



Biology 272: Local Flora

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[INVITATION](#)



AN INVITATION TO THE COURSE

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Local Flora (Biology 272, Ecology 891) teaches students about the flora of North Carolina and the Southeast, how scientists study the plant tree of life (modern plant systematics), recognition of over 100 common plants, recognition features of 50 plant families, the ecosystems of North Carolina, 21st century issues in the conservation of plant biodiversity, economic botany, and the importance of plants in human history.

This course emphasizes the flora of North Carolina, as a means of understanding the modern scientific inquiry into the course of plant evolution. My career involvement with biodiversity conservation and study of plant communities and habitats informs the class through sections of the class that deal with ecological processes, conservation issues, human use and mis-use of plant resources, so the course touches on history, literature, economics, art, land use and management, and biological invasions.

A large amount of diverse information is presented in this class. While a certain basic set of information must be learned, the student is also facilitated in focusing his/her learning on subject matter components of the greatest individual interest. A wide variety of learning approaches are employed, from visual recognition of plant species, memorization of terminology, hands-on experience with live and pressed plants, a team quest to find 75 plant structures, and individual project where creativity is emphasized, and a food log exercise in which students independently explore the plants they ate in the course of a day via internet and other resources.

I hope that students that take this class come away from it with an enriched way of seeing the natural world around them, and a new curiosity about plants and their roles in human lives. They will also learn in more detail about classification as a process, and specific aspects of biological classification. By involving art, history, economics, conservation views of the plant world, I also hope to have students leave the course with a background that will enable them as citizens to better understand pressing modern issues of biodiversity conservation, food supply, climate change, and biological invasions.





STRATEGIES FOR TEACHING & LEARNING

We start with an introduction to basic concepts of classification in general and biological (genealogical) classification specifically, and then we move into a broad overview of the evolution of plant life as reflected in the main groups of plants alive today. A lecture and exercise of "plants we eat and wear" establishes a foundation for later additional information about economic botany and the role of plants in history and human cultures. After the midterm, the course explores two main areas, the evolution, characteristics, recognition, and examples of 50 plant families (8 lectures), and the ecological factors and processes that structure the plant life we have today in North Carolina, with a tour of the major plant communities from the mountains to the sea.

The bulk of the material on which students will be tested is presented in the powerpoint lectures (made available after the lecture to students via Blackboard). the labs are less structured and require students to move from station to station at their own pace and master the material expected. The independent project and the food log present opportunities for independent research, while the FloraQuest team scavenger hunt is a fun way to solidify the students' understanding of plant structures and terminology used to describe them in a small group setting.



COURSE REQUIREMENTS

The grade is based on the following evaluations:

- Plant Recognition Quizzes (22%)
- Food Log (5%)
- Midterm Exam (20%)
- FloraQuest team scavenger hunt (8%)
- Independent Project (20%)
- Final Exam (25%)

Plant Recognition Quizzes (22%)

The student jumps right into learning common plants of North Carolina with the first 4 labs. Students are introduced each week to 30-40 plants through on-campus field trips and powerpoint lectures, which they then have to be able to identify the following week's quiz. The final quiz is

cumulative for the approximately 110 plants. In each quiz, the student moves among 25 stations and identifies fresh samples of the plants to scientific name, common name, and plant family.

Food Log (5%)

For a 24 hour period, each student keeps a log of all the foods and drinks he/she consumes. Then using any resources available (primarily the www), the student determines all the plant species eaten, where each one was first domesticated in the world, and if possible, where the actual food consumed was grown. Most students find this exercise a revelation in terms of the number of plant species they consume in a day, and the eclectic mixture of foods we eat, reflecting the complex human history of domestication of plants and animals, and modern trends in treating food as a major industrial and international commodity. The log is graded on its accuracy and detail, not the foods eaten (no points deducted for Domino's pizza).

Midterm Exam (20%)

The Midterm is based on lecture and lab material presented in the first half of the course, emphasizing classification, taxonomy, and nomenclature, a broad overview of the evolution of plants through time, mainly emphasizing groups still alive today, and an overview (in lecture and lab) of plant structures and the terms used to describe them. The Midterm includes short essay, longer essay, multiple choice and true/false questions.

FloraQuest (team scavenger hunt) (8%).

The FloraQuest involves students in small teams. In a two week period, each team must find actual examples of 75 plant structures, by scouring campus, roadsides, produce markets, and florists' shops.

Independent Project (20%).

The project is intended to engage creativity while being educational. In other words, the project should be flexible enough to allow room for fun, while you learn about a specific topic and become an expert on that topic. The project should reinforce some of the knowledge and

terminology learned in the course by applying them to a specific interest you want to explore in more depth. Most projects fit, at least loosely, into one of four broad project options (Plant Family, NC County, Single Species, or Biogeography), or other possibility by arrangement. The end product should be appropriately documented, whatever or not it is in a standard research paper format.

Final Exam (25%)

The Final exam is based on lecture and lab material presented in the second half of the course, emphasizing plant families, ecological processes and geological history that have shaped the modern flora over the last billion years, ecosystems and plant communities of North Carolina, and conservation of biological diversity. The Midterm includes short essay, longer essay, multiple choice, true/false questions, and identification of plants using a dichotomous key.



COURSE DETAILS

Course Information

The course is worth 4 credit hours. It is designed primarily for juniors and seniors in Biology, Environmental Sciences, or Environmental Studies, but is open to Freshman and Sophomores and students in other, less related majors who have a strong interest in the subject matter.

Class Meeting Location and Times(s)



CALENDAR

2009-06-18	
Activity during this class	Lecture 1

Introduction to Local Flora; Plant Recognition List 1	
Activity during this class	Lab 1
Battle Park Walk, Plant Recognition List 1	

2009-06-19	
Activity during this class	Lecture 2
Classification, Description, Identification, Nomenclature; Taxonomic Hierarchy and Categories	

2009-06-22	
Activity during this class	Lecture 3
Plants We Eat and Wear; Characters and Character States; assign food log	
Activity during this class	Lab 2
Herbarium tour; Vegetative structures 1	

2009-06-23	
Activity during this class	Lecture 4
Major Groups of Plants -- Phylogeny	
Activity during this class	Lab 3
Keying; vegetative structures 2	

2009-06-24	
Activity during this class	Lecture 5
Mosses, Liverworts, and Hornworts; Fern Allies	

2009-06-25	
Activity during this class	Lecture 6
Plant Recognition List 2	
Activity during this class	Lab 4
QUIZ on List 1; Battle Park Walk, Plant Recognition 2	

2009-06-26	
Activity during this class	Lecture 7
Ferns; Gymnosperms	

2009-06-29	
Activity during this class	Lecture 8
Other characters; taxonomy; new flora; plant ID, keys; food log due	
Activity during this class	Lab 5
Fruits; assign Scavenger Hunt	

2009-06-30	
Activity during this class	MIDTERM
Activity during this class	Lab 6
Fruits; assign Scavenger Hunt	

2009-07-01	
Activity during this class	Lecture 9
Plant Families 1	

2009-07-02	
Activity during this class	Lecture 10
Plant Families 2	
Activity during this class	Lab 7
QUIZ on List 2; Arboretum Walk, Plant Recognition 3	

2009-07-06	
Activity during this class	Lecture 11
Ecological Processes	
Activity during this	

class	SCAVENGER HUNT QUIZ
2009-07-07	
Activity during this class	Lecture 12
Mountains; Piedmont (begin)	
Activity during this class	Lab 9
Keying and family studies 1	
2009-07-08	
Activity during this class	Lecture 13
Piedmont (finish); Coastal Plain (begin)	
2009-07-09	
Activity during this class	DAY-LONG TRIP MASON FARM
2009-07-10	
Activity during this class	Lecture 14
Coastal Plain (finish)	
2009-07-13	
Activity during this class	Lecture 15
Plant Families 3	
Activity during this class	Lab 10
Keying and family studies 3	
2009-07-14	
Activity during this class	Lecture 16
Plant Families 4	
Activity during this class	Lab 11
Keying and family studies 3	

2009-07-15	
Activity during this class	Lecture 17
Plant Families 5	

2009-07-16	
Activity during this class	ALL-DAY TRIP SANDHILLS GAME LAND

2009-07-17	
Activity during this class	Lecture 18
Plant Families 6	

2009-07-20	
Activity during this class	Lecture 19
Conservation	
Activity during this class	Lab 12
QUIZ on all lists; Keying and family studies 4	

2009-07-21	
Activity during this class	Lecture 20
Invasive aliens	

2009-07-23	
Activity during this class	FINAL EXAM



this syllabus was created with the assistance of the [syllabus development guide](#), a project of unc-ch's center for teaching & learning