

GENERAL BOTANY BIOL 2022

Spring 2018

course website <http://wardlab.cbs.umn.edu/botany/>

Course Objectives:

- To learn basic plant biology: anatomy, growth, development, reproduction, and evolution.
- To understand the relation between plant structure and function, and the interactions between plants and associated microbial organisms.
- To understand the roles of plants in the environment; and of plants in agriculture, biotechnology, horticulture and forestry.

Prerequisite: BIOL 1001 or 1009

Instructors & TAs	Office	Phone*	Email	Office Hours**
Dr. John Ward	618 BioSci	612-625-4763	jward@umn.edu	Monday 10AM-12noon
Dr. Ya Yang	714 BioSci	612-625-6292	yangya@umn.edu	Monday 10AM-12noon
Stephanie Erlandson	368 BioSci		erlan045@umn.edu	by appointment
Kristin Grandt	662 BioSci		haman132@umn.edu	by appointment

* use last five digits for on campus phone calls, **or by appointment

Required Lab Manual:

- Lab manual BIOL 2022 Laboratory Guide, College of Biological Sciences

Recommended Text, any of the following:

- Botany – an Introduction to Plant Biology by James Mauseth either 4th edition (2008) or 5th edition (2013) or 6th edition (2016)
- Plant Biology by Rost, Thomas L., Barbour, Michael G., Stocking, C. Ralph. 2nd edition (1994)
- Best book and best buy: Biology of Plants by Peter Raven, Ray Evert, Susan Eichorn any edition. 6th edition (1999), 7th edition (2004), or Raven Biology of Plants (2012)

Lecture: 4:05 PM - 4:55 PM Tuesdays and Thursdays Ruttan Hall B35

Labs: All labs are in the greenhouse classroom 104 (AgGhCl 104)

Section No.	Time	Day	TA
003	12:50 - 3:50 pm	Tuesday	Stephanie Erlandson
004	5:10 - 8:10 pm	Tuesday	Kristin Grandt
005	12:50 - 3:50 pm	Wednesday	Kristin Grandt
006	12:50 - 3:50 pm	Thursday	Stephanie Erlandson

Grading: 600 points total for course

Lecture (2/3 of grade)	Points	Comments
Midterm I	100	Covers first 1/3 of lectures
Midterm II	100	Covers second 1/3 of lectures
Final Exam	150	Covers last 1/3 of lectures (100 pts) plus comprehensive questions (50 pts)
Assignments	50	Written assignments
Laboratory (1/3 of grade)		

Lab Quizzes	180	Six quizzes on lab material (no drops); see syllabus
Lab notebook	20	
TOTAL COURSE	600	total points

Letter Grades Based on Total Course Points*

> 540 (90%)	A	402 (67%) – 419	C-
522 (87%) – 539	A-	360 (60%) – 401	D+
498 (83%) – 521	B+	300 (50%) – 359	D
480 (80%) - 497	B	<300	F
462 (77%) - 479	B-		
438 (73%) – 461	C+	402 – 600	S
420 (70%) – 437	C	<402	N

*Cut-offs of point totals for letter grades may be lower, but not higher than those shown here.

Expectations for attendance: Attendance in lecture is essential to get the best grade.

Policy on Missed Exams: Students with a verified illness or family emergency will be allowed to make up a missed exam. Students with a conflict due to a religious observance or University sponsored event will be allowed to make up a missed exam provided they make arrangement with the instructor at least 48 hours before the exam.

Concerns regarding exam scores: Questions regarding exams scores should be brought to the instructor's attention immediately after the student checks the exam key for clarification and *no later than one week after exams are returned.*

Student Conduct Code: The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: *Student Conduct Code.* To review the Student Conduct Code, please see:

http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf.

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

Use of Personal electronic Devices in the Classroom: The University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. The instructor for this course recognizes that electronic devices can be important for learning. The only restriction is that their use should not distract other students. For complete information, please reference:

<http://policy.umn.edu/education/studentresp>.

Scholastic Dishonesty: You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code:

http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, the student may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: <http://policy.umn.edu/education/instructorresp>.

The Office for Community Standards has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <https://communitystandards.umn.edu/avoid-violations/avoiding-scholastic-....> If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class-e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

Makeup Work for Legitimate Absences: Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: <http://policy.umn.edu/education/makeupwork>.

Sexual Harassment: "Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: <http://regents.umn.edu/sites/regents.umn.edu/files/policies/SexHarassment.pdf>

Equity, Diversity, Equal Opportunity, and Affirmative Action: The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Equity_Diversity_EO_AA.pdf.

Disability Accommodations: The University of Minnesota views disability as an important aspect of diversity, and is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you have, or think you have, a disability in any area such as, mental health, attention, learning, chronic health, sensory, or physical, please contact the DRC office on your campus (UM Twin Cities - [612.626.1333](tel:612.626.1333)) to arrange a confidential discussion regarding equitable access and reasonable accommodations.
- Students with short-term disabilities, such as a broken arm, **can** often work with instructors to **minimize** classroom barriers. In situations where additional assistance is needed, students should contact the DRC as noted above.
- If you are registered with the DRC and have a disability accommodation letter dated for this semester or this year, please contact your instructor early in the semester to review how the accommodations will be applied in the course.
- If you are registered with the DRC and have questions or concerns about your accommodations please contact your (access consultant/disability specialist).

Additional information is available on the DRC website: <https://diversity.umn.edu/disability/> or email drc@umn.edu with questions.

Mental Health and Stress Management: As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: <http://www.mentalhealth.umn.edu>.

LECTURE, READING and LAB SCHEDULE:

Week	Date:	Lec.	Lecture Topic:	Reading: chapter in Mauseth text	Lab #	Laboratory Topic:
1	1/16	1	Introduction, Course Policies, Plant cell structure	Ch 3	1	Intro to Plants Greenhouse tour Set up for Lab 3: geraniums
	1/18	2	Plant cell compartments. Cell Division and Growth	Ch 4		
2	1/23	3	Cell types, tissues and organs	Ch 5	2	Basic plants Phylogeny Set up for Lab 6: hydroponics
	1/25	4	Primary growth of stems			
3	1/30	5	Plant Architecture: Leaves	Ch 6	3	Leaves LAB QUIZ 1
	2/1	6	Secondary Growth of Stems	Ch 8		
4	2/6	7	Photosynthesis: from bacteria to plants	Ch 10	4	Stems Collect Soil for Labs 5 and 6
	2/9	8	Nutrient Transport: moving liquids	Ch 12		
5	2/13	9	Plant Architecture: Roots	Ch 7	5	Roots Prep for Lab 6: starch plates; seed plates LAB QUIZ 2
	2/15	10	Respiration: how the roots live	Ch 11		
6	2/20		EXAM 1 (lectures 1-10)		6	Growth and Physiology I
	2/22	11	Soils and Mineral Nutrition	Ch 13		
7	2/27	12	Plant Growth and Development	Ch 14	7	Growth and Physiology II Prep for Lab 10: fern plates LAB QUIZ 3
	3/1	13	Genetics	Ch 15		
8	3/6	14	Plant Genetics	Ch 16	8	Fungi
	3/8	15	Fungi and Lichens	Ch 24 (in 4th and 5th ed)		
	3/10 to 3/18		Spring Break			
9	3/20	16	Algae and the origins of eukaryotic cells	Ch 19	9	Algae and Lichens LAB QUIZ 4
	3/22	17	Algae	Ch 19		
10	3/27	18	Bryophytes	Ch 20	10	Land Plants
	3/29	19	Ferns and early vascular plants	Ch 21		
11	4/3		EXAM 2 (lectures 11-19)		11	Gymnosperms LAB QUIZ 5
	4/5	20	Gymnosperms	Ch 22		
12	4/10	21	Angiosperms	Ch 23		Angiosperm Reproduction

	4/12	22	Angiosperm Reproduction	Ch. 9	12	
13	4/17	23	Angiosperm Reproduction	Ch 9	13	Angiosperm fruits
	4/19	24	Plants and nutrient cycles			LAB QUIZ 6
14	4/24	25	Plant Biotechnology			NO LAB
	4/26	26	Plant domestication and diversity			
15	5/1	27	Plant Biotic Interactions			NO LAB
	5/3	28	Review for exam and course evaluations			
16	5/8		FINAL EXAM			4:05-6:05 in B35 Ruttan Hall