BIOD26H
Fall 2015
Fungal Biology and Pathogenesis
Course outline

Instructor:
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Objectives of this course.

To provide an overview of the fungal kingdom with emphasis on the unique nature of fungal biology, the diversity of fungi and their role as pathogens of plants and animals. Students will be provided with an overview of the major fungal diseases that threaten plant and animal (including human) health. An appreciation of this understudied and underappreciated kingdom is critical from an ecological, biotechnological and human health perspective. We will assess and analyze the host pathogen interaction in plants and animals, address virulence factors and the types of treatments and prevention available for fungal infections. Throughout the course we will address the clinical implications of human pathogens. We will also address the economic implications of plant and animal pathogens to agriculture. . We will use both lectures and research paper discussions. **Each student is encouraged to ask questions, and participate in class. Often times a question can lead to an interesting discussion for all students.**

There is no text for this course. The lectures come from a number of sources including primary papers, and reviews. However, the textbook used for BIOC17 (Wiley , Prescott or Brock or the custom text from BIOC17 summer 2013/2014) does have some good background information. I will post some primary source material from which the lectures are drawn.

BIOD26 is a **lecture/seminar** based course with a **tutorial** used for activities related to tips on how to research a topic, writing of papers and presentations and may include a lecture if necessary given the large class size and the need to provide a minimum of four full weeks for presentations. Once student presentations begin the lecture and tutorial time will be used for student presentations. The tutorial will not meet every week.. I/or the TA will post announcements when the tutorials will be used. The **first tutorial will be the Sept 17, 2015. There will be a minimum of four tutorials in Sept and early Oct.** However starting in late October they will be used every week for student presentations.

Communication

I prefer to meet with you to answer your questions. For this reason I have an **open door policy.** If I am in my office my door will be open and I will be

available for question related to course work and any other inquires. **The best way to reach me is,** to drop by and see me or come by during my office hours. If you wish to see me at a specific time (and not just drop by) outside of the office hours then email me a request for an appointment and we can meet then**..** I will answer emails when I am on campus. I am on campus generally Monday through Friday. If you send me emails on the weekend I will respond no later than the following Monday. **Please use Utoronto accounts for email (I will not answer emails from non-U OF T accounts) and please indicate the course in the subject heading.**

- General announcements and any material needed for the course will be posted on **blackboard**

Formal Office hours:
Wed and Thursday noon to 1 pm

Accessibility:

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 me 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 S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca.

Academic integrity/plagiarism

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, 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 include, but are not limited to:

In papers and assignments:
➢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:
➢Using or possessing unauthorized aids.
➢Looking at someone else's answers during an exam or test.
➢Misrepresenting your identity.

In academic work:
➢Falsifying institutional documents or grades.
➢Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see http://www.utsc.utoronto.ca/aacc/academic-integrity)

"Normally, students will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site".

Course schedule:

Two hours of lecture per week and two hours of tutorial (schedule will be posted). Will start week of Sept 17 (likely 5 tutorials in a row and then we will use the tutorials once presentations start)

Grade breakdown:

Midterm (TBA) 19%
Format: short/long essay

Final exam (in final exam period) 32%
Format: short/long essay, may include questions on student presentations

Oral presentation (includes the presentation of Research paper in a peer reviewed journal by each student. The paper must not be more than 5 years

old. (work in pairs approx 20 min with 5 minutes for questions)

15%

- Depending on class size will start mid Oct
- presentation on a topic of your choice as long as it addresses a **topic in fungal biology.** It can be a pathogen interaction or a symbiotic interaction. It can be from a clinic, molecular ecological or economic perspective
- we will discuss the full specifics in class, but you will be given the latitude to present a topic that is of interest to you.

Short Review:

18%

area of research relating to fungal biology that interests you.
The written review may address the topic from a molecular, clinical, agricultural , ecological or economic perspective
-no more than 7 pages double spaced (with a minimum of 14 primary source papers (this does not include published reviews). Reviews may be used in addition to the 14 primary source papers (Due date: Thursday Dec 3, 2015 at the beginning of the class or a time posted on blackboard).

Summaries/outlines/one minute write-ups/ clinical thinking group activities in class

- take place in both lecture and tutorials. You must participate in 80% to receive full credit in lecture .
- Tutorial will include small assignments and you must participate appropriately and fully in 100%
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If you wish to opt out of **the lecture portion** you may and the percentage will be moved to your final exam.

- One-minute write ups/case studies are short written responses to a question posed in class: you receive the mark whether your response is completely correct or not.

Lecture 5%
tutorial 5%

You may not opt out of attending the class presentations

-participation during the lecture/tutorial and student presentations (which Will include write-ups and questions asked on the presentations made

6%

Attendance will be required to receive credit for participation grades and summaries/outlines

Option assignment (7 %).
Research a topic of general interest regarding fungi (i.e. in the news, electronic, paper or video). **Construct a mini talk of no more than 6 powerpoint slides**(which must tell a story) and post to the course site for students to read (if you opt for this you must opt in by week 3 so that I know the number of students participating and provide the mini lecture slides by week 8.

- **If you opt in you can choose to have your final exam reduced to 25%of your** grade or choose to reduce the your midterm to 11%. You may wait until you see your midterm grade to decide how to use your 7%

Bonus grade of 1% :
For students that read the mini lectures and **post potential short answer question that could be used in an exam**

Lecture schedule (lectures will be posted prior to class)
I have given topic numbers rather than dates. More than one topic may be covered in one lecture. Most topics will be covered over more than one lecture as the topics are very broad in nature. If I am covering a paper that relates to the topic, the paper will be posted at least four days prior to allow you time to look at the paper.

Topic 1: Introduction/ overview to the fungal Kingdom and characteristics of fungi:

- Diversity of Fungi and fungal-like organisms
- The interrelationship of fungi and other organisms, economic importance

Topic 2: Overview of plant and animal (including insect and fish) pathogens:

- Host-pathogen interactions
- role of virulence factors:
- role in agriculture/farming
- biological control

Topic 3: Human pathogens

- Major fungal disease of humans

Topic 4 Treatment of mycoses with emphasis on human infections

- Diagnosis
- Role of immune system
- Clinical implications

<u>If you have an interest in a particular area you wish to see covered let me know in advance and i will try to incorporate the topic into my lectures</u>