

## Inorganic Chemistry Laboratory, CHEM 210L-ATH Syllabus

Spring 2023 – Thursday 8:00-12:00 – JSC 446

Prof. Cody C. Webb Jr.

Office Location: JSC 453

Office Hours: Tuesday 1:00-5:00 PM, M/W/F 8:00-10:00 AM

Contact Information: [webbc2@hartwick.edu](mailto:webbc2@hartwick.edu), 607-431-4777

### Key Academic Deadlines:

Last Day to Add: Feb. 17, 2023

Last Day to Drop: Apr. 21, 2023

Link to course registration deadlines: <https://www.hartwick.edu/academics/student-resources/academic-deadlines-important-dates-2022-2023/>

Please talk to your advisor about any changes you are thinking of making to your course schedule, since such changes can affect your progress toward completing your degree, as well as your eligibility for Financial Aid and Athletics. Your advisor can help you make informed decisions in support of your academic success. If you are unsure of who your advisor is, please let me know and I can help you check this.

### 1. Catalog Description

Students perform weekly laboratory experiments to explore and apply concepts covered in the lecture component of the course. A passing grade in CHEM 210L is required for completion of CHEM 210.

Corequisite: CHEM 210

### 2. FlightPath

The Hartwick FlightPath is a student-centered program that is flexible and adaptable to support your individualized pathway to graduation and to prepare you for what lies ahead. By the time you graduate from Hartwick, you will have a suite of skills and experiences that tie together the breadth of your Hartwick education and highlights your accomplishments. This course supports the development of student educational outcomes in the following way(s):

- Formulate a **substantive thesis** on a relevant topic. Student states clearly **what will be discussed** later in the text.
  - Writing Project: Five research Papers
- Compose a **cogent analytical text**. Student crafts a **well-structured and logical argument**.
  - Writing Project: Outline
- Discuss the chosen topic knowledgeably. Student **demonstrates a credible understanding** of the topic.
  - Writing Project: First Draft
- Write clear and precise expository prose. Student **communicates with clarity and fluency**.
  - Writing Project: Final Draft

### 3. Learning Outcomes & Assessment

The focus of experimental work in this course is designed to familiarize students with basic and advanced inorganic synthetic and characterization techniques. Students will create a variety of inorganic materials including coordination complexes, hierarchical inorganic compounds, and nanomaterials. Students will then evaluate the molecular structure and properties of these compounds using techniques including magnetic susceptibility, powder X-ray diffraction, and ultraviolet-visible spectroscopy.

This course is a 200-level writing competency qualifying course. Upon completion of this course, students will further progress toward meeting GEO1 (“Communicate competently using oral and written skills”) and

GEO3 (“Evaluate information critically”) by being able to:

1. Produce college-level, discipline-specific writing – expository and analytical – characterized by a series of well-organized, evidence-based propositions and clear prose.
2. Demonstrate consistent use of core discipline-specific conventions, particularly in relation to content, organization, and stylistic choices.
3. Use language that effectively conveys meaning.
4. Access, evaluate, and make use of relevant scholarly information in constructing an evidence-based argument.
5. Use discipline-specific research and citation techniques (i.e., in-text and bibliographic).
6. Revise and edit a draft essay in order to produce a properly formatted final essay that demonstrates discipline-specific conventions and stylistic choices.

#### 4. Required Materials

- Safety goggles
- Appropriate laboratory attire (no shorts, no sandals)
- Scientific or graphing calculator
- Carbon copy laboratory notebook

#### 5. Attendance and Grading

Criteria	Weight
Lab Reports (x5)	12% (x5 = 60%)
Attendance and Participation	10%
Writing Project: Five Research Papers	5%
Writing Project: Outline	5%
Writing Project: First Draft	5%
Writing Project: Final Draft	15%

Attendance is mandatory for all laboratory sessions and a minimum of 24 hours prior notice must be given to the instructor, with appropriate documentation, for absences because of legitimate reasons or sanctioned Hartwick College events. In the event of an excused absence, the student must make-up the lab within one week. Students that are absent from four or more lab classes, regardless of whether the absences were excused, will not be able to pass the course. In the event of inclement weather, an announcement will be posted on D2L with instructions for students to complete an activity at home. Lab sessions for this course will be a mix of experiments, writing workshops, and group activities. Full credit for the Attendance and Participation portion of their final grade will be given to students who attend all lab sessions on-time, are consistently prepared, and fully participate in lab activities.

Lab reports are due one week at the start of the following lab period. Late lab reports will be penalized five points per day and after five days will not be accepted. The project for this course is to write a review of a randomly assigned inorganic chemistry research topic. There are three hard deadlines during the semester related to this project: five approved research papers which are fully annotated, an outline of the review paper, and a rough first draft. In order to receive full credit for each benchmark, you must complete all requirements as outlined by the instructor. The final draft of this paper will be due during the last week of classes. Final grades will be assigned based on the following table:

## Tentative Grade Scale

94%-100%	A	73%-76%	C
90%-93%	A-	70%-72%	C-
87%-89%	B+	67%-69%	D+
83%-86%	B	63%-66%	D
80%-82%	B-	60%-62%	D-
77%-79%	C+	Below 60%	F

## 6. Course Schedule

Date	Experiment
2/9/23	Keeping a Lab Notebook, Writing an Experimental Section
2/16/23	Lab 1 – Introduction to Magnetism
2/23/23	Writing a Discussion Section, Introduce Projects, Critically Reading
3/2/23	Lab 2 – Demonstrating Hund’s Rule
3/9/23	Lab 3 Part I – Synthesis and Characterization of ZIF-8
3/16/23	Lab 3 Part II – ZIF-8 cont.
3/23/23	Spring Break!
3/30/23	Lab 4 Part I – Europium and Terbium Complex Synthesis
4/6/23	Lab 4 Part II – Lanthanide Complex Characterization
4/13/23	Writing the Complete Report
4/20/23	Lab 5 Part I – CdSe Quantum Dots
4/27/23	Lab 5 Part II – Spectroscopy of CdSe QD’s
5/4/23	Presentation practice
5/11/22	Final Presentations

## 7. Academic Accommodations

Hartwick College is committed to upholding and maintaining all aspects of the Federal Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973. If a student with a disability wishes to request academic accommodations, they should contact Lara Sanford, Director of AccessAbility Services, at [sanfordl@hartwick.edu](mailto:sanfordl@hartwick.edu), or [AccessAbilityServices@hartwick.edu](mailto:AccessAbilityServices@hartwick.edu). AccessAbility Services is located on the 5<sup>th</sup> floor of Yager Library in the Center for Student Success. Any information regarding a student’s disability will remain confidential. Requests for academic adjustments should be made as early as possible.

## 8. Academic Honesty

Students are expected to complete and submit their own work. For further information please read Hartwick’s Academic Honesty policy: <https://www.hartwick.edu/academics/student-services/academic-affairs/academic-policies/>.

## 9. Title IX

Hartwick College is committed to equal opportunity and providing a safe community free from all forms of sexual misconduct including sexual/gender-based harassment, discrimination, dating or domestic violence, stalking, sexual exploitation, and sexual assault. If you wish to make an official report to the College or have questions about the College’s policy and procedures regarding sexual misconduct, please contact the Title IX Coordinator, Michael Arno, at [arnom@hartwick.edu](mailto:arnom@hartwick.edu) or (607) 431-4293. Online reporting and policy information is available at <https://www.hartwick.edu/about-us/employment/human-resources/title-ix/>. If you wish to speak confidentially about an incident of sexual misconduct, please contact one of the following resources: Perrella Wellness Center, Health - (607) 431-4120, or Counseling – (607) 431-4120; or

Opportunities for Otsego's Violence Intervention Program – (607) 432-4855.

All other employees, including faculty, are responsible employees at Hartwick College and are required to report any incident of sexual misconduct that is personally reported to them to the Title IX Coordinator so that support and resources can be provided for all parties.

## **10. COVID-19**

Any COVID-19 updates will be provided on the College website (<https://www.hartwick.edu/about-us/covid-19-updates/>). Instructors will communicate with students about any specific adjustments that are being made to their courses, such as modality of instruction, expectations for participation, and any changes to assigned work; students should check their Hartwick email accounts frequently for information from their instructors.

## **11. Campus Mental Health Support Services**

As a student you may experience a range of issues that can cause barriers to learning. These might include strained relationships, anxiety, stress, alcohol/drug problems, feeling down, or loss of motivation. The Counseling Center is available to help with these issues and may be reached by calling (607) 431-4420 or emailing [counselingcenter@hartwick.edu](mailto:counselingcenter@hartwick.edu). Counseling services are **free of charge** and confidential. Fifty-Fifty, a peer counseling service, is also available if you are more comfortable talking with a fellow student who has been trained to offer information and support in a safe, non-judgmental atmosphere. To reach Fifty-Fifty, call (607) 431-5050 or email [fiftyfifty@hartwick.edu](mailto:fiftyfifty@hartwick.edu).