COURSE OUTLINE

1. **Course:** CMMB 421, Virology - Fall 2020

   Lecture 01: MWF 10:00 - 10:50 - Online

   **Instructor** Email            Phone          Office   Hours
   Dr Michael Hynes  hynes@ucalgary.ca  403 220-8473  BI 429C  By appointment only
   Dr Jennifer Corcoran  jennifer.corcoran@ucalgary.ca  403 210-9129  HRIC 2A-08  By appointment only

   Course coordinator is Dr. Michael Hynes

**Online Delivery Details:**

This course is being offered online in real-time via scheduled meeting times, you are required to be online at the same time.

Lectures will be delivered by ZOOM. All students must have access to a computer with reliable internet access, a camera, and audio input and output on zoom. Lectures will not be recorded and posted. Powerpoints will be posted ahead of each class to the extent that this is possible.

**Course Site:**

D2L: CMMB 421 L01-(Fall 2020)-Virology

**Note:** Students must use their U of C account for all course correspondence.

2. **Requisites:**

   See section 3.5.C in the Faculty of Science section of the online Calendar.

   **Prerequisite(s):**
   Biochemistry 393 and Cellular, Molecular and Microbial Biology 343; and Biology 311 or Medical Science 341; and Biology 331 or Medical Science 351.

3. **Grading:**

   The University policy on grading and related matters is described in F.1 and F.2 of the online University Calendar.

   In determining the overall grade in the course the following weights will be used:

<table>
<thead>
<tr>
<th>Component(s)</th>
<th>Weighting %</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Exam 1</td>
<td>10</td>
<td>October 5, 2020, On-line during class period</td>
</tr>
<tr>
<td>Midterm Exam 2</td>
<td>10</td>
<td>November 2, 2020, On-line during class period</td>
</tr>
<tr>
<td>Term Paper</td>
<td>25</td>
<td>Due November 16th, 2020</td>
</tr>
<tr>
<td>On-line Quizzes</td>
<td>15</td>
<td>Multiple, TBA. Only the best five results will count towards final mark. Schedule and due dates for these will be on D2L and announced in class.</td>
</tr>
<tr>
<td>Presentation</td>
<td>10</td>
<td>In Tutorials November 19, 26, December 3</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30</td>
<td>Registrar scheduled. On-line and a take-home component.</td>
</tr>
</tbody>
</table>

   Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.
The conversion between a percentage grade and letter grade is as follows.

<table>
<thead>
<tr>
<th>Minimum % Required</th>
<th>A+</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D+</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>92 %</td>
<td>87 %</td>
<td>80 %</td>
<td>77 %</td>
<td>73 %</td>
<td>70 %</td>
<td>66 %</td>
<td>63 %</td>
<td>60 %</td>
<td>55 %</td>
<td>50 %</td>
<td></td>
</tr>
</tbody>
</table>

This course has a registrar scheduled final exam.

4. **Missed Components Of Term Work:**

   The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

   In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

5. **Scheduled Out-of-Class Activities:**

   There are no scheduled out of class activities for this course.

6. **Course Materials:**

   Required Textbook(s):


   Links to important articles will be provided on D2L. Powerpoints from course will be posted to D2L ahead of each class. Lectures will NOT be recorded.

   A new edition of this textbook will be available in 2021, so this will be the last year we use the current (second) edition.

   In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

   - A computer with a supported operating system, as well as the latest security, and malware updates;
   - A current and updated web browser;
   - Webcam/Camera (built-in or external);
   - Microphone and speaker (built-in or external), or headset with microphone;
   - Current antivirus and/or firewall software enabled;
   - Stable internet connection.

   For more information please refer to the UofC [ELearning](https://www.ucalgary.ca/learning) online website.
7. **Examination Policy:**

No notes or electronic aids are allowed on tests or examinations. Non-programmable calculators may be used to answer mathematical questions, should any occur. The presence of such questions will be communicated in advance to students.

Some questions for the final exam may be pre-assigned as much as two weeks in advance. These will be take-home elements of the exam, and a choice of such questions will be offered. Other take-home questions involving less preparation will be communicated at least 48 hours before the scheduled final exam date.

**1) There will be TWO (2) midterm exams** administered through the course D2L website. They will be completed during two of the regularly scheduled class periods as indicated in the grading section and you will be expected to be available to write the exams during those times. The exams will be 30 minutes plus 15 minutes technical time (45 minutes total). Time will be adjusted for SAS students if needed and accommodations for students will be done on a case-by-case basis. Exams may be a mixture of multiple choice, true or false, fill in the blank, and definition questions.

**IMPORTANT:** It is the student's responsibility to ensure that they have adequate computer and internet access to write the exams. Students will be required to begin their exams promptly at the start of their scheduled class on the day of the exam. If students encounter any technical issues starting an exam, they MUST document the issue by taking a photo, screenshot, or video, and they must contact the instructor immediately so that either additional time can be provided to access the exam or alternative arrangements made. **Students claiming to experience such difficulties who do not contact their instructor providing evidence of technical difficulties within 15 minutes of the scheduled start of the exam will not be allowed to write the exam and will receive a grade of zero (0) on the exam.** If a student’s exam is suspended during the exam (lost internet connection, internet browser crashes etc.), he or she MUST provide evidence (photo/ screenshot/video) and contact the instructor immediately. Students will then be granted reentry to suspended exams if they began the exam on time, provided evidence of the suspension, and still have time remaining to complete their exam.

**2) The final exam** is a registrar scheduled timed exam and will be designed to take 2 hrs to write but 3hrs will be given to account for any issues. Students will start at the registrar scheduled time. Time will be adjusted for SAS students if needed and accommodations for students will be done on a case-by-case basis. The final exam will be administered online through the course D2L website. There will be a take-home component due on the same day as the final exam.

Students should also read the Calendar, Section G, on Examinations.

8. **Approved Mandatory And Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course.

9. **Writing Across The Curriculum Statement:**

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section E.2 of the University Calendar.

Writing quality WILL be part of the assessment for all course components.

10. **Human & Living Organism Studies Statements:**

Students will not participate as subjects or researchers in human studies.

See also Section E.5 of the University Calendar.

**STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS.** Students taking laboratory and field-based courses in these disciplines can expect involvement with and experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells, or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.

All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concern they might have with the Undergraduate Program Director of the Department.

Students are expected to be familiar with Section SC.4.1 of the University Calendar.
11. Reappraisal Of Grades:

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See Section I.3 of the University Calendar.

a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within ten business days of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections I.1 and I.2 of the University Calendar.

b. **Final Exam:** The student shall submit the request to Enrolment Services. See Section I.3 of the University Calendar.

12. Other Important Information For Students:

a. **Mental Health:** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).

b. **SU Wellness Center:** For more information, see www.ucalgary.ca/wellnesscentre or call 403-210-9355.

c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (sysa@ucalgary.ca) or phone at 403-220-2208. The complete University of Calgary policy on sexual violence can be viewed at [https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf](https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf).

d. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under Section K. Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. These are only examples.

e. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at procedure-for-accommodations-for-students-with-disabilities.pdf.

Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head, Undergraduate of the Department of Biological Sciences, Heather Addy by email addy@ucalgary.ca or phone 403 220-6979. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than 14 days prior to the date in question. See Section E.4 of the University Calendar.

f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see Legal Services website.

g. **Student Union Information:** VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: ombuds@ucalgary.ca.
h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or non-academic misconduct, in addition to any other remedies available at law.

**CMMB 421**

**TERM PAPER AND SEMINAR PROJECT**

**Term Paper:**

A list of topics of this year’s term paper will be announced in the first tutorial and posted to D2L before that. Students may also propose their own original topic provided they clear it with Dr. Hynes. The paper will take the form of a minireview, and will normally be 4-5 pages long, double-spaced (not including references or figures and tables (maximum 3 figures and/or tables)). See more detailed explanation given in tutorial or on D2L. The paper is due on **November 16th** and is to be submitted electronically and in print. There will be a late penalty of 5 % per 12 hour period or part thereof for assignments not submitted on time.

**Student Presentation**

Students will be required to give a brief presentation of a recent scientific paper (2019 or later) about a virus of their choice. A title of the presentation, a brief description of the virus, and a short summary in lay terms of what the paper means must be submitted by November 06, 2020. Actual talks will be given during the tutorial sessions, and will be scheduled with input from students as to their schedules. See D2L for complete details and advice.

**Tutorials**

In addition to providing a time slot for students to present seminars in a small group, informal setting, the tutorial time slots will be used to give guidance on writing the term paper and doing the presentation, and to answer questions and go over material before each midterm and final exam. The following is a tentative schedule, and will be confirmed on D2L by the second week of classes.

- Sept 10 No tutorial
- Sept 17 Writing term papers, what is a minireview ?, Referencing, citing, copyright etc.
- Sept 24 No tutorial
- Oct 01 Exam preparation/Review Session for Midterm 1
- Oct 08 No tutorial
- Oct 15 No tutorial
- Oct 22 Optional; Help with term paper
- Oct 29 Instructions for student presentations and demonstration, Midterm 2 review
- Nov 05 Presentation titles due, Schedule talks.
- Nov 12 READING WEEK
- Nov 19 Student presentations
- Nov 26 Student presentations
- Dec 03 Student presentations, Final exam review
A tentative lecture schedule will be posted to D2L for the course as soon as dates are worked out with the various guest lecturers.

**Course Outcomes:**

- Explain and discuss the major principles and concepts of a wide range of viruses including i. bacteriophages ii. Plant viruses iii. Human and animal viruses
- Promote understanding of the interrelationships among fields of inquiry within biology by stressing the connection of Virology to evolution, cell biology, the environment, infectious disease, epidemiology, immunology and molecular biology.
- Make informed decisions on the benefits and drawbacks of vaccination against human viruses.
- Explain and present ideas effectively in an oral presentation, to different groups of people (scientific and nonscientific audiences).
- Communicate scientific information by writing a scientific literature review (with an appropriate bibliography) and in particular be able to recognize and present primary scientific literature.
- Assess, in the field of virology, scientifically based information and critically evaluate the information.
- Recognize members of the U of C community carrying out research on bacteriophages, viruses and prions and be able to describe their findings