



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 471 Independent Laboratory Research

Course CRN # and Section: 20805, Section 02

Semester Taught: Spring 2019

Professor: Hong Yin

Credit Hours: 3

Office Location: 401B Science Hall

Prerequisites: Permission of the Instructor.

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: TBA

Email: hyin@concord.edu

Building and Room Number: Science 409

Phone: (304)384-5315

Office Fax: (304)384-6022

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

Course Description/Rationale:

Independent research in chemistry. Original investigative projects will be developed and completed by the student under the direction of a chemistry faculty advisor. May be repeated for up to six hours credit.

Course Management System: Not applicable

Hardware/Software Needed: Microsoft Word, Excel & PowerPoint

Text requirements: Scientific journal articles related to the given research topic.

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
- An ability to employ appropriate observational, logical, analytical, computational, creative, and critical thinking skills within and across academic disciplines; and to apply these skills in problem-solving.
- An ability to employ appropriate methods and technologies for conducting empirical and scholarly research, to interpret research findings, and to use insights gained from such research as a basis for informed decision making.
- An ability to learn and work effectively both independently and collaboratively.

This course addresses components of the chemistry program objectives pertinent to knowledge & problem-solving skills (#1&2), communication skills (#1), and attitudinal development (#1&2) and components of CU educational goals pertinent to skills (#1,2,3&7). Concord University Goal #1 – Skills, Learning Outcomes 3 will be formally assessed during the semester.

National Standards: Not applicable

Specific Learning Outcomes:

Students enrolled in this course are expected to be able to

- use library, SciFinder® and other tools to search for existing information relevant to their research topic and fundamentals
- work in an effective manner and practice responsible conduct in research
- reflect on their research outcomes, begin to think more like researchers and constructively suggest ways to improve
- elaborate their research to audience in and outside the field via scientific communicate skills during a research presentation

Course Requirements:

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

- Participate in literature discussions during weekly meetings with their instructor
- Efficiently conduct original research and maintain decent lab documents for experimental data
- Help manage purchases of supplies and instrumentation
- Participate in poster preparation and presentation
- Complete final exam – a mini paper review writing assignment

The final exam will be writing a comprehensive, critical, and readable review of published results on recent research in the given topic area that have not been critically reviewed in the past one to two years. The review may cover research results of five to eight published journal articles. All selected paper should be discussed although not all will be treated in depth. The review should tend to be comprehensive, but there's no specific length or style required. Try to provide a critical analysis of the topic and insights about the remaining challenges and future directions for the field.

Grading:

Literature Discussion	20%
Research and Lab Techniques	20%
Research Notebook	20%
Poster Presentation	20%
<u>Final Exam</u>	<u>20%</u>
Total of	100%

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

Course Policies:

- **Attendance:** Regular attendance is essential for adequate performance and is required. Students who are not attending class or are failing to turn in assignments may be dropped from the course. Accommodations for excused absences supported by documentation 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.) arrangement for accommodations must be made prior to the absence.

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

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

<u>Day of</u>	<u>Activities/Assignments Due</u>
02/07	Research Notebook
03/07	Literature Summary
04/11	Poster Presentation
05/09	Final Exam

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