# BZ333 – Introductory Mycology Course Syllabus Summer 2023 (June 12<sup>th</sup> – July 9<sup>th</sup>, 2023)



## **Meeting times and locations:**

In person: M/W 10:00am-12:00pm; 1:00pm-5:00pm; BIO128

Online (asynchronous): ~12 hours of work per week

## **Instructor information:**

Lecture & Lab Instructor: Dr. Ami Wangeline Email: <u>ami.wangeline@colostate.edu</u>

**Office Hours: By appointment via email** In person – BIO246 or online via teams

**Communicating with the instructor:** please email the instructor using the information provided above. **Emails will typically be returned within two work days or less.** 

# **Course information:**

Prerequisite: BZ 120 or LIFE 103.

**Course Description:** Groups of fungi including classification, structure, morphogenesis, phylogeny, and genetics and reproduction.

### **Course Competencies:**

- Understand core biological concepts relating to fungi (e.g., structure vs. function, energetics, genetics, evolution, decomposition, symbiosis).
- Prepare and examine tissue slides using compound light microscopes.
- Compare and Contrast the reproductive strategies of different fungal groups (evaluating the costs and benefits of asexual versus sexual reproduction)
- Discuss the physiology of metabolism, nutrition and secondary compounds in fungi.

- Describe, with a fundamental understanding, the relationships fungi and their environments.
- Compare and contrast the major phyla (Basidiomycota, Ascomycota, Chytridiomycota and groups previously in the Zygomycota).
- Discuss the interactions of fungi with other organisms including humans.

### Instructional Materials:

- Required Textbook: The Fungi, 3<sup>rd</sup> Edition (Paperback ISBN: 9780123820341; eBook ISBN: 9780123820358)
  - Required CANVAS website. The majority of course materials will be delivered via Canvas.
    - You will need your eID to login in: <u>http://canvas.colostate.edu</u>
    - $\circ$   $\:$  If you are registered for BZ333, this course will be in your listing.
    - If you are new to CANVAS, please take the time to review the CANVAS tutorials so you can get the most out of this resource! The syllabus, announcements, lectures, grades, and additional resources will be posted on CANVAS

Additional Requirements: We will have multiple lab activities and field trips that will require time outside of our normal meeting times. Some of these will be required and others optional. Make sure to discuss any conflicts with the instructor as soon as possible.

### **Course policies:**

**Course Attendance Policy:** Student participation in all types of instructional sessions is expected. Attendance is **required** for all face-to-face lab meetings. Missed assignments and lab work will likely result in missed points, and may negatively impact your grade. **Missing more than ONE laboratory session during the summer course will result in automatic grade of 0% for the lab.** 

**Class cancellation announcements:** If class is cancelled, an email will be sent out via Canvas with instructions, and the information will also be posted in our class announcements.

Academic integrity: This course will adhere to the <u>CSU Academic Integrity/Misconduct</u> policy as found in the General Catalog and <u>the Student Conduct Code</u>. Academic integrity is the moral code or ethical policy of academia. This includes values such as avoidance of cheating or plagiarism (<u>https://www.plagiarism.org/</u>) and maintenance of academic standards. Maintaining academic integrity involves: creating and expressing your own ideas in course work; acknowledging all sources of information; completing assignments independently or acknowledging collaboration; accurately reporting results when conducting your own research or with respect to labs; and honesty during exams.

Integrity is of the utmost importance in both science and education, and all evidence of cheating will be documented and will become part of your permanent CSU record. Further, it will carry an academic consequence (the severity of the penalty will be at the instructor's discretion and may include receiving a failing grade for the assignment and/or course, academic probation, suspension, or expulsion.).

Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. Because academic integrity is so central to our mission as students, teachers, scholars, and citizens, I will ask that you affirm the CSU Honor Pledge as part of completing your work in this course.

**Make up and Late Work Policy:** Exams, discussions, labs activities, and other in-class activities are difficult to replicate and typically cannot be made up after they are administered in class.

- **Exams:** All exams cannot be made up after they are administered to the class during the assigned dates. The window of availability is to allow for emergencies. If you wait until the end of the day Friday and then have something come up, the points will be lost.
- Labs: Laboratory attendance is very important. If you are not in lab, you are missing a significant portion of the information for the semester. Labs are impossible to set up at alternate times, as often times they use living materials. Therefore, if you miss the lab, you miss the points associated with it (e.g., Lab assignment). You are expected to attend all laboratory sessions. Missing more than ONE laboratory session during the summer course will result in automatic grade of 0% for the lab. Due to the nature of this lab, it may be necessary to come in outside of your scheduled lab time to check on cultures later in the week.
- Late Work: All work turned in late will be docked 10% per day until turned in to the instructor (including weekends and holidays).

### Code of Conduct:

By registering for this class, you are entering into an agreement between yourself and the instructor (me) regarding our respective roles in achieving the learning objectives articulated above in BZ 333 and earning the grade in the course that you desire. As an instructor, my role is to organize and present course material in a way that guides your progress through the material and helps you to gain practice in the course objectives articulated above. As a student, your role is to attend class and be engaged with the material, lab work and conversations surrounding the content. If you wish to do well in the course, you should plan on attending class, reviewing all material in a timely manner, participate in class discussions, review study guides, complete Canvas assessments thoroughly, form study groups, and study by \*practicing\* rather than simply reviewing your notes.

Because some of our classroom interactions are conducted online (via Canvas), please review the core rules of netiquette for some guidelines and expectations on how to behave in an online learning environment.

#### **Professionalism:**

- Appropriate attire wear attire you want to be seen in and more importantly will make you feel confident and serious about the work you will be doing. We ask that you always at a minimum wear shirts and short/pants.
- Attendance and punctuality establish and maintain a regular schedule; maintain a calendar/planner; arrive before the appointed start time; greet instructors and peers; provide prompt notification of absences.
- *Respectful demeanor and interactions* demonstrating respect and deference to instructors/peers; conducting oneself in a manner consistent with the values and ethics you would want to be treated as a professional.
- Professional language and communications demonstrate professional oral and written (including electronic) communication skills; using discretion and appropriate professional language in addressing instructors/peers; use complete sentences, proper sentence structure and grammar; check work for appearance, completeness and spelling; avoid slang.
- *Emotional self-regulation* attend to one's emotional reactivity and triggers; take responsibility for one's feelings/behavior and avoid blame; avoid the expression of raw emotions; be personally and professionally centered when engaging with instructors/peers; demonstrate a willingness to resolve difficult relationships and modify one's behavior accordingly; do not expect special consideration or entitlement.
- *Responsiveness to feedback* demonstrate non-defensive receptivity to feedback and suggestions; show a willingness to be self-reflective and self-corrective.

- Appropriate effort and initiative collaborate with instructors/peers to identify and complete weekly tasks; complete higher
  priority tasks before secondary tasks; follow through on appointed tasks and activities; spend course time on professionally
  useful activities; show a genuine interest through engagement with course material, instructors and peers; demonstrate
  intellectual and professional curiosity and insightfulness.
- Accountability, integrity and ethics be accountable to the syllabus, policies and expectations of LCCC, this course and its
  instructors; complete tasks and activities in a professional, high quality and timely manner; speak and act in manner the
  upholds the integrity of this course, the degree and institution it serves; maintain professional integrity and honesty in your
  work, activities and interactions; represent accurately the work and task you have completed verse those of others; seeking
  appropriate consultation when in doubt.

# Grading and work expectations:

Standard grading: A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 59% and below. To earn an A, you must have high performance in all graded parts of the class (nothing will be dropped or adjusted beyond what is already in the syllabus).

#### Point breakdown:

Lecture			
Attendance/effort	16 x 5 pts each	80 pts	
Lecture exams	3 x 100 pts each	300 pts	combo of multiple choice, true/false, label diagrams,
			matching and essay – 60 minutes timed
Final exam		150 pts	50 points from new material, 100 points from previous
			material
Current topics presentation		100 pts	group presentation on fungal topics of interest
Presentation topic approval		10 pts	
Fungi in the news		(up to 25	Extra credit for posts and interactions – see discussion
discussion board		points)	for specifics

#### Lab

Lab contracts		10 pts	
Lab activities	8 x 25 pts each	200 pts	sterile technique, fungal isolation, culture and
			identification
Culture ID/pure isolate	2 x 50 pts each	100 pts	
Grand Total		950 pts	

#### Notes:

- You will be tested on material from the assigned textbook chapters, online lectures and activities, our in-class discussion and laboratory coverage of the topic.
- Rounding is not automatic, it is awarded based on attitude, improvement and attendance
- Extra credit is only provided at the instructors discretion, and when all previous assignments are completed, and a student is borderline between grades

## **Inclusive Learning**

I am committed to the principle of universal learning. This means that our classroom, our virtual spaces, our practices, and our interactions will be as inclusive as possible. Mutual respect, civility, and the ability to listen to others carefully are crucial to universal learning. CSU provides many resources to help students succeed and EVERY student deserves the help they need. I have compiled a comprehensive list of resources available on the Canvas page. Please see the "Resource" page to find those resources and DO NOT HESITATE to reach out for help or share your concerns.

Accommodations: If you are a student who will need accommodations in this class, please reach out to Student Disability Center (SDC) immediately, and contact me to discuss your individual needs. Any accommodation must be discussed in a timely manner prior to implementation. A verifying memo from The Student Disability Center may be required before any accommodation is provided.

The Student Disability Center has the authority to verify and confirm the eligibility of students with disabilities for the majority of accommodations. While some accommodations may be provided by other departments, a student is not automatically eligible for

those accommodations unless their disability can be verified and the need for the accommodation confirmed, either through SDC or through acceptable means defined by the particular department. Any student who is enrolled at CSU, and who self-identifies with SDC as having a disability, is eligible for support from SDC. Specific accommodations are determined individually for each student and must be supported by appropriate documentation and/or evaluation of needs consistent with a particular type of disability. SDC reserves the right to ask for any appropriate documentation of disability in order to determine a student's eligibility for accommodations as well as in support for specific accommodative requests. The accommodative process begins once a student meets with an accommodation's specialist in the SDC.

# Laboratory Use and Safety:

Students in this course will be using chemicals which require precautions and should consult with the instructor for safe usage. Use of these materials requires precautions that must be adhered to for the safety of the student, and others in the classroom. No students are allowed in the Biology prep room unless accompanied by a staff member.

- Your work area should be clear of all equipment (it is all cleaned and put away) and wiped down with a paper towel and the cleaning solution provided.
- All prepared slides should be returned to the appropriate box. All wet mount slides should be washed, dried, and returned to the appropriate box.

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- All equipment should be washed and dried (if applicable), and returned to the designated area for storage.
- All hair should be tied back and care exercised when using any open flame.
- Any trash you generate must be disposed of properly (in the trash can, hazardous waste bag or glass waste container provided).
- Food and drink are not allowed during active lab. Food or drink may be allowed during non-lab activities based on the instructor's discretion.
- Any electronics not being used for learning should be turned OFF and put away during the class period.
- Children or guests in the classroom are discouraged during lab, but may be allowed on a case by case basis.

# Tips on Being Successful in BZ333:

- This can be difficult class for many students because the pace is fast and so much is covered.
- Give yourself as much time as possible to engage with the content, particularly the vocabulary. Create specific times to study each week.
- There is a lot of vocabulary in this class to memorize both in description and in identification. Make sure you develop a mechanism to commit these items to memory early.
- The exams will cover the textbook chapters, the lectures and any lab activities specified.
- All of the powerpoint slides are all on Canvas in handout format. Have them available (print or download) prior to watching the lecture to make sure your notes are focused on content, not what is listed on the slide.
- After watching a lecture or reading a chapter, go over your notes, writing a quick summary of the main points and any questions that you have.
- The volume of content, level of difficulty and/or pace can make this course challenging. Do not get behind: you may not be able to catch up. Get help early and often as needed.

**General Course Outline** 

**Disclaimer:** Changes to this schedule may be necessary as this course progresses. When a need to change the schedule arises students will be informed in advance via announcements in class and/or via Canvas.

# Course Schedule (P= in person; H= at home/online):

	Date/Topic		Morning	Afternoon			
Week 1		Online	<ul> <li>Lectures: 1- Anatomy, 2- Spores and reproduction</li> <li>Read: Chapters 2, 3</li> </ul>	1			
	Fungal anatomy & reproduction	Μ	<ul> <li>Lecture - Introduction to the class; safety and academic integrity</li> <li>Lecture - Sterile technique</li> </ul>	<ul> <li>Microscopy</li> <li>Start cultures</li> <li>Take home plates for air culture</li> </ul>			
		W	<ul><li>Spore examination</li><li>Slime molds</li></ul>	<ul> <li>Return plates, bring collected plant tissue</li> <li>Plant tissue clearing, plant tissue fungal isolation</li> <li>Spores continued</li> </ul>			
		Exam	• Th-F online using lockdown browser. 60 minutes timed				
Week 2	Fungal diversity	Online	<ul> <li>Lectures: 3 – Classification and Ascomycota, 4 – Basidiomycota and mycorrhizae, 5 – Lower Fungi (Mucoromycota and Chrytridiomycota)</li> <li>Read: Chapters 1, 7</li> </ul>				
		Μ	<ul> <li>Bring in water for chytrid baiting</li> <li>Mucoromycota</li> <li>Chytridiomycota</li> <li>Transfer <i>Pilobolus</i></li> </ul>	<ul><li>Ascomycota</li><li>Observe/sub-culture plates</li><li>Continue Lower fungi</li></ul>			
		W	<ul><li>Basidiomycota</li><li>Mushroom dissection</li></ul>	<ul> <li>Continued all fungi labs</li> <li>Observe <i>Pilobolus</i></li> <li>Soil dilution plates</li> </ul>			
		Exam	Th-F online using lockdown browser. 60 minutes timed				
Week 3	siology &	Online	<ul> <li>Lectures: 6 - Genetics, 7 – Physiology and nutrition</li> <li>Read: Chapters 4, 5</li> <li>Movie</li> <li>Submit presentation topic via email by 5:00pm Tuesday.</li> </ul>				
	ıgal nutrition, phys genetics	Μ	Mushroom foraging field trip – transportation will be provided (you can bring in wild samples for ID practice, and if you collect two wild mushrooms with spore prints and ID them, they can replace one pure culture/ID for your assignment).				
		w	<ul><li>Symbioses</li><li>Complete dilution plates</li></ul>	<ul> <li>Catch up and review</li> <li>Work on unknowns</li> <li>Work on presentations</li> </ul>			
	Fu	Exam	• Th-F online using lockdown browser. 60 minutes t	imed			
Week 4	Fungi and humans	Online	<ul> <li>Lecture: 8 – Special topics</li> <li>Read: Chapters 6, 12</li> </ul>				
		Μ	<ul><li>Work on unknowns</li><li>Work on presentations</li></ul>	<ul> <li>Finish all remaining lab work</li> <li>Last chance to re-culture if necessary</li> <li>Last day for Fungi in the news posts</li> </ul>			
		w	<ul> <li>Presentations (topics in Chapter 8, 9 or 11 + supporting primary literature)</li> </ul>	<ul> <li>Submit pure cultures</li> <li>Presentations (topics in Chapter 8, 9 or 11 + supporting primary literature)</li> </ul>			
		Exam	• Th-F online using lockdown browser. 90 minutes t	imed			