

CHEM 122L: General Chemistry II Laboratory

Self-Paced Enroll Anytime Online Course

This is an unofficial syllabus and is subject to change at any time. The official course syllabus is posted in Blackboard.

Instructor & Course Information

Credits	1 undergraduate credit
Prerequisite	CHEM 121: General Chemistry I and CHEM 121L: General Chemistry I Lab
Corequisite	CHEM 122: General Chemistry II

Instructor Michael Whitney*

Contact information See the Blackboard course for contact information and the instructor bio.

*If you have any course questions prior to enrollment, please email und.online@und.edu

Course Description and Objectives

This course is the laboratory which accompanies CHEM 122: General Chemistry II. After successfully completing this course, students will be able to do the following:

Basic Laboratory Skills and Record Keeping

- Adhere to instructions with respect to laboratory safety and to recognize hazardous situations and act appropriately.
- Recognize standard laboratory glassware and analytical equipment.
- Correctly carry out common laboratory procedures.
- Measure and report quantities with appropriate precision.
- Convert raw data to a physically meaningful form.
- Properly maintain a laboratory notebook with enough detail that others could repeat any of their experiments.

Maturity and Responsibility

- Effectively prepare in advance for laboratory work.
- Work individually or effectively as part of a team.
- Learn from mistakes.

Context and Communication

- Plan and collect data to answer a scientific question.
- Analyze data to identify relationships and to effectively report the data.
- Make a claim and support that claim with evidence from the collected data.
- Recognize whether results and conclusions "make sense".
- Communicate chemical principles in oral and written form.

Integration and application of knowledge/experience

- Apply information and experience from math and science courses to current and future work.

- Apply critical thinking in the laboratory.
- Recognize the applicability of scientific principles to real world situations.

The learning objectives for each experiment are in the Lesson folders on Blackboard.

Essential Studies – Requirements & Goals

The combination of CHEM 122 and 122L fulfills UND's Essential Studies Requirement of a 4-hour science course with lab and it provides 4 of a required 9 hours of Math, Science, and Technology. CHEM 122 and 122L are also Quantitative Reasoning courses – meaning skills related to quantitative reasoning contribute to 30% or more of the final grade. Such skills include arithmetic/basic algebra, data analysis/interpretation, finding and using quantitative information in context, communicating quantitative data (mathematically, visually, orally, and/or in writing), as well as translating among these various forms.

Textbook and Course Materials

1. **Hands on Lab (HOL) Student Lab Kit.** Students can order their lab kit directly from HOL using the link provided on Blackboard. The cost of the Lab Kit (LP-3249-CK-01) is \$177.23 plus shipping.
2. **Textbook:** *Chemistry 2e*, OpenStax, 2019, this e-text is free and accessed online via the following link: [OpenStax Textbook Website](#). If you would like a paper copy, use the following ISBN-13: 9781593995782
3. **Student Solution Guide:** [OpenStax Website](#)
4. **Scientific Calculator**

Technical Requirements

The [UND Technical Support webpage](#) contains information on your UND email and how to download a free version of Microsoft Office.

- Students are expected to use their official UND email in the course.
- You will use Microsoft Word to complete assignments.
- [View the basic technical requirements](#) for every online course.

Lesson/Lab Topics

Lesson	Topic	Location
1	Getting Started	HOL website
2	Laboratory Safety	HOL website
3	Exp 1: Colligative Properties and Osmotic Pressure	HOL website
4	Exp 2: Reaction Order and Rate Laws	HOL website
5	Exp 3: Equilibrium and Le Châtelier's Principle	HOL website
6	Exp 4: Determination of the K_a of a Weak Acid	HOL website
7	Exp 5: Using Buffers	HOL website
8	Exp 6: Oxidation-Reduction Activity Series	HOL website
9	Exp 7: Electrochemical Cells and Cell Potentials	HOL website
10	Lab Final Exam	Blackboard

Assessment and Grading

This course contains 10 lessons designed to focus your study of Chemistry and to assist you in achieving the course learning objectives/outcomes. You will work on a combination of initial activities, 7 experiments, and a final exam.

Each lesson contains the following structural elements

- Lesson Learning Outcomes/Objectives
- Lab Materials list
- To-Do List
- Video and Supporting Material
- Link to lab content on Hans On Labs

Point Breakdown and Grading Scale

Getting Started	12 pts (4.27%)
Laboratory Safety	38 pts (13.52%)
Exp 1: Colligative Properties and Osmotic Pressure	29 pts (10.32%)
Exp 2: Reaction Order and Rate Laws	20 pts (7.12%)
Exp 3: Equilibrium and Le Châtelier's Principle	30 pts (10.68%)
Exp 4: Determination of the K_a of a Weak Acid	31 pts (11.03%)
Exp 5: Using Buffers	33 pts (11.74%)
Exp 6: Oxidation-Reduction Activity Series	31 pts (11.03%)
Exp 7: Electrochemical Cells and Cell Potentials	27 pts (9.61%)
Lab Final Exam	30 pts (10.68%)
Total points used to derive grade	281 pts (100%)

Letter grades (A, B, etc.) will be awarded ONLY based on the total number of accumulated points

A	89.50% to 100.00%
B	79.50% to 89.49%
C	69.50% to 79.49%
D	59.50% to 69.49%
F	00.00% to 59.49%

Course Evaluation

Near the end of the course you will find the link to the course completion survey. Your feedback on the course is very important to me. Please provide honest and constructive feedback. I read all students' comments carefully and use them to improve my course. The responses are compiled twice a year so your responses remain anonymous.

Netiquette

Netiquette is a set of rules for behaving properly online. Here are a few basic points to remember when communicating in this course:

- **Be scholarly.** Use proper language, grammar, and spelling. Explain your thoughts, justify opinions, and credit the ideas of others by citing or linking to scholarly resources. Avoid misinforming others when you are unsure of the answer. When discussing something and supplying a guess, clearly state that.
- **Be respectful.** Respect the privacy of others. Do not share personal or professional information about others unless permission has been granted. Respect diversity and opinions that differ from their own. Be tactful when you communicate.
- **Be professional.** Everyone should strive to give their best impression online. Truthfulness, accuracy, and running a final spell check are appropriate expectations for university students. Writing in a legible font and limiting the use of emoticons is considered professional behavior. Profanity and participation in hostile interactions, known as flaming, is unprofessional as well as disruptive.

- **Be polite.** Students should be addressing professors and instructors by the appropriate title or requested name. Students should interact online politely, just as they would be expected to do in a physical environment. Sarcasm rudeness, and writing in all capital letters (shouting) should be avoided.

About UND Self-Paced Enroll Anytime Courses

You have 3 to 9 months to complete this course from the time of your enrollment. You may work at your own pace and complete lessons/exams on your own schedule, submitting up to 3 per week for grading.

After you finish your course, your final grade will be posted in Blackboard. Please **allow 3-5 business days for your final grade to appear** on your transcript in Campus Connection. You will receive a confirmation email from the Enroll Anytime staff once the final grade is officially posted on your transcript. You may then order an official transcript, if desired.

If you have an **administrative** question regarding course enrollment dates, extensions, withdrawals, questions regarding your transcript, or need exam assistance, please contact the **Office of Extended Learning** at und.courses@UND.edu or 701-777-0488.

Questions regarding **coursework** should be directed to the **instructor**.

For **technical support** including username and password help, assignment submission, or other technical assistance in the course, contact [University Information Technology](#).

Student Resources

UND cares about your success as a student. For more information, visit the [Student Resources Page](#) for additional information. Students have access to assistance from the [UND Writing Center](#), [tutoring services](#), and more.

A final note

Chemistry can be a difficult subject. Thus, I highly recommend that any student who struggles or needs any help meet with me as early in the SPEA term as possible. Questions that come up should be resolved as soon as possible to avoid getting behind, and to prevent difficulty in understand new concepts that build upon old ones. Students are expected to take responsibility for their own education and to work at an appropriate pace. To receive more valuable feedback on your assignments and to avoid the need for cramming, I recommend that you work a steady pace and try to turn in assignments as soon as possible.

University of North Dakota Policies & Resources

Academic Integrity

Academic integrity is a serious matter, and any deviations from appropriate behavior will be dealt with strongly. At the discretion of the professor, situations of concern may be dealt with as a scholastic matter or a disciplinary matter.

As a scholastic matter, the professor has the discretion to determine appropriate penalties to the student's workload or grade, but the situation may be resolved without involving many individuals. An alternative is to treat the situation as a disciplinary matter, which can result in suspension from the University, or have lesser penalties. Be aware that I view this as a very serious matter, and will have little tolerance of or sympathy for questionable practices. A student who attempts to obtain credit for work that is not their own (whether that be on a paper, quiz, homework assignment, exam, etc.) will likely receive a failing grade for that item of work,

and at the professor's discretion, may also receive a failing grade in the course. Read more in the [Code of Student Life](#).

Accessibility for Students

The University of North Dakota is committed to providing equal access to students with documented disabilities. To ensure access to your classes and program, please contact [Accessibility for Students](#) to engage in a confidential discussion about accommodations for the classroom, clinical and/or online course settings. Accommodations are not provided retroactively. Students are encouraged to register with Accessibility for Students at the start of their class/program. More information can be obtained by email UND.accessibilityforstudents@UND.edu or by phone at 701.777.2664.

If you receive an exam accommodation from Accessibility for Students, please share the letter with the Office of Extended Learning at UND.courses@UND.edu.

Religious Accommodations

UND offers religious accommodations, which are reasonable changes in the academic environment that enable a student to practice or observe a sincerely held religious belief without undue hardship on the University. Examples include time for prayer or the ability to attend religious events or observe a religious holiday. To request an accommodation, complete [student religious accommodation request form](#). If you have any questions, you may contact the [Equal Opportunity & Title IX Office](#).

Pregnancy Accommodations

Students who need assistance with academic adjustments related to pregnancy or childbirth may contact the Equal Opportunity & Title IX Office to learn about your options. Additional information and services may be found at [Pregnancy Resources](#).

Resolution of Problems

Should a problem occur, you should speak to your instructor first. If the problem is not resolved by speaking with your instructor, contact the department chair, and next to the Dean's office. Should the problem persist after taking these initial steps, you have the right to go to the provost next, and then to the president.

Notice of Nondiscrimination

It is the policy of the University of North Dakota that no person shall be discriminated against because of race, religion, age, color, gender, disability, national origin, creed, sexual orientation, gender identity, genetic information, marital status, veteran's status, or political belief or affiliation and the equal opportunity and access to facilities shall be available to all. Concerns regarding Title IX, Title VI, Title VII, ADA, and Section 504 may be addressed to Donna Smith, Assistant Vice President for Equal Opportunity & Title IX and Title IX/ADA Coordinator, by calling 701.777.4171 or emailing UND.EO.TitleIX@UND.edu. Concerns can also be directed to the Office for Civil Rights, U.S. Department of Education, 230 S. Dearborn St., 37th Floor, Chicago, IL 60604, or any other federal agency.

Reporting Discrimination, Harassment, or Sexual Misconduct

If you or a friend has experienced sexual misconduct, such as sexual harassment, sexual assault, domestic violence, dating violence, or stalking, please contact the [Equal Opportunity & Title IX Office](#) or UND's Title IX Coordinator, Donna Smith, for assistance: 701.777.4171; donna.smith@UND.edu. You may also contact the Equal Opportunity & Title IX office if you or a friend has experienced discrimination or harassment based on a protected class, such as race, color, national origin, religion, sex, age, disability, sexual orientation, gender identity, genetic information, pregnancy, marital or parental status, veteran's status, or political belief or

affiliation.

Faculty Reporting Obligations Regarding Discrimination, Harassment, and Sexual Misconduct

It is important for students to understand that faculty are required to share with UND's Title IX Coordinator any incidents of sexual misconduct or of discrimination or harassment based on a protected class they become aware of, even if those incidents occurred in the past or are disclosed as part of a class assignment. This does not mean an investigation will occur if the student does not want that, but it does allow UND to provide resources to help the student continue to be successful at UND. If you have been impacted by discrimination, harassment, or sexual misconduct, you can find information about confidential support services at the [Equal Opportunity & Title IX Office](#).

How to Seek Help When in Distress

We know that while college is a wonderful time for most students, some students may struggle or have issues that arise. You may experience students in distress on campus, in your classroom, in your home, or within residence halls. Distressed students may initially seek assistance from faculty, staff members, their parents, and other students. In addition to the support we can provide to each other, there are also professional support services available to students on campus through the Dean of Students and the [University Counseling Center](#). Both staffs are available to consult with you about getting help or providing a friend with the help that he or she may need. For more information, visit the [UND Cares Program website](#).

Land Acknowledgement Statement

Today, the University of North Dakota rests on the ancestral lands of the Pembina and Red Lake Bands of Ojibwe and the Dakota Oyate - presently existing as composite parts of the Red Lake, Turtle Mountain, White Earth Bands, and the Dakota Tribes of Minnesota and North Dakota. We acknowledge the people who resided here for generations and recognize that the spirit of the Ojibwe and Oyate people permeates this land. As a university community, we will continue to build upon our relations with the First Nations of the State of North Dakota - the Mandan, Hidatsa, and Arikara Nation, Sisseton-Wahpeton Oyate Nation, Spirit Lake Nation, Standing Rock Sioux Tribe, and Turtle Mountain Band of Chippewa Indians.