

Point Loma Nazarene University  
Department of Chemistry

**CHE4070L – Environmental Chemistry Lab  
Spring Term, 2024**

Wednesday, 2:45 – 5:45 pm, Sator Hall 216

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Office hours: MW, 1:30 – 2:30 pm and by appointment

Sator 206  
(619) 849-3251

**Prerequisite.** Completion or enrollment in CHE4070 is required.

**Course Description**

A 1-unit lab course designed to accompany [CHE 4070](#). The lab component will focus primarily on detection of pollutants in air and water by using modern chemical instrumentation. The skills learned will be applied to a class research project.

**Course Learning Outcomes**

At the completion of this course, students will be able to:

- Analyze samples using standard chemical instrumentation (GC, HPLC, IR, UV-vis, ICP)
- Design and conduct experiments related to environmental analysis
- Analyze and interpret data from environmental analysis
- Communicate technical information effectively

**Lab Reports.** Lab reports will be due for the each of the five instrument labs. These reports will focused on reporting and interpreting results.

**Independent Project.** The final project will require students to develop a proposal to use the instruments to analyze environmental samples that they collect. Once the proposal is approved, the students will prepare the samples and record the appropriate data. There will be one draft report and a final report due.

**Recommended texts**

There are no required textbooks for this course. The textbook required for CHE4068 will be a useful resource during this lab course.

*Grading:*

Lab reports	50 %
Independent Project Proposal	10 %
Independent Project Draft	10 %
Independent Project Report	30 %

*Grading Scale:*

A	90 – 100 %
B	80 – 90 %
C	70 – 80 %
D	60 – 70 %
F	< 60 %

## Lab Schedule

<b>Week</b>	<b>Date</b>	<b>Topic</b>
1	1/10	<b>No lab</b>
2	1/17	<b>Lab Introduction and Safety Meeting</b>
3	1/24	<b>Theory and Operation of GC and HPLC Instruments</b>
4	1/31	<b>GC / HPLC Lab</b>
5	2/7	<b>GC / HPLC Lab</b>
6	2/14	<b>Theory and Operation of UV-vis and FTIR Spectrometers</b>
7	2/21	<b>UV-vis / FTIR Lab</b>
8	2/28	<b>UV-vis / FTIR Lab</b> Introduction to Final Project
<b>9</b>	<b>3/6</b>	<b>Spring Break</b>
10	3/13	<b>Theory and Operation of ICP-OES</b> Discussion of Final Project Proposals
11	3/20	<b>ICP-OES Lab</b> Final Project Proposals Due
12	3/27	<b>Independent projects</b>
13	4/3	<b>Independent projects</b>
14	4/10	<b>Independent projects</b>
15	4/17	<b>Independent projects</b> Draft of report due
16	4/24	<b>Independent projects</b>

**Final Exam Week: Final report due by Wednesday, May 1.**

**PLNU Mission**  
**To Teach ~ To Shape ~ To Send**

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

**PLNU FINAL EXAMINATION POLICY.** Successful completion of this class requires taking the final examination on its scheduled day. The final examination schedule is posted on the [Traditional Undergraduate Records: Final Exam Schedules](#) site. If you find yourself scheduled for three (3) or more final examinations on the same day, you are authorized to contact each professor to arrange a different time for one of those exams. However, unless you have three (3) or more exams on the same day, no requests for alternative final examinations will be granted.

**PLNU COPYRIGHT POLICY.** Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

**STATE AUTHORIZATION.** State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization](#) to view which states allow online (distance education) outside of California.

**INCOMPLETES AND LATE ASSIGNMENTS.** All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances.

**PLNU ACADEMIC HONESTY POLICY.** Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

**SPIRITUAL CARE.** Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith. If students have questions, a desire to meet with the chaplain or have prayer requests you can contact the [Office of Spiritual Development](#)

**PLNU ACADEMIC ACCOMMODATIONS POLICY.** PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities. Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center ([EAC@pointloma.edu](mailto:EAC@pointloma.edu) or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will issue an academic accommodation plan ("AP") to all faculty who teach courses in which the student is enrolled each semester.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course and/or if they do not wish to utilize some or all of the elements of their AP in that course.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC.

**ATTENDANCE AND PARTICIPATION POLICY.** Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university withdrawal date or, after that date, receive an "F" grade.