



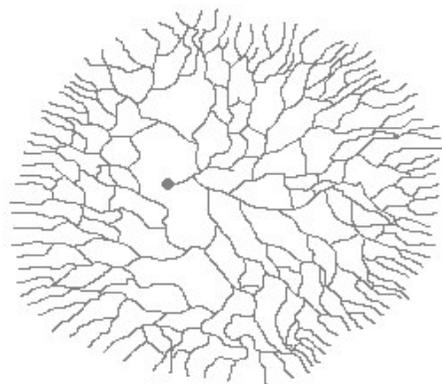
# Fungi and Civilization

**PLPA 2130 - 001 3(3,0)**

**Spring 2018**

**MWF 12:20 - 1:10 pm**

**Poole Agricultural Center (P&A) 174**



## **Instructor and Office Hours**

Dr. Julia Kerrigan

Office: 161-A Poole (P&A) (room is along the outer wall by Lehotsky)

Office hours: MF 1:15 - 2:30, or by appointment

Office phone: 864-656-2640

[jkerrig@clermson.edu](mailto:jkerrig@clermson.edu)

## **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.

### **GENERAL EDUCATION COMPETENCIES**

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

## **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**

Class participation and critical thinking is encouraged through discussion, in-class assignments, and Top Hat responses.

I will post lecture notes ~24 hours before class, you are responsible for printing them and bringing them to class. These notes are an outline and do not replace attending class, listening, and taking notes yourself.

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.

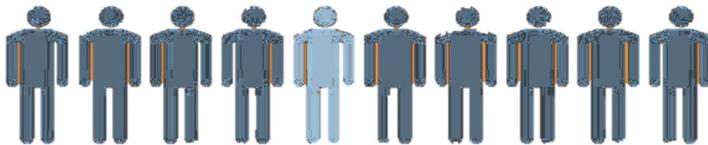
This class is participating in the Clemson Thinks2 (CT2) campus-wide Quality Enhancement Plan that focuses on undergraduate critical thinking, a skill that is invaluable for your success in college and in your career pursuits after graduation.

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

You will take the California Critical Thinking Assessment test (details provided elsewhere) 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, or on handouts.

Typically, poor class attendance is reflected in grades.

Ten percent (10%) of your final grade will be based on participation via Top Hat.

Attendance will not be taken every, but on the days it is taken if you are late or not in attendance you will not get points for that day.

I prefer you attend every class, but I know things happen so I will not count the first three absences, regardless of the reason. If you have extenuating circumstances, such as a prolonged medical condition, with documentation, I will make exceptions based on the situation. Please do not email me that you had an emergency or bring me a note that you visited Redfern, these will not allow for an additional absence. Although I do care, the reason I allow the three absences is to account for these types of situations.



*prepare to engage*

"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.

Top Hat (<https://tophat.com>) has a mobile app that you will download to your phone. You must sign up for a subscription to the Lecture Classroom Response. It is \$24/term (or \$36/year). Click on Get Started button, then the Student button. Enter the Join Code 438308, verify it is the correct course, and sign up for an account and pay the subscription fee.

# Lecture Requirements

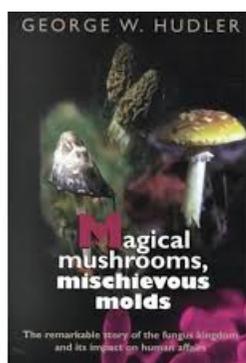
Top Hat student response system will be used to keep track of participation, comprehension, and critical thinking. It helps me to understand what you know and gives everyone a chance to participate in class.

Your answers with Top Hat will account for 10% of your final grade.



I will drop three of the lowest scores to account for unexcused absences (mentioned above), trouble with your phone, etc.

We will start using Top Hat Friday, January 26 so be sure to sign up for a subscription and become acquainted with the app before class that day.



## Textbook

Magical Mushrooms, Mischievous Molds by George Hudler is required.

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

## 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.

You can learn more about Canvas here <https://community.canvaslms.com/docs/DOC-4121>

## Assignments

Details will be provided in separate handouts throughout the term. These include in-class assignments that will be handed in at the end of the class that day and assignments with scheduled due dates.

## Examinations

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

Test content will cover topics in lectures covered since the previous exam. Previous exam questions are posted on Canvas to help you prepare for each test.

No quiz scores will be dropped, each is designed to both help you prepare for the lecture exam and it is well documented that repetition helps with information retention.

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

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. 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 to Dr. Kerrigan as soon as possible and at least one week before the exam. After that no exceptions will be granted unless exemplary conditions exist (proof required).



# 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 determined by examinations, assignments, and participation.

Exams (100 points x 4 exams)	= 400 / 60%
Quizzes (25 points x 4 quizzes)	= 100 / 15%
Assignments (100 points)	= 100 / 15%
Top Hat responses (70 points)	= 70 / 10%
<b>TOTAL</b>	<b>= 670 / 100%</b>

Grades will be maintained on Canvas.



## Class conduct

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.



Smart/cell phones may only be used for Top Hat. Be an active listener, critical thinker, and participate. Enjoy the break from texts and social media!

Laptops, tablets, and similar devices are not permitted. Print the notes ahead of class and focus on listening, taking notes, and contributing.



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.

## Late Arrival

You can expect me to come to class prepared and eager to share new material with you. I expect you to come to class open to new ideas and eager to learn. If I am late for class, you should wait 15 minutes before assuming no class will be held. Check your email for notification. I will make every effort not to be late for class and I hope you will do the same.

# Lecture Requirements

## Important dates

- M 1/15/2018 Martin Luther King, Jr. day
- F 1/26/2018 Top Hat participation begins
- F 1/26/2018 Quiz 1 and signed acceptance of syllabus required
- M 2/05/2018 Exam 1
- W 2/21/2018 Quiz 2
- F 3/02/2018 Exam 2
- M-F 3/19–23 Spring break!
- M 3/26/2018 Quiz 3
- W 4/04/2018 Exam 3
- F 4/20/2018 Quiz 4
- M 4/30/2018 8-10:30am Exam 4/Final not cumulative, mandatory, in the regular classroom



# University Policies

## Class cancellation

As written in the Clemson University's Undergraduate Class Regulations: "Any exam that was scheduled at the time of a class cancellation due to inclement weather will be given at the next class meeting unless contacted by the instructor. Any assignments due at the time of a class cancellation due to inclement weather will be due at the next class meeting unless contacted by the instructor. Any extension or postponement of assignments or exams must be granted by the instructor via email or Blackboard within 24 hours of the weather related cancellation."

## Clemson University's Copyright Statement

"Materials in some of the courses are copyrighted. They are intended for use only by students registered and enrolled in a particular course and only for instructional activities associated with and for the duration of the course. They may not be retained in another medium or disseminated further. They are provided in compliance with the provisions of the Teach Act. Students should be reminded to refer to the Use of Copyrighted Materials and "Fair Use Guidelines" policy on the Clemson University website for additional information: <http://www.clemson.edu/library/reference/qr/patents.html>."

# University Policies

## Clemson University's Academic Integrity Policy

"As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a 'high seminary of learning'. Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form."

## Academic Honesty

You are expected to do your work independently of other students unless instructed to do otherwise by Dr. Kerrigan. You must use the Top Hat app yourself, having other students use it is for you is considered academic dishonesty. Any student suspected of academic dishonesty will be referred to the committee on academic integrity for action.

## Clemson University's Title IX (Sexual Harassment) Policy

"The Clemson University Title IX (Sexual Harassment) statement must be included: Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran's status, genetic information or protected activity in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This policy is located at <http://www.clemson.edu/campus-life/campus-services/access/title-ix/>. Mr. Jerry Knighton is the Clemson University Title IX Coordinator. He also is the Director of Access and Equity. His office is located at 110 Holtzendorff Hall, 864.656.3184 (voice) or 864.565.0899 (TDD)."

## Clemson University's Accessibility Statement

Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the professor know, and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848, by emailing [studentaccess@lists.clemson.edu](mailto:studentaccess@lists.clemson.edu), or by visiting Suite 239 in the Academic Success Center building. Appointments are strongly encouraged – drop-ins will be seen if at all possible, but there could be a significant wait due to scheduled appointments. Students who receive Academic Access Letters are strongly encouraged to request, obtain and present these to their professors as early in the semester as possible so that accommodations can be made in a timely manner. It is the student's responsibility to follow this process each semester. You can access further information here: <http://www.clemson.edu/campus-life/campus-services/sds/>.

# 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. Just remember...all fungi are edible, but some will kill you

Poisonous and hallucinogenic mushrooms, their active compounds

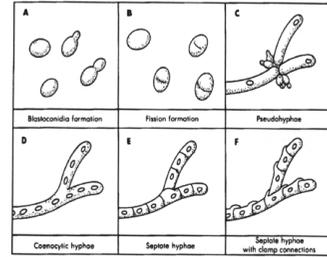
11. Santa Claus, shamans, fairies, and Wasson

Ethnomycology: Discussion on the social values of psychoactives, why some cultures embrace their use while others outlaw it ?

About me, your instructor: I am a scientist who studies mycology and plant pathology. I did not plan to studies these disciplines but fell in love with them while in college.

I was born and raised in Newport Beach, CA but have lived all over the US and visited most states. I think these experiences have allowed me to be open to other viewpoints and see things from a variety of perspectives.

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...



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



# Lecture Topics

## 12. Fungal excrement

Yeasts.: An overview of fermentation, bread, and alcohol



## 13. Fungi and food – the good

The advantages of asexual fungi, their ubiquity, and many uses

14. “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

## 15. Fungi and food – the bad

Mycotoxins: Historical examples and current concerns and treatments



## 16. Home sick?

Sick house syndrome and allergens



## 17. Fungi and food – the ugly

Diseased grain, ergotism, and the Salem Witch Trials

18. “God caused the potato blight but England caused the Famine”

Overview of the Irish potato famine and the religious and political influences

19. Wrath of Grapes and no chestnuts roasting over an open fire

The immense repercussions of imported pathogens



20. Monocultures and the fungi that love them

Examples of epidemics due to monocultures and why monocultures--from turf to timber--are still common practice

21. It makes your skin crawl

Medical mycology



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

