Mayville State University

BIOL 236L Survey of Botany Laboratory

Michael E. Kjelland, M.S., Ph.D.

Fall, 2025

1 Semester Hour

Contact Information:

Instructor Name: Dr. Michael Kjelland

Contact Information: 701.788.4733, michael.kjelland@mayvillestate.edu;

Location: Office SB 136

Hours of Availability: 10 am - 11 am W, or by appointment

Instruction Mode: On-campus face-to-face

Time Zone: All times indicated throughout this syllabus reflect Central Time Zone (CT).

Meeting Times and Location: 8:00 am – 9:50 am, Tuesday in MaSU Sc. Bldg. 142

Course Dates: August 26 - December 19, 2025 (tentatively)

Final Exam Time and Location: Dec. 9, 8:00-9:50 AM, Science Bldg Room # 142

How to address your instructor: Dr. Kjelland/Professor Kjelland. (Pronounced Chelland)

Zoom Link: Will be sent in an email to the student/s when necessary

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Course Description

> *"One must learn by doing the thing; for though you think you know it, you have no certainty until you try."*
>
> **Sophocles**

The BIOL 236L laboratory course is intended to introduce or expand upon ideas and concepts relevant to the corresponding "lecture" class. Lab activities related to the lecture to include microscopy and field activities.

Good laboratory experiences can make a significant contribution to your professional work and expand the meaning and enjoyment of your life. Many of these experiences are particular to this course; they may not be confronted anywhere else in your college career.

Pre-/Co-requisites: Pre-requisite: BIOL 151. Co-requisite: BIOL 236.

Purpose of the Course

The purpose of this lab course is to provide an opportunity for the student to apply the theoretical knowledge presented in lecture and get practical experience working in a laboratory setting.

Course Objectives

To successfully complete this course, the learner will be expected to meet the following objectives, as aligned to Composite Science Education Program Approval Standards through North Dakota's Education Standards and Practices Board (ND ESPB):

In this laboratory class you will:

1. Apply theoretical ideas to practical situations - a critical aspect of most careers.
2. Gain skill in performing certain operations, often detailed and complex, to a successful conclusion, and thereby develop confidence in your own abilities and the reliability of scientific experimentation.
3. Learn to make sound conclusions based on your own observations of experimental data.
4. Arrive at a decision as a member of a cooperative group.

Standards Alignment (Composite Science Education Program Approval Standards-ND ESPB):

- 13047.1 Composite Science Major/General Science The composite/general science program requires that environmental science be incorporated within other courses or as a separate course. The composite/general science program requires:1. Coursework in biology, chemistry, physics, and earth science, including: a. Minimum of twenty four semester hours in one area, b. Minimum of twelve semester hours in two other areas, c. Minimum of four semester hours in the fourth area, d. Courses must be from those that the institution allows toward graduation in the science major. 2. Study of mathematics through the pre-calculus level (college algebra and above) and statistics

Program Student Learning Outcomes (SLOs) Addressed in This Course (required)

The Academic Program Student Learning Outcomes document can be found in your course shell. It contains all learning outcomes pertaining to Essential Studies courses and all majors and minors. The document has an index, so you can quickly find the degree you are pursuing.

As part of Mayville State's effort to demonstrate continuous improvement in achieving student learning outcomes, this course:

☐ introduces SLO # ☒ reinforces SLO #1,2 ☐ masters SLO # For Major / Minor: Biology Major	☐ introduces SLO # ☒ reinforces SLO #1,2,3,4 ☐ masters SLO # For Major / Minor: Biology Minor	☐ introduces SLO # ☒ reinforces SLO #1,2,3,4 ☐ masters SLO # For Major / Minor: Biology Education Minor	☐ introduces SLO # ☒ reinforces SLO #1,2 ☐ masters SLO # For Major / Minor: Science Composite Educa

Describe the assessments being used.

As part of Mayville State's effort to demonstrate continuous improvement in achieving Essential Studies Learning Outcomes, this course will assess

ELO # ☐1 ☐2 ☐3 ☐4

as part of the Essential Studies and Capstone Courses. As part of Mayville State University's Essential Studies curriculum, this course seeks to prepare students for twenty-first century challenges by gaining: 1) Knowledge of human cultures; 2) Intellectual and practical skills; 3) Personal and social responsibility; 4) Integrative and applied learning.

Course Improvements Based on Most Recent Assessment Findings

This course was assessed in 2019 and will be again in the future. Past results were acceptable; so no improvements were identified.

During previous offerings of this course, students have done well. Even though students have met expectations in the course, I will be spending more time explaining diagrams that are pertinent to the education of students. I would prefer to see structure identification and function scores to be higher. In addition, oral communication skills of students were assessed for content knowledge, vocabulary, presentation skills and preparation. Students exceled in oral communication as long as they took the time to use their own words to explain terminology.

Required/Recommended Materials

MSU Technology Requirements

There is no required text or materials for this lab course. Handouts will be posted on Blackboard® or given in class.

Use of Artificial Intelligence in this Course

AI may be incorporated at times when directed by the course instructor.

Instructional Strategies

Multiple strategies will be utilized during the semester including the following:

- Direct instruction
- Indirect instruction
- Interactive instruction
- Experimental learning and modeling
- Guided and independent study
- Cooperative learning activities
- Class Discussions
- Application
- Inquiry approach

- Questioning skills

Learning Experiences

Student Responsibilities:

Everyone enrolled in a laboratory course must be familiar with the safety guidelines.

Come to class prepared. This preparation includes reading through the laboratory handout which outlines the experiment. You should be able to answer the pre-lab questions.

"In the field of observation, chance favors only the prepared mind." Louis Pasteur

Participate in the laboratory experience. Collection of experimental data will always be part of the experience. You will record your observations in some manner – paper or electronically. In some instances, calculations will be required to fill in a data table, therefore it is recommended that you bring a calculator to lab.

Write a laboratory report for each experiment. One week following the collection of the experimental data, the written report is due.

- Read all chapters prior to completing labs or do appropriate research online, including chapters as noted, research articles, etc.
- Assignments will be given in lab or through Blackboard®.
- Quizzes in Blackboard are required to be completed on or before designated due dates.
- It is important for you to check your grades in Blackboard. If you find that the instructor has made a mistake while entering your grade, you have one week to bring it to the attention of the instructor. After a ONE WEEK PERIOD, grades will be locked in Blackboard.
- Please refrain from requesting extensions as they will not be granted. Please not this before starting the course and refrain from leaving negative feedback in you miss a deadline and are not granted an extension. Please do not feel disrespected if your request does not receive a reply, by continuing in the course, you accept this rule. This is your formal notification about requests for extensions. **If requesting an extension, you need to have a university excused absence and include DOCUMENTATION in your initial email.**

Individual laboratory reports for each experiment are required. Reports should include the data collected during the experiment, a conclusion, and answers to any post- laboratory questions. Reports are due one week after the experimental data are collected. Calculations should include proper units. All answers must be labeled. Graphs should be labeled. Even if you do the experiment with a partner, you must turn in your own report. If you use information from a book or table, include the reference in an endnote to your report.

A journal activity monitoring and documenting development from seed to plant will be required.

A field activity classifying plants and documenting diversity within a given area of the Mayville community will be required.

At the end of the semester, a Final Exam will be given. These questions will be based upon the experiments and lab work that you have performed during the semester.

Instructional Technologies Utilized in this Course

- Blackboard®
- Labster
- Starfish
- MS Office Suite (Mac programs/documents will not be accepted because they do not open)

Expectations/Protocols

As a student you are expected to:

- Begin the lab course when the semester begins.
- Answer questions appropriately: Some lab report answers may be given without full sentence structure where appropriate to the questions asked, but must clearly answer all parts for the question, contain correct spelling and display appropriate grammar and word usage. Answers to other questions, such as essay questions or short answer questions, which ask students to "explain", "compare" or "describe", should display appropriate sentence structure and logical development of thought. **Every single answer needs to be put into your own words. Copy and paste is plagiarism and will receive a score of ZERO**
- Check your Mayville State email and the ANNOUNCEMENTS forum on the course home page a minimum of once daily to remain current on course information and changes.

Instructor/Student Communication

- Students are accountable for all academic communications sent to their Mayville State University e-mail address. Students should not use outside email. Instructor is not responsible for emails not received (by instructor themselves or by students) if outside email is used.
- Faculty response time can be up to 72 hours during the work week if a specific question is asked (most emails are answered within 24 hours during the week). If no questions is explicitly asked, a response may not be deemed necessary. Emails will not be checked on the weekends. An email sent on a Friday afternoon may not be responded to until the following Tuesday (or longer if there is a holiday). Please plan ahead accordingly.

Method of Evaluation/Grading

1) Grades for labs, quizzes, lab practical's can be anticipated within 2 weeks of the due date. Turning an assignment in early does not mean grading will be done early. Sometimes, a set of assignments will take longer to grade, especially if the assignment is heavy in text (some labs may fall into this category) and may take an additional week.

2) With regard to late submissions, they are not accepted. Make-up practicals, missed labs/quizzes are ONLY permitted if there is a UNIVERSITY EXCUSED ABSENCE AND <u>THERE IS DOCUMENTATION</u>. Being busy, over sleeping, taking an extra shift, or general issues are NOT university excused absences. Please

do not ask for extensions based upon these issues. If a university excused absence is in place with documentation, the student has 1 (one) week to complete the activity. This is one week from the day of the due date, NOT a week from when the student returns or contacts the instructor. After 1 (one) week, no points will be awarded. Determination of a university excused absence is based upon being sick and having gone to a medical professional (who can provide documentation), university sporting event in which you are actively participating in (which documentation is required), death in the immediate family (grand parent, parent, sibling, child, aunt/uncle for which you can provide documentation), military deployment (which documentation can be provided for), or legal (such as a court date that documentation can be provided for). Moving or travel is NOT a university excused absence. Academic accommodations related to the aforementioned exceptions (or related ones) need to be approved by Mindy O'Connor. In terms of attendance and/or participation points, please see section above.

Grades will be TENTATIVELY based on two regular exams, a final exam, numerous lab assignments and lab quizzes. ***There will be no make-ups for lab practical exams, except under extreme circumstances (medical, legal or military). You can only make up one exam during the semester and it must be during the exam week. You must take both lab practicals to pass the course.*** The grading scale is the typical 90% = A, 80%=B, 70%=C, 60%=D, <60%=F. **IT IS IMPORTANT FOR YOU TO CHECK YOUR GRADES ON BLACKBOARD. IF YOU FIND THAT I HAVE MADE A MISTAKE WHILE ENTERING YOUR GRADE YOU WILL HAVE ONE WEEK TO BRING IT TO MY ATTENTION, AFTER THAT GRADES ARE LOCKED IN BLACKBOARD.**

Practical Exams	100 points (2 worth 40 points, Final = 20 points)
Lab Quizzes	25 points (2 worth 25 points)
Assignments	175 points (5 worth 10 points, 5 worth 25 points)
Total	***300 points***

Grades (%):	90-100	A
	80-89	B
	70-79	C
	60-69	D
	< 60	F

Late Arrivals

The grading system for students adding this course after the first day of instruction will not be modified. The student will be graded on the activities that transpired from the beginning of the course. Students will be penalized for missed assignments and the student is still responsible for learning the course material that was covered during their initial absence. By continuing the course, you accept this rule.

Important Student Information

In the Blackboard course, you will find a document entitled, "Important Student Information," which includes information about:

- ✓ Academic Grievance Concerns and Instructor English Proficiency
- ✓ Starfish - Student Success System

- ✓ Students with Documented Disabilities
- ✓ Academic Honesty
- ✓ Emergency Notification
- ✓ Continuity of Academic Instruction for a Pandemic or Emergency
- ✓ Family Educational Rights and Privacy Act of 1974 (FERPA)
- ✓ Diversity Statement

Additional Information

This classroom is a place where you will be treated with mutual respect, and the course instructor welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible or nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class. MSU is committed to providing a safe learning environment, free of harassment and discrimination as articulated in our university policies located on our website. MSU's policies require me as a faculty member to share information about incidents of gender-based discrimination and harassment with MSU's Title IX coordinator, regardless of whether the incidents are stated to me in person or shared by students as part of their coursework.

Starfish Statement

This class will participate in Starfish Early Alert and Connect, which promotes student success through coordination and communication among students, instructors, advisors, and campus support service departments. If I observe that you are experiencing difficulties in the course (attendance concerns, low test scores or participation, in danger of failing, etc.), I may send an email to your mayvillestate.edu email account through the Starfish system. My message will tell you about my concerns and the next steps to take to resolve the issue. Your advisor, the Director of Student Success, and/or I will work with you to create success strategies to address any difficulties you are having. In addition, if I observe that you are doing well in my course, you may also receive "kudos" from me acknowledging your efforts.

Starfish may involve taking advantage of various campus support services, such as academic tutoring or advising. If I recommend that you use campus support services, I, your advisor, or the Director of Student Success will redirect you to that support office so they will be better prepared to assist you. Starfish provides essential notices by email, so please check your mayvillestate.edu account frequently and respond quickly if you receive an email from Starfish.

Please see the Starfish webpage for additional details.

Bibliography:

Writing to Learn Botany, Moore, Randy, William C. Brown Publishing, Dubuque IA, 1995.

Laboratory Manual for Applied Botany, Levetin, E., McMahon, K., and Reinsvold, R., McGraw Hill, Boston MA, 2002.

Course Timeline/Schedule

All Lab Reports, Lab Quizzes and Lab Practical's must be completed by the scheduled due dates as listed below. Activities will be turned off as of 5pm CST on those due dates and no credit will be available for those activities after the due dates. If an emergency occurs, which affects your participation in this course, contact me immediately. Be prepared to provide proof (documentation). Being busy is not an emergency. Do not send an email saying you have a sick child or you have been sick, these assignments are open from day one and you can finish them before the due date. For the purposes of this course an "emergency situation" is an unexpected, unpreventable and significant occurrence which is university excused, which realistically prevents you from completing required coursework by its due date. You are expected to be aware of due dates and manage the required coursework within your personal schedule and obligations. For example, not submitting any coursework for 3 weeks and then not being able to submit it during week 4 because of an emergency that week is not acceptable.

NOTE: This is a **tentative** schedule. It may change based on instructor's schedule.

Lab Topic	Date/Week of:
No Lab	8/25/2025
Lab 1 – Introduction, Syllabus & Chapter 1	9/01/2025
Lab 2 – Chapter 2	9/08/2025
Lab 3 – Chapter 3	9/15/2025
Lab 4 – Chapter 4	9/22/2025
Lab 5 – Lab Practical Exam I	9/29/2025
Lab 6 – Chapter 5	10/06/2025
Lab 7 – Chapter 6	10/13/2025
Lab 8 – Chapter 7	10/20/2025
Lab 9 – Chapter 8	10/27/2025
Lab 10 – Lab Practical Exam II	11/3/2025
Lab 11 – Chapter 9	11/10/2025
Lab 12 – Chapter 10-11	11/17/2025
Lab 13 – Chapter 12-13	11/24/2025
Lab 14 – FINAL EXAM Review	12/1/2025
Lab 15 – FINAL EXAM	12/8/2025

Appendix

Coronavirus (COVID-19) Information for On-Campus Courses

The health and safety of our students, staff, and faculty is our top priority. Mayville State University is committed to resuming face-to-face instruction on campus beginning with the fall semester of 2020. Please refer to the *Fall 2020 COVID-19 Classroom Guidelines for On-Campus Courses* document for additional information regarding classroom expectations and modifications necessary to minimize exposure risk and promote health and safety for students and faculty within on-campus classes.

In the event that a rebound in COVID-19 local infections necessitates a change in course format, plans for remote options for this course include asynchronous or synchronous classroom instruction via Zoom and Yuja.