

BCMB 489 A02: FUNGAL AND PARASITIC PATHOGENESIS
COURSE OUTLINE FALL 2020

INSTRUCTOR

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OFFICE HOURS: TBA

COURSE OBJECTIVES:

The aim of the course is to provide an overview of medically important fungi and parasites, and the diseases that they induce 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 of humans and select parasites. *Cryptococcus*, *Aspergillus* and *Candida* fungal species will be discussed, as well as the protozoa *Plasmodium* and organisms associated with neglected tropical diseases including the helminth *Ascaris*, for example. Students will also advance their skills in data interpretation, research project development and communication through discussing manuscripts and delivering oral and written reports on select topics.

COURSE READINGS:

There is no textbook. Publications and lecture material will be posted on the Course website.

LECTURE FORMAT:

The course is scheduled for Tuesday, Wednesday, Friday, 11:30-12:20, and will consist of a combination of asynchronous and synchronous sessions. See the separate "Course Schedule" document posted on the Course website.

A. Asynchronous sessions for independent reviewing: Wednesdays, 11:30-12:20

This time is set aside for independent reviewing of posted lectures and manuscripts. Posted lectures consist of Powerpoint presentations with audio, and provide introductory and overview information on the course topics. PDF versions of the lectures will also be posted. Manuscript references will also be posted for downloading. Students are expected to review the material before the synchronous classes on Tuesdays.

B. Synchronous classes: Tuesdays, 11:30-12:20 with Instructor, and Fridays, 11:30-12:20 for Group project meetings via Zoom links posted on BrightSpace.

**Students MUST sign into the Zoom link via their UVIC ID in order to access the sessions.*

1. Synchronous sessions with the instructor: Tuesday sessions will consist of a review of material, questions/exercises, or class discussions of assigned papers, and will be recorded. Students are expected to review the posted lecture material, read manuscripts and meet with their groups to answer a set of questions prior to these sessions. Student video and audio should be turned off during the recorded live sessions. Questions can be asked via the Chat function, or by turning on the audio/video. Students must attend the synchronous sessions in order to receive participation marks for the Group Paper Discussion Assignments. The first synchronous class will be held on Wednesday, Sept. 9. Synchronous classes with the instructor will subsequently fall on Tuesdays. The last two weeks of class will be fully synchronous (Tues, Wed, Fri) to allow for Group presentations.

*** In the case that more time is needed, paper discussions may continue on the Wednesday class. These will be recorded and posted.**

2. Group meeting time: Class groups will meet Fridays, 11:30-12:20 via the Zoom link in order to discuss answers to questions on assigned manuscripts or to work on the final Group presentations. Students must attend group meetings, since it can be difficult to get everyone together at different times. The instructor will be present to answer questions but is not running a set class during this time. Groups can additionally meet outside of class time, but this will be in the absence of the instructor.

a. Manuscript reading and discussion: Of the manuscripts covered in class, approximately 5 will be accompanied by a set of questions. Student groups will meet to organize their answers to the question set, and **hand in one document with answers the evening before** the Synchronous session on Tuesdays. Each student will be responsible for a question. During the synchronous class session, the instructor will call upon the different groups to answer specific questions for the class in order to contribute to an overview of the paper. Additional questions will be asked, which will be relevant for questions on the midterm tests. Any individual can contribute to the paper discussion after the instructor has gone through the assigned questions and groups.

Everyone must read the manuscripts and attend the synchronous class discussions. Marks for this part of the course are based on 1) handing in answers to questions and quality of answers (3 marks/paper) and 2) attending the synchronous session on Tuesdays and answering verbal questions (1 mark). Total marks for Group Manuscript Discussion Assignments: 20 marks.

***Students that do not contribute to the group meetings for organizing answers to the papers will receive 0 marks for that paper. This will be monitored via attendance at the Group meeting and through Group feedback to the Instructor.**

b. Group Presentations: Student groups are also responsible for preparing an oral presentation on select topics, the content of which will expand on subjects covered in class and contribute to the course material. Information on the presentation content and format will be provided in a separate document. The presentations will be held during the last two weeks of class. The presentation will be accompanied by a written report. All classes during the last two weeks of class will thus be synchronous. Several Group meetings on Fridays are designated for this purpose (see schedule). Part of the Group presentation mark will include peer evaluation.

COURSE CONTENT*

1. Introduction	-Course overview, structure -Introduction to Fungi: General
2. Fungal Pathogens: General	-Overview of fungal pathogens; types of infections, impact, epidemiology, examples of most common pathogens, detection
3. <i>Cryptococcus</i> sp.	-Disease features, pathophysiology of organism, host response -Manuscript 1 Discussion and question set
4. <i>Aspergillus</i> sp.	-Disease features, biology of organism, pathogenic mechanisms, host response -Manuscript 2 Discussion and question set
5. Midterm I	-Oct . 6

6. <i>Candida</i> sp.	- Biology of organisms, pathogenic mechanisms, host response -Manuscript 3 Discussion and question set
7. Treatments and challenges	-Drugs, vaccines, alternatives, resistance -Manuscripts: Open Discussion
8. Protozoa and helminth parasites	-General Overview
9. <i>Plasmodium</i>	-Disease features, biology of organism, pathogenic mechanisms, host response, treatments -Manuscript 4 Discussion and question set
10. <i>Ascaris</i>	-Disease features, biology of organism, pathogenic mechanisms, host response, treatments -Manuscript 5 Discussion and question set
11. Midterm II	-Nov. 13
12. Student presentations	-Select topics expanding on course content
13. Final exam	-TBA

ASSESSMENT OF STUDENT PERFORMANCE

(1) Techniques to be used:

- Assignment of a numerical mark to short answer and longer answer questions on exams and paper assignments, as well as on an oral presentation and associated written report.
- Exams are based on material covered in synchronous and asynchronous sessions (posted lectures, papers, discussions).
- Exams are “open-book”, 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 and academic code of conduct before each exam, and write the exam on their own, without the assistance of others.
- Exams can be initiated within a 24 h time block, and completed within a restricted amount of time after initiation.

(2) Evaluation and weighting:

Component	Date	Contribution
Midterm I	Oct. 6	17.5%
Midterm II	Nov. 13	17.5%
Group Paper Discussion Assignments	Sept. 22,29 Oct. 13 Nov. 3, 17	20%
Group Presentation	Nov. 23- Dec. 4	25
Final Exam	TBA	20%

(3) Grading Scheme:

A⁺	90 - 100	B⁺	77 - 79	C⁺	65 - 69	F	< 50
A	85 - 89	B	73 - 76	C	60 - 64	N*	< 50
A⁻	80 - 84	B⁻	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: **Midterm 1, Midterm 2, Final exam, Group Presentation, and at least 3 Paper Discussion Assignments.**

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 a the purpose of connecting and engaging with the relevant to the class.
3. No recordings of live lectures are permitted without permission of the instructor. Many online 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. 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.
5. Students are expected to be available for all exams. Instructors may grant deferrals for midterm examinations for illness, accident, or family affliction. Although and students do not require documentation, students must provide appropriate documentation contact their instructor and BCMB office (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.
6. 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 deferred 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.

7. 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 for 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.
8. Requests for review/remark of a midterm exam must be made within one week of the exam being returned.
9. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.
10. Supplemental exams or assignments will not be offered to students wishing to upgrade their final mark.
11. Anonymous participation in online classes is not permitted without written permission of the instructor.

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. Reach out to Counselling Services, the Centre for Academic Communication, or Learning Assistance Program for assistance.

CENTER 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 regarding the course and 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. You will be reminded nearer the time but please be thinking about this important activity.