BIOL 3214: Botany: Plant Life

Fall 2022 (4 credits)
Lecture: Bolin Hall, Room 209
Lab: Bolin Hall, Room 214

Instructor: Dr. Timothy J. Pegg, Assistant Professor, Department of Biology

Contact Information: *Office* – Bolin 218D (Aug-Oct), Pierce 101 (Nov-Dec)
Email – timothy.pegg@msutexas.edu

Office Hours: Mondays & Fridays, 11:00am – 12:00pm
Thursdays, 8:00am – 10:00am
Or by appointment

Lecture Class Times: Monday, Wednesday, Friday, 8:00AM-8:50AM

Lab Times: Monday, 2:00PM-4:50PM

Required Texts:

1. **Botany: An Introduction to Plant Biology: 7th Edition**
   a. *Author:* James D. Mauseth
   b. *ISBN-13:* 978-1284157352
   c. *ISBN-10:* 1284157350

2. **Botany: A Lab Manual: 7th Edition**
   a. *Authors:* James D. Mauseth, Amanda Snook
   b. *ISBN-13:* 978-1284157390
   c. *ISBN-10:* 1284157393

Course Description:

Lecture: Botany (a.k.a. *Plant Science*) is the study of plant biology. In this course we will consider plants from the level of individual molecules, to some unique "plant-only" lifestyle features, to the ecological interactions of plants with all other forms of life.

Lab: This course contains a mandatory laboratory component. Enrollment and participation in the laboratory section of the course are necessary for you to experience plant experimentation first-hand. If you miss a laboratory session for any reason, it is your responsibility to contact your lab instructor and plan to complete assignments from that laboratory when that is possible.

Course Objective:

The successful student will:

1. Understand plants in the context of the environment in which they live
2. Roles plants play in ecosystems
3. Plant evolutionary history
4. Plant growth patterns to maximize nutrient acquisition
5. Reproduction modes plants utilized to ensure survival of a given species
6. Communication and associations with other non-plant organisms
7. Explanation of genotypic and phenotypic variations seen in plants

Course Policies:

Excused Absences

Email me at least 24 hours before a planned event or absence. You will be responsible for the work and material we cover in class. Final Exams will not be excused unless an extraordinary circumstance has occurred.

Absences for Medical and/or Mental Health Reasons

Students should not attend class if they have a fever of 100.4°F or greater, are ill, or are experiencing multiple COVID-19 symptoms. In order for these absences to be excused, the student must contact the Student Wellness Center for evaluation.

If a student suffers from a chronic condition that leads to absence from class, he/she must have presented documentation to the MSU Disability Support Services (disabilityservices@msutexas.edu).

Absences Due to Co-Curricular Events or Religious Observances

Classes missed due to participation in college-sponsored co-curricular events or college-recognized religious observances are considered excused absences provided appropriate procedures are followed. The student must notify the instructor at the earliest possible time before the absence and arrange to make up missed work as defined by the instructor's syllabus

Unexcused Absences

If a student has an unexcused absence from class on the day of an exam or quiz then the assigned grade will be 0 points. However, the instructor may make exceptions, and grant make-ups, under extraordinary circumstances.

Class Dismissal

The instructor may dismiss students from lecture and lab sections due to instances of significant disrespect, disruption, or threatening behavior. Return to class will be prohibited prior to a meeting with the instructor to discuss the incident and decide on a course of action to prevent reoccurrence. A second instance of dismissal will result in permanent removal from the course and an automatic assignment of an "F" grade for lecture and lab. Severe violations of class or MSU College policies may also result in removal from the course and assignment of an "F" grade despite only a single offense.

Desire-to-Learn (D2L)

D2L will be used as a means of communicating, as a location where you can access resources (ex. PowerPoints) that are required or useful for success in the course, and where you will submit some required work products. You can log into D2L through the MSU Homepage. If you experience difficulties, please use links to technical help found in the D2L site.

Grading Policy

Lecture Exams	= 100 points/ea. (3 total)
Quizzes	= 15 points/ea. (195 total)
Final Exam	= 150 points
Literature Summaries	= 10 points/ea. (100 total)
Research Presentation	= 100 points
Lab Assignments	= 15 pts/ea. (195 total)
Total Possible	**= 1,040 points**

Grading Scale

90 - 100%	**=**	**A**
80 – 89.9%	**=**	**B**
70 – 79.9%	**=**	**C**
60 – 69.9%	**=**	**D**
0 – 59.9%	**=**	**F**

Exams will cover materials from lectures and chapter readings. The Final Exam will be comprehensive over the entire semester, though focused to specific areas. Short study guides will be provided prior to each exam.

Quizzes will be posted to D2L at the end of each class week and will be due before class on the subsequent Monday.

Primary literature articles will be posted to D2L beginning the second week of class. Several questions will be assigned for each reading. Answers for each reading will be submitted to D2L within **1 week** after posting as a MS Word-compatible file type.

A 4-page, double-spaced research paper and 5-minute MS PowerPoint presentation will be due by the week before your Final Exam. This paper will cover one of a list of botany topics we discuss during the course of the semester. This paper will be structured in the form of a short review article from a peer-reviewed journal. A topic list and rubric will be provided by the end of the **5th week of classes** to assist in writing this assignment and creation of the presentation.

Questions for each lab will be selected from the laboratory manual by the instructor or presented as a separate handout. These questions will be submitted into a specific Dropbox on D2L by the beginning of the next lab period. Questions should be formatted as either a PDF or MS Word-compatible file.

Late Assignments

Late assignments will not be accepted or graded unless prior approval is obtained by the instructor, or extraordinary circumstances occur.

Extraordinary circumstances

In the case of extraordinary circumstances (documented medical emergency, natural disasters, etc.), the instructor reserves the right to resolve grading issues on an individual basis and in accordance with criteria stipulated in the most current MSU Student Handbook (2022-2023).

Electronics in Class

Cell phones, computers and other electronic devices must be turned off in class unless prior permission has been obtained by the instructor, they serve as an accommodation to an impairment or disability, and/or must stay on as a requirement for an occupation (EMT, other medical professional, etc.)

College Policies:

Campus Carry Rules/Policies

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License to Carry permit, and openly carrying handguns is not allowed on college campuses. For more information, visit Campus Carry.

Active Shooter Information
The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by MSU Police Department regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit Safety / Emergency Procedures. Students are encouraged to watch the video entitled "*Run. Hide. Fight.*" which may be electronically accessed via the University police department's webpage: *"Run. Hide. Fight."*

Smoking/Tobacco Policy:
University policy strictly prohibits the use of tobacco products in any building owned or operated by Midwestern State University. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy:

Please refer to the (2022-2023 Student Handbook)

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State University are informed that strictly enforced policies are in place which prohibit the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state, and federal law for any offenses involving illicit drugs on university property or at University-sponsored activities.

Academic Dishonesty:

Dishonesty within the academic community is a very serious matter because dishonesty destroys the basic trust necessary for a healthy educational environment. Academic dishonesty is defined as any treatment or representation of work as if one were fully responsible for it when it is in fact the work of another person. Academic dishonesty includes cheating, plagiarism, theft, or improper manipulation of laboratory or research data or theft of services. A substantiated case of

academic dishonesty may result in disciplinary action, including a failing grade on the project, a failing grade in the course, removal from the course, and/or expulsion from Midwestern State University. Please reference the 2022-2023 Student Handbook for additional information.

Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to the Office of Disability Support Services (disabilityservices@msutexas.edu, 1-940-397-4140).

Grade Appeal Process

To appeal a grade, consult the Midwestern State University 2021-2022 Student Handbook and visit the following checklists: the Grade Appeal Checklist provides the timeline for appealing from the instructor to the next in line (dean of the college). The Academic Honesty Checklist describes the timeline for appealing from the instructor to the next in line (chair of department) and who must be notified of academic honesty infractions.

Notice of Non-Discrimination:

Midwestern State University is an equal opportunity educator and employer that values diversity. In our educational, admissions and employment policies, scholarship and loan programs, and athletic and other activities, Midwestern State University does not discriminate on the basis of age, race, color, national or ethnic origin, disability, sex, gender identity, gender expression, sexual orientation, religious affiliation, veteran status, or any other protected status.

Student Expectations:

Students have responsibilities for achieving the course objectives. Learning is a process that requires effective skills and strategies that you must actively develop. In this course the foundation of academic success includes:

- Attending class
- Reading the assigned material
- Submitting assignments
- Asking your professor (Dr. Timothy Pegg) for assistance and clarification of topics when required

Tentative Lecture Schedule

Week	Day	Date	Topic	Ch. Assignment
1	M	8/28	Syllabus, Introduction to Botany, Plant Overview	Ch. 2
1	W	8/30	Plant Overview, Ethnobotany and Historical Sig	Ch.2, Ch. 3
1	F	8/26	Ethnobotany and Historical Significance	Ch. 3
2	M	8/29	Cell Structure	Ch. 4
2	W	8/31	Cell Growth and Division	Ch. 5
2	F	9/2	Cell Growth and Division	Ch. 5
3	**M**	**9/5**	**Labor Day – No Class**	---
3	W	9/7	Tissues and Primary Growth of Stems	Ch. 6
3	F	9/9	Tissues and Primary Growth of Stems	Ch. 6
4	M	9/12	Leaves	Ch. 7
4	W	9/14	Leaves	Ch. 7
4	F	9/16	Roots	Ch. 8
5	M	9/19	Roots	Ch. 8
5	W	9/21	Research Presentation Info & Review Session	Handouts
5	**F**	**9/23**	**Exam #1**	---
6	M	9/26	Structure of Woody Plants; Secondary Growth	Ch. 9
6	W	9/28	Structure of Woody Plants; Secondary Growth	Ch. 9
6	F	9/30	Flowers and Reproduction	Ch. 9
7	M	10/3	Flowers and Reproduction	Ch. 10
7	W	10/5	Flowers and Reproduction	Ch. 10
7	F	10/7	Plant Metabolism: Photosynthesis & Respiration	Ch. 11,12
8	M	10/10	Plant Metabolism: Photosynthesis & Respiration	Ch. 11,12
8	W	10/12	Transport Processes	Ch. 13
8	F	10/14	Soils and Mineral Nutrition	Ch. 14
9	M	10/17	Soils and Mineral Nutrition	Ch. 14
9	W	10/19	Developmental and Morphogenesis	Ch. 15
9	F	10/21	Developmental and Morphogenesis	Ch. 15
10	**M**	**10/24**	**Exam #2**	---
10	W	10/26	Genetics of Metabolism and Development	Ch. 16
10	F	10/28	Genetics of Metabolism and Development	Ch. 16
11	M	10/31	Plant Population Genetics and Evolution	Ch. 17, 18
11	W	11/2	Plant Population Genetics and Evolution	Ch. 17, 18
11	F	11/4	Classification & Systematics	Ch. 19
12	M	11/7	Algae & Origin of Eukaryotic Cells	Ch. 20
12	M	11/7	Algae & Origin of Eukaryotic Cells	Ch. 20
12	W	11/9	Nonvascular Plants	Ch. 21
12	F	11/11	Nonvascular Plants	Ch. 21
13	W	11/16	Vascular Plants	Ch. 22, 23, 24
13	F	11/18	Vascular Plants	Ch. 22, 23, 24
14	**M**	**11/21**	**Exam #3**	---
14	**W**	**11/23**	**Thanksgiving Break – No Class**	---
14	**F**	**11/25**	**Thanksgiving Break – No Class**	---
15	M	11/28	Plant Populations & Ecosystems	Ch. 25
15	W	11/30	Plant Community Ecology	Ch. 26
15	F	11/2	Biomes	Ch. 27

Tentative Lab Schedule

Week	Date	Topic	Manual Chapter
1	8/28	Syllabus, Introduction to Botany and Microscopy	Ch. 1
2	**9/04**	**Labor Day – No Lab**	**----**
3	9/11	Plant Cells, Cell Division	Ch. 3, 4
4	9/18	Plant Tissues: Stems	Ch. 5
5	9/25	Plant Tissues: Leaves	Ch. 6
6	10/02	Plant Tissues: Roots	Ch. 7
7	10/09	Secondary Meristems and Woody Growth	Ch. 8
8	10/16	Photosynthesis	Ch. 9
9	10/23	Cellular Respiration and Fermentation	Ch. 10
10	10/30	Mineral Nutrition	Ch. 12
11	11/06	Nonvascular & Seedless Plants	Ch. 17 & 18
12	11/13	Gymnosperms	Ch. 19
13	11/20	Angiosperm: Flowers	Ch. 20
14	11/27	Angiosperm: Fruit	Ch. 21
15	**12/04**	**Research Presentations**	**---**

Final Exam = Wednesday, December 13, 8:00-10:00am