

CHEM 220: Environmental, Analytical & Geochemistry

About the course

Chemical equilibria are fundamental in the understanding of biological and environmental processes and in chemical analysis. This course emphasizes quantitative and graphical interpretation of acid-base, solubility, and redox equilibria in aqueous solution and soils. Laboratory work stresses application of gravimetric, volumetric, and spectrophotometric techniques.

After taking this course, you'll be able to:

- Use symbolic and mathematical language to plan solutions to sequential and parallel chemical problems
- Foster an engaged and interactive learning community through group activities.
- Plan and execute laboratory procedures independently and with high precision and accuracy.

Land acknowledgement: The land on which we gather is a sacred indigenous place located within the ancestral territories of the sovereign Sac and Fox, Ho-Chunk, and Potawatomi Nations, as recognized by treaties between those nations and the United States of America. Recognizing and honoring Native occupancy is a key part of our commitment to inclusion and anti-racism.

Course Materials and Resources

Online resources and references	<ol style="list-style-type: none"> 1. Textbook: 2. Textbook: <i>Chemistry 2e</i> by OpenStax (https://openstax.org/details/books/chemistry-2e) 3. Course website: https://moodle.beloit.edu/course/view.php?id=3078 https://chemistry.beloit.edu/classes/Chem220/index.html
Classroom materials	<ol style="list-style-type: none"> 1. Calculator (must do scientific notation)
Laboratory materials	<ol style="list-style-type: none"> 1. Laboratory notebook (dedicated lab notebook) 2. Safety goggles (provided)

Course Values and Policies

- **Inclusivity:** Inclusivity is a demonstration of equity and social justice through awareness, understanding, and respect for the differences in identity, culture, background, experience, and socialization, and the ways in which these forms of difference impact how we live and learn. Inclusivity requires equitable, institution-wide representation and access to resources. In practice, this manifests itself by each individual being aware of, committed to, and responsible for the well-being and care of all students, staff, and faculty.
- **Safety:** This is our highest priority in the classroom and lab. **Preparing for lab by reading over the procedure, thinking through the actions you will take, and familiarizing yourself with**

any chemicals with which you will work is the best way to be safe in the lab. Please follow laboratory safety rules outlined during lab. Always wash your hands before and after lab, AND before and after touching shared materials in the classroom. If you feel unwell or are experiencing any symptoms of COVID-19, please stay home and get tested.

- **Academic honesty:** As a student, you are obligated to familiarize yourself with and adhere to the Academic Honesty policy in the Beloit College [Student Handbook](#).
- Science is collaborative, but ultimately the work you do in this class must be your own, original work. If someone helps you or if you work with someone on a lab or calculation, acknowledge that person's help in your lab notes or report. If you get help from a book or an article, acknowledge the source by putting down the reference. *Representation of someone else's work as your own or falsification of data can result in failing the course and in suspension or dismissal. Plagiarism and other forms of academic dishonesty will be reported to the Dean of Students for disciplinary action.*
- **Attendance:** Group work and laboratory skills are essential learning components of this course and therefore, like all courses at Beloit College, in person attendance is required. You will learn the most from this course by coming to class *on time*, actively engaging with the content, and collaborating with your peers. However, if you are feeling ill or an emergency arises and you cannot attend our regularly scheduled class time, please reach out to your instructor and group members as soon as possible so that we can make alternative arrangements. *Because performing laboratory activities is an essential component of this course, to pass this course **the maximum number of absences allowed for this course is five days.***
- **Punctuality:** Please arrive before class starts, arriving late is disruptive for your classmates, and will lead to you missing important announcements and safety information.
- **Collaboration:** Scientists work together to solve problems and make new discoveries. We will practice that collaboration in this course. You will often work with a partner in the lab and in small groups during classroom activities. In this course, we strive to foster a collaborative environment in which class members reach out to assist each other; at your table, please work to assure each group member is at the same point in the activity. This may feel uncomfortable, but please reach out to your neighbor and ask them for clarification or offer guidance if they are not at the same place as you are.
- **Quiz policies:** Please plan to remain in the classroom (no restroom breaks) during quiz time. If an emergency arises and you need to leave, please leave your cell phone on the table where your instructor can see it. During quizzes you will be allowed to use your calculator and select reference materials provided by your instructor.
- **We are not able to offer any make-up labs or quizzes.** See dropped assignments.

How to Succeed

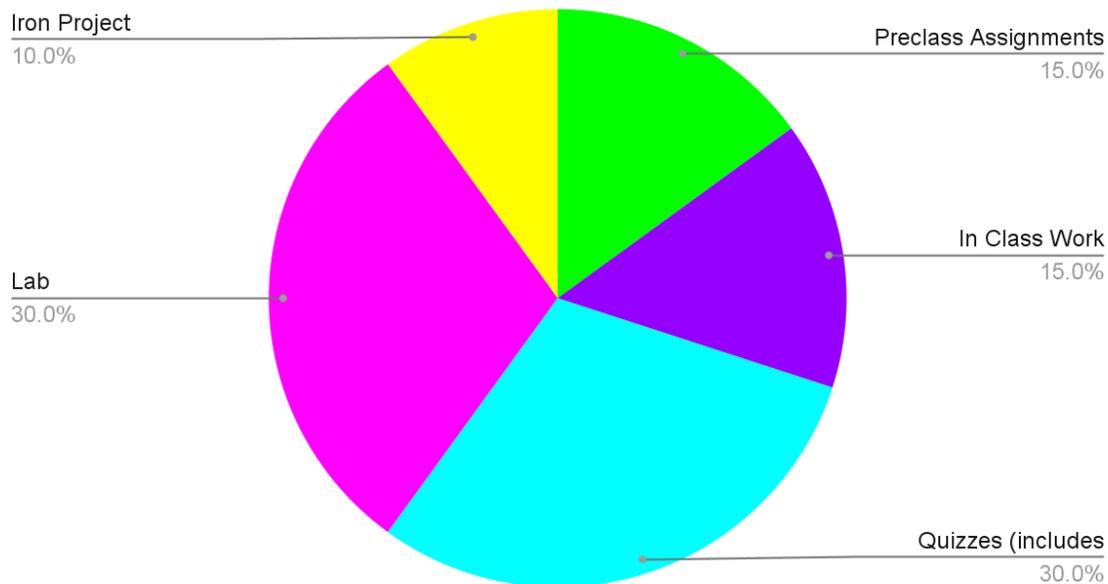
- Attend and actively participate in class
- Complete preclass assignments
- For every lab, come prepared with your Purpose and Method and understanding of the procedure
- Set regular study times

Assignments and Assessments

How you'll be assessed:

Preclass Assignments	15%
In Class Work	15%
Quizzes (includes Final)	30%
Lab	30%
Project	10%

Grade Breakdown



- **Preclass Assignments:** A preclass assignment is due (one Moodle) before every class day. This assignment is due at 11:59pm the day before class. These assignments will ensure you are prepared for class and help me prep the course materials for the next day, therefore late work will not be accepted and they will be graded for correction. You have an unlimited amount of times to take the quiz. The highest grade will be kept. In order to accommodate students, **your lowest four preclass assignments will be dropped** and there will be no makeups. Every week, typically Friday, preclass assignments include a mental health check-in (completion).

- **In Class Work:** If you are in class and working diligently, you will get these points. There will be no makeups. **The lowest four assignments will be dropped.**
- **Quizzes:** You will have four quizzes (including the final) over the course of the class. The quiz will consist of a 30 point individual quiz and a 15 point group quiz. There will be no makeups. **Your lowest quiz score will be dropped.**
- **Labs:** Labs should be completed during the lab period and turned in before you leave. If this has to shift, I'll let you know. There will be no makeups. **Your lowest lab grade will be dropped.**
- **If you miss class:** If you need to miss class, you're expected to communicate and make a plan. As soon as possible, notify your instructor and relevant classmates (group members). Look over the course calendar, complete the preclass assignment, and complete the in class activity on your own time. Make sure to communicate this plan to your instructor when notifying them of your absence.
- **Grading Scale:** Normal rounding rules will be used.

4.0	100-90
3.7	89-87
3.3	86-83
3.0	82-80
2.7	79-77
2.3	73-76
2.0	70-72
1.7	67-69
1.3	63-66
1.0	60-62
0.0	61-0

- **Dropped points/assignments:** The same info highlighted above, but in a table. Note that if you miss a class for any reason, the grade for that day will be among those dropped.

Assignment	Number dropped
Preclass Assignments	4 lowest scores
In Class Work	4 lowest scores
Individual Quiz	1 lowest score
Group Quiz	1 lowest score
Labs	1 lowest score

Additional Resources for Your Success in Chemistry 220

- **Student Office Hours (SC 416):**
 - Mondays: 11am-12pm
 - Wednesdays: 10am-11am
 - Other: Email me livingstonc@beloit.edu
- **TA Hours (Chemistry Study Lounge, 414):**

- o Mondays: 5-7
 - o Thursday: 2:30-4:30
- **Free peer tutoring:** For an individual tutor, apply by going to your Portal, to the Student Life tab, and use the Tutoring Forms (on left) and Request a Tutor. If you want support from an **Organizational Tutor**, you can also request one on the Portal using the same form. If you have any questions, contact LEADS. See <https://www.beloit.edu/offices/leads/tutoring/> website.
 - **Learning Enrichment and Disability Services (LEADS):** Each student at Beloit College has the right to equitably access their education. If you have a disability and need accommodations, please contact LEADS located on 2nd floor Pearsons (north side), [608-363-2572](tel:608-363-2572), learning@beloit.edu or through olesena@beloit.edu. For accommodations in my class, please bring me an Access Letter from the Director of LEADS and then we will discuss how to implement the accommodations. Contact that office promptly, as accommodations are not retroactive.
 - **Counseling services:** Counseling services through the Health and Wellness Center are free and available to all Beloit students. Appointments are available Monday through Friday. To make an appointment, call the Health and Wellness Center at 608-363-2331 or visit the office, which is located on the second floor south side of the Powerhouse.
 - **Alert slips:** If you miss a significant amount of class and/or fail to turn in work, your instructor will promptly send an alert slip. Alert slips are electronic forms emailed by faculty to students (and cc'd to advisors, coaches, and the Dean of Students office) to indicate concerns about academic performance, changes in behavior, and/or attendance. Overall, an instructor's intent in sending alert slips is to help you improve your performance before it's too late and help ensure that you do not lose financial aid you may be receiving. If you receive an alert slip, read it carefully and seek assistance as soon as possible.