commit an offence of academic dishonesty, including intentional acts to disrupt academic activities.

Suspected breaches of academic honesty will be investigated and charges shall be laid if reasonable and probable grounds exist.

Academic Honesty and electronic devices during assessments (e.g. exams)

- Internet capable and personal storage devices of all kinds must be turned off, including vibrate. These and any other unauthorized material must be placed under the student's chair and should not be accessed at any point during the exam. Failure to comply with directive may be considered a break of academic honesty.
- See <http://registrar.yorku.ca/exams/tipsheet>

Please familiarize yourself with the full Senate Policy on Academic Honesty, found at <http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/>

Please also familiarize yourself with the SPARK Academic Honesty tutorial found at <https://spark.library.yorku.ca/academic-integrity-what-is-academic-integrity/>

Academic Accommodation for Students with Disabilities

York University shall make reasonable and appropriate accommodations and adaptations in order to promote the ability of students with disabilities to fulfill the academic requirements of their programs.

The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses.

Please familiarize yourself with the full Senate Policy on Academic Accommodations for Students with Disabilities, found at <http://secretariat-policies.info.yorku.ca/policies/academic-accommodation-for-students-with-disabilities-policy/>

Note: Students should submit accommodation letters from Counseling and Disability Services (CDS) to the course instructor within the first two weeks of the course or as soon as issued.

Counseling and Disability Services - <http://cds.info.yorku.ca/>

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

Note: A student registered with CDS, and choosing to write with Alternate Exams, is responsible for making the appropriate writing arrangements within the timeframes outlined by Alternate Exams.

Alternate Exams - <http://altexams.students.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.

<https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/15/wo/kmHGekTpzKLX6XYKBXYc8M/0.3.4.62.0>

Note: Students who will have an academic conflict as a result of a religious observance, at any point in the term, should make the instructor aware of such at least three weeks prior to the conflict.

For conflicts occurring during an official examination period, please complete the Examination Accommodation Form available at http://www.registrar.yorku.ca/pdf/exam_accommodation.pdf and

submit to your instructor at least three weeks prior to the final exam.

Student Conduct in Academic Situations

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect and to refrain from actions disruptive to such a relationship. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom 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. A statement of the policy and procedures regarding disruptive and/or harassing behaviour by students in academic situations is available on the website of the University Secretariat (<http://secretariat.info.yorku.ca/>).

Division of Natural Science Resources

NATS-AID

Free peer tutoring for students enrolled in Natural Science Courses.

See <http://natsci.info.yorku.ca/nats-aid/>

M-AID in NATS (Math Aid)

Free math help for students enrolled in Natural Science Courses (TA tutors)

See <http://natsci.info.yorku.ca/m-aid-in-nats/>

Other Resources

Learning Commons

The Learning Commons brings together key supports for your learning: writing, research, learning skills and career services. <http://www.library.yorku.ca/cms/learning-commons/>

goSAFE

goSAFE is a complimentary service provided to the York Community. At the Keele campus, goSAFE has two routes: North Route & South Route which will safely transport community members by vehicle from one specified hub to another on campus. goSAFE operates seven days a week, all year round, including University closures (with the exception at Glendon during the Christmas holiday closure).

Call the goSAFE office at 416-736-5454 or extension 55454 during hours of operation. Please give your name, location and destination. <http://www.yorku.ca/goSAFE/>

Mental Health and Wellness at York University

Outlines a variety of resources available to support mental health and wellness

<http://mhw.info.yorku.ca/resources/resources-at-york/students/>

Good2Talk

Post-Secondary Student 24 hour Helpline

<http://www.good2talk.ca/> 1-866-925-5454