

**BCMB 489 A01: FUNGAL AND PARASITIC PATHOGENESIS**  
**COURSE OUTLINE FALL 2021**

**INSTRUCTOR:**

Dr. Catherine Bachewich  
Sessional Lecturer, Department of Biochemistry and Microbiology, University of Victoria  
Affiliate Associate Professor, Department of Biology, Concordia University, Montreal, QC  
**Email: [cbachewich@uvic.ca](mailto:cbachewich@uvic.ca)**

**INCLUSIVITY**

I consider this classroom to be a place where you will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expression, national origins, religious affiliations, sexual orientations, ability-and other visible and non-visible differences. All members of this class are expected to contribute to a respectful, welcoming, and inclusive environment for every other member of the class. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this desire early in the semester so that appropriate changes can be to the records. Contact me if you have issues accessing resources.

**TERRITORIAL ACKNOWLEDGEMENT**

We acknowledge and respect the ləkʷəŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.

Link to First Peoples House: <https://www.uvic.ca/services/indigenous/house/index.php>

**COURSE TIME/LOCATION:**

Tuesday, Wednesday, Friday, 11:30-12:20; Engineering Computer Science 104

**OFFICE HOURS:**

Friday, 12:30-1:20 via ZOOM link (see Brightspace for link)

**COURSE OBJECTIVES:**

The aim of the course is to provide an overview of medically important fungi, parasites and associated diseases in humans. Students will gain a comprehensive understanding of the global impact, pathophysiology, host responses, recent therapeutic strategies, experimental approaches and challenges associated with the most common fungal pathogens and select parasites of humans. Fungi belonging to the *Cryptococcus*, *Aspergillus* and *Candida* genera will be discussed, as well as the parasitic malaria-inducing protozoa *Plasmodium* and other parasites associated with neglected tropical diseases, including the helminth *Ascaris*, for example. Students will also advance their skills in data interpretation and scientific communication through discussing manuscripts and participating in a group oral presentation.

**COURSE FORMAT:**

**Lectures:** The course will be delivered face-to-face (unless otherwise specified due to changing circumstances associated with the current pandemic). The class sessions will be recorded to allow students who are not able to attend to watch later. The recording will be posted in Brightspace. Students who have privacy concerns can contact me and will have the option to limit their personal information shared in the recording. If you have other questions or concerns regarding class recording and privacy please contact [privacyinfo@uvic.ca](mailto:privacyinfo@uvic.ca).

There is no textbook; lectures will be based on reviews and primary literature.  
Some class time will be set aside for group project presentation work (see the separate course schedule document posted on Brightspace). The last two weeks of classes will be dedicated to group presentations.

**Assignments:** Of the manuscripts covered in class, three will be accompanied by a set of questions for evaluation. Students must individually complete and submit their answers before the start of class that covers a paper. Additional questions will be asked during discussion, which will be relevant for the exams.

**Group Presentations:** Students will be placed into groups by the instructor and must select and present a paper on a topic related to the course. The group project presentations will contribute to the course content. Some class time will be designated for group work, which will take place on specified Friday classes. Students are also encouraged to meet outside of class time if needed, which can be arranged via Zoom if preferred. The group project evaluation includes a general group mark, as well as an individual assessment that will be based on the quality of contributions to the presentation and a short written assignment on the paper. Information on the presentation content, format, group function and evaluation will be presented in class and provided in a separate document.

**Participation:** The grade will be based on contributing to class discussions, as well as attending group presentations and posing questions.

**Transcription & Captioning Statement:** Auto-generated transcription and captioning is enabled in this course. Please be aware that automated transcription and captioning is at best 70-90% accurate and by nature will include error. This depends on the subject matter, speaker, audio quality etc. Words prone to error include specialized terminology and proper names. Students are asked to refer to the audio feed for clarification of any errors. If you find transcription or captioning **that is offensive**, please contact your instructor and/or teaching assistant so that they are aware. If you require captions as part of an academic accomodation, please contact [CAL](#).

**Copyright Statement:** All course content and materials are made available by instructors for educational purposes and for the exclusive use of students registered in their class<sup>[1]</sup>. The material is protected under copyright law, even if not marked with a ©. Any further use or distribution of materials to others requires the written permission of the instructor, except under fair dealing or another exception in the Copyright Act. Violations may result in disciplinary action under the [Resolution of Non-Academic Misconduct Allegations policy \(AC1300\)](#).

**Online Conduct Statement:** The University of Victoria is committed to promoting critical academic discourse while providing a respectful and supportive learning environment. All members of the university community have the right to this experience and the responsibility to help create such an environment. The University will not tolerate racism, sexualized violence, or any form of discrimination, bullying or harassment. Please be advised that, by logging into UVic's learning systems or interacting with online resources, and course-related communication platforms, you are engaging in a university activity. All interactions within this environment are subject to the university expectations and policies. Any concerns about student conduct may be reviewed and responded to in accordance with the appropriate university policy. To report concerns about online student conduct: [onlineconduct@uvic.ca](mailto:onlineconduct@uvic.ca)

## **COURSE CONTENT\***

<b>1. Introduction</b>	-Course overview, structure -Introduction to Fungi: General
<b>2. Fungal Pathogens: General</b>	-Overview of fungal pathogens; types of infections, impact, epidemiology, examples of most common pathogens, detection
<b>3. <i>Cryptococcus</i></b>	-Disease features, pathophysiology of organism, host response -Manuscript 1 (Assignment 1)
<b>4. <i>Aspergillus</i></b>	-Disease features, biology of organism, pathogenic mechanisms, host response -Manuscript 2 (Assignment 2)
<b>5. <i>Candida</i> sp.</b>	-Biology of organisms, pathogenic mechanisms, host response
<b>EXAM 1 (Oct. 19)</b>	
<b>6. <i>Candida</i> con't.</b>	-Manuscript 3
<b>7. Treatments and challenges</b>	-Drugs, vaccines, alternatives, resistance -Manuscript 4
<b>8. Protozoa and helminth parasites</b>	-General Overview
<b>9. <i>Plasmodium</i></b>	-Disease features, biology of organism, pathogenic mechanisms, host response, treatments -Manuscript 5 (Assignment 3)
<b>10. <i>Ascaris</i></b>	-Disease features, biology of organism, pathogenic mechanisms, host response, treatments -Manuscript 6
<b>11. Student presentations</b>	-Select topics expanding on course content
<b>EXAM 2 (Final exam period)</b>	

## **ASSESMENT OF STUDENT PERFORMANCE**

### **(1) Techniques to be used:**

- Assignment of a numerical mark to multiple choice, short answer and longer answer questions on assignments and exams, and to the oral presentation and associated written material.

- Exams are based on material covered in lectures (powerpoint presentations, papers and discussions).

- Exams are “open-book” and will be completed online via Brightspace, but students are expected to study as if they were writing in class in order to complete the exams within the designated time frame and not spend the majority of time searching for answers. Students are obligated to sign an academic code of conduct before each exam, and write the exam on their own, without the assistance of others.

- Exams can be initiated and completed within a 24 h time block

## (2) Evaluation and weighting:

Component	Date	Contribution
Exam I	Oct. 19	25%
Exam II	Final exam period	35%
Assignments (x 3)	Sept. 21 Oct. 5 Nov. 2	18%
Group Presentation (group and individual components)	Nov. 23, 24, 26, 30, Dec. 1, 3	20%
Participation		2.0%

## (3) Grading Scheme:

A <sup>+</sup>	90 - 100	B <sup>+</sup>	77 - 79	C <sup>+</sup>	65 - 69	F	< 50
A	85 - 89	B	73 - 76	C	60 - 64	N*	< 50
A <sup>-</sup>	80 - 84	B <sup>-</sup>	70 - 72	D	50 - 59		

### \* N grades

Students who have completed the following elements will be considered to have completed the course and will be assigned a final grade: **both exams, at least 2 Assignments, and the Group presentation.**

Failure to complete one or more of these elements will result in a grade of “N” regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student’s GPA as 0. The maximum percentage that can accompany an N on a student’s transcript is 49. Students are responsible for ensuring that they are properly registered in the course, and are expected to have met all pre/co-requisites for the course.

## DEPARTMENT INFORMATION AND POLICIES

1. The Department of Biochemistry and Microbiology upholds and enforces the University’s policies on academic integrity. These policies are described in the current University Calendar. All students are advised to read this section.
2. Cell phones, computers, and other electronic devices must be turned off at all times during live class sessions unless being used for the purpose of connecting and engaging with the class.
3. No recordings of live lectures are permitted without permission of the instructor. However, many courses will be recorded by the instructor for accessibility for students unable to attend. If you do not wish to be recorded, contact your instructor to determine if alternative arrangements can be made.
4. Students and instructors are expected to assess their health daily and avoid campus if ill.
5. Course materials, such as notes, problem sheets, quizzes, examinations, example sheets, or review sheets, may not be redistributed without the explicit written permission of the instructor.
6. Students are expected to be available for all exams. Instructors may grant deferrals for midterm examinations for illness, accident, or family affliction. Although students do not require documentation, students must contact their instructor and BCMB office ([biocmicr@uvic.ca](mailto:biocmicr@uvic.ca)) with the reason for their absence within 48 hours after the midterm exam. The Department will keep a record of the absences. It is the responsibility of the student to ensure all required components

are complete, and to arrange deferred exams/assignments with the instructor, which normally should occur within one week of the original exam date.

7. The Department of Biochemistry and Microbiology considers it a breach of academic integrity for a student taking a deferred examination to discuss the exam with classmates. Similarly, students who reveal the contents of an examination to students taking an examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar). Students must abide by UVic academic regulations and observe standards of scholarly integrity (no plagiarism or cheating). Online exams must be taken individually and not with a friend, classmate, or group, nor can you access notes, course materials, the internet, or other resources without the permission of the instructor. You are prohibited from sharing any information about the exam with others. Use of unauthorized electronic devices and accessing the internet and class material during exams is prohibited unless permission is granted by the instructor. Instructors may use Browser Lockdown Software to block access during classes and exams.
8. Deferral of a final exam must be requested with an Academic Concession form and submitted directly to Undergraduate Records. Deferred final exams for fall term courses will be arranged by the instructor. Deferred final exams or spring term courses will be arranged through Undergraduate Records and must be written before the end of the summer term as stipulated in the University Calendar.
9. Requests for review/remark of a midterm exam must be made within one week of the exam being returned.
10. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.
11. Supplemental exams or assignments will not be offered to students wishing to upgrade their final mark.
12. Anonymous participation in any online classes is not permitted without permission of the instructor.

**Important note about COVID-related stress:** The current pandemic is placing added stressors- financial, mental, and physical- on everyone. Your wellbeing is of foremost importance. If you are experiencing difficulties coping, the University has resources to help. Please reach out to Counselling Services, the Centre for Academic Communication, or Learning Assistance Program for assistance.

**Centre for Accessible Learning:** 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, approach the Centre for Accessible Learning (CAL) as soon as possible in order to assess your specific needs. <https://www.uvic.ca/services/cal/index.php>

**Course Experience Survey (CES):** We value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to us regarding the course and our teaching, as well as to help the department improve the overall program for students in the future. When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to your [CES dashboard](#). You will need to use your UVic NetLink ID to access the survey, which can be done on your laptop, tablet or mobile device. We will remind you nearer the time but please be thinking about this important activity.