PMB 2022: GENERAL BOTANY

3 credits, Spring 2019

Required Texts & Materials:

- Required textbook: Botany: an Introduction to Plant Biology by James Mauseth, 6th edition (2016). Older editions not OK, but used books or E-books are OK. We do not need Navigate.
- Required Lab manual: PMB 2022 Laboratory Guide, Spring 2019
- All additional course materials will be posted on Canvas: https://canvas.umn.edu
- Obtain iClicker access and register for PMB 2022 Spring 2019 https://www.iclicker.com/students

Schedule

	Section	Time	Location	Instructor
Lecture	001	MW 4:05–4:55 pm	64 BioSci	Yang
Labs	003	M 12:50–3:50 pm	104 Plant Growth Facility	Grandt
	004	M 5:10–8:10 pm	104 Plant Growth Facility	DeMers
	005	W 12:50–3:50 pm	104 Plant Growth Facility	DeMers
	006	W 5:10–8:10 pm	104 Plant Growth Facility	Grandt

Contact information

	Office	Email	Office Hours
Prof. Ya Yang	714 BioSci	yangya@umn.edu	Tuesday 2–3:15 pm or by appointment
Mara DeMers	209 Ecology	demer013@umn.edu	By appointment
Kristin Grandt	662 BioSci	haman132@umn.edu	By appointment

Grading: 600 points total for course

Lecture

Exam 1 (Feb 20, during class)	100	Covers lectures 1–8
Exam 2 (Apr 3, during class)	100	Covers lectures 9–17
Exam 3 (May 6, during class)	100	Covers lectures 18–25. *No final exam.
Pre-lecture quizzes	48	2 pts for each lecture, due 15 min before class. You can attempt as many times as you want before deadline. Highest score will be recorded. 24 quizzes in total, no drops.
Lecture participation	42	Complete an in-class worksheet or answer at least half the clicker questions to earn 2 pts per lecture. 4 drops.

Lab

Lab quizzes	180	6 quizzes on lab material, 30 pts each, no drops
Lab notebook and participation	30	Determined by your TA
COURSE TOTAL	600	

Letter Grades Based on Total Course Points

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

>=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

Course Objectives:

- To learn basic plant biology: anatomy, development, reproduction, ecology, 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: One semester of college-level biology.

Expectations of Students:

- Be an active learner by getting involved with the subject material, talking about it, and questioning it.
- Interact with your instructor, TAs, and classmates with respect and courtesy.
- Attend lectures, be on time, and stay until the end of class.
- You will be held responsible for all material that is presented in class and in the class assignments.
- Complete pre-class assignments before attending class. You will find it much easier to follow lectures if you come to class prepared. For labs, it is essential to read the exercise before the lab meets.
- It is essential to keep up with the material as concepts build upon each other as the semester progresses. Studying the night before exams is unlikely to result in success.
- Attend and participate actively in lab sections. Lab exercises review and illustrate material covered in lecture. Lab is also a great opportunity for hands-on learning, including learning new techniques.

Policy on Absences and Makeup Work: There is a detailed description of the University policy at this website: https://policy.umn.edu/education/makeupwork. In brief, here are some key elements:

- Students must notify their instructors of circumstances that UMN considers "unavoidable or legitimate circumstances" leading to a request for makeup work as soon as possible and provide information to explain the absence. Some situations will be sufficiently urgent that arrangements for makeup work cannot be made prior to the date of an absence. In such cases, arrangements should be made as soon as possible following the student's return.
- The instructor has the right to request, and the student must provide if requested, verification for absences, with the exception of a single episode medical absence that does not require medical services.
- The instructor has the right to request verification for a single episode medical absence if (i) the student has had more than one single episode medical absence in the class, or (ii) the single episode medical absence involves missing laboratory sessions, exams or important graded in-class assignments.
- The instructor may not penalize the student and must provide reasonable and timely accommodation or opportunity to make up missed work, including exams or other course requirements that have an impact on the course grade if the student: Was absent due to circumstances considered unavoidable or legitimate (see UMN website), has complied with the notification requirements, and has provided verification if the instructor has requested further information.

Academic Integrity: Scholastic dishonesty is broadly defined as "any act by a student that misrepresents the student's own academic work or that compromises the academic work of another." 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. In this course, scholastic dishonesty will not be tolerated. The consequences of committing scholastic dishonesty will be handled on a case-by-case basis but could result in a failing grade for the class. All cases will be reported to the UMN Office For Community Standards.

Concerns regarding exam, quiz, and participation scores: Questions regarding any course scores should be brought to the instructor's attention no later than one week after scores are posted.

Disability 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 Disability Resource Center office on your campus (UM Twin Cities - 612.626.1333; email drc@umn.edu) 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. Additional information is available on the DRC website: https://diversity.umn.edu/disability/.

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.

Classroom learning environment: We want to create a welcoming learning environment that supports a diversity of thoughts, perspectives, and experiences; honors your identities (including race, nationality, gender, class, sexuality, ability, religion, veteran status, etc.); and accommodates personal challenges (including challenges related to disabilities, mental health, parenthood, and other personal circumstances). We expect students and instructors to treat everyone in the classroom with respect and kindness. Instructors have a responsibility to address disrespectful behavior when/if it occurs and are mandatory reporters in the context of any issues regarding sexual harassment. If something is said or done in the class (by anyone) that makes you feel uncomfortable or unsafe, please don't hesitate to approach Dr. Yang or any of the TAs. You can also refer to the resources below:

Resources:

- Office for Equity and Diversity (https://diversity.umn.edu/)
- Title IX office (for reporting any issues with sex discrimination, harassment, assault, stalking, and relationship violence). https://diversity.umn.edu/eoaa/titleix
- Gender and Sexuality Center for Queer and Trans Life: http://gsc.umn.edu/
- Multicultural Center for Academic Excellence (MCAE): http://mcae.umn.edu/
- Women's Center (https://diversity.umn.edu/women/)
- Institute for Diversity, Equity, and Advocacy (IDEA): http://idea.umn.edu/

Course schedule

Date	Lec. #	Lecture Topic	Lab #	Lab Topic
1/23	**1**	Introduction		
1/28 1/30	**2** **3**	Plant cell Growth and division of the cell	**1**	Intro to Plants I CBS Conservatory tour
2/4 2/6	**4** **5**	Stems Leaves	**2**	Intro to Plants II
2/11 2/13	**6** **7**	Photosynthesis Roots	**3**	Leaves **LAB QUIZ 1 (Labs 1–2)**
2/18 2/20	**8**	Secondary Growth **EXAM 1 (Lectures 1–8)**	**4**	Stems
2/25 2/27	**9** **10**	Respiration Nutrient Transport	**5**	Roots **LAB QUIZ 2 (Labs 3–4)**
3/4 3/6	**11** **12**	Soils and Mineral Nutrition Plant Growth and Development	**6**	Physiology I
3/11 3/13	**13** **14**	Origin of eukaryotic cells, meiosis & life cycles Fungi and Lichens	**7**	Physiology II **LAB QUIZ 3 (Labs 5–6)**
3/18–22		Spring Break		
3/25 3/27	**15** **16**	Algae Bryophytes	**8**	Fungi
4/1 4/3	**17**	Life history evolution **EXAM 2 (Lectures 9–17)**	**9**	Algae and Lichens
4/8 4/10	**18** **19**	Vascular plants without seeds Gymnosperms	**10**	Bryophytes, lycophytes, and monilophytes **LAB QUIZ 4 (Labs 7–8)**
4/15 4/17	**20** **21**	Angiosperms Angiosperm reproduction	**11**	Gymnosperms **LAB QUIZ 5 (Labs 9–10)**
4/22 4/24	**22** **23**	Plant biotic interactions Plant ecology	**12**	Angiosperms I
4/29 5/1	**24** **25**	Plant domestication Plant biotechnology & GMO Guest lecture by Prof. Feng Zhang	**13**	Angiosperms II **LAB QUIZ 6 (Labs 11–12)**
5/6		**EXAM 3 (Lectures 18–25)**		