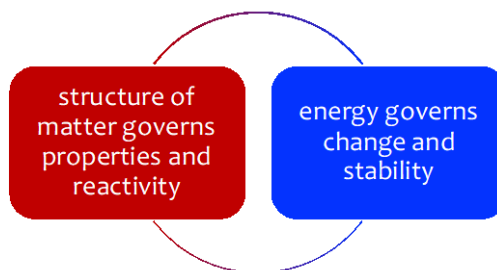


# Chemistry 109 Honors

## *Honors Advanced General Chemistry*

**Chemistry 109 and Chemistry 109 Honors** are one-semester courses focused on those principles of chemistry relevant to all the molecular sciences. The goals of these courses are three-fold. First and foremost, this course will introduce you to the *liberal art* that is chemistry—that chemistry is not just a body of facts, but an incredibly useful and interesting way of thinking about the world. This course will also build your knowledge of the fundamental ideas upon which chemical reasoning is built: (1) the nanoscale structure of matter governs a substance's properties and reactivity; and (2) whether a chemical system changes or remains stable depends on differences in energy and energy dispersal.

Lastly this course aims to build your skills in a variety of practices related to science, including analyzing and interpreting data, constructing explanations, engaging in argument from evidence, developing and using models, and planning and carrying out investigations. **By the end of the semester, you should be “thinking like a chemist”** by identifying chemistry's core ideas and applying these ideas to explain and model chemical phenomena, plan experiments, make correct inferences and deduce conclusions from data, and interpret whether conclusions are warranted based on given data.



**Chemistry 109 Honors (109H) has the same course structure as non-honors Chemistry 109.** The main goal in pursuing honors credit in this course is *not* to master material in addition to that presented in Chemistry 109. Rather, the goal of Chemistry 109H is to master a portion of the course material more deeply by engaging in a creative activity relevant to the material. **In this course, you will explore the landscape of undergraduate research related to the materials and molecular sciences at UW–Madison.** Chemistry 109H students will work together to propose, construct, and peer-review vignettes (texts, videos, podcasts, etc.) that connect Chemistry 109 core ideas and science practices to the research of fellow undergraduates. **Because you will learn how current campus research is connected to general chemistry principles, students planning to pursue majors in the materials and molecular sciences (biochemistry, chemistry, chemical engineering, materials science and engineering, molecular and cell biology, etc.) are especially encouraged to enroll in Chemistry 109H.**

### **COURSE REQUIREMENTS, INFORMATION, AND RECOMMENDATIONS**

- All sections of Chemistry 109 have the same math requisite, which is completion of MATH 113, 114, or 171 (algebra, trigonometry, and precalculus) or placement into MATH 221 (first-semester calculus).
- Students are expected to have taken at least one year of high school chemistry, and many Chemistry 109 students have had two years.
- Lectures 01 and 02 of Chemistry 109 are non-honors sections. Students seeking Honors credit should enroll in Lecture 03, which meets MWF 8:50–9:40 a.m.
- There are no additional requisites for Chemistry 109H. However, students must obtain permission to enroll by contacting the Chemistry consultant at SOAR or emailing [undergrad@chem.wisc.edu](mailto:undergrad@chem.wisc.edu).
- Chemistry 109H students must attend supplemental 50-min sessions (Monday evenings from 7:00–7:50 p.m.), during which a portion of the work toward Honors credit will be planned and executed.

*Chemistry 109 is a very fast-paced course.* If you have never taken a chemistry course or if it has been some time since your last chemistry course, it is recommended that you consider enrolling in Chemistry 103 and 104.

**Chemistry 109 is a five-credit course.** The credit standard for the course is met by an expectation of a total of 225 hours of student engagement with course learning activities (~15 hr per week). These activities in the Honors section include regularly scheduled whole-class (3.33 hr per week) and discussion/laboratory meeting times (4 hr per week), as well as completing pre-class activities, homework, preparing for exams, preparing for laboratory activities, completing post-laboratory assignments, and completing Honors work.