

## General Chemistry II, CHE1053 Spring 2023

	Department of Chemistry
	General Chemistry II, CHE1053
3 Units	
Spring 2023	

Meeting days: Mon, Wed, Fri	Instructor title and name: Dr. Ariane Jansma, Professor
Meeting times: 8:30 – 9:25 am	Voice Mail: 619-849-2623
Meeting location: LA01	Email: <a href="mailto:ajansma@pointloma.edu">ajansma@pointloma.edu</a>
Final Exam: Wednesday, May 3, 4:30 pm	Office location and hours: Mon, Wed, Fri: 11:00 am – 2:00 pm Thurs: 12:30 – 2:00 pm
Additional info: Tutoring Sessions available via online appointment	Additional info: Additional office hours available on Thursday morning via email request

### 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.

#### Foundational Explorations Mission

PLNU provides a foundational course of study in the liberal arts informed by the life, death, and resurrection of Jesus Christ. In keeping with the Wesleyan tradition, the curriculum equips students with a broad range of knowledge and skills within and across disciplines to enrich major study, lifelong learning, and vocational service as Christ-like participants in the world's diverse societies and culture.

### COURSE DESCRIPTION

Study of the basic principles of modern chemistry. Emphasis on atomic and molecular structure, chemical bonding, gas laws, states of matter, and solutions. Prerequisite(s): Successful completion of General Chemistry I (CHE 1052), or the equivalent. Math skills equivalent to those taught in pre-calculus. Corequisite(s): CHE 1053L.

## COURSE LEARNING OUTCOMES

An in-depth knowledge of chemistry is critical in understanding basic and applied sciences, engineering, and medical professions as well as providing valuable insight for comprehending current events and policies.

Specifically, upon completion of this course, students will be able to:

- Demonstrate a foundational knowledge of the general principles of chemistry including the behavior of solutions, the characteristics of equilibrium (including acid/base equilibrium), the significance of free energy, the properties of electrochemistry, and structures of transition metal and their compounds.
- Solve problems related to describing basic chemical kinetics, characterizing reaction equilibrium, predicting the direction of spontaneous change, calculating electrochemical cell potentials and writing chemical equations for selected chemical reactions.
- Perform basic chemical laboratory techniques related to the topics listed above (CHE1053L).

## FOUNDATIONAL EXPLORATIONS LEARNING OUTCOMES

This is the second course in a two-semester sequence studying the general principles of Chemistry. The course is designed to meet the following objectives:

- Teach chemical facts and theories
- Provide a conceptual framework of modern chemistry

Topics covered include solutions, reaction rates, chemical equilibrium (including acid-base equilibria and solubility equilibria), thermodynamics, electrochemistry, transition metals, and nuclear chemistry. Although the laboratory portion is a separate course, it is a co-requisite and thus an integral part of learning for this course.

## REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

NOTE: NO new materials are required for CHE1053 if you took CHE1052 last semester. You should already have everything on the following list.

### Required Materials:

- **Textbook:** Tro, Chemistry: A Molecular Approach Plus Modified MasteringChemistry with eText, Pearson, 5th Edition, ISBN-13: 9780135748626 (hardcover text), 9780135748763 (looseleaf text), or 9780134989884 (etext)
- **Online Homework:** MasteringChemistry [www.masteringchemistry.com](http://www.masteringchemistry.com) (bundled with text or purchased separately) Course ID: **beauvais89835**
- **Scientific Calculator:** Non-graphing, non-programmable calculator required for exams.

### Optional Materials (Recommended):

- **Tro, Study Guide for Chemistry:** A Molecular Approach, Pearson, 4th Edition 2017, ISBN-13: 9780134066271. Tro, Selected Solutions Manual for Chemistry: A Molecular Approach, Pearson, 5th Edition 2017, ISBN-13: 9780134066288.
- **ACS Review Study Guide** to help review for the final exam. We will be offering this guide for purchase early in the semester so wait for announcements.

## PREREQUISITES:

- **Chemistry Prerequisite:** Successful completion of General Chemistry I (CHE 1052), or the equivalent.
- **Mathematical Expectations:** Math skills equivalent to those taught in pre-calculus.
- **Corequisite:** CHE1053L

## ASSESSMENT AND GRADING

The activities described below will contribute to your total course grade according to the following:

Examinations (4)	50%
Quizzes	5%
Attendance and Participation	5%
Homework	15%
Christian Practices	5%
Final Examination	20%

Letter grades will be assigned at the end of the course based on your percentage of total possible points, according to the following *approximate* scale:

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

(+) and (-) grades will be assigned within each bracket. There is no A+ grade.

## Strategies for success in CHE1053

1. It is crucial that you not only memorize but thoroughly understand course material. Focus on recognizing patterns and learn to apply the problem solving strategies that are introduced in the book and lecture.
2. Working problems is the key to success. Work the practice problems in the book as you read the material and start homework sets early so that you can take advantage of office hours and review sessions. Practice additional problems at the end of each chapter (especially if there is an area where you are struggling).
3. ATTEND SYNCHRONOUS SESSIONS! History shows that attendance is critical to strong performance on exams in chemistry.
4. Come prepared to synchronous sessions. Not just attendance, but the time you invest in reading the assigned sections and answering prelecture problems will be very important when it comes time to study for exams.
5. Get help if you don't understand something. The instructors are here for you!

## Advice from previous General Chemistry students

- Read the sections assigned for each lecture beforehand. Even if you don't understand what you are reading, it will make so much sense when the instructor explains it. Doing this keeps you on top of this class and makes quizzes and tests much easier to study for.
- I advise them to start mastering chemistry assignments as soon as they are assigned. They should take advantage of office hours, too.
- Go to office hours if you don't understand something! Read the textbook - it actually helps so much to go over those examples and do them yourself. When studying for the exams, redo examples from class handouts.
- Dedicate a certain amount of time each day to reviewing in class material and go to office hours if you are confused about anything at all.
- Pay attention and show up to class! Also read and take notes on the sections that will be covered in lecture. If you're struggling in the class or just not understanding even one thing, go to the tutoring center or office hours and really get it down.
- Stay on top from the beginning. Work on test taking strategy. Study. Exams are everything.
- Study hard and prioritize your time. Also, make a good relationship with the professor.

## ADMINISTRATION

1. Attendance: You are responsible for all the material covered during class. 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 drop date or, after that date, receive the appropriate grade for their work and participation.
2. The use of portable electronic devices (phones, laptops, iPods, etc.) not related to the course is not permitted in the classroom.
3. Online Homework: Homework will be assigned regularly through [MasteringChemistry \(Course ID: beauvais89835\)](#). Successful completion of the homework is essential in mastering the course material. Late assignments will not be accepted.
4. Participation: Class participation is crucial for all students success and the grade will be based on Canvas assignments and clicker scores.
5. Christian Practices: Further information regarding the Christian Practices assignment will be provided during the second week of class.
6. Exams and Quizzes: Four exams and a comprehensive final will be given during the semester. Make-up exams will be arranged only if the instructor is contacted prior to the scheduled exam time and then only if you present an institutionally valid excuse. Quizzes will be given via Canvas at the start of each week, covering material from the previous week. The lowest quiz score will be discarded when final grades are computed. *Only non-graphing and non-programmable calculators may be used for exams and quizzes.*

## **SPIRITUAL CARE**

PLNU strives to be a place where students grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith.

If you have questions, a desire to meet with the chaplain, or if you have prayer requests, you can contact the [Office of Student Life and Formation](#).

## **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.

## **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.

## **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.

## **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.

## **SEXUAL MISCONDUCT AND DISCRIMINATION**

Point Loma Nazarene University faculty are committed to helping create a safe learning environment for all students. If you (or someone you know) have experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that help and support are available through the Title IX Office at [pointloma.edu/Title-IX](http://pointloma.edu/Title-IX). Please be aware that under Title IX of the Education Amendments of 1972, it is required to disclose information about such misconduct to the Title IX Office.

If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Counseling Services at [counselingservices@pointloma.edu](mailto:counselingservices@pointloma.edu) or find a list of campus pastors at [pointloma.edu/title-ix](http://pointloma.edu/title-ix)