



The mission of Concord University is to provide quality, liberal arts based education, to foster scholarly and creative activities and to serve the regional community (<http://www.concord.edu/academics/>).

Course Prefix, Number and Title: Chemistry 112 General Chemistry Laboratory II

Course CRN # and Section: 20238, Section 04; 20239, Section 05

Semester Taught: Spring 2019

Professor: Hong Yin

Credit Hours: 1

Office Location: 401B Science Hall

Prerequisites: CHEM 101 & CHEM 111

A grade of C or better in CHEM 101, 111, 102, 112 is required to take 200-level and above CHEM courses.

Co-requisite: CHEM 102

Office Hours: T 11:00-1:00 PM, W 1:00-3:00 PM, F 1:00-2:00 PM and by appointment

Course Time:

Lab Section 04: F 10:00-12:50 PM S404 Inclement weather start time: 11:30 AM

Lab Section 05: F 2:30-4:50 PM S404 Inclement weather start time: 2:30 PM

Email: hyin@concord.edu

Building and Room Number: S404

Phone: (304)384-5315

Office Fax: (304)384-6022

College/Department Website: <http://www.concord.edu/physci/node/1>

Catalog Description: A laboratory course designed to accompany the concepts presented in CHEM 102. Must be taken concurrently with CHEM 102. Three hours laboratory.

Course Rationale: This is an introductory chemical laboratory course designed to build laboratory skills and enhance analytical thinking skills which are emphasized in CHEM 102. Students will learn basic techniques used in chemistry, perform a wide variety of experiments and communicate the results via written reports. The laboratory skills learned in CHEM 112 will be applicable in more advanced chemistry and biology courses.

Course Management System: moodle.concord.edu

Moodle Privacy Policy: <https://moodle.org/mod/page/view.php?id=8148>

Moodle Accessibility Statement: <https://docs.moodle.org/34/en/Accessibility>

Hardware/Software Needed: Microsoft Word, Excel & PowerPoint

Text requirements:

CHEM 112: General Chemistry Laboratory II manual

Other required materials:

- Full-seal safety goggles
- Permanently-bound composition book for use as laboratory notebook
- Sharpie permanent marker
- Calculator
- Combination lock for lab drawer (1 per lab group)

Concord University Educational Goals:

The mission, educational goals, and objectives of the chemistry program are aligned with the CU Mission & Educational Goals (<http://catalog.concord.edu/index.php?catoid=8>).

Department Mission:

The Department of Physical Sciences challenges students to become interdisciplinary, ethically responsible professionals and scientists. Our degree programs and courses engage students with fundamental scientific content with the aim to transform them into leaders in their discipline and equip them to succeed in future careers and post-graduate studies. Our faculty foster a dynamic learning environment that broadens students' knowledge, skills, and attitudes through active-learning curricula.

Chemistry Program Educational Goals & Objectives:

Students in the chemistry program will be challenged to gain content knowledge and problem-solving skills across the five major subdivisions of the chemical sciences. They will also gain diverse communication skills, and demonstrate attitudes conducive to working in an ethical, safe, responsible, and professional manner.

Concord University Educational Goals Assess:

Skills: Proficiency in interpreting data, integrating information, formulating ideas, thinking critically, and communicating with others, as demonstrated by the following competencies:

- Effective inter-communication skills and literacy adapted as needed for the demands of various kinds of discourse:
 - listening and speaking
 - reading and writing
 - numeracy
 - graphic communication
 - non-verbal communication
 - media and technological literacy

Knowledge: Familiarity with principles underlying academic discourse in various fields, as demonstrated by the following capabilities:

- An awareness of the fundamental characteristics and properties of the physical universe.

National Standards: Not applicable

Specific Learning Outcomes:

As a result of taking the course, the student should be able to:

- Apply the concepts covered in CHEM 102

- Recognize and predict hazards of chemical manipulations and respond properly to perform laboratory experiments in a safe manner
- Perform accurate and precise quantitative measurements
- Interpret experimental results and draw reasonable conclusions
- Assess the reliability of results and recognize sources of error
- Demonstrate the ability to work effectively in small groups
- Summarize experimental results via written and oral communication in a clear, concise manner

Course Requirements:

The following assignments will be used to determine the student's grade in the class.

- **Pre-laboratory Exercises:** Pre-lab exercises are designed to familiarize the student with the lab exercise and stimulate thinking about how the experiment will be designed and executed. These assignments will be posted on Moodle and must be completed at least 30 minutes prior to the beginning of YOUR lab session each week. These pre-lab assignments will be graded. Three attempts are allowed for each pre-lab and the highest score will be used. A student will not be allowed to enter the laboratory without completing the pre-lab assignment.
- **Lab Notebook:** Each student will keep a laboratory notebook, which should be a primary record of your experimental procedures, results, data analysis and discussions. A detailed description of how to keep a laboratory notebook is provided in your laboratory manual. The notebook must be initialed by the instructor prior to leaving each lab. Several times throughout the semester, notebooks will be collected and graded.
- **Evaluation:** You will be assessed each week on your: preparedness, ability to work safely, technique, knowledge and overall citizenship in the lab.
- **Writing Assignments:** Throughout the semester, each group will write sections of a laboratory report for various laboratory exercises as instructed by the professor. Each member of the group is expected to contribute to these assignments. Upon submitting each assignment, each member of the group will sign a statement that both members contributed equally to the assignment and that both members approve the submitted assignment. Each assignment will be critiqued and graded. Through these assignments, you will learn how to effectively write a scientific paper. A detailed description of how to write a laboratory report is provided in your laboratory manual.
- **Project:** Four weeks of lab will consist of an extended project. Several projects will be posted on Moodle from which your group can choose. You will complete the experiments for this project during three weeks of lab. Each of these weeks will have pre-labs that require you to plan for that week's activities. During the fourth week, your group will present a poster. Your group will also write a report for the multi-week project.

Grading:

Pre-lab Exercises	14%
Lab Notebook	15%
Evaluation	14%
Writing Assignments	40%
Project:	
Laboratory Report	10%
Poster	7%
<hr/> Total of	100%

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

Course Policies:

- **Attendance & Make-Up:**

Regular attendance is essential for adequate performance and is required. Although the instructor reserves the right to drop non-attending students, it is the student's responsibility to withdraw if they have decided not to complete the course. Accommodations for documented university or medical excused absences will be made on a case-by-case basis. In situations where the student is aware of the absence in advance (athletic events, field trips, etc.), arrangements for conducting the lab during another section that week **MUST** be made prior to the absence. If a student misses lab due to an unforeseen circumstance, they must contact the instructor (see, email or call) before the end of the missed class period to make arrangements if applicable. Individuals that wait to speak with the instructor at a later date will not be granted permission to make up the lab. Make-ups must be completed within one week of the originally scheduled date. Individuals that miss more than 2 labs will receive an F in the course.
- **Electronic Assignment Submission:**

Some assignments require on-line submission via Moodle. On-line assignments must be completed in a timely fashion. An excuse for "technological difficulties" (internet was down, etc.) is not acceptable.
- **Late Assignments:**

Assignments that are not submitted at the specified times will be considered late. There will be a 10% deduction for every day late.
- **Safety:**

All appropriate safety guidelines will be adhered to strictly. Safety goggles must be worn at all times in the laboratory. In addition, the student must dress appropriately. Shoes that entirely cover your feet and clothing that entirely covers your torso and legs must be worn. Shoes with high heels, shorts, dresses/skirts, and long, flowing clothing will not be permitted in the lab. No exceptions will be permitted. Consult with the instructor if you have any questions. Students who do not follow safety instructions may have points deducted, be asked to leave without the possibility of make-up, or be dropped from the course.
- **Electronic Device Policy:**

All cell phones must be turned off during pre-lab and lab. The instructor reserves the right to make point deductions from your grade for using a cell phone during class.

Course Timeline (Schedule of Assignments/Assessments/Presentations):

This is a tentative schedule. The instructor reserves the right to modify this schedule as needed.

Lab:	Dates:	Topic:
1	1/18	Acid-Base Titration Notebooks Due
2	1/25	Miscibility
3	2/1	Freezing-Point Depression Osmotic Pressure Demo Introduction and Literature Cited for Miscibility Due
4	2/8	Kinetics of Bleaching – Week 1 Abstract for Freezing-Point Depression Due
5	2/15	Kinetics of Bleaching – Week 2
6	2/22	Le Chatelier's Principle Results and Discussion for Kinetics of Bleaching – Week 2 Due
7	3/1	Extended Project Experimental Procedures for Le Chatelier's Principle Due Notebooks Due
8	3/8	Extended Project
**	3/15	Spring Break – No Class **
9	3/22	Extended Project
**	**3/29**	Poster Session Project Poster due (upload PowerPoint file)
10	4/5	Acids, Bases, and Indicators
11	4/12	Buffers Project Laboratory Report Due
12	4/19	Identification of an Unknown Acid Using Molar Mass & pK _a
13	4/26	Solubility Equilibria and Gibbs Free Energy
14	5/3	Electrochemistry Notebooks Due
**	4/5/19	<i>last day to drop w/ "W"</i>

Accessibility/Accommodations

Concord University is committed to responding to the needs of students with disabilities as defined by the Americans with Disabilities Act. Please inform your instructor at the beginning of the class semester if you have a disability and are requesting accommodations. It is your responsibility to self-disclose that you are requesting accommodations. The University and instructor will provide you with a reasonable accommodation. You should register with CU's Disability Services Office, located in the Athens campus Jerry and Jean Beasley Student Center, Bottom Floor, across from the Campus Post Office. The Disability Services Office phone is 304-384-6086 or you can email the Director, Nancy Ellison, at nellison@concord.edu for assistance.

Academic Dishonesty

Academic dishonesty is morally unacceptable as well as destructive to the learning and teaching atmosphere. Academic dishonesty includes the giving or receiving of improper help on examinations or assignments, falsifying documents, and plagiarism (the act of stealing and using, as one's own, the ideas or the expression of the ideas of another). Such dishonesty can lead to a variety of penalties — including but not limited to failure of assignment, failure of course, loss of institutional privileges, or dismissal from the University. (See University Catalog Academic Policies and Procedures.)

Concord University Honor Code

A Concord University Honor Code was approved by students, staff, faculty, administration, and the CU Board of Governors. The Code states:

"As a member of the Concord University Community I will act with honesty and integrity in accordance with our fundamental principles and I will respect myself and others while challenging them to do the same."

The Honor Code is intended to unite the Concord community behind a culture of honesty, integrity, and civility.

Class/Online Attendance Policy

Regular class attendance is part of a student's academic obligation at Concord. Irregular attendance may affect academic performance adversely and is detrimental to the atmosphere of a class.(See University Catalog Academic Policies and Procedures.)

Emergency Alert System

In an effort to increase safety and security on our campus, Concord University encourages everyone to register for instant text message alerts. Alerts will only be used for security and safety notices. All students, faculty, and staff are eligible to receive text message alerts on their cell phones or email alerts. Please contact the IT HelpDesk for further assistance (304-384-5291).

Emergency Information

Emergency/courtesy telephones are located at the main entrance of each residence hall and at various other locations on campus. Emergency telephones can be identified by the flashing blue light and will provide the user with a direct link to Public Safety at the press of a button. To report an on-campus emergency, call 304-384-5357 or 911. The Office of Public Safety is located on the bottom floor of the

Rahall Technology Center. For further emergency information go to:
<http://www.concord.edu/administration/office-public-safety>.

Inclement Weather Policy

As a general policy, the University will remain in normal operations during adverse weather conditions. In the event of severe weather conditions, the following may occur:

University Closure

No students or employees are to report.

Classes Cancelled

Students do NOT report BUT employees are expected to report to work at their normal time.

Operating on an Inclement Weather Delay

Under this schedule, all 8 a.m. classes will start at 10 a.m. Students and faculty will follow the Inclement Weather Schedule. (See <http://www.concord.edu/emergency-alerts> for Athens/Beckley Inclement Weather Schedules.)

**Announcements invoking the late schedule or other options referenced above are aired on area radio and television stations and are sent as text and email messages to those enrolled for this service.*

Student Conduct

In classrooms, online, laboratories, and during any activities that are part of course requirements, students are expected to observe reasonable rules of conduct.

Sexual Harassment & Assault

Federal law, Title IX, and Concord University policy prohibits discrimination, harassment, and violence based on sex and gender (including sexual harassment, sexual assault, domestic/dating violence, stalking, sexual exploitation, and retaliation). If you or someone you know has been harassed or assaulted, you can receive confidential counseling support through the Concord University Counseling Center (304-384-5290). Alleged Violations can be reported non-confidentially to the Concord University Title IX Coordinator at 304-384-6327 or titleix@concord.edu. Reports to Campus Security can be made at (304-384-5357). As an employee at Concord University, I am a mandatory reporter which means I must report any sexual misconduct I am made aware of. This includes verbal or written (such as in an assignment) disclosures of sexual harassment or sexual assault.

Technology Services

Contact the CU Help Desk at extension 5291 from campus or 304-384-5291 off campus. You may also e-mail cuhelpdesk@concord.edu.

Syllabus Disclaimer

"This syllabus is subject to change based on the needs of the class. Please check it regularly."

Miscellaneous: Not applicable