PRINCIPLES OF VIROLOGY (BIOC20H3F)

COURSE INSTRUCTOR:
- Dr. Christina Guzzo: christina.guzzo@utoronto.ca

OFFICE HOURS:
- Wednesdays from 1:00 – 3:00pm
- By appointment only, 15 min time slots, booked online via Quercus
  ⇒ Join Zoom Meeting: https://utoronto.zoom.us/j/84441540035
     Meeting ID: 844 4154 0035
     Passcode: 201718

TEACHING ASSISTANT:
- Arvin Persaud: arvin.persaud@mail.utoronto.ca

LECTURES – all online, synchronous (recordings to be posted):
- Tuesdays 10:00am – 12:00pm (live via Zoom)
  ⇒ Join Zoom Meeting: https://utoronto.zoom.us/j/83732550389
     Meeting ID: 837 3255 0389
     Passcode: 989489
- Recordings posted in the 'Media Gallery' of Quercus

TEXTBOOK:
- Fundamentals of Molecular Virology (2nd edition) by Nicholas H. Acheson
- Reserve copies available at the library

EXAMS:
- Midterm: 2hrs, in-class (online) on October 19th, 2021
- Final Exam: 3hrs, during final exam period – date TBA by Registrar

COURSE PREREQUISITES:
- BIOB10Y3 or BIOB10H3+BIOB11H3

GRADING SCHEME:
- Homework Quizzes = **15%** (5 quizzes x 3% each)
- Application Assignment = **5%**
- Midterm Exam = **35%**
- Final Exam (cumulative) = **45%**
  o NOTE: exam is worth 35% if enrolled in C90.

HOMEWORK QUIZZES (15%):
- You will have one week to complete bi-weekly quizzes on Quercus:
  o Example: Quiz #1 will open Weds, Sept 15th at 11:59PM and close Weds, Sept 22nd at 11:59PM
  o Each quiz is single attempt, with a 20 min time limit
  o Each quiz is 10 questions, worth 3% of your final grade
  o There are 5 quizzes over the semester (see classes schedule).
- Any incomplete quizzes will result in a mark of zero.

APPLICATION ASSIGNMENT (5%):

Goal: To demonstrate that you have considered how your knowledge gained in the course can be used outside of class.

Requirements:
- Write a 500-word reflection describing how class content was applied to an everyday interaction, conversation, or to your understanding of virology in society in a unique way.
- Include a descriptive title for your reflection.
- Indicate a reference to which lecture (and slides) your reflection pertains to.
- Word documents only (.doc or .docx)
- 500-word limit for the reflection (not including title and lecture reference)
- You have the option to include a related or supporting attachment (i.e. news article, text conversation, publication, etc)
  - Email your supporting attachment to the TA at the time of submission: arvin.persaud@mail.utoronto.ca with subject line: *BIOC20 Reflection Attachment*

Marking & Rubric:
- Details found under 'Application Assignment' on Quercus.
- Assignments will be subject to the University's plagiarism detection tool.

Due date: can be submitted any time before classes end (before 11:59pm on Dec 5th).

MIDTERM (35%):

- Tuesday, October 19th in class (online via Quercus quiz)
- The midterm will cover lecture topics up to and including October 5th (Lecture 5).
- The format will be multiple choice, diagram, and short answer.

FINAL (45%):

- The final exam will be cumulative, covering all lecture topics, with an emphasis on Lectures 6-11.
- The format will be multiple choice, diagram, short answer and long answer.
- *NEW* Alternative Grade Breakdown (see next section of this syllabus):
  - Option to apply 10% of C90 grade to your final exam mark
  - If you select this option, your BIOC20 Final Exam would be worth 35%, with your C90 grade accounting for the other 10% of the 45% allotted to final exam marks in BIOC20.
  - More details on Quercus.

(OPTIONAL) BIOC90 INTEGRATIVE MULTIMEDIA DOCUMENTARY PROJECT

This course is one of several that can be used to fulfill the BIOC90 program requirement that all students in Biological Science specialist and major programs need to complete before graduation. If you decide to enroll in BIOC90 this semester, you can do so through Acorn – you will need to enroll before the course add/drop date. Please note that if you are enrolled in more than one of the C-level courses that can be used to fulfill this program, you will need to decide which course you want the 10% grade for BIOC90 applied to (you can only apply this grade to ONE of the participating C-levels).

Please see https://www.utsc.utoronto.ca/biosci/biob90h3-bioc90h3 for a list of participating courses. It is your decision as to when you will complete BIOC90 (you do not need to do so this semester, but you do need to complete this course to graduate if you are enrolled in the most recent versions of our

programs). If you end up taking BIOC90 at a time when you are not enrolled in any of the participating classes, you cannot benefit from the assignment grade in any way. If you are not sure if you need to take BIOC90 to complete your program, please consult degree explorer – it will show up as a program requirement if it is something you need to complete. Note: even if it is not one of your program requirements, you can still choose to complete this course if you wish to do so.

Under the 'BIOC90 Module' on our Quercus Page, the C90 course instructor will post all the information you will need to help you decide whether you want to take BIOC90 this term. Here, you will be able to find (i) the C90 course syllabus, as well as (ii) an information session held by the course instructor covering the details of the project.

COURSE LEARNING OBJECTIVES:

1) Conceptualize the ubiquitous nature of viruses across all kingdoms.
2) Correctly use viral-specific terminology to explain virus and host interactions, and host immune responses to infection.
3) Describe the basic categories of viral structure and molecular mechanisms of viral replication for each of the major categories (classifications) of viruses.
4) Synthesize knowledge of how viral processes lead to host disease, both at molecular and organismal level.
5) Develop a sense of how to apply knowledge from this class to diverse scenarios and interactions in everyday life.

LECTURE TOPICS & CORRESPONDING TEXTBOOK READINGS (tentative):

1. Introduction, History, Detection of Viruses, Viral Replication
   - Textbook Chapter 1
2. Virus Structure & Assembly, Virus Classification
   - Textbook Chapter 2 & 3
3. Virus Entry
   - Textbook Chapter 4
4. Viruses of Bacteria and Archaea
   - Textbook Chapters 5-9 (selected topics)
5. Positive-Strand RNA Viruses:
   - Textbook Chapters 12-14 (selected topics)
6. Negative-Strand and Double-Stranded RNA Viruses:
   - Textbook Chapters 16 (Filoviruses) & 18 (Influenza Viruses)
7. DNA Viruses
   - Chapters 20, 23, 24, 26 (selected topics)
8. Viruses that use a Reverse Transcriptase
   - Textbook Chapters 28-30 (Retroviruses, HIV-1 and Hepadnaviruses)
9. Host Defences Against Virus Infection
   - Textbook Chapters 33 & 34 (Viral Immunology)
10. Antiviral Agents and Viral Vectors
    - Textbook Chapters 35-37 (Vaccines and Therapeutics)

CLASS SCHEDULE:

DATE (M)	WEEK #	CLASS TOPIC
07-Sep	1	**Lecture 1** -Introduction & History -Detection of Viruses -Viral Replication
14-Sep	2	**Lecture 2** -Virus Structure & Assembly -Virus Classification
15-Sep	QUIZ 1	Week 1 and 2 material
21-Sep	3	**Lecture 3** -Virus Entry -Viruses of Bacteria and Archaea
28-Sep	4	**Lecture 4** Positive-Strand RNA Viruses: -Coronaviruses
29-Sep	QUIZ 2	Week 3 and 4 material
05-Oct	5	**Lecture 5** Positive-Strand RNA Viruses: - Flaviviruses - Togaviruses
12-Oct	6	**READING WEEK**
19-Oct	7	**MIDTERM (in class, online)**
26-Oct	8	**Lecture 6** Negative-strand and Double-stranded RNA viruses -Filoviruses -Influenza Viruses
27-Oct	QUIZ 3	Week 5 and 6 material
02-Nov	9	**Lecture 7** DNA viruses: -Adenovirus -Herpesvirus -Poxvirus
09-Nov	10	**Lecture 8** Viruses that use a Reverse Transcriptase: -Retroviruses, HIV-1
10-Nov	QUIZ 4	Week 7 and 8 material
16-Nov	11	**Lecture 9** Host Defences Against Virus Infection
23-Nov	12	**Lecture 10** Antiviral Agents and Viral Vectors -Vaccines & Therapeutics
24-Nov	QUIZ 5	Week 9 and 10 material
30-Nov	13	**Lecture 11** -Course Review & Exam Practice

COURSE POLICIES

COURSE COMMUNICATIONS:

- Content-related questions should be asked during class (or right after class), during a scheduled office hour appointment with Prof. Guzzo, or on the class Discussion board on Quercus.
  - Please note: no content-related questions will be answered over email.
- Quiz-related questions should be sent via Quercus inbox message to the TA (Arvin Persaud).
- Conflicts with the course schedule or access to content (i.e. lecture slides) should be sent via Quercus inbox message to the TA (Tejnarine Persaud).
- For help with Quercus specifically, please contact student-helpdesk@utsc.utoronto.ca or visit https://www.utsc.utoronto.ca/projects/quercus/student-help/

ACCESSIBILITY NEEDS:

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach course instructor and/or the Access*Ability* Services Office as soon as possible. I will work with you and Access*Ability* Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC Access*Ability* Services staff (located in SW302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca. The sooner you let the course instructor know your needs the quicker we can assist you in achieving your learning goals in this course.

ACADEMIC INTEGRITY:

The University treats cases of cheating and plagiarism very seriously. The University of Toronto's *Code of Behaviour on Academic Matters* (http://www.governingcouncil. utoronto.ca/policies/behaveac.htm) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences.

Potential offences in papers and assignments include using someone else's ideas or words without appropriate acknowledgement, submitting your own work in more than one course without the permission of the instructor, making up sources or facts, obtaining or providing unauthorized assistance on any assignment.

On tests and exams cheating includes using or possessing unauthorized aids, communicating with others during an exam or test, misrepresenting your identity, or falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

Please avoid academic dishonesty, have confidence in your own ability to learn and grow academically by doing your own thinking and writing, and when in need, ask for help!

Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their assignments to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (https://uoft.me/pdt-faq).

MISSED WORK DUE TO ILLNESS:

If you miss term work (including quizzes and term tests) due to illness you must **self-declare within 48 hours via Acorn**. **Please note it is mandatory for you to fill in the notes field within the self-declaration tool on Acorn to specify what term work you are missing and applicable due dates to be considered**. For some additional instructions on how to declare illness please review the following resource https://help.acorn.utoronto.ca/blog/ufaqs/how-do-i-declare-an-absence/. If you are missing term work for another reason including: short-term illness under the care of a Physician or someone affiliated with Health and Wellness, disability reasons, a family death, vehicle accident, essential travel that is not vacation related, or varsity activities, you must e-mail the course instructor **and** Jennifer Campbell(jac.campbell@utoronto.ca) in advance or within 48 hours of the term work due date. Please note all documentation will be verified for authenticity by Jennifer Campbell and any accommodations (if applicable) will be determined by the course instructor.

Please note that we understand that life happens and you may miss term work for valid reasons and we will help you navigate through those situations. Please remain in communication with our departmental admin office as well as your course's teaching team.

MISSED MIDTERM POLICIES:

- **Advance conflict:** If you know **in advance** that you cannot write the Midterm exam at the scheduled time because it conflicts with some other **valid activity**, please notify the course instructor as soon as possible so that we can make arrangements for you to write the Midterm at an alternative time. **Any such alternative time must be arranged 72hrs before the scheduled date of the Midterm Exam (Oct 19th, 2021).**
- **Medical illness:** If you miss a term test for medical reasons you must **self-declare within 48 hours via Acorn**. More details in the section above on 'Missed Work due to Illness'.
- **Other valid reasons**: If you miss the Midterm for any other valid reason, please consult with the Course Coordinator (Jennifer Campbell) as soon as possible. The Course Coordinator will determine whether the reason given for the missed Midterm is valid in accordance with university policies. Also, the Course Coordinator may ask for any documentation required to verify the reason given.
- **Invalid reasons**: Students who miss the Midterm for any invalid reason will receive a grade of zero.
- **One make-up exam**: There will be one single make-up Midterm scheduled. Missing the make-up midterm exam will result in transfer of all midterm exam grades onto the final exam weighting (i.e. final exam worth 80% of your grade).

HEALTH AND WELLNESS

The university experience can be a challenging one, there is no need to go about it alone. If you or anyone you know could use someone to talk to (or text with), here are some resources in addition to your instructors, program coordinators, and TAs:
- Your **campus registrar** and **office of residence of student life (ORSL)**
- **MySSP** [24/7, talk in 146 languages & text in 35 languages]: available on Apple App Store and Google Play Store.
- **Good 2 Talk Student Helpline** [24/7]: 1-866-925-5454
- **Gerstein Centre** [24/7]: 416-929-5200

DISCLAIMER *The above schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, particularly in the event of COVID-19-related changes to University policies and guidelines.*