

Kennesaw State University
Department of Molecular & Cellular Biology
Spring
Mycology BIOL 6490-Graduate Students

INSTRUCTOR: Premila Achar

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Lecture Room: Sc 212

Course: Lecture: MWF 11.00-11.50am

Office: RM 526

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Office Hours: On Appointment

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COURSE DESCRIPTION :

Mycology is the study of FUNGI, both macroscopic and microscopic. It includes the study of fungal diseases in higher plants, animals, and human beings as well as pharmacological and industrial products made by economically important fungi. This course includes instruction in cell and molecular biology; histopathology; fungal growth and behavior; environmental mycology; and fungal pathogens and pathogenesis.

COURSE OBJECTIVES:

By the end of the course students will:

1. Demonstrate knowledge in the basic understanding of the biology, taxonomy and phylogeny of fungi.
2. Describe important impacts fungi have on humans and natural ecosystems.
3. Describe the mechanisms and environmental conditions which facilitate fungal growth
4. Compare life histories of plant pathogens.
5. Illustrate the economic importance of fungi in industrial products for humans.

PRE-REQUISITES: pre- or co-requisite in BIOL 3340 or permission of the instructor

TEXTBOOK:

- Alexopoulos, C. J. Introductory Mycology, 1996 (4th ed.) John Wiley & Sons. ISBN 978-0-471-52229-4

RECOMMENDED ADDITIONAL READING

- ReissE,ShadomiHJ,LyonGM.2012.FundamentalMedicalMycology. Wiley--Blackwell.
- Richardson MD, Warnock DW.2004. Fungal Infection: Diagnosis and Management. Wiley. ISBN: 9781405115780.
- Fundamentals of the Fungi (4th ed.), by Elizabeth Morre-Landecker
- Additional readings of original research, reports, and handouts will be assigned during the semester.

ATTENDANCE POLICY:

- Students are expected to attend scheduled classes.
- If you miss a lecture, YOU are responsible for obtaining all notes, announcements, and assignments.

ASSIGNMENTS AND QUIZZES:

- Assessments will take the form of Assignments, Quizzes, Class discussions, Group activities, Researcher papers and Oral presentations.
- Assignments are due before the end of the class period on the due date. An assignment is considered late if it is turned in once the class period of its due date has ended. All late assignments must be given directly to the instructor.
- 5 points will be deducted/day from total points after each due date.
- Assignments may **not** be placed in the box on the instructor's door. Assignments may **not** be submitted electronically, except in extreme circumstances and with the **prior** approval of the instructor.
- All quizzes will be administered at the beginning of the class period on the scheduled day.
- Students are required to purchase scantron sheet from KSU bookshop for each exam.

All quizzes, assignments, exams, and other course materials not collected by students will be shredded and recycled at the conclusion of the final exam period

EXAM POLICY:

Questions in exams are in the form of definitions, descriptions, drawings, problem analyzing and interpretation of data and multiple choices. The final exam is cumulative.

Answer sheets of final exams will be shredded and recycled if not collected within two weeks of the start of the next academic semester.

COURSE GRADING POLICY:

1. Online quizzes will be posted on lecture materials via D2L.
2. Group discussions - focus on issues tailored for the student's heightened understanding of pertinent topics.
3. News group discussions- new information and discoveries on pertinent topics .
4. Exams questions are in the form of definitions, descriptions, drawings, problem analyzing and interpretation of data and multiple choices. The final exam is cumulative.
5. Oral Presentations will be based on ground breaking scientific research- the objective of this assignment is to allow a student to gain in-depth knowledge of a specific

mycological topic, and to share that knowledge with the class via an oral presentation at the end of the course.

6. Individual research paper on selected topics-written

Final grade:

Final letter grades A, B, C...and (%) in the course will be assigned according to the point breakdown: A- 90-100, B- 80-89, C-70-79, D- 60-69, & F<60 %. The final grade for the course will be based on the percentage of points earned out of the total number of points.

| Graded assignments | TOTALS |
|---|--------|
| Exams* | 100 |
| 4 Quizzes @ 25 pts. each (lecture) | 100 |
| Scientific Paper** (presentation- oral) | 100 |
| 1 Research paper**- (individual – written) | 100 |
| Class Group discussions on selected topics | 50 |
| Class Assignments | 50 |
| Grand Total | 500 |

*Date for Final examination for this course is available on Academic Calendar. A deviation to this date, if any, due to unforeseen circumstance, will be notified in class.

Research papers**

Research papers, written and oral, will be selected from the list below:

- Arabidopsis, the Role Model for Fungal Genetics
- The Uniqueness of Fungal spore Dispersal
- Discuss Host-Parasite relationship, and explain: Commensalisms, Mutualism, and Parasitism.
- Deadly Toxins
- Describe Mycoses and Infection
- Opportunistic Yeast infections in Man
- Significance of Primary Systemic Mycoses.

Extra credit

Extra credit may be offered, at the discretion of the instructor throughout the semester and the points earned will be added directly to the cumulative points scored on the exams. Extra credits are given for active participation in class during the course, and leadership in group activity or any other course related class activities.

Changes in policies

Changes to the course's point distribution, schedule, policies, office hours, or any other component may be made throughout the semester. Changes will be announced in class and posted on the course web site.

CONTENT:

| TOPICS | READING ASSIGNMENTS |
|---|--|
| Unit 1 | |
| Introduction - General characteristics of fungi and their importance | Role of fungi in the Ecosystem |
| Fungal life cycles, ecological role of fungi, and human-fungus interactions | |
| Division or Phylum Myxomycota - The Slime Molds | |
| Chytridiomycota: The Chytrids | |
| <i>Quiz 1</i> | <i>Date -TBA-online</i> |
| Oomycota: Water Molds | |
| Division or Phylum Zygomycota - The Bread Molds | Air pollution by house molds |
| Unit 2 | |
| Division or Phylum Ascomycota - The Sac fungi | |
| Saccharomycetales & the filamentous Ascomycetes | |
| Powdery Mildews | Mildew in economically important crops |
| <i>Quiz 2</i> | <i>Date -TBA-online</i> |
| Perithecial fungi | |
| Cup fungi | |
| Ascstromatic fungi | |
| Unit 3 | |
| Division or Phylum Basidiomycota | Edible, Poisonous, and hallucinogenic mushrooms |
| Agaricales: The Mushrooms | |
| Aphylophorales, Bracket fungi | |
| Gasteromycetes, Puffballs | |
| Urediniomycetes & Ustomycetes, rusts and smuts | Mycotoxins in the grain and other food products |

| | |
|---|--|
| Quiz 3 | Dates- TBA-online |
| Unit 4 | |
| Division or Form Phylum Deuteromycota: The Imperfect Fungi | Allergies and Fungal Diseases of Animals & Humans |
| Oral Presentations | TBA (group 1) TBA (group 2) |
| Final Exam Review | TBA |
| Last day of class | TBA |
| Final Exam | TBA |
| | |

Inclement Weather:

In adverse weather situations, find out the status of school closings by checking the following
 weblink:https://portal2.kennesaw.edu/pls/portal92/APP_SNOW.DYN_SHOW_STATUS.show

Plagiarism and Cheating

The above is in accordance to the University policy concerning plagiarism and cheating as stated in the KSU Student Code of Conduct. Refer to KSU document. All instances of academic misconduct, both intentional and unintentional, will be handled through established procedures of the University Judiciary Program (<http://www.kennesaw.edu/judiciary/procedur.shtml>). Students violating the University's academic honesty code are subject to University-level disciplinary action, which may include suspension or expulsion from the University. For exams, any student observed cheating will receive an automatic zero for the entire exam in addition to any penalties assessed through campus disciplinary procedures.

Academic Withdrawal Policy

Students may withdraw from one or more courses anytime before the last three weeks of the semester. However, as of Fall 2004, students will be allowed a maximum of eight total withdrawals if they enter KSU as a freshman. Transfer students will be allowed one withdrawal per fifteen credit hours attempted, for a maximum of eight. Students who choose to pursue a second degree at KSU will be allowed two additional withdrawals. Students who entered KSU before the Fall of 2004 will be allowed one withdrawal per fifteen credit hours attempted for a maximum of eight. To withdraw, the student should

complete an official withdrawal form in the Office of the Registrar. Students who officially withdraw from courses on or before the last day to withdraw without academic penalty will receive a “W”. Students who officially withdraw after the last day to withdraw without academic penalty (and before the last three weeks of the semester) will receive a “WF”, which will be counted as an “F” in calculation of their grade point average.

The only exceptions to these withdrawal regulations will be for instances involving unusual circumstances, which are fully documented. Students may appeal to the academic standing committee for consideration of unusual circumstances.

Students cannot withdraw from their courses and remain in the program; they must carry at least 3 hours of credit. Program staff will not handle course withdrawals. Students must contact their home institutions (where they are registered) and handle the process themselves. They must provide the Faculty Member and Program Director with evidence that they have dropped the course.

Academic accommodations

Any student with a documented disability or medical condition needing academic accommodations of class-related activities or schedules must contact the instructor immediately. Written verification from the [KSU disAbled Student Support Services](#) is required. No requirements exist that accommodations be made prior to completion of this approved University documentation. All discussions will remain confidential.