

Mycology

PLPA 5200/6200

Instructor: Dr. Kathy Lawrence
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Telephone: (334) 844-1956
Office Hours: 8 a.m. – 10 a.m. - Wednesday

1) Credit Hours: 4

2) Text and major resource materials:

- Alexopoulos, C. J. , *Introductory Mycology*. (5th ed.). John Wiley & Sons.
- Webster, J. C. and R. W. S Weber. *Introduction o Fungi*. (3rd ed.) Cambridge
- Kendrick, Bryce. *The Fifth Kindgom*.

WELCOME TO OUR COURSE

Course Rationale:

In this an undergraduate/graduate level course, that will broaden your knowledge about fungi. This is a comprehensive survey of the fungi, their evolution, morphology and ontogeny of reproductive structures will be discussed. Consideration will be given to their physiology and role as plant pathogens.

3) Course Description:

PLPA 5200/6200 Introductory Mycology (4). Lec. 2 Lab 4. Pr., BIOL 1030. Mycology will be presented as a systematic survey of the fungi with emphasis on morphology.

4) Course Objectives:

- To gain an appreciation of general Mycology;
- To gain knowledge on morphology and identification of fungi;
- To learn the mechanisms and environmental conditions which facilitate the fungal plant pathogens;

5) Course Content:

The course consists of 7 phyla spread across 15 sessions. Students are required to do the assigned readings from the textbook and supplemental books and refereed papers. Videos, handouts with images will also be presented.

Course Topics:

The topics in this course provide a thorough knowledge of the following:

Unit - 1:

1. **Introduction:** - In session one, we will introduce the general characteristics of fungi and their biological uniqueness.
2. **Myxomycota - slime molds and Plasmodiophoromycota - endoparasitic slime molds:**
3. **Chytridiomycota:**
4. **Oomycota - water molds:**
5. **Zygomycota - bread molds and sugar fungi:**

Unit - 2:

6. **Introduction to Ascomycota - sac fungi: The ascomycetous yeasts - Saccharomycetales and the filamentous Ascomycetes I- Eurotiales.**
7. **Ascomycota - filamentous Ascomycetes II - obligately biotrophic 'powdery mildews'**
8. **Ascomycota - filamentous Ascomycetes - the perithecial fungi - Pyrenomycetes**
9. **Ascomycota - filamentous Ascomycetes - cup fungi - Discomycetes**
10. **Ascomycota - filamentous Ascomycetes - ascostromatic fungi - Loculoascomycetes**

Unit - 3:

11. **Basidiomycota - mushroom fungi - Agaricales**
12. **Basidiomycota - bracket fungi and related fungi - Aphylllophorales**
13. **Basidiomycota - puffballs - Gastermycetes**
14. **Basidiomycota - rusts and smuts - Uredianales and Ustilaginales**

The lab assignments in this course provide thorough hands on experience of the following:

1. Introduction - use of the microscope.
2. Myxomycota, Plasmodiophoromycota, and Chytridiomycota
3. Oomycota - Pythium and Phytophthora
4. Zygomycota - Rhizopus
5. Ascomycota - Yeasts
6. Ascomycota - Powdery mildews
7. Ascomycota - Cup fungi
8. Ascomycota - Perithecial fungi
9. Ascomycota - Ascstromatic fungi
10. Review of the fungi
11. Basidiomycota - mushrooms
12. Basidiomycota - puff balls
13. Basidiomycota - rusts and smuts
14. Holiday
15. Mycology Practical

6) Course Requirements:

1. Lecture Presentations:

Lectures will be in the form of power point presentations with questions intermingled through out the lecture. Presentations will include all the information about each fungal phyla as well as color photos of the fungal cultures and structures. Questions will be asked frequently to stimulate student understanding and retention.

2. Lab Assignments:

The students will be required to build a lab notebook containing all the information they will need in the labs for the entire semester. Successful learning in lab will require active participation by the students. The diversity of experiences with the lab assignments between the students will enhances the learning and brings a different perspective to the course. Students will be required to summarize their experiences from each lab in the form of weekly lab reports. These reports will be turned in on Thursday evening by midnight. Reports maybe submitted by email or hard copies my be placed in my mail box outside 209 Life Science.

3. Fungal collection:

To truly learn fungi you must make a collection of your own. The collection will be turned in with each exam keeping classifications in order.

Due Date	<u>Undergraduate</u>	<u>Graduate</u>
Exam 1	2 Lower fungi	3 Lower fungi
Exam 2	3 Ascomycete or Deuteromycetes	5 Ascomycetes or Deuteromycetes
Exam 3	2 Basidiomycetes	4 Basidiomycetes

3. Exams:

Throughout the semester, students will be given three exams based on the lectures, laboratory materials and readings. Exams will be an essay form.

4. Final Examination:

The final exam will be comprehensive and will be based on the material presented in lecture and lab.

Performance Evaluation:

The work in this course will be evaluated on the basis of the responses to exams, lab reports, the final exam and a fungal collection. The final course average will be computed as follows although points may vary.

Exam 1	100 points
Exam 2	100 points
Exam 3	100 points
Lab reports (approximately)	100 points
Lab practical	50 points
Fungal collection (approximately)	7a0-150 points
Daily questions	

The final course grade will be determined by the final class average using a 10 % scale below. The actual numbers may vary depending on the final number of points.

630 - 700 points	A
560 - 629 points	B
490 - 559 points	C
420 - 489 points	D
below 419 points	F

7) Course Policy:

Late Submissions:

It is the students' responsibility to share a significant responsibility for preparing and discussing course material. All the required readings, discussion questions and assignments must be completed on time. If a serious situation arises and the student anticipates he/she will not be able to meet a deadline, it should be discussed with the instructor before the due date.

If the instructor is contacted regarding the problem at least several days before the due date, and judges it to warrant special consideration (usually due to illness or injury) I, the instructor and the student will negotiate an alternate due date.

If the instructor has not been contacted and special consideration has not been granted, assignments turned in after the due date will be penalized 10% of total possible points for each day late.

Make-up Examinations:

Make-up exams will only be given with a valid university excuse. This means a Doctor's statement (not an In-Out slip) or other documentation must be provided. All make-ups will be given within a week of the exam unless other arrangements are made with the instructor. The learner is responsible for informing the instructor prior to missing the examination or no later than one day after the examination's official date.

Learners with Disabilities:

Auburn University is committed to providing accommodations and services to students with documented disabilities. Any learner with a qualified disability which requires accommodations should contact The Program for Students with Disabilities, 1244 Haley Center, Auburn University, AL 36849, 334-844-2096 PH, 334-844-2099 FAX, haynemd@auburn.edu. More information is available on their website at www.auburn.edu/disability. The office will fax or mail the required forms to learners to apply for services. Learners who have questions to participate in this course should contact the above office in advance to ensure proper accommodations.

Plagiarism and Academic Dishonesty:

Plagiarism is the act of presenting directly or indirectly someone else's work as your own. Plagiarism is a major type of academic dishonesty and will not be tolerated. Similarly

cheating on tests in any way, falsifying bibliographies, fraudulent quotes, and similar practices are intolerable forms of academic dishonesty. The University's policy for academic misconduct in the Student Code of Conduct will be followed for this course (Tiger Club, pp. 83 and 92). Please contact the instructor for any questions regarding its contents.

Course Schedule

Unit - 1:

- Week 1. **Introduction:** – We will introduce the general characteristics of fungi and their biological uniqueness.
- Week 2. **Myxomycota – slime molds and Plasmodiophoromycota – endoparasitic slime molds: and Chytridiomycota:**
- Week 3. **Oomycota – water molds:**
- Week 4. **Zygomycota – bread molds and sugar fungi**
- Week 5. **Exam 1 Sept. 21, 2011**

Unit - 2:

- Week 6. **Introduction to Ascomycota – sac fungi: The ascomycetous yeasts – Saccharomycetales and the filamentous Ascomycetes I- Eurotiales.**
- Week 7. **Ascomycota – filamentous Ascomycetes II – obligate biotrophic ‘powdery mildews’**
- Week 8. **Ascomycota – filamentous Ascomycetes – the perithecial fungi – Pyrenomycetes**
- Week 9. **Ascomycota – filamentous Ascomycetes – cup fungi – Discomycetes**
- Week 10. **Ascomycota – filamentous Ascomycetes – ascostromatic fungi – Loculoascomycetes**
- Week 12. **Exam 2 Oct. 31, 2011**

Unit - 3:

- Week 12. **Basidiomycota – mushroom fungi – Agaricales
bracket fungi and related fungi – Aphyllorphales**
- Week 13. **Basidiomycota – puffballs – Gastermycetes**
- Week 14. **Basidiomycota – rusts and smuts – Uredianales and Ustilaginales**
- Week 15. **Holiday**
- Week 16. **Exam 3 Nov. 30, 2011**
- Week 17. **Dec. 9, 2011 Final exam Friday 8:00-10:30 am**

Lab Schedule

Unit - 1:

- Week 1.** **Microscopes:** - We will become work with the microscopes.
- Week 2.** **Myxomycota - slime molds and Plasmodiophoromycota - endoparasitic slime molds:**
- Week 3.** **Chytridiomycota:**
- Week 4.** **Oomycota - water molds:**
- Week 5.** **Zygomycota - bread molds and sugar fungi**
- Week 6.** **Work on your collections**
- Week 7.** **Ascomycota - sac fungi: The ascomycetous yeasts - Saccharomycetales and the filamentous Ascomycetes I- Eurotiales.**
- Week 8.** **Ascomycota - filamentous Ascomycetes II - obligately biotrophic 'powdery mildews'**
- Week 9.** **Ascomycota - filamentous Ascomycetes - theperithecial fungi - Pyrenomycetes**
- Week 10.** **Ascomycota - filamentous Ascomycetes - cup fungi - Discomycetes**
- Week 11.** **Ascomycota - filamentous Ascomycetes - ascostromatic fungi - Loculoascomycetes**
- Week 12.** **Work on your collections**
- Week 13.** **Basidiomycota - mushroom fungi - Agaricales
bracket fungi and related fungi - Aphylllophorales
puffballs - Gastermycetes**
- Week 14.** **Basidiomycota - rusts and smuts - Uredianales and Ustilaginales**
- Week 15.** **Holiday**
- Week 16.** **Lab practical**
- Week 17.** **Fungal collections due**