

Spring 2020, BIOL 3500/5500 - Mycology (4 credit hours)

Instructor: Dr. Emily Cantonwine, Office: BC 2031, egcantonwine@valdosta.edu, 229-333-5337

Lecture – BC2202 - M, W, F 11:00-11:50 Lab – BC2040 - M 2:00-4:50 Office hours – TWRF 2-3

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 of 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 various environments
- explain the importance of fungi to ecosystems and human culture
- identify important diseases of animals and plants caused by fungi
- compare and contrast beneficial and nuisance fungi
- conduct laboratory techniques to aid in fungal observations towards identification

Required Texts:

- 1) Kendrick, W.B. 2017. The Fifth Kingdom, 4th Edition. Focus Publishing/R. Pullins Co.
- 2) Hudler, G.W. 1998. Magical mushrooms, mischievous molds, Princeton University Press.

Students are required to bring the Fifth Kingdom, syllabus, and lecture notes to lecture and lab.

Important information:

- A grade of C or higher is required in this course to count towards biology degree.
- Midterm is the last day to withdraw from the course.
- If you have need for special arrangements to meet the requirements of this course, please contact the Access Office and discuss this need with me as soon as possible.

Assessment	#	points each	points total	SCALE Depends on Participation*
Exams	4	100	400	A 89.5/90.0 to 100%
Reading Quizzes	10	5	50	B 79.5/80.0 to 89.49/89.99%
Scavenger Hunt Report	1	100	100	C 69.5/70.0 to 79.49/79.99%
Lab Practical	1	100/50*	100/50*	D 59.5/60.0 to 69.49/69.99%
*Honors/Graduate Project		50	50	F < 59.5/60.0%
Total			700	

***Participation Bonus:** Final grades will be rounded to the nearest point (i.e. 89.50 = 90) ONLY for students who lose 5 or fewer participation points. One point is lost for each of these reasons: you are late or fail to sign in before class begins, you exit the classroom during instruction, you use your cell phone for an unapproved reason during class, you sleep during class, or you are absent from class (excused or unexcused). If you are sick with a temperature, or clearly contagious, then I expect you to skip class and lose a point - you have 5 to lose! Only one lab session can be missed (excused or unexcused), as the second missed lab will result in the loss of 5 points instead of 1.

ASSESSMENTS:

Exams: There will be 4 lecture exams, each worth 100 points. Exams will be based on lecture material and may include material from reading assignments (i.e. peer-reviewed articles, blog posts, etc) discussed in class. Exams cannot be taken early unless you have a university related excuse and have informed me of this need at least one week in advance. Make-up exams are an option - If you have an acceptable, documented excuse, you can take an exam of similar difficulty to the rest of the class. If you do not have documentation, or I do not accept your excuse, the make-up exam will be more challenging with essay questions.

Reading Quizzes: Readings from Hudler's *Magical mushrooms, mischievous molds* will be evaluated with quizzes (see the tentative schedule for weekly assignments). Quizzes will occur at the beginning of class as scheduled. Your 10 highest quiz grades will count. Most quizzes will be ~5 questions and you will have 5-7 minutes to complete (don't be late to class!). To do well on the quizzes, pay attention to big picture concepts, and interesting & easy to remember facts while you read. You may refer to the reading and your own hand-written notes during the quiz; however, a digital version of the reading and another person's notes, or notes that were put together by a group, are NOT allowed! There are no make-ups for reading quizzes.

Scavenger Hunt Report: This is a semester-long project that covers a wide diversity of fungal observations. More information will be presented in lab.

Lab Practical: A lab practical will be given to evaluate your ability to identify fungal structures, recognize the taxonomic group that the structure belongs to, and determine the function of the structure (ex. asexual, sexual, etc). All structures presented on the lab practical will be part of the scavenger hunt. Most will be presented in lecture too.

Honors Option/Graduate Project: These Students will learn about systematics techniques via participation in the Mycoflora@VSU project. Most of this instruction and work will be done in Dr. Cantonwine's research lab, outside of class and lab time. Assessment will be based on completion of work assigned and a final report that includes an introduction, methods and results for all parts of the Mycoflora project that are conducted.

GENERAL RULES

Attendance: You are expected to attend all lectures & labs unless you are sick. If you are absent (excused or unexcused), it is your responsibility to obtain missed lecture notes before the next class (Kaltura videos or other student). If any lectures are provided via Kaltura ONLY, students must watch the entire recording before the next class period to receive "participation credit". Missed labs may or may not be made up. See me to discuss options. Missed lecture and lab handouts, if applicable, should be picked up from me in my office.

Lecture notes: Lecture notes are not provided. It is your responsibility to take notes during lecture. I may lecture faster than you can take notes. You are encouraged to come up with a note-taking system to keep up with lecture, or watch Kaltura videos to get any notes that you missed during lecture.

Access to the laboratory: Students are granted access to the Laboratory (BC 2040) during weekdays except for when other lab courses are using the space. A schedule is posted on the lab door.

Food and Drink in the Laboratory and Lecture Rooms: No food, drink, or chewing gum is allowed in the laboratory. These will be disposed of if I see them. My policy in the lecture room is more lenient. You may consume food or drink as long as their use does not cause a disturbance. Each student is responsible for cleaning up after him or herself.

Expectations of student conduct in the classroom and lab: I expect your *full attention* to be focused on the material during instruction. If you cannot do this (for whatever reason), then I expect you to be *respectful* of other students and myself by not being disruptive. Cell phone use is discouraged during lecture and should be on airplane mode in lab! Cell phone photography is encouraged in lab. No photographs, video or sound recordings are permitted in lecture without prior approval.

Academic Integrity: I follow the Academic Honesty Policies and Procedures of the University and the Policy on Plagiarism composed by the Department of Biology. See www.valdosta.edu/biology/documents/biologyplagiarism.doc and www.valdosta.edu/academic/AcademicHonestyPoliciesandProcedures.shtml. "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	Readings (* Required, ^ Reference)	Lab
Jan 13	- Introduction to fungi - Phylogeny - Basidiomycetes	* Friday Quiz - MMMM pg. ix-xvi & Ch. 1 ^ Text pg. vii-ix, Ch. 1, 5	Introduction – Scavenger Hunt
Jan 20	- MLK DAY – No lecture - Basidiomycetes	* Friday Quiz - MMMM Ch. 2 ^ Text Ch. 1, 5, 9, 10, 11, 17	NO LAB
Jan 27	- Basidiomycetes	* Friday Quiz - MMMM Ch. 12 ^ Text Ch. 1, 5, 9, 10, 11, 17	Basidiomycete Lab I
Feb 3	- Basidiomycetes - Catch-up/Review - Exam 1 (Feb 7)	^ Text Ch. 1, 5, 9, 10, 11, 17	Basidiomycete Lab II, Lichen Lab I
Feb 10	- Ascomycetes	* Friday Quiz - MMMM Ch. 3 ^ Text Ch. 1, 4, 6, 7, 11, 12, 16	Lichen Lab II, Ascomycete Lab I
Feb 17	- Ascomycetes	* Friday Quiz - MMMM Ch. 4 ^ Text Ch. 1, 4, 6, 7, 11, 12, 16	Ascomycete Lab II
Feb 24	- Ascomycetes	* Friday Quiz - MMMM Ch. 5 ^ Text Ch. 1, 4, 6, 7, 11, 12, 16	Scavenger Hunt day
March 2	- Ascomycetes (yeast) - Catch-up/review - Exam 2 (March 6)	^ Text Ch. 1, 4, 6, 7, 11, 12, 16	Microbrewery lab
March 9	- Glomeromycota	* Friday Quiz - MMMM Ch. 14 ^ Text Ch. 1, 2, 3, 17	Glomeromycota Lab
March 16	- SPRING BREAK		NO LAB
March 23	- Zygomycetes	* Friday Quiz - MMMM Ch. 13 ^ Text Ch. 1, 2, 3, 17	Zygomycete Lab
March 30	- Chytridiomycota	* Friday Quiz - Handout, 2017 Golden Goose Award winner Dr. Joyce Longcore ^ Text Ch. 1, 2, 3, 17	Chytridiomycete Lab + Other groups
April 6	- Fungus-like organisms - Catch-up/review - Exam 3 (April 10)	^ Text Ch. 1, 2, 3, 17	Scavenger hunt Day
April 13	- Medical mycology & medicinal fungi	* Wednesday Quiz - MMMM Ch. 7 * Friday Quiz - MMMM Ch. 8 ^ Text Ch. 18-24	Scavenger hunt day
April 20	- Psychotropic and poisonous fungi	* Wednesday Quiz - MMMM Ch. 6 * Friday Quiz - MMMM Ch. 11 ^ Text Ch. 18-24	Field Trip/Guest Lecture Scavenger Hunt Report Due
April 27	- Fungal products	* Wednesday Quiz - MMMM Ch. 9 * Friday Quiz - MMMM Ch. 10 ^ Text Ch. 18-24	NO LAB
May 4	Exam 4 (Thursday, May 7, 10:15-12:15)		LAB PRACTICAL (Monday)