Biology of Macrofungi (BIOL 4010/6010) – Summer 2014 (July 8-29)

Lecture: M-F, 11:00am - 1:35pm
Lab: M-R, 2:00pm - 4:35pm (No Friday lab due to field trip hours)
Required Field Trip to University of North Georgia ($150 additional cost): July 14-17

Instructor: Dr. Emily Cantonwine; Office: BC 2031
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Email: egcantonwine@valdosta.edu
Office hours: 4:35-5:00pm M-R

Required Materials (unless otherwise stated):

- J.H. Petersen. 2013. The Kingdom of Fungi. Princeton University Press.
- Kimbrough, J.W. 2000. Common Florida Mushrooms. University of Florida, IFAS/Extension.
- Digital camera
- Pocket knife
- Ruler (provided by instructor)
- Plastic fishing tackle box (provided by the instructor)
- Mushroom collecting basket (medium sized cardboard box acceptable replacement)
- 10X handlens (recommended)

Learning Outcomes

- Students will be able to identify mushrooms with dichotomous keys based on ecological, macroscopic and microscopic data.
- Students will be able to use mycological terminology to describe characteristics of macrofungi.
- Students will be able to predict ecological role of macrofungi based on mushroom location and genera identification.
- Students will be able to identify by sight or description a selection of edible or poisonous mushrooms.
- Students will be able to match toxins to species or physiological response in humans.
- Students will be able to group mushrooms by systematic relatedness.

Important Information

- A grade of C or higher is required in the course to count towards a biology degree.
- The last day to withdraw from the course is July 17.
- If you have need for special arrangements to complete the requirements of this course, please contact the Access Office for Students with Disabilities, and discuss this need with me.

GRADE:	**SCALE**
Exams (2): 100 pt each*	**A 90-100%**
Lab Practical: 100 pt*	**B 80-89.9%**
Taxonomy Homework: 100 pt	**C 70-79.9%**
Macrofungi Collection: 100 pt*	**D 60-69.9%**
Topic Presentation: 50pt	**F <60%**
Participation: 50 pt	

***Some differences for 4010 students and Honor's Option/6010 students.**

Assessments

Exams. There is a mid-term and final exam. The final exam is cumulative.

Lab Practical. An assessment of lab skills (those required to complete the mushroom collection project), and knowledge of vocabulary and genera from homework.

Taxonomy Homework. For each taxon assigned (HW 1-7), students will dissect the meaning of the Latin name, describe the characteristics that define the group, make note of unique field or lab observations helpful for identification, and come up with a plan to distinguish mushrooms in that group from those groups already covered. Homework is due at the beginning of lecture on the date listed in the schedule. The assignment will be returned the next lab period and discussed. For HW 8-10, students will identify of the fruiting body forms within the systematic group assigned (or taxa for a form group), and provide a list of other taxa where the unique forms are classified. *Please note: Each student is expected to complete homework assignments on their own. Copying defeats the purpose of the assignment and will result in a poor grade if suspected.

Macrofungi Collection. More information will be provided in lab on 7/10.

Topic Presentation. Each student will select a topic related to macrofungi and prepare either a 15min powerpoint presentation for class or a scientific poster. Students will also provide the instructor & fellow students with 3 possible exam questions related to the content presented. The educational quality of the questions will be part of your Topic Presentation grade. Two of the questions may be in any format, but at least 1 must require a brief written response (2-3 sentences). A selection of the questions provided will show up on the final exam.

If a student elects to do a poster, it must be done on powerpoint and be an appropriate size to be printed at the VSU print shop (Instructor can advise). There is a fee to print, and this cost is the student's responsibility.

The instructor must approve topics by the end of the day Monday July 14th. Topic information must be (mostly) gathered from peer-reviewed informational resource(s), i.e. primary articles, review articles, peer-reviewed books, and copies of these resources are due to the instructor at the time of presentation.

Topic ideas include but are not limited to reviews of the ecology and biogeography of a species, mushroom byproduct, research technique, ecological strategy, or current research article.

Participation. This grade will be based on your participation (which includes your attention) during the lecture, laboratory, discussions, and field trip. The following rubric will be used:

- Perfect attendance and participation exceeds expectations = 50 pt
- Perfect attendance and participation meets expectations = 45 pt
- Perfect attendance but participation does not meet expectations, or 1 absence and participation meets expectations = 40 pt
- This grade decreases by 5 points for each additional absence and by 1 point for each unapproved use of a cell phone [confirmed or suspected].
    - Examples of an unapproved use – Looking at your phone when I am presenting course content or directions of any sort. Texting, reading a text, making a call, or searching a website that is not relevant to the course.
    - Examples of an approved use – Using mushroomexpert.com or mushroomoberver.org while in field or lab (when I am not instructing). Using your phone to take photos or record data.

General Rules

Attendance – Student attendance is taken into account in the participation grade. Because the material that is covered each day equals that of a week during the regular semester, all absences, excused or unexcused, will affect the participation grade. Tardiness to class or lab will also affect participation.

Lecture Notes – It is your responsibility to take notes during lecture. Students with an excused absence can see me for missed notes. Laptops are not allowed for note taking.

Access to the Lab – The code to get into the lab is 268269, or botany. Students may use the lab anytime the building is open.

Food & Drink in Lecture and Lab – No food or drink is allowed in the laboratory. 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. A bag of chips is disturbing! Each student is responsible to clean up after him or herself.

Student Conduct – I expect your full attention to be on the material during instruction. If this is not possible, then I expect you to be respectful of other students and myself by not being disruptive. See the participation grade rubric for my cell phone policy.

Academic Integrity – I follow the Academic Honesty Policies and Procedures of the University.

Tentative schedule

Day	Lecture	Lecture Readings	Lab Subject	Lab Readings	Homework Due @ 11
T (July 8)	Introduction to fungi, cell biology, ecology, fruiting body forms, websites	Petersen 1-23; 34-45, 194-221	Macroscopic morphology – Collecting methods, macroscopic & chemical tests.	Mushroomexpert.com - Collecting for study - Describing mushrooms and keeping a journal - Determining odor and taste - Chemical reactions	
W	Spore production & dispersal mechanisms, life cycles, microscopic features for diagnosis		HW1 discussion, Microscopy, microscopic structures	Mushroomexpert.com - Making spore prints, - Using a microscope - Identifying mushrooms	HW 1 Amanita, Agaricus, Russula, Lactarius
R	Basidiomycete classification	Petersen 102-187	HW 2 discussion, Macrofungi collection project		HW 2 Pluteus, Lepiota, Chlorophyllum
F	Basidiomycete classification continued		NO LAB		HW 3 Cortinarius, Tricholoma, Inocybe
M (July 14)	Drive to UNG		HW 3 & 4 discussion (PM)		HW 4 Marasmoid mushrooms, Mycenoid mushrooms
T	--- Evening discussions		HW 5 & field collection discussion (PM)		HW 5 Hygrocybe, Hygrophorus
W	--- Evening discussions		HW 6 & field collection discussion (PM)		HW 6 Armillaria, Gymnopilus, Pleurotus
R	Return to VSU		Return to VSU, Sample processing		No HW due
F	Ascomycete classification	Petersen 46-83, 98-99	NO LAB		HW 7 Entalominoid mushrooms, Coprinoid mushrooms

M (July 21)	**Exam 1 (July 8-18 lecture content)**; Introduction to Systematics		HW 7 discussion, Collect; sample processing & initial verification		NO HW due
T	Current Systematics	BV articles. Mushroomexpert.com	HW 8 discussion, Collect; sample processing & initial verification		HW 8 Family Agaricaceae
W	Poisonous mushrooms & toxins	BV article	HW 9 discussion, Collect; sample processing & initial verification		HW 9 Order Russulales
R	Edible & medicinal mushrooms	BV article	HW 10 discussion, Collect; sample processing & initial verification		HW 10 club fungi
F	TBA		NO LAB		
M (July 28)	Topic presentations		Turn in Macrofungi Collection, Topics Poster Session, Edible mushroom sampling		
T	**Exam 2 (Cumulative)**		**Lab Practical**		