



Fungi and Civilization

PLPA 2130 - 001 3(3,0)

Spring 2022

MWF 10:10 - 11:00 am

Poole Agricultural Center (P&A) 174

Traditional (in-person) instruction



Instructor and Office Hours

Dr. Julia Kerrigan

Office: D-137 Poole (P&A)

Office hours: MWF 11:05 - 12:00, or by appointment

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I will try to respond to emails as soon as possible, within 24 hours except for during weekends and university holidays. If it has been longer than this time period feel free to send me a reminder.

Course Description

Overview of how fungi affect the lives of humans, both currently and historically.

The diversity of fungi and tremendous roles fungi play on the planet are addressed in respect to the biological, social, and ethical consequences.

The general nature of this course makes it beneficial to all students regardless of specialty.

This course satisfies General Education competencies in Science and Technology in Society, Natural Science, and Clemson Thinks2.

Learning Outcomes

Students will demonstrate:

An understanding of the defining characteristics and basic biology and ecology of fungi.

An awareness of the diversity of fungi and the roles they play on our planet.

A comprehension of how fungi affect the lives of individuals and societies, both currently and historically.

Critical evaluation of the social consequences, value judgments, ethical implications, and other viewpoints regarding the impacts of fungi and civilization.

Course Format

I will post lecture notes ~24 hours before class. **These notes are an outline and do not replace attending class, listening, and taking notes yourself.**

Critical thinking and class participation is encouraged through Packback responses, in-class assignments, and discussions.

The information in this course is primarily based on biological and historical facts, but our critical examination of WHY these events occurred will be raised throughout the course.

CT2

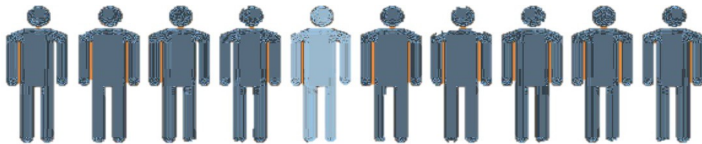
This class is participating in the Clemson Thinks2 (CT2) campus-wide Quality Enhancement Plan that focuses on undergraduate critical thinking, a skill that is invaluable for your success in college and in your career pursuits after graduation.

In-class questions and assignments, particularly Packback and the Fungi in the News assignment, are designed to enhance your critical thinking skills.

You will take the California Critical Thinking Assessment Test (details will be provided) at the beginning of the term and at the end of the term to measure how your skills have improved.

Lecture Requirements

Attendance is important



Regular attendance is expected and you are responsible for all the information presented in class, whether it is delivered verbally, on PowerPoints, in reading assignments, or on handouts.

Typically, poor class attendance is reflected in grades.

I do not take attendance, but once in a while there will be extra credit points for in-class participation.

Canvas

Canvas will be used <http://www.clemson.edu/canvas/>.

Copies of the syllabus, notes, readings, and other materials will be posted; I will let you know specifically where throughout the course.



“The academic resources of Clemson University are provided for the intellectual growth and development of students. Class attendance is critical to the educational process; therefore, students should attend scheduled courses regularly if they are to attain their academic goals.”

If you miss class you are responsible for getting notes from other class members. Get contact information from at least three other students enrolled in this class so you can easily share notes. I am always willing to clarify information if you need help after acquiring notes from someone in the class.

Laptops and similar devices are only permitted for taking notes. Doing other activities is distracting to those around you. Please be respectful and limit use to taking notes for this course. I recommend you print the ppt's, listen, and take notes. You will find this provides a focused and effective learning environment!

Lecture Requirements

Textbook

Magical Mushrooms, Mischievous Molds by George Hudler is required.

Additional reading materials from other sources will be provided throughout the term.



Examinations

Three examinations and six quizzes - based on lecture materials, relevant readings, videos, and discussions - will be given during lecture periods and the final exam schedule. Exams and quizzes are scheduled so that there is a relatively uniform number of lecture dates between each.

Test content will cover topics in lectures covered since the previous exam. Previous exam questions and answers will be posted on Canvas to help you prepare for each test. Quizzes typically contain questions on detailed information, while comprehension of overall principles and concepts is expected in the exams.

Make-up exams will be given only if a valid, documented excuse for your absence (i.e. medical emergency) is provided within 24 hours after an exam is given. Missed exams without an acceptable, timely excuse will receive a grade of zero.

The third and final exam is not cumulative and everyone is required to take it.

One quiz score will be dropped, this may include a quiz missed because of an undocumented absence or your lowest score. I will remove the lowest grade after you have taken Quiz 6.



If you have a scheduled absence for a valid reason (i.e. University function) and will be unable to attend a quiz or exam, you must convey that at least one week before the test and we will schedule a time for you to take it (proof required).

During tests, all work must be your own. You may not use notes or any other external source for your information other than yourself. Any violation of this will be submitted to the Office of Academic Integrity.

We will use Respondus Lockdown for all Exams. Here is a link with information about it:

<https://www.clemson.edu/online/tools/responduslockdown.html>.

And here is how to install and update it:

<https://clemson.app.box.com/s/50yo4k65vtppgr63nrks9icfppud9eru6>

<https://www.youtube.com/watch?v=XuX8WoeAycs>

I will provide a practice so you can test the Respondus Lockdown works on your machine.

Additional information, details, and support will be given before each test.

Assignments

Details will be provided in separate handouts for each assignment.

1. Packback
2. Sampling Airborne Fungi
3. Fungi in News assignment

To get the maximum points, be sure to read the assignment requirements carefully and turn things in before the deadlines.

1. Packback

Participation is a requirement for this course, and the Packback Questions platform will be used for online discussion about class topics. Packback Questions is an online community where you can be fearlessly curious and ask open-ended questions to build on top of what we are covering in class and relate topics to real-world applications.

Packback Requirements:

Your participation on Packback will count toward **10%** of your overall course grade.

There will be a weekly deadline for submissions, which is **Wednesday by midnight**. In order to receive your points per week, you should submit the following per each deadline period:

- 1 open-ended Question per week each worth 33.33% or 4pts of each assignment grade
- 2 Responses per week each worth 66.67% of each assignment grade. You must receive a curiosity score of 50 or higher to receive full credit. You can see your score and improve it while you write.
- Half credit will be provided for responses that do not meet the minimum curiosity score.
 - You get one 'free' missed week, i.e. if you submit nothing one week no penalty. After that, each week missed will count as 0 towards your total. If you are late/miss the deadline you will get 0 that week (you have a week to do it – engage early!).

How to Register on Packback:

An email invitation will be sent to you from help@packback.co prompting you to finish registration. If you don't receive an email (be sure to check your spam), you may register by following the instructions below:

1. Create an account by navigating to <https://questions.packback.co> and clicking "Sign up for an Account"
Note: If you already have an account on Packback you can log in with your credentials.
2. Then enter our class community's lookup key into the "Looking to join a community you don't see here?" section in Packback at the bottom of the homepage.
3. Community Lookup Key: 876e63b2-1ba8-4c89-8489-825feb49049b Follow the instructions on your screen to finish your registration.

Packback requires a subscription fee. Refer to www.packback.co/product/pricing for more information.

How to Get Help from the Packback Team:

If you have any questions or concerns about Packback throughout the semester, please read their FAQ at help.packback.co. If you need more help, contact their customer support team directly at help@packback.co.

For a brief introduction to Packback Questions and why we are using it in class, watch this video:

vimeo.com/packback/Welcome-to-Packback-Questions

Assignments (there are three, continued)

2. Sampling airborne fungi. Details will be provided in a separate handout.
3. Fungi in the News. Details will be provided in a separate handout.

Lecture Requirements

Grading System



Clemson University's grading system is described in the Undergraduate Announcements. Please see the Registrar's web site at <http://www.registrar.clemson.edu/html/finalGrades.htm>. Scores will be calculated following a ten point (%) grading scale:

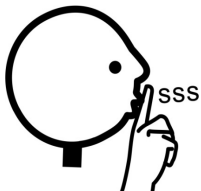
A: 90-100%, B: 80-89%, C: 70-79%, D: 60-69%, F: below 60%.

Grades will be maintained on Canvas.

You can see how you are doing in the course anytime by looking up your scores.

		<u>Points / Percent</u>
Exams (100 points x 3 exams)	=	300 / 60%
Quizzes (20 points x 5 quizzes)	=	100 / 20%
Packback	=	50 / 10%
Sampling Fungi	=	10 / 2%
Fungi in the News	=	40 / 8%
<hr/>		
Total	=	500 / 100%

Learning Environment



I like to have an informal atmosphere in my classes, but I also want an atmosphere of mutual respect.

Be on time. It is disruptive to your classmates and me if you come to class after it has started. In addition, I provide important instruction about exams and assignments at the beginning of class.

Do not pack up until after I indicate the class is over. It only takes seconds to put your things away. This is a large class, if everyone starts packing up before the end of class it is difficult to hear my instruction.

Cell phone use is not permitted. Be an active listener, critical thinker, and participate. Enjoy the break from texts and social media!

Please be respectful of those around you. This is a large class, space is tight, and the room is full. Everything you do affects your neighbors. Do not have conversations, use your phone, or otherwise engage in activities that will bother your neighbors.

If you are distracted because of your surroundings please move to a different seat as well as let me know your concerns. This is a large room and my focus is on presenting the material, thus I often do not hear or see side activities.

Lecture Requirements

Important dates

- M 1/17 Martin Luther King, Jr. day
- W 1/19 Packback begins
- W 1/26 Quiz 1 and signed acceptance of syllabus (on quiz) required. 1st Packback due
- W 2/9 Quiz 2
- W 2/16 Exam 1
- W 3/2 Quiz 3
- W 3/16 Quiz 4
- M 3/21-25 Spring break!
- W 3/30 Exam 2
- W 4/8 FIN due
- W 4/13 Quiz 5. Packback ends
- M 4/25 Quiz 6
- T 5/3 Exam 3/Final 3–5:30pm in regular classroom, not cumulative, mandatory



Lecture Topics

0. Lecture title
Topic

1. Introduction to the course format, policies, and content
Overview of the importance of fungi and human affairs

2. What are fungi?
Introduction to the characteristics of fungi and what makes a fungus a Fungus

3. Lifestyles of the sick and famous
The functional roles of fungi in our environment

4. CT2
Critical thinking and why we need it more than ever

5. Mushrooms and boletes and stink horns, oh my
Diversity of fungi: Basidiomycota

6. Morels, molds and mildews, lichens
Diversity of fungi: Ascomycota

7. The mushroom treatment...to be kept in the dark and fed lots of manure
Cultivating mushrooms

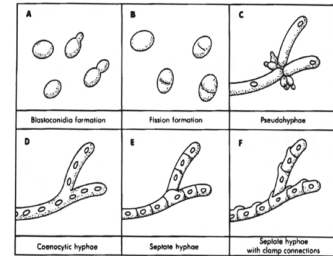
8. Can you eat it?
Wild edible mushrooms, their nutritional values, and mushroom hunters

9. Mushrooms as medicine
Overview of common medicinal fungi and discussion on how different cultures use fungi for health

10. "The discovery of antibiotics is perhaps the most important discovery in the history of therapeutic medicine. Antibiotics have saved more lives than any other medical therapy"
Antibiotics and antibiotic resistance

11. Just remember...all fungi are edible, but some will kill you
Poisonous and hallucinogenic mushrooms, their active compounds

12. Santa Claus, shamans, fairies, and Wasson
Ethnomycology: Discussion on the social values of psychoactives, why some cultures embrace their use while others outlaw it ?



Critical thinking is something we do every day, but like most skills we can improve on it through practice - we will practice throughout the term. Examples of CT2 questions will be included with these Lecture Topics, I will pose several critical thinking questions during most lectures.



Lecture Topics

13. It makes your skin crawl
Medical mycology



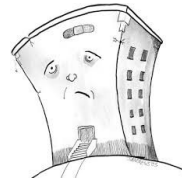
14. Fungal excrement
Yeasts: An overview of fermentation, bread, and alcohol



15. Fungi and food – the good
The advantages of asexual fungi, their ubiquity, and many uses

16. Fungi and food – the bad
Mycotoxins: Historical examples and current concerns and treatments

17. Home sick?
Sick house syndrome and allergens



18. Fungi and food – the ugly
Diseased grain, ergotism, and the Salem Witch Trials

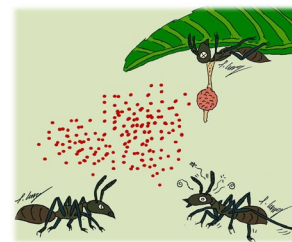
19. “God caused the potato blight but England caused the Famine”
Overview of the Irish potato famine and the religious and political influences



20. Wrath of Grapes and no chestnuts roasting over an open fire
The immense repercussions of imported pathogens

21. Monocultures and the fungi that love them
Examples of epidemics due to monocultures and why monocultures--from turf to timber-- are still common practice

22. Rotten to the core
Ecology of wood rotting fungi and their importance



23. Who's eating who?
The first agricultural societies and fungi and bugs eating each other

24. Fantastic Fungi: The Movie

25. Tradd Cotter from Mushroom Mountain

About me, your instructor:
I am a scientist who studies mycology and plant pathology. I did not plan to study these disciplines but fell in love with them while in college. Although I teach about mushrooms and organize a mushroom club, my research focused on the basic biology of fungi, typically microscopic species.

I love academia because it allows me to study the fields about which I am passionate while also sharing these topics with others. I am excited for students' opportunities to find their passions and experience new things.

	Date	LT #	Lecture Topic (topics will be added throughout term)	Reading
1	Jan 12	1	Syllabus. Introduction to the significance and biodiversity of fungi.	Introduction
2	Jan 14	2	What are fungi?	Chapters 1-2
	Jan 17	3	<i>Martin Luther King, Jr. Day</i> https://www.clemson.edu/centers-institutes/gantt/mlk/ .	Chapters 1-2
3	Jan 19	4	Fungal Ecology. <i>Packback starts.</i>	Chapters 1-2
4	Jan 21	5		Chapters 1-2
5	Jan 24			
6	Jan 26	6	Quiz 1, signed acceptance of syllabus required.	Chapters 1-2
7	Jan 28			
8	Jan 31			
9	Feb 2			
10	Feb 4			
11	Feb 7			
12	Feb 9		Quiz 2	
13	Feb 11			
14	Feb 14			
15	Feb 16		Exam 1	
16	Feb 18			
17	Feb 21			
18	Feb 23			
19	Feb 25			
20	Feb 28			
21	Mar 2		Quiz 3	
22	Mar 4		Midterm evaluations	
23	Mar 7			
24	Mar 9			
25	Mar 11			
26	Mar 14			
27	Mar 16		Quiz 4.	
28	Mar 18		Last day to drop without a final grade.	

	Date	LT #	Lecture Topic	Reading
	Mar 21-25		Spring Break!	
29	Mar 28			
30	Mar 30		Exam 2	
31	Apr 1			
32	Apr 4			
33	Apr 6			
34	Apr 8		<i>FIN due</i>	
35	Apr 11			
36	Apr 13		Quiz 5 Packback stops.	
37	Apr 15			
38	Apr 18			
39	Apr 20			
40	Apr 22			
41	Apr 25		Quiz 6	
42	Apr 27			
43	Apr 29			
	May 3		Exam 3/Final 3–5:30pm in regular classroom	



Interested in learning more about fungi?
 SCUMS is a local group with monthly speakers and forays.
 Go to SCUMSonline.com for more information.