

Mayville State University

CHEM 360L

Elements of Biochemistry Lab

Bob Miess

Spring 2025

1 S.H.

Contact Information: Email: Robert.Miess@mayvillestate.edu Office: CB 108C, Extension: 34885

Hours of Availability: Monday @ 2, Thursday @ 11, Friday @ 2 other times by arrangement; my schedule is posted in the course shell and outside my office door

Instruction Mode: On-campus, face-to-face

Meeting Times and Location: T 8 – 9:50

Course Description

This course consists of one two-hour lab period per week. The assignments will be applicable to the lecture. Students will conduct experiments using appropriate technology, analyze data, and create lab reports using appropriate software applications.

Pre-/Co-requisites

CHEM 342, Organic Chemistry II, is required as a pre-requisite for this course but may be waived with instructor approval with exigent circumstances.

CHEM 360, Elements of Biochemistry, is a required co-requisite for this course. The lab will build on class discussion and provide opportunities to apply and observe topics under discussion.

Purpose of the Course

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

Sophocles

The CHEM 360L laboratory course is intended to introduce or expand upon ideas and concepts relevant to the corresponding "lecture" class.

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.

Course Objectives

The goals of the MSU Science program are to present current information on aspects of the physical world and to develop logical reasoning, sometimes mathematical, relating one process to another. Elements of Biochemistry prepares the student to discuss and work with the basic principles of biochemistry and its relationship to other disciplines as well as to describe different scientific models and how these models are used to stimulate scientific inquiry.

In this laboratory class you will (as aligned to Composite Science Education Program Approval Standards through North Dakota's [Education Standards and Practices Board](#)):

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
- 13047.3 Inquiry The program requires study of the processes of science common to all scientific fields.

Program Student Learning Outcomes (SLOs) Addressed in This Course

In CHEM 360L no high-stakes program activities have been identified at this time.

Required/Recommended Materials

There is no required lab text for this course. Lab handouts with experimental procedures will be posted on Blackboard. Reference materials are available in the lab. It is recommended you have a personal set of goggles or safety glasses. There are pairs of goggles available in the lab if you do not have them. You may wish to have a notebook for this course to record your data, results, and conclusions.

Expectations/Protocols

Laboratory Safety:

Everyone enrolled in this laboratory course must be familiar with the safety guidelines as presented during the first formal lab class meeting and evidenced by signing the Safety Agreement which will be collected by the instructor.

My lab course expectations include:

1. Come to class prepared. This preparation includes reading through the laboratory handout which outlines the experiment. You should be able to answer pre-lab questions on a quiz.
"In the field of observation, chance favors only the prepared mind."

Louis Pasteur

2. Participate in the laboratory experience. Collection of experimental data will always be part of the experience. You will show calculations and record observations and results in

your notebook. In some instances, calculations will be required to fill in a data table, therefore it is recommended that you bring a calculator to lab or at least have access to one. I discourage you from bringing your computer into the lab just for protection reasons as some of the chemicals we use can cause damage to them as well as there can be water spills and leaks. For these reasons, you may wish to print a paper copy of the procedure.

3. A formal written laboratory report for each experiment is needed which follows a journal article format (abstract, introduction, procedure, data, conclusions. Typically, this report will be due two weeks following the collection of the experimental data. A sample report will be provided as a guide for your work to demonstrate expectations.
4. Attend all laboratory class periods. Only absences due to an University approved excuse will be approved. If you miss a period due to an excused absence you will be allowed to make up the work at a time that mutually works in your schedule and in the instructor's schedule. It is your responsibility to make the arrangements. If you miss a period due to an unexcused absence you will not be allowed to make up the work. You will receive a "0" grade for the missed lab.

Instructor/Student Communication

Students are accountable for all academic communications sent to their Mayville State University e-mail address and all information posted on the course Blackboard site.

Assignments can be submitted electronically via email or using the appropriate drop box posted in the course schedule.

I will respond to all emails sent Monday – Friday within 24 hours. Weekend emails will be addressed the first day of the next work week, typically by noon.

Method of Evaluation/Grading

I will normally return graded reports within 72 hours of collection. I will post grades on Blackboard within this same timeframe. If someone is not participating or not taking care of business, I may ask you to join me for a personal conference outside of class time.

You should know what your grade is by simply looking at the Blackboard gradebook.

The Quizzes total will count 15% of your course grade. The reports will make up the remaining 85% of the total grade.

The total of these percentages will be used to determine the final letter grade in the course using the typical 90, 80, 70 scale.

Enrollment Verification

The U.S. Department of Education requires instructors to validate student enrollment. As this is an on-campus course, attendance will be used as verification. Logging into the LMS is **NOT** considered attendance. If it is not validated, your enrollment in this course will be at risk.

Important Student Information

In the Announcements section of the Blackboard Institution Page, you can view and download the Important Student Information document for the current academic year. It includes information about:

- ✓ Land Acknowledgement Statement

- ✓ Academic Grievance Concerns and Instructor English Proficiency
- ✓ NetTutor - Online Tutoring Program
- ✓ Starfish - Student Success System
- ✓ Students with Documented Disabilities
- ✓ Student Learning Outcomes / Essential Learning Outcomes
- ✓ Academic Honesty
- ✓ Emergency Notification
- ✓ Continuity of Academic Instruction for a Pandemic or Emergency
- ✓ Family Educational Rights and Privacy Act of 1974 (FERPA)
- ✓ Diversity Statement (Title IX)