

VSU BIOL 3500 - Mycology (4 credit hours)
ASU BIOL 3800- Mycology (4 credit hours)

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Course Description: Biology of fungi with emphasis on morphology, taxonomy, physiology, and ecology, including the roles of fungi as both beneficial organisms and as causal agents in plant and animal diseases.

Course Objectives (Educational Outcomes): By the end of the semester, students will be able to

- explain how fungi are similar and different from other organisms
- identify fungal groups based on microscopic and macroscopic characteristics
- describe how fungi are adapted to their environments
- explain the importance of fungi to ecosystems and human culture
- conduct laboratory techniques to aid in fungal observations towards identification
- estimate lichen growth rates at locations across Ireland.

Required Materials:

- Kendrick, W.B. 2001. The Fifth Kingdom, 3rd Edition. Focus Publishing/R. Pullins Co.
- (VSU Only) Nicholas Money. 2002. Mr. Bloomfield's Orchard. Oxford Press.
- Laptop or device to access lecture powerpoints and videos.

Assessments:

Exams: (40%) There will be 2 exams based on lecture materials, assigned readings, field trips and labs. Materials evaluated using other assessment methods (i.e. quizzes, collection project, lichen experiment, etc) will not be included on exams.

Quizzes: (10%) At least eight quizzes will be given over assigned readings, video recordings, lecture topics, &/or sites visited. Your highest 6 grades will count.

Fungal collection project: (30% BIOL 3500/3800, & 20% Honors Option) Students will be required to record (photograph), describe, and ID at least 50 fungal organisms while in Ireland. Fungal identification will be a group effort, but the project (content and report organization) must be 100% individual work. The project will be an electronic or hard copy report of the fungal collection, and is due at the end of the summer session. More information will be provided in class.

Field Notes: (10%) Students will be required to write a one page summary of each field experience.

Lichen Cemetery Experiment: (10%) Students will work in groups to test a hypothesis about the growth of two lichen species developed by students in our 2013 course. Data will be collected at one or more cemeteries visited throughout Ireland. More information will be provided in class.

Book club: (10%) Honors option students will meet with instructors (i.e. over lunch or dinner) in a book club format 1-2x/week to discuss chapters from Mr. Bloomfield's Orchard. A reflective paper related to the book will be due at the end of the summer session. Suggested paper topics include, but are not limited to: The value of popular science books, like Mr. Bloomfield's Orchard, for educating the general public; The value of Mr. Bloomfield's Orchard for an introductory mycology student. Paper topics are due at our last book club meeting.

GENERAL RULES

- Students are required to be on time and attend all lectures, labs, and field trips.
- Students are expected to be coherent (awake and functional) during all class activities.
- Students may not engage in any illegal activity.
- Consequences for failing to follow rules may include any of the following: points off, implementation of a curfew, or dismissal from the program. Consequences are at the discretion of the instructor of record.

Academic Integrity: We follow the Academic Honesty Policies and Procedures of our respective Universities. “Academic Integrity/Honesty” means performing all academic work without plagiarism, cheating, lying, tampering, stealing, receiving unauthorized or illegitimate assistance from any other person, or using any source of information that is not common knowledge.

Tentative Schedule:

| Week | Lecture Topics | Assigned Readings | Quizzes |
|-------------|--|--|----------------|
| 1 | Comparative cell biology, physiology, life-cycle, ecology, phylogeny (Exam 1 material) | Kendrick Chapters 3, 9, 10, 11 (VSU - Money Chapter 3) (Honor’s – Money Chapter 7) | 2-3 |
| 2 | Oomycota, Chytridiomycota, Zygomycota, Ascomycota, Glomeromycota, Basidiomycota (Exam 2 material) | Kendrick Chapters 3-8, 11, 17 (Honor’s - Money Chapters 4, 6, 9) | 3-4 |
| 3 | Fungal pathogens, Edible fungi, Poisonous fungi, Fungi in food and industrial processing, medical mycology (Exam 2 material) | Kendrick Chapters 18-24 (Honor’s – Money Chapters 1, 8, 2) | 2-3 |