

CHEMISTRY 251

Experiential Learning Research Syllabus and Contract

Research Advisor: _____

Research Student: _____

*Common Hour Instructor: _____

Student ID number: _____

Student email address: _____

**The common hour component of CHE 251 is not offered during the summer. Students who wish to register for CHE 251 during the summer will receive a grade of IN (incomplete) until completing the common hour component during the following autumn quarter.*

Required Text

H. Beall and J. Trimbur, *A Short Guide to Reading and Writing about Chemistry*, 2nd ed. Longman, New York, 2001.

Expectations

1. The student will work on the research project weekly. A minimum of 50 hours per quarter is expected.
2. The student should follow safety guidelines for the project and be familiar with the University's Chemical Hygiene Plan. Repeated violations of safety rules will result in the course failure.
3. The student should be proactive and communicate the progress of the research via reports according to the agreed schedule.
4. Please check your email at least once a day.
5. You are required to keep a detailed lab notebook according with guidelines of the project.
6. Finally, the student is required to submit a formal written report fully describing their research projects. *A copy of this report must be deposited with the chemistry chairperson.* The adviser can ask you to make a presentation for other students and/or faculty.

Writing in Chemistry Common Hour

The ability to successfully communicate in writing one's understanding of the development and evolution of a scientific research project is essential regardless of topic, and you will begin to learn to

be successful chemistry writers through a weekly common hour, required of all students earning Experiential Learning credit in the Chemistry Department. While laboratory research will remain the focus of your Experiential Learning (50% towards the final grade), during the weekly common hour (to be scheduled at the instructor's and students' convenience each quarter) you will be actively engaged in short, informal writing assignments and/or peer review of formal (and longer) writing assignments completed outside the classroom. This is meant to encourage you to use writing as a tool for understanding (and communicating about) your research. At least one formal writing assignment will be completed per week, the sum of which will count for 20% of your final grade. A journal style paper summarizing your laboratory work will be the final writing assignment. This paper will be a high quality paper, and will incorporate the techniques learned during (and outside) the common hour in the context of your actual experimental work. The final paper will be assessed by the common hour instructor (for form) as well as by your research or internship advisor (for content); it will count for 15% of your final grade. In addition to the final paper, you will be required to present your work orally before a committee of faculty, performance on which will also factor into your final grade for the course (15%). A tentative weekly schedule of topics to be covered follows:

Week #	Topic (<i>Learning Objectives Italicized</i>)
1-2	<p><i>Writing and Chemistry: The Basics</i></p> <ul style="list-style-type: none"> • Who is the writer? • What is the purpose of writing in chemistry? • What “forms” do chemists use? • Who is the audience? <p><i>Writing and Scientific Responsibility</i></p> <p><i>Reading and Writing to Learn Chemistry</i></p> <ul style="list-style-type: none"> • Critical reading and writing. • Formulating questions to assist understanding. • “Thinking like a chemist.” • Editing, proofreading, and revising
3-4	<p><i>How to Read a Scientific Article: Writing Summaries and Critiques</i></p> <ul style="list-style-type: none"> • Reading and understanding scientific articles. • Writing summaries. • Writing critiques.
5-7	<p><i>Writing Research/Grant Proposals</i></p> <ul style="list-style-type: none"> • Review the literature to define a problem. • Formulate a problem and design an experimental approach. • Plan your research proposal (component parts). • Drafting and revising.
8-10	<p><i>Writing to Inform and Persuade</i></p> <ul style="list-style-type: none"> • Reporting science; chemistry and public opinion. • Preparing oral presentations. • Designing and using visual aids. <p><i>Writing a Peer Reviewed Journal Article Based on Original Research</i></p>

Grading

Your final grade for the course will be based on the following components:

Component	% of Final Grade
Research	50
Common Hour & In-class Writing Assignments	20
Final paper (journal-style article)	15
Oral Presentation	15

Your research advisor will assess the research component of your grade. Some of the things that he or she will consider are: (1) the quality of your research effort; (2) hours worked/reliability; (3) record keeping and the quality of your reports, final paper, and presentation.

In general: A grade of “C” will be assigned for meeting minimum expectations. A grade of “B” will be assigned for going above the minimum expectations and displaying some degree of ingenuity and persistence. A grade of “A” can be earned by meeting all of the above requirements plus displaying a high degree of enthusiasm.

Please note that no grade will be assigned until your laboratory space is clean and has been inspected and the key to your research space has been returned to the departmental secretary.

Signature of Faculty Advisor Date

Signature of Common Hour Instructor Date

Signature of Student Date