



Mycology: BIOL 5823

College of Science, Mathematics and Engineering
Spring 2026 | W 5:30pm – 7:50pm | Bolin 248

Contact Information

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Course Description

This course presents a survey of the diversity of fungi, their biology, and their roles in the environment. In the latter half, particular emphasis will be placed on medical mycology. Specific aspects of fungal biology and pathogenesis will be explored in more depth using current literature. Discussion of taxonomic and structural concepts will be supplemented by laboratory work.

Textbook & Instructional Materials

No text is required for this course. Research and review articles will be assigned as required and made available on the course website (D2L).

Recommended / Useful Books:

- Moore, D., Robson, G.D., Trinci, P.J. 2011. *21st Century Guidebook to Fungi*. New York: Cambridge University Press. ISBN: 978-0-521-18695-7. [Available online](#). (http://www.davidmoore.org.uk/21st_Century_Guidebook_to_Fungi_PLATINUM/)
- Kendrick, W.B. **The Fifth Kingdom**. 3rd Edition. Mycologue Publishing. [Available online](#). (<http://www.mycolog.com/fifthtoc.html>)
- Alexopoulos, C.J., C.W. Mims, and M. Blackwell. 1996. *Introductory mycology*. 4th ed., New York: John Wiley & Sons.
- Reiss, E., Shadomy, H.J., Lyon III, G.M. 2012. *Fundamental Medical Mycology*. Hoboken, NJ: Wiley-Blackwell. ISBN: 978-0-470-17791-4

Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without

following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct. [Office of Student Conduct](#)

Moffett Library

Moffett Library provides resources and services to support student's studies and assignments, including books, peer-reviewed journals, databases, and multimedia materials accessible both on campus and remotely. The library offers media equipment checkout, reservable study rooms, and research assistance from librarians to help students effectively find, evaluate, and use information. Get started on this [Moffett Library webpage](#) to explore these resources and learn how to best utilize the library.

Grading

All exams and assignments count toward your final grade in the course and so it is important to do the best that you can on everything you turn in. If you find yourself having difficulties, please come to me for help early in the semester so that you give yourself time to improve. Passing requires 60% of the points (unadjusted) for the course, or 300. Fractional percentages will be rounded at the end of the semester.

Table 1: Points allocated to each assignment

Assessments	Points
Exam	100
Journal Club Presentation	50
Research Paper	100
Research Presentation	100
Collection	100
Participation/Safety	50
Total Points	500

Table 2: Total points for final grade.

Grade	Points
A	450-500
B	400-449
C	350-399
D	300-349
F	299 and under

Exams

There will be one take-home format exam. Specifics on completion and other details will be provided when the exam is handed out.

Research Paper and Oral Presentation

You will choose a fungal disease from the list provided. Your term paper will serve as a review of that disease including a discussion the etiologic agent(s), mechanism of damage, host and microbe factors involved in disease, diagnosis, treatment, etc. Additional information on paper formatting will be provided separately.

The second part of this assignment is to convert your paper into a presentation. You will have 30-35 minutes to present your topic, with 5-10 minutes for discussion and questions afterwards. This should be thought of as an independent entity (i.e. don't plan on simply reading your paper), but will develop out of your paper. You don't need two topics..

Journal Club Presentation

This segment of the course is in a journal club-type format. Each student will choose a paper on some aspect of fungal biology from the primary literature. Presentation dates will be determined during a future class period.

Responsibilities of the presenters/discussion leaders: During this time, your role is that of a teacher. In your presentation, the following should be clearly emphasized:

- 1)** What is the context of this paper? Provide enough background to give the results in the paper meaning and significance.
- 2)** What is the **specific** question the paper addresses? Often this is a very simple question.
- 3)** Describe, **figure by figure**, the results of the paper. What type of experiment is shown in the figure: A western blot? A gel shift? A northern blot? What controls are used? What does the data mean? The bulk of your time will be spent doing this. If you simply read the author's explanation of the data without walking the class through the data, this is not acceptable. One good way of approaching this section is to divide the paper into individual experiments and describe the results (figures) of each experiment. Introduce each experiment with its purpose – "To determine ..."'
- 4)** What new model of the phenomenon in question does the data suggest? Basically this means if you had to make a textbook (cartoon) figure to explain this paper, what would you draw?

When you are not presenting, you should be contributing to the class discussion. This means that you should have already read the paper before class.

Thus, you should be prepared to discuss the material and ask any questions you might have.

(Adapted from S. Ulrich & A. Hatoum, BIOC 48100, Ithaca College)

Informal Collection

You will need to use the information from this semester to assemble a small informal collection.

This collection will consist of **10 specimens**. Specimens can include: **1)** dried specimens of macroscopic fungi, including mushrooms, stink horns, shelf fungi, birds' nests, puffballs, lichens, slime molds, or microscopic fungi producing macroscopic symptoms (leaf spots, powdery mildews, downy mildews, rusts, smuts, etc); or **2)** cultures of yeasts or moulds.

Taxonomically, the collection should contain:

- 3 Basidiomycetes
- 3 Ascomycetes
- 2 Zygomycetes
- 2 (from any of the above categories).

Specimens that were previously classified as Deuteromycetes can be collected and included. For purposes of your collection, place them into Ascomycota or Basidiomycota based on the current taxonomy.

Organisms should be identified to genus (and species if possible). Only one specimen per genus will be accepted. Labeling information should include the following information: Your name, the genus of the specimen, species name (if known), collection location & date.

You should also include a brief description of each fungus based on your observations (i.e., the characters you used for making the identification), source of fungus (substrate from which it was isolated), and brief description of isolation technique. You also need to include the reference(s) used in making your identification. Cultures may be turned in any time during the semester, preferably as soon as the fungus is isolated into axenic (pure) culture.

A more detailed description of the Collection Report will be provided separately.

In addition to the collection writeup, macroscopic fungal specimens will also be reported on iNaturalist. An iNaturalist project has been set up for the class. This will allow for a more direct contribution of your findings to the biodiversity knowledge base for the region.

Students are expected to actively participate in the course. This includes both the lectures and the laboratory-associated work. Participation in lecture includes

preparing for lecture, asking questions, and participating in class discussions. Participation in the lab includes actively working on collections and mastering the techniques. Laboratory participation also includes following all laboratory safety guidelines and regulations.

Late Work

Points will be deducted from assignments turned in late.

Make Up Work/Tests

No make-up exams will be given in this course. If you must miss class during a midterm exam period due to unavoidable circumstances, then the cumulative part of the final exam will replace the missed midterm score. Acceptable circumstances include death of an immediate family member, jury duty, call to military service, hospitalization or similar debilitating illness and event attendance required by the university. Routine appointments, medical or otherwise, and vacation travel are not acceptable reasons for absence from an exam.

You must notify the instructor of problems **prior to** the start of the exam and provide the proper documentation as soon as possible. Only **one** midterm exam will be substituted for in this manner. Exams will not be moved for congested midterm or finals schedules.

Important Dates

- Last day for term schedule changes: **January 23, 2026**
- Deadline to file for graduation: **February 16, 2026**
- Last Day to drop with a grade of "W": **April 29, 2026**
- Refer to: [Drops, Withdrawals & Void](#)
- Refer to the course D2L page for exam and assignment due dates

Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

Attendance

Students are expected to attend all meetings of the classes in which they are enrolled. Although in general students are graded on intellectual effort and

performance rather than attendance, absences may lower the student's grade where class attendance and class participation are deemed essential by the faculty member. In those classes where attendance is considered as part of the grade, the instructor should so inform students of the specifics in writing at the beginning of the semester in a syllabus or separate attendance policy statement. An instructor who has an attendance policy must keep records on a daily basis. The instructor must give the student a verbal or written warning prior to being dropped from the class. Instructor's records will stand as evidence of absences. A student with excessive absences may be dropped from a course by the instructor. Any individual faculty member or college has the authority to establish an attendance policy, providing the policy is in accordance with the General University Policies.

Attendance is not a direct part of your course score. However, continual tardiness – and the resulting class disruption due to coming in late – will be considered and may influence your final points awarded. Cell phone use distracts from attention in class. Therefore, students who persist in using their mobile devices during class, except for designated classroom activities, will be marked as absent.

If you feel ill: Stay home and isolate yourself. Inform your instructor of your circumstances.

It is the responsibility of the student to obtain notes or other information covered in class during an absence.

Instructor Expectations and Class Policies

- Students are expected to be prepared for lecture and lab by 1) reading the text, lab manual or handouts prior to coming to class; 2) having paper and pen at hand.
- Students are expected to arrive a few minutes early to mentally prepare. If late arrival is unavoidable, the student should enter the class in a manner that creates as little disruption as possible.
- Student Conduct: Please refer to the [Student Handbook](#) for university policies related to student responsibilities, rights, and activities.
- Analytical and critical thinking skills in both written and oral communication are part of the learning outcomes of this course. Therefore, all writing assignments and classroom discussion responses should be prepared by the student. Developing strong competencies in this area will prepare you for a competitive workplace. Because of this, AI-generated submissions are not permitted and will be treated as plagiarism (Adapted from Texas Tech University statement).
- Students with disabilities: It is the responsibility of the student to first contact Disability Support Services and then the instructor to decide what accommodations might be provided for a disability. It will be the

responsibility of the student to plan to acquire notes. Any requests for accommodation must be made 2 weeks prior to the first exam.

- The instructor considers this classroom to be a place where you will be treated with respect as a human being. Students will show respect for each other and the instructor. Failure to do so will result in the disrespectful student being asked to leave the classroom or laboratory. Furthermore, guns or other weapons create a coercive environment that is neither safe nor conducive to learning. Therefore, weapons of any kind will not be allowed in my classroom. This includes guns, concealed or otherwise, regardless of licensure. Any student bringing a weapon to class or to lab will be immediately dropped from the course. It is the professor's expectation that ALL students consider the classroom a safe environment.
- **CELL PHONES (and other electronic devices): (READ THIS TWICE, PLEASE)** This class, as well as your other classes, requires your engagement, and typical cell phone use serves to detract from that engagement. While in class, your phone should be on "silent" (NOTE: vibrate is NOT silent).
- **Other electronic devices (laptops, tablets and similar devices):** These may be used only if you are using them as "electronic paper". That is, if you are writing on them with a stylus or some type. The ability to take good notes is a skill that university students must be able to master. Further, classroom studies have shown that taking notes by hand increases engagement in the material. Simply transcribing the lecture word-for-word (as you are tempted to do while typing) is not helpful.
- **E-mail:** I will respond to e-mail during regular school hours (8:30 am – 5:00 pm M-F). I will make every effort to respond to e-mail sent during the week within 24 hours. Those sent over the weekend will be attended to on Monday. Always include a subject line in your e-mail messages. It would be particularly helpful to include in the subject line the course number & section (*i.e.*, BIOL 3314). Questions about simple matters of class schedule or those that can otherwise be answered from information in this syllabus will be given low priority.
- The instructor reserves the right to amend these rules as needed throughout the term.

Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a 100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester.

HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exists in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Student Wellness Center, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disability Support Services](#).

College Policies

Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by MSU Police Department regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit [MSUReady – Active Shooter](#). Students are encouraged to watch the video entitled "Run. Hide. Fight." which may be electronically accessed via the University police department's webpage: ["Run. Hide. Fight."](#)

Grade Appeal Process

Update as needed. Students who wish to appeal a grade should consult the Midwestern State University [MSU Catalog](#)

***Notice:** Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Tentative Course Schedule:

Week or Module	Lecture Topic	Lab
Week 1 Jan 22	Introduction, Field paperwork	
Week 2 Jan 29	General Characteristics	Safety, Microscope Use, Culturing, Tape Prep
Week 3 Feb 5	Zygomycota	Water stocks, frozen stocks, slides (Zygomycota)
Week 4 Feb 12	Ascomycota	Slides (Ascomycota), Specimens (collected)
Week 5 Feb 19	Basidiomycota	Slides (Basidiomycota), Specimens (Collected)
Week 6 Feb 26	"Deuteromycota"	Slides (Deuteromycota), Specimens (Collected)
Week 7 Mar 5	Fungal Pathology	Collections
Week 8 Mar 12	No classes – Spring Break	
Week 9 Mar 19	Antifungal Agents, Host-Fungal Interactions	Collections
Week 10 Mar 26	Online lecture (TX-ASM)	Collections
Week 11 Apr 2	Papers: Journal Club	Collections
Week 12 Apr 9	Papers: Journal Club	Collections
Week 13 Apr 16	Papers: Journal Club	Collections
Week 14 Apr 23	Research Presentations	
Week 15 Apr 30	Research Presentations	
Week 16 Apr 7	Research Presentations	