

Syllabus

Biology of Ascomycetes and Basidiomycetes (Bot. 359)

Spring 2017

Instructor: Terry W. Henkel, Ph.D.

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Office Hours: 1-3 pm Monday & Wednesday, or by appointment

Meeting Times: Lecture Section 1: Monday & Wednesday 11-11:50 am, Art Building 102

Lab: Section 11 (Henkel) Tuesday & Thursday 2 - 4:50 pm, Science B 128

Lab: Section 12 (Henkel) Tuesday & Thursday, 5-7:50 pm, Science B 128

Required Online Textbook: *Introduction to Fungi* (2007), 3rd Edition, J. Webster & R.W.S. Weber. [Digital version available online on BOT 359 Moodle site.](#)

Recommended: *Mushrooms of the Redwood Coast* by Noah Siegel & Christian Schwarz (field guide)

Required Lab Equipment: Fine forceps, blunt forceps, 2 probes, notebook for drawing (unlined), pencils; 10X handlens: Bausch & Lomb available at: http://www.forestry-suppliers.com/product_pages/Products.asp?mi=52491&itemnum=61240

Course Format: The course will consist of two lectures (Mon/Wed 11-11:50 am) and two labs (Tues/Thurs 2-4:50 pm or 5-7:50 pm) per week. This 2-unit course will therefore end at mid-semester. Lectures will cover life histories, systematics, ecology, genetics, and practical applications of two major phyla of fungi, the *Ascomycota* and *Basidiomycota*. Laboratories will focus on anatomy, morphology, and taxonomy of these fungi. Laboratory exercises will include microscopy, and will be strongly influenced by what fungi are available weekly in the field.

Lecture Schedule:

Mon.	16	Jan.	<i>No class - holiday</i>
Wed.	18	Jan.	<i>Basidiomycota</i> I. Introduction to <i>Basidiomycota</i>
Mon.	23	Jan.	<i>Basidiomycota</i> II. Form and function of basidiomata
Wed.	25	Jan.	<i>Basidiomycota</i> III. Sexual reproduction, life cycles
Mon.	30	Jan.	<i>Basidiomycota</i> IV. Wood and litter decomposition
Wed.	1	Feb.	<i>Basidiomycota</i> V. Mycorrhizae
Mon.	6	Feb.	<i>Basidiomycota</i> VI. Rusts
Wed.	8	Feb.	TBA
Mon.	13	Feb.	Lecture examination
Wed.	15	Feb.	<i>Ascomycota</i> I. Introduction to <i>Ascomycota</i>
Mon.	20	Feb.	<i>Ascomycota</i> II. Structure and classification
Wed.	22	Feb.	<i>Ascomycota</i> III. Sexual reproduction; life cycles
Mon.	27	Feb.	<i>Ascomycota</i> IV. Asexual reproduction; conidial fungi
Wed.	1	Mar.	<i>Ascomycota</i> V. Lichens I
Mon.	6	Mar.	<i>Ascomycota</i> V. Lichens II
Wed.	8	Mar.	Lecture Examination TBA

Laboratory Schedule:

Tues.	17	Jan.	Introduction
Thurs.	19	Jan.	<i>Basidiomycota: Agaricales, Russulales, Boletales</i>
Tues.	24	Jan.	<i>Basidiomycota: Agaricales, Russulales, Boletales (cont.)</i>
Thurs.	26	Jan.	<i>Basidiomycota: aphylloroid fungi</i>
Tues.	31	Jan.	Quiz; <i>Basidiomycota: aphylloroid fungi (cont.)</i>
Thurs.	2	Feb.	<i>Basidiomycota: gasteroid fungi</i>
Sat.	4	Feb.	Field Trip
Tues.	7	Feb.	<i>Basidiomycota: rusts; jelly fungi</i>
Thurs.	9	Feb.	open lab; review
Tues.	14	Feb.	Laboratory Practical
Thurs.	16	Feb.	<i>Ascomycota: yeasts; plectomycetes</i>
Tues.	21	Feb.	<i>Ascomycota: pyrenomycetes; loculoascomycetes</i>
Thurs.	23	Feb.	<i>Ascomycota: discomycetes</i>
Sat.	25	Feb.	Field Trip; Field Quiz
Tues.	28	Feb.	<i>Ascomycota: discomycetes (cont.)</i>
Thurs.	2	Mar.	open lab; review
Tues.	7	Mar.	Laboratory Practical

Field Trips: Two required weekend field trips will be made to local forests for students to observe, collect, and interpret fungi in their natural habitats. These two field trips will be held on *Feb. 4 (Sat.)* and *Feb. 25 (Sat.)*; attendance is required; acceptable excuses for missing a field trip include illness, family emergency, or severe conflicts with other field trips (documentation required). Field trips will run from 9 am to ~4 pm. Details will be provided as dates approach.

Moodle: Regular use of MOODLE is REQUIRED of all students in BOT 359. Moodle is an indispensable tool for sharing information and documents between the instructor and students. Lecture notes, powerpoint presentations, labs, handouts, announcements, and other items will be available (sometimes exclusively) through Moodle.

Examinations: There will be two lecture examinations, two lab practicals, and two quizzes. One quiz will be held in the lab, the other in the field. Exams will cover the preceding series of lectures as well as relevant readings from the textbook. Lab practicals will be based on materials observed in the preceding labs and again will be influenced by the availability of fresh fungi. Quizzes will be inclusive of all lecture and lab materials covered up to the quiz date.

Readings: Readings will be assigned from the textbook, and you are responsible for this material. Additionally, readings from the primary mycological literature will be assigned and questions regarding this material will appear on the lecture exams.

Grades: A student's grade will consist of exams, practicals, and quizzes:

Quiz (lab)	January 31	25
Lecture examination	February 13	100
Lab practical	February 14	100
Quiz (field)	February 25	25
Lab practical	March 7	100
Lecture examination	March 8	100
	Total points =	450

Grading Scale:

% of total points	Grade	% of total points	Grade
100-93	A	77.9-73	C
92.9-90	A-	72.9-70	C-
89.9-88	B+	69.9-68	D+
87.9-83	B	67.9-60	D
82.9-80	B-	59.9- 0	F
79.9-78	C+		

Student learning objectives:

1. Students will be able to use morphological features and life history traits in identification and ecological interpretation of fungi of the phyla *Ascomycota* and *Basidiomycota*.
2. Students will be able to use morphological characteristics in defining groups under traditional taxonomic classification schemes, and will interpret the impacts of molecular phylogenetic systematics on contemporary classification schemes in higher fungi by translating molecular phylogenetic trees into classifications.
3. Students will be able to organize and synthesize a large body of detailed body of information incorporating aspects of life histories, systematics, ecology, genetics, and practical applications of *Ascomycota* and *Basidiomycota*.
4. Students will be able to use critical reading and thinking skills to interpret and critique research papers from the primary mycological literature.
5. Students will be able to identify and describe economically important *Ascomycota* and *Basidiomycota*, including those used in food processing, industrial biochemical production, wild food sources, as well as crop and forest tree pathogens.

Important Dates Spring 2017: these can be found at the "Calendar of Activities & Deadlines Spring 2017" weblink at:

<http://pine.humboldt.edu/registrar/pdf/CalendarOfActivitiesSp17.pdf>

Additional Information on Campus Policies and Resources:

<http://www2.humboldt.edu/academicprograms/syllabus-addendum-campus-resources-policies>

Additional notes – Incompletes & Unofficial Withdrawals:

→An incomplete (I) is given only when extenuating circumstances prevent a student from completing work in the course; earlier exam scores stand unchanged. Per University policy, an "I" grade remaining incomplete after one year will automatically be changed to "F".

→Students who stop attending and do not drop the class will not get an Incomplete. The latter will receive a grade of **Unofficial Withdrawal**. For the purposes of grade point average, a grade of "W" is equivalent to an "F". In fact, a "W" may be worse than an "F" for those students who wish to repeat the course later. Petitions to replace a grade earned in this course with a better grade may be denied if the student has withdrawn from this course unofficially.