

Mycology
(Lecture and Laboratory, BIOL 429 and 429L)
Fall 2016
Wed. & Fri. 2:00-3:15pm, KESH 235 (lecture)
Wed. & Fri. 3:30-4:50pm, KESH 235 (lab)

Instructor: Dr. Vlad Gulis

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Office Hours: Tue, Thu. 12:30-3:30 or contact me for an appointment (you may expect a reply within 24 hours during the normal working hours).

Prerequisite: BIOL 122

Textbook: Webster J. and Weber R.W.S. 2007. Introduction to Fungi. Cambridge University Press (required).

Other reference materials (recommended):

Vargas N., Cárdenas M., Jiménez P., Noyd R.K., Restrepo S. 2015. Mycology Guide: Key Terms and Concepts, 2nd edition.

Arora D. 1986. Mushrooms Demystified. Ten Speed Press, 2nd edition.

Lab Manual: No lab manual required. Handouts will be provided by the instructor. However, you will need a loose-leaf binder in order to keep track of them.

Moodle: Moodle will be used for this class. A copy of the syllabus, lecture notes, points/grades and other pertinent information will be posted. Check it regularly.

Course description: This course is designed as an introductory course in aspects of fungal taxonomy and biology. The lecture portion of the course will begin with a general introduction to the fungi and proceed into a taxonomic survey of the different groups of fungi and fungal-like organisms. Major emphasis will be placed on structure - function relationships of selected genera within different fungal groups. The laboratory will supplement the lecture in this regard and will introduce basic techniques of isolation, culture and identification of fungi. The lecture portion of the course will conclude with discussions of fungal physiology, ecology and medical mycology.

Course objectives: To ensure that students:

- understand major topics and principles in mycology
- understand and explain the critical importance of fungi in the ecosystems and for humans
- have sufficient background to take more advanced courses in the area of mycology, microbial ecology, microbiology, either as an undergraduate or graduate student or as a student in a medical or other health-related school

Student learning outcomes: By the end of the semester, a student

- will be able to demonstrate a general understanding of major topics and principles of mycology including
 - fungal cell structure
 - fungal metabolism
 - fungal evolution and diversity
 - fungal ecology
 - fungal interactions with humans and select fungal diseases
- will be able to recall facts, compare, contrast and discuss various fungal groups, concepts and processes of relevance to modern mycology
- will master various “hands-on” mycological techniques

Assessment and Grading: Students will receive a combined grade for both lecture and lab. The student’s performance will be assessed *via* three exams with accompanying lab practical exams during the semester as well as a semicumulative final exam. Lecture exams will be short answer and brief discussion type questions, and will only include material covered in lecture. Lab notebook, collection and participation will also be taken into account.

Point distribution

Assignment	Points
Exam 1 / Lab practical 1	100/20
Exam 2 / Lab practical 2	100/20
Exam 3 / Lab practical 3	100/20
Final exam	140
Lab notebook, collection and participation	100
Total	600

Grading scale

Grade	%
A	90-100
B+	85-90
B	80-85
C+	75-80
C	70-75
D+	65-70
D	60-65
F	0-60

Confirmed cheating or plagiarism on an exam or assignment will result in a grade of “F” for that assignment, the entire course and/or reporting to the university. In general, academic misconduct will not be tolerated. See CCU Student Code of Conduct for details.

Attendance: Attendance is expected and will be monitored *via* a sign-off sheet. I will follow the CCU catalog policy that “An instructor is permitted to impose a penalty, including assigning the grade of F, for unexcused absences in excess of 25% of the regularly scheduled class meetings”. Make-up exams are only given for university-excused absences. See current CCU catalog for details. Lab attendance is mandatory and there are no make-ups for labs.

Smartphones: Use of smartphones during the class is both disruptive and disrespectful to your colleagues. You will be asked to leave the class after the second offense.

Disabilities: Students with disabilities should see me at the beginning of semester so special arrangements can be made, if necessary. Also, please contact Office of Disability Services.

Tentative Schedule

Date	Lecture Topic*	Lab Topic*
Wed, Aug. 24	Syllabus, Introduction	Introduction
Fri, Aug. 26	General characteristics and biology of fungi	General methods, microscopy
Wed, Aug. 31	Dictyosteliomycota	Cellular slime molds
Fri, Sep. 2	Myxomycota	Plasmodial slime molds
Wed, Sep. 7	Oomycota	Water molds
Fri, Sep. 9	Oomycota	Downey mildews
Wed, Sep. 14	Chytridiomycota	Chytridiomycota
Fri, Sep. 16	Chytridiomycota	Chytridiomycota
Wed, Sep. 21	Exam 1	Exam 1
Fri, Sep. 23	Zygomycota	Zygomycota
Wed, Sep. 28	Zygomycota	Zygomycota
Fri, Sep. 30	Ascomycota, yeasts	Saccharomycotina
Wed, Oct. 5	Ascomycota II, cleistothecial fungi	Eurotiomycetes
Fri, Oct. 7	No Class: Student Holiday	No Class: Student Holiday
Wed, Oct. 12	Ascomycota III, perithecial fungi	Sordariomycetes
Fri, Oct. 14	Ascomycota IV, apothecial fungi	Leotiomycetes, Pezizomycetes
Wed, Oct. 19	Ascomycota V, pseudothecial fungi	Dothideomycetes
Fri, Oct. 21	Exam 2	Exam 2
Wed, Oct. 26, last day to drop with a "W"	Basidiomycota, rusts and smuts	Rusts and smuts
Fri, Oct. 28	Basidiomycota II	Bracket fungi, mushrooms
Wed, Nov. 2	Basidiomycota III	Puffballs, bird's nest
Fri, Nov. 4	Fungal genetics and molecular phylogenetics	DNA isolation
Wed, Nov. 9	Growth and nutrition	DNA amplification, purification
Fri, Nov. 11	Reproduction and spores	Processing sequences
Wed, Nov. 16	Exam 3	Exam 3
Fri, Nov. 18	Mycorrhizae, endophytes	Mycorrhizae
Wed, Nov. 23	No Class: Thanksgiving Break	No Class: Thanksgiving Break
Fri, Nov. 25	No Class: Thanksgiving Break	No Class: Thanksgiving Break

Wed, Nov. 30	Lichens	Lichens
Fri, Dec. 2	Ecology of aquatic hyphomycetes	Collections and notebooks are due
Wed, Dec. 7	Medical mycology	No lab
Wed, Dec. 14	Final Exam (1:30pm)	

*tentative and subject to change at the discretion of the instructor