

# CHE 131. General Chemistry I Lab

Kahveci Group

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# General Chemistry I Lab

**Note:** CHEM 131 General Chemistry I Lab (undergraduate level) was taught by [Murat Kahveci](#) at [DePaul University](#) in Autumn 2020, Winter 2020, Autumn 2019, Autumn 2018, Winter 2017, Autumn 2017. [CHEM 131 Course URL](#)

CHE 131 is a co-requisite for CHE 120, General Chemistry IP, or CHE 130, General Chemistry I. This course, in conjunction with CHE 120/130, can be used by non-science majors to fulfill a Scientific Inquiry-Lab (SI-Lab) learning domain requirement in the Liberal Studies Program. The laboratory experiments you will perform will reinforce material presented in lecture and allow you to explore lecture topics in more detail. Specific learning objectives for each experiment can be found in the laboratory manual. You will be assessed based on your level of preparedness, accuracy, laboratory technique, data analysis, and overall understanding of the experiments. Your results, analysis, and understanding will be presented in laboratory reports. The writing of laboratory reports will also offer you the opportunity to develop your scientific writing skills. The laboratory is a critical component of your education as a scientist. Because of the importance of the laboratory, if you have two or more laboratory absences for invalid reasons, you will fail this course.

## The scientific inquiry learning domain learning outcomes and writing expectations

The learning outcomes for the SI:Lab learning domain are listed below. They may also be found online on the Liberal Studies Program web site.

In the context of natural science content, and building on the understanding of the scientific worldview and the nature and process of science they have developed in the Science as a Way of Knowing (SWK) course: Students will understand how science serves as a mechanism for inquiry into the natural world through hands-on, experience-based investigation.

1. Students will be able to pose meaningful scientific questions and generate testable scientific hypotheses.
2. Students will be able to plan, design and conduct scientific investigations in a collaborative environment using appropriate tools and techniques to gather relevant data in order to test and revise scientific hypotheses.
3. Students will be able to develop and use scientific models (conceptual, physical, and mathematical) to make predictions and develop explanations of natural phenomena.
4. Students will be able to address variability in the data and recognize and analyze alternative explanations and predictions.
5. Students will be able to communicate scientific procedures, results, and explanations and engage in arguments based on scientific evidence.

Formal writing is essential for communicating ideas and progress in science, mathematics, and computation to experts within the field and to the broader society. Courses within the Scientific Inquiry Domain should include both formal writing (for example lab reports, essays, and written responses to questions) and supplemental elements that are appropriate for the subject of the course such as mathematical equations, computer code, figures and graphs, lab notebooks, or field journals.

# Workshop

**Summary:** Laboratory Check-in, Lab Report Writing & Excel Workshop.

**i Note:** AQ20: Experiment 1

# Density and Volumetric Glassware

**Summary:** Goals, assignments, and Q&A highlights about the Density and Volumetric Glassware Experiment.

**Note:** AQ20: Experiment 2

# Avogadro's Number

**Summary:** Goals, assignments, and Q&A highlights about the Avogadro's Number Experiment.

**Note:** AQ20: Experiment 3

# Introduction to Spectroscopy

**Summary:** Goals, assignments, and Q&A highlights about the Introduction to Spectroscopy Experiment.

**Note:** AQ20: Experiment 4



# Empirical Formula of a Compound

**Summary:** Goals, assignments, and Q&A highlights about the Empirical Formula of a Compound Experiment.

**Note:** AQ20: Experiment 5

# Qualitative Analysis

**Summary:** Goals, assignments, and Q&A highlights about the Qualitative Analysis Experiment.

**Note:** AQ20: Experiment 6

# The Copper Cycle

**Summary:** Goals, assignments, and Q&A highlights about the Copper Cycle Experiment.

**Note:** AQ20: Experiment 7

# Introduction to Titration

**Summary:** Goals, assignments, and Q&A highlights about the Introduction to Titration Experiment.

**Note:** AQ20: Experiment 8