BIOL SCI 109: The Nature of Plants
Spring 2015
Syllabus

Lectures:	MWF 11:00 – 11:50
	Abbott Auditorium (Pancoe)
Exams:	Midterm 1 (February 5), Midterm 2 (March 5)
Instructor:	Norman Wickett
	Hogan 6-120B (sixth floor, room 120B)
	Office hours: Fridays 9:50 – 10:50 or by appointment (email)
	Phone (847) 467-2769 (Northwestern) or (847) 835-8280 (Chicago Botanic)
	Preferred contact – email nwickett@northwestern.edu
Textbook:	None. Lecture slides will be posted on Canvas
Other Material:	Assigned and distributed on Canvas

COURSE DESCRIPTION

This course is designed to give students an understanding of the biology of plants while at the same time not overwhelming you with levels of detail and specialized terminology that are not useful to non-majors. We will learn about biological processes by studying how plants make and store food, reproduce, defend themselves, and colonize new areas. We will examine the interactions of plants with other groups of organisms, such as with nitrogen-fixing bacteria and ant "bodyguards", and how plants play a fundamental role in the ecosystem. We will discuss adaptations that plant groups have evolved for living in extreme environments, including desert and aquatic habitats, as well as adaptations in carnivorous, parasitic, and epiphytic plants. Through all of these topics, we will consider practical aspects of plant biology as we study how humans use plants, as sources of food, fiber, and medicines. This class consists of lectures on Mondays, Wednesdays, and Fridays, the topics of which are outlined below (Lecture Schedule). It is expected that you attend lecture and take notes on the lecture slides, which will be posted before class each day.

POLICIES

I will schedule **a single time** for a make-up exam following the original date and you are responsible for accommodating this time. I will do my best to schedule a time that works for everyone. Medical, or other reasons for missing an exam must be accompanied by documentation.

Academic Integrity

All students need to familiarize themselves with the Academic Integrity policies for Undergraduates at Northwestern (www.northwestern.edu/provost/policies/academic-integrity/) and follow them in this course. If there is any evidence of cheating on an exam or evidence of any other Academic Integrity issue, it is the Instructor's responsibility **to forward the issue to the Dean's office**.

Students With Disabilities

Any student requesting accommodations related to a disability of other condition is required to register with AccessibleNU (accessiblenu@northwestern.edu; 847-467-5530) and provide professors with an accommodation notification from AccessibleNU, preferably within the first two weeks of class. All information will remain confidential.

EVALUATION

Three exams will be given in this class: a midterm on April 22, a midterm on May 11, and a "final" midterm on June 1 (the last day of class). **There will be no final exam during Final Exam Week**. The exams are not cumulative, but it is expected that concepts learned for each midterm are necessary to understand material covered on subsequent exams. The breakdown for your final grade is as follows:

Point Distribution		
Exam 1	100 pts	30%
Exam 2	100 pts	35%
Exam 3	100 pts (10 per exercise)	35%

Grade Distribution					
93 - 100	**A**	90 - 92	**A-**		
87 - 89	**B+**	83 - 86	**B**	80 - 82	**B-**
77 - 79	**C+**	73 - 76	**C**	70 - 72	**C-**
60 - 69	**D**	< 60	**F**		

No extra credit will be given in this class.

LECTURE SCHEDULE

Date	Topic	Material Covered
M Mar. 30	**NO CLASS**	
W Apr. 1	First Day of Class	Introduction Course objectives and expectations
F Apr. 3	Introduction	What are plants? Why are plants important?
M Apr. 6	Plant Diversity and Reproduction I	Bryophytes and ferns: the non-seed plants
W Apr. 8	Plant Diversity and Reproduction II (Guest Lecture)	Gymnosperms: the seed plants
F Apr. 10	**NO CLASS**	Norm in DC
M Apr. 13	Plant Diversity and Reproduction II	Angiosperms: the flowering plants
W Apr. 15	Life Cycle Overview	Review of bryophyte, fern, gymnosperm, and angiosperm life cycles, with practice questions
F Apr. 17	Pollination	Flower shape, size, color etc.

M Apr. 20	Dispersal	Seeds, fruits, spores, and more… **Extra office hours: 1:00 to 3:00**
W Apr. 22	**EXAM 1**	
F Apr. 24	**NO CLASS**	
M Apr. 27	Photosynthesis and Respiration	How do plants create and use energy? What products result from these processes?
W Apr. 29	The Vascular System	Xylem and phloem: how plants distribute water and nutrients throughout the plant body.
F May 1	Mineral Nutrition I	Plants need more than light and water; what else is required for growth and reproduction?
M May 4	Mineral Nutrition II	Macronutrients and micronutrients con't…
W May 6	Herbivory and Plant Defense	Why do animals eat plants, and what do plants do to protect themselves?
F May 8	Alternative Life Histories	Adaptations and strange plants Last day to drop a class for Spring quarter **Extra office hours: 1:00 to 3:00**
M May 11	**EXAM 2**	
W May 13	Extreme Environments I	What kinds of adaptations are typical of plants that live in hot, cold, wet, and extremely dry environments?
F May 15	Extreme Environments II	How have plants adapted to "toxic" soils and to environments prone to fire?
M May 18	The Origin of Agriculture	How did agriculture arise, and how did it shape modern civilization? What kinds of plants were involved in this transition?
W May 20	Modern Agriculture	Plant genetics, modern plant breeding, GMOs and more…
F May 22	Economic Botany I	Plants used for medicine, fiber, and recreational drugs
M May 25	**Memorial Day (NO CLASS)**	
W May 27	Economic Botany II	Plants used for food and spices
F May 29	Review Day	Time to catch up, and to review any important topics before the last exam. **Extra office hours: 1:00 to 3:00**
M Jun. 1	**EXAM 3**	Last day of class
Tu Jun. 2	**Reading Week Begins**	
M Jun. 8	**Spring Exams Begin**	There will be no final exam during exam week for this class.
M Jun. 15	**Grades Posted**	