2024 Syllabus

Magical Mushrooms, Mischievous Molds

PLSCI 2010 and PLSCI 2013

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Co-instructor Dr. Chase Mayers

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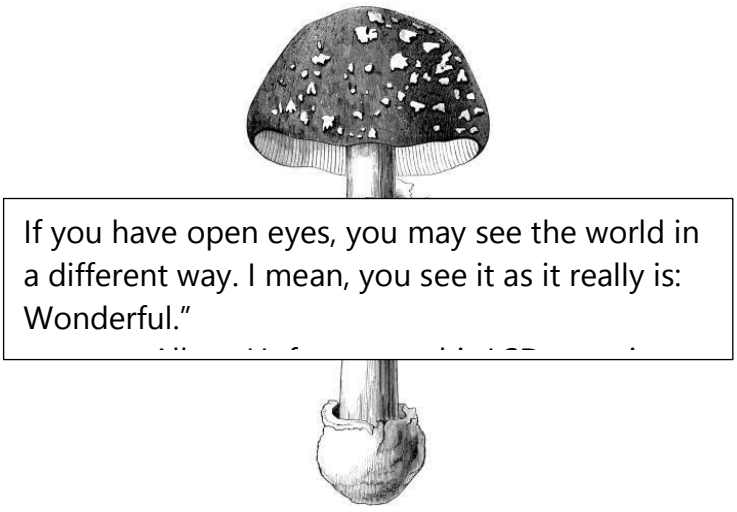
Welcome to Magical Mushrooms, Mischievous Molds, a light but substantive introduction to the world of **fungi**. We'll explore the surprising diversity of fungi on Planet Earth, how they connect with and impact society, ecology, and agriculture, and their positive and negative roles in our lives.



This Syllabus is for the **lecture portion** of the course, whether you are enrolled in **PLSCI 2010** (2cr) or **PLSCI 2013** (3cr).

PLSCI 2013 shares the same lecture and lecture Canvas page as 2010, but 2013 adds a weekly lab component with its own separate syllabus and Canvas page.

The Shroom Squad

The Shroom Squad:

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Course Mailbox: magicalmushrooms@cornell.edu

Our course mailbox is the main way to contact us with problems, questions, etc.
We aim to respond within 24h (48h on weekends). If you don't hear back from us, please write again.

Our Learning Objectives

By the end of this class, we expect you'll be able to:

1. Describe the properties of a wide range of fungi and fungal symbioses and relate their roles and contributions to ecosystems.
2. Discuss the positive and negative effects of fungi and fungal toxins on human health, agriculture, and global food security.
3. Apply knowledge of fungal evolution and life cycles to devise ways to manage disease in humans and plants.
4. Describe fungal foods, biochemicals, and materials and explain how they can contribute to environmental sustainability and society.

Lectures and Readings

Come to lectures. This course is famous because our lectures and labs are fun and our topics are amazing! Come, listen, take notes. We assign short **pre-class videos** to prepare you for each lecture via Canvas. They are the topics of in-lecture quizzes, and are included on our exams.

Course Grades for PLSCI 2010 (2 cr)

Lecture Quizzes, *Individual*	**15%**	*Highest 17 of 21 scores are counted.*
Lecture Quizzes, *Group*	**10%**	*Highest 17 of 21 scores are counted.*
Thursday Discussion Qs	**10%**	*Highest 9 of 10 scores are counted.*
Midterm 1	**20%**	
Midterm 2	**20%**	
Final Exam	**25%**	

Final grades are calculated on a percentage basis: 98–100 = A+; 93.0–97.9 = A; 90– 92.9 = A-; 88–89.9 = B+; 83–87.9 = B; 80–82.9 = B-; 78–79.9 = C+; 73–77.9 = C; 70–72.9 = C-; 68–69.9 = D+; 63–67.9 = D; 60–62.9 = D- ; below 60% = F.

PLSCI 2010 (2 cr) vs. 2013 (3 cr) Course Grades

Both versions of the course attend the same lectures and use the PLSCI 2010 Canvas page with the same lecture assignments. Students enrolled in **PLSCI 2013** attend lectures plus a weekly **lab section** with its own separate **syllabus, assignments,** and **Canvas page**.

Final Grade for PLSCI 2010 *(2cr)***:** *All grades from Lecture Section; no additional weekly labs.*
Final Grade for PLSCI 2013 *(3cr)***:** ***66%*** *from Lecture section (see above) +* ***34%*** *from weekly labs (see lab syllabus).*

[forbidden overlap: You cannot receive Cornell credit if you take both PLSCI 2010 and PLSCI 2013]

Grade Options

Students in PLSCI 2013 (the 3-credit version with labs) may only enroll for **letter grade**.

Students taking the S/U Option for PLSCI 2010 are expected to fully engage in all aspects of the class including in-class active learning discussions and quizzes, exams, Demo Days, and assignments. Note that to get a passing grade of S, you must earn a C- or higher. If your score is less than 70% you will receive a grade of U.

Pre-lecture Videos

Starting with Lecture 2, **pre-lecture videos** will be assigned via Canvas. They are tested via in-class **quizzes**. They provide core background to concepts that will be discussed in the lecture.

Active Learning Groups

We use **active learning groups** to engage with the course material during our lectures.

Groups of 5–6 students will be assigned after our first lecture. Your group number and a map of your assigned seats will be shared via Canvas before Lecture 2. Your group sits together in assigned seating, starting in Lecture 2. Groups remain the same across the semester *(we may merge groups that shrink)*. Your group will work together on **quizzes in every lecture**, and Thursday **discussion questions**.

Lecture Quizzes

Do well in this class by coming to lecture and engaging with our Squad and our Subject!

At the start of each Lecture, you'll take a quiz – first individually using iClicker (iRAT), then with your active learning group using scratch-off sheets (tRAT). You will be graded for both individual and group attempts on the quiz, and your final quiz grade will be calculated from your **best 17 individual scores of 21 Lecture Quizzes**, and your **best 17 scores of 21 Group Quizzes**. We do NOT offer quiz extensions or makeups, even for technical glitches, late adds, crises, illness, etc.

Thursday Discussion Questions

Every Thursday we'll end lecture with a **Group Discussion,** a fungus-related scenario with multiple answers. You'll evaluate those answers as groups, to choose the best answer (there may be multiple more or less correct answers). Each group submits their chosen answer on paper. We look forward to creative solutions and analytical thinking! Group members who are present in the classroom must sign or initial the paper. Only group members who are present will receive credit for the group answer.

Peer Evaluation

We expect all group members to be present in class, and active (both speaking and listening) in group discussions. Two or three times over the semester, we'll ask you to confidentially evaluate the contributions of all group members. Students scored poorly by their peers may see deductions from Group Quiz and Group Discussion points.

Demo Days

Three times over the semester we'll host drop-in Demo Days in room 326 Plant Science. They give you a chance to meet some fungi up close, and enrich what you've learned in lectures. Each lab runs over a 3-day period, so you can choose when to visit, or visit multiple times. We'll provide a Study Guide to give you a sense for what we hope you'll learn. Material from Demo Days is tested on relevant Midterms and the Final Exam.

Exams

Each of our three in-person Exams measures your mastery of important facts and concepts, and your ability to problem-solve. Each multiple choice question has one right answer among four or five choices. Each short answer question may have several possible correct answers. The number of points a question is worth can guide you as to the number of different ideas we hope to see in your answer. You will answer multiple choice questions on bubble sheets, and short answer questions on the exam itself.

Each **Exam** covers lecture material (including pre-lecture Core Videos) from preceding lectures and Demo Days: Midterm 1 covers about the first third of lectures plus Demo1; Midterm 2 covers the second third of lectures and Demo2; the Final Exam is comprehensive, and covers all class materials. Across our exams, we don't directly test but assume you know core concepts about fungi. These core concepts were the focus of our pre-lecture videos.

The first two Midterms are held during regular class times. The Final Exam will be during Finals Week, at a time and location assigned by the Registrar. All students take all 3 exams. We participate in the **Alternative Testing Program** for students with academic accommodations.

If, after an Exam, we conclude a question was confusing, we reserve the right to remove the question from the total for the exam, or curve exam grades to account for flaws in exam design. We never curve your grade downward.

Inclusion, Accessibility, Special Needs, Wellness

We strive to create a kind, positive class culture that includes students with special needs, injuries, crises, and disabilities. It's important to let us know what you need in good time. We invite you to connect with **Student Disability Services**, or contact us for a confidential discussion of how we can best support you.

Students with Disabilities

Students with Disabilities: Your access in this course is important to us. Please request your accommodation letter early in the semester, or as soon as you become registered with SDS, so that we have adequate time to arrange your approved academic accommodations.

- Once SDS approves your accommodation letter, it will be emailed to you and to Prof Hodge. Please follow up with us to discuss logistics of your accommodations.
- If you are approved for exam accommodations, please consult with us at least **two weeks** before our scheduled exam date to confirm testing arrangements.
- If you experience access barriers in this course, such as with printed content, graphics, online materials, or any communication barriers; reach out to me or SDS right away.
- If you need an immediate accommodation, please speak with me after class or send an email message to magicalmushrooms@cornell.edu and SDS at sds_cu@cornell.edu.

If you have, or think you may have a disability, please contact Student Disability Services for a confidential discussion: sds_cu@cornell.edu, 607-254-4545, sds.cornell.edu.

Our Course Materials

From our perspective, this class represents a lot of earnest and original work. Course materials posted on Canvas are intellectual property belonging to Prof. Hodge and Dr. Mayers. You may not buy or sell any of our course materials. You may not share recordings of our lectures or labs. Such unauthorized behavior constitutes academic misconduct. We do recommend sharing our stories (in your own words) with friends and family over a nice meal.

Academic Integrity

Please take this class the right way—earnestly and honestly. We want this to be a warm and comfortable class, in which you learn some freaky stuff. We rely on you to contribute positively to our class culture.

Every student is responsible for understanding Cornell's Code of Academic Integrity.

Take our exams and individual quizzes as individuals; do not share answers among friends or online. A commitment to growth and integrity can improve your self-image, your relationships, and your whole life. If someone in your group is absent, you may not answer on their behalf or write their name to indicate they are present.

If you're having trouble, reach out and talk frankly with us rather than decide to cheat. For academic integrity violations, such as cheating and academic misconduct, the penalty we apply may be greater than

the point value of the assignment itself. That is because we consider these violations a betrayal of our community standards and the very principles of education.

COURSE CALENDAR

Lectures are **Tues and Thurs (1:25–2:15pm),** in person in Call Auditorium
Lecture recordings are posted to Canvas within 24 h

Class	Date	Our topic
Lecture 1	Tues Jan 23	**Intro to the class, the instructors, and some fungi**
Lecture 2	Thu Jan 25	**The fungus lifestyle; growth and reproduction**
Lecture 3	Tues Jan 30	**Classification and naming of fungi**
Lecture 4	Thu Feb 1	**How fungi get around**
	Feb 5	**Last day to add/change credits**
Lecture 5	Tues Feb 6	**Mycotoxins**
Lecture 6	Thu Feb 8	**Molds in your House**
Lecture 7	Tues Feb 13	**Catastrophic plant diseases I**
DEMO ONE	Th Feb 15 Fri Feb 16 Mon Feb 19	**Demo One: The Fungus Lifestyle.** No lecture on Thursday! Instead, visit Plant Science 326 during open hours on Thurs, Fri, or Mon to see fascinating examples of fungi (hours tba) Bring your iClicker or iClicker app. Allow an hour and a half.
optional	Fri Feb 16	**Review sessions for Midterm One** Locations and times TBA
optional	Mon Feb 19	**Review sessions for Midterm One** Locations and times TBA
EXAM	Tues Feb 20	**MIDTERM EXAM ONE** on material covered in Lectures 1–7 and Demo One.
Lecture 8	Thurs Feb 22	**Catastrophic plant diseases II: Rusts**

		February Break: Feb 24-Feb 27
Lecture 9	Thurs Feb 29	**Catastrophic plant diseases III: Trees**
Lecture 10	Tues Mar 5	**Medical mycology: fungi that grow on YOU**
Lecture 11	Thurs Mar 7	**Antibiotics and other medicines from fungi**
Lecture 12	Tues Mar 12	**Ergot, ergotism, and LSD**
Lecture 13	Thurs Mar 16	**Blue cheese, bread, and other fungi for food**
	Mar 20	**Last Day to Drop/Change Grading Basis**
Lecture 14	Tues Mar 19	**Yeasts and alcoholic fermentation**
DEMO TWO	Th Mar 21 Fri Mar 22 Mon Mar 25	**Demo Two: Plant/Animal Disease.** No lecture on Thursday! Instead, visit Plant Science 326 during open hours on Thurs, Fri, or Mon to see fascinating examples of fungi (hours tba) Bring your iClicker or iClicker app. Allow an hour and a half.
optional	Fri Mar 22	**Review sessions for Midterm Two**
optional	Mon Mar 25	**Review sessions for Midterm Two**
EXAM	Tues Mar 26	**MIDTERM EXAM TWO** on material covered in Lectures 8–14 and Demo Two.
Lecture 15	Thu Mar 28	**Wild, edible 'shrooms and poisonous toadstools**
		Spring Break : March 30 – April 7
Lecture 16	Tues Apr 9	**Cultivating mushrooms; building with mycelium**
Lecture 17	Thurs Apr 11	**Symbiosis : Mycorrhizae**
Lecture 18	Tues Apr 16	**Hallucinogenic mushrooms I: Psilocybe**
Lecture 19	Thu Apr 18	**Hallucinogenic mushrooms II: Amanita muscaria**
Lecture 20	Tue Apr 23	**Fungal degradation of wood and plastic**

DEMO THREE	Th Apr 25 Fri Apr 26 Mon Apr 29	**Demo Three: Mushrooms etc.** No lecture on Thursday! Instead, visit Plant Science 326 during open hours on Thurs, Fri, or Mon to see fascinating examples of fungi (hours tba) Bring your iClicker or iClicker app. Allow an hour and a half.
Lecture 21	Tues Apr 30	**Insects and fungi I**
Lecture 22	Thu May 2	**Insects and fungi II**
Lecture 23	Tues May 7	**the last lecture**