

Department of Chemistry

CHEMISTRY 1003

General, Organic and Biological Chemistry

4 Units (plus 1 unit CHE1003L corequisite laboratory)

Fall 2026

Course info

Meeting times: MWF 8:20-9:25 pm Liberty Station 207	Instructor: Dr. Emily Schmidt Email: eschmidt@pointloma.edu
Final Exam (for <i>all</i> sections): 4:30 - 7 pm on Monday, December 14th	Office hours: M 7:00 - 8:00 pm Zoom W 11:00 - 2:00 pm Rohr Science Chem Department Rm 330 F 11:00 - 1:00 pm Rohr Science Chem Department Rm 330 Sign up for an appointment here

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

From the PLNU Catalog: Examination of those aspects of inorganic and organic chemistry that are pertinent to biology and chemistry. Examines the structures and metabolic reactions of biomolecules. Provides a background for nursing, family and consumer sciences and physical education majors. (Meets a general education requirement; does not count toward any Chemistry Department majors.)

Chemistry 1003 is an introductory chemistry class suitable for anyone who has never taken any chemistry classes before.

COURSE LEARNING OUTCOMES

At the end of the course you will be able to:

1. Speak fluently in the language of chemistry, describing the composition of matter at multiple levels: from the macroscopic to the atomic level.
2. Predict the properties of atoms, molecules, ions and molecular compounds, on the basis of structure.
3. Write balanced equations to describe common types of chemical transformations, including acid-base reactions.
4. Identify the main organic functional groups, and explain how intermolecular forces influence their properties.
5. Identify major classes of biological molecules, and describe how their chemical structure facilitates their biological function.

FOUNDATIONAL EXPLORATIONS LEARNING OUTCOMES

The following Foundational Explorations Learning Outcome (FELO) will be assessed in this class ([link to FE courses and corresponding FELOs](#)):

FELO 1e: Quantitative Reasoning: Students will be able to solve problems that are quantitative in nature.

Assessment of FELO 1e comprises 3-5 free response problems included as part of the course final exam.

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

Fundamentals of General, Organic and Biological Chemistry, by McMurry, Castellion, Ballantine, Hoeger and Peterson, Pearson, 8th Edition, **2017**. (ISBN-13: 9780134665708) *Required*

Modified Mastering Chemistry (Online homework platform that comes bundled with the textbook if you purchase it through the PLNU bookstore; for more information, visit [Course Materials](#).) *Required*

Calculator: Texas Instruments TI-30XIIS or equivalent. *Required*

COURSE SCHEDULE AND ASSIGNMENTS

Note: This schedule is subject to change. Any substantial changes (i.e. changes to anything other than *Details* or *Readings*) will be announced on the *Announcements* page in Canvas. Up-to-date reading assignments will also be listed in each Week Overview. A PDF of the schedule is available [here](#).

	DAY	DETAILS	READING/NOTES
1	M 8/31	Course Introduction	Syllabus
	W 9/2	Matter	1.2-1.5
	F 9/4	Measurements and Conversion Problems	1.6-1.10, 1.12
		Week 1 Assignment Due	
2	M 9/7	Labor Day - No class	
	W 9/9	Measurements and Conversion Problems	1.6-1.9 & 1.10, 1.12
		Atoms and Isotopes	2.1-2.3
	F 9/11	The Periodic Table and Electrons	2.4 -2.9
		Week 2 Assignment Due	
3	M 9/14	Quiz 1	Chapters 1-2
		The Periodic Table and Electrons	2.4 -2.9
	W 9/16	Ionic Compounds	Ch 3
		Covalent bonds	4.1-4.4

	F 9/18	Drawing Lewis dot structures	4.6-4.7
		Week 3 Assignment Due	
4	M 9/21	VSEPR and Polarity	4.8 -4.10
	W 9/23	<i>Practice drawing molecules: Lewis structures and VSEPR</i>	Ch 4
	F 9/25	Catch up day	TBD
		Week 4 Assignment Due	
5	M 9/28	Exam 1	Chapters 1-4
	W 9/30	Chemical Reactions	5.1-5.4
	F 10/2	Oxidation & Reduction Reactions	5.5-5.6
		Week 5 Assignment Due	
6	M 10/5	Moles and Stoichiometry	6.1-6.4
	W 10/7	Reaction Energy Diagrams	7.1 & 7.5-7.6
		Equilibria	7.7-7.9
	F 10/9	Solutions & Solubility	9.1-9.3 & 9.6-9.7
		Week 6 Assignment Due	
7	M 10/12	Quiz 2	Chapters 5-7
		Solutions & Solubility	9.1-9.3 & 9.6-9.7
	W 10/14	Calculating Concentration Practice	(9.6-9.7)
		Electrolytes & Osmolarity	9.8, 9.10
	F 10/16	Acid-base Reactions & pKa	10.1-10.3
		Week 7 Assignment Due	
8	M 10/19	Predicting acid strength & pH	10.4-10.6
	W 10/21	Catch up day	
		Week 8 Assignment Due	
	F 10/23	<i>Fall Break - No class</i>	
9	M 10/26	Exam 2	Chapters 5-7, 9, 10
	W 10/28	Intro to Organic Chemistry, drawing and	12.1-12.4
	F 10/30	Naming alkanes	12.6
		Intermolecular forces	8.2, 12.7
		Week 9 Assignment Due	

10	M 11/2	Organic functional groups Naming alkenes & alkynes	12.2, <i>flip through</i> 13.8, 14.1, 14.5, 14.7-14.9 13.2-13.3
	W 11/4	Isomers, part II Naming alcohols & ethers	13.3 14.2, 14.7, 14.9
	F 11/5	Intermolecular forces, part II Naming aldehydes & ketones	14.3, <i>review</i> 8.2 15.2
		Week 10 Assignment Due	
11	M 11/9	Quiz 3 Oxidation & Reduction of Organic	Chapters 12-14 14.4, 15.5, 15.6
	W 11/11	Naming & classifying amines and reactions	16.2 & 16.5-16.6
	F 11/13	Naming carboxylic acid derivatives and	17.1-17.2
		Week 11 Assignment Due	
12	M 11/16	Formation and hydrolysis of amides and esters	17.3-7.4 18.3-18.5
	W 11/18	Protein structure and function, classes of	18.2, 18.6-18.10 & 19.1-19.4
	F 11/20	Catch up day	TBD
		Week 12 Assignment Due	
13	M 11/23	Exam 3	Chapters 12-19
	W 11/26 - F 11/28	<i>Thanksgiving Break - No class</i>	
14	M 11/30	Chirality & Fischer projections Isomers, part III	14.10, 20.2 14.10
	W 12/2	Classifying sugars & biologically important	20.1-20.3, 20.4, 20.6, 20.7
	F 12/4	Types of lipids & Membranes	23.1-23.3, 23.5 - 23.7
		Week 14 Assignment Due	
15	M 12/7	Quiz 4 Reactions of lipids	Chapters 14, 20, 23 23.4
	W 12/9	Nucleic acids & the Central Dogma	26.1-26.5
	F 12/11	Catch up Day / Exam review	
		Week 15 Assignment Due	

Comprehensive Final

4:30 - 5:25 pm, Monday, December 14th

ASSESSMENT AND GRADING

EdPuzzle Videos - Short lecture videos are provided to introduce each day's topic. The videos will be *based on that day's reading assignment* (which you can find in that week's Overview) and *will cover new material*. You should complete these EdPuzzles before coming to class. EdPuzzles will be graded for *participation* and *effort*.

Worksheets - Worksheets related to that day's lecture will be available for extra practice. After class, you should upload a copy of your work to Canvas to verify participation and effort.

Assignments - Problems requiring greater thought and reflection will be completed outside of class and will be due each week on Friday. Given the large class size and recognizing the need for rapid feedback, assignments will be *electronic* and provided through Modified Mastering Chemistry. If you bought a new book from the book store you already received access to Modified Mastering in your bundle; alternatively, access to Modified Mastering with the eBook can be purchased online. The Modified Mastering format allows you to check your answer in real time. Note that the interface will only accept homework submissions up to the set due time and date.

Quizzes - Periodically, on Mondays, there will be in-class quizzes in two parts. First, you will have ~10 minutes to complete the quiz on your own (for an *individual* score). Then, you'll have the opportunity to repeat the quiz in your groups (for a *group* score). Your final score will be a combination of your individual and group scores.

Exams - There will be three midterm exams (one hour each, in class) and one final (two hours). Despite focusing on recently-covered material, midterm exams are technically *cumulative* and may assume knowledge from earlier in CHE1003.

The final exam is a *comprehensive* standardized multiple choice exam published by the American Chemical Society, with 3-5 additional free response questions. See the course schedule for exam dates.

Makeup examinations will be given only for excused absences. In such cases, appropriate documentation must be provided within two working days of the end of the excused absence.

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

Grade distribution

EdPuzzle Videos & Participation	10%
Online homework (Mastering Chemistry)	15%
Quizzes (individual + group)	15%
Midterm exams	35%
Final exam (ACS standardized exam)	25%

Student grades will be posted in the Canvas grade book throughout the course. Letter grades will be assigned at the end of the course based on your percentage of total possible points, according to the following scale:

A	B	C	D	F
Grade scale				
A 93-100	B+ 87-89	C+ 77-79	D+ 67-69	F Less than 59
A- 90-92	B 83-86	C 73-76	D 63-66	

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 [Class 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.

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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.

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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.

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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 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.

LANGUAGE AND BELONGING

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive,

and prejudice free. Inclusive/Bias-free language is the standard outlined by all major academic style guides, including MLA, APA, and Chicago, and it is the expected norm in university-level work. Good writing and speaking do not use unsubstantiated or irrelevant generalizations about personal qualities such as age, disability, economic class, ethnicity, marital status, parentage, political or religious beliefs, race, gender, sex, or sexual orientation. Inclusive language also avoids using stereotypes or terminology that demeans persons or groups based on age, disability, class, ethnicity, gender, race, language, or national origin. Respectful use of language is particularly important when referring to those outside of the religious and lifestyle commitments

of those in the PLNU community. By working toward precision and clarity of language, we mark ourselves as serious and respectful scholars, and we model the Christ-like quality of hospitality.

You may report an incident(s) using the [Bias Incident Reporting Form](#).

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SEXUAL MISCONDUCT AND DISCRIMINATION

In support of a safe learning environment, 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 accommodations and resources are available through the Title IX Office at pointloma.edu/Title-IX. Please be aware that under Title IX of the Education Amendments of 1972, faculty and staff are 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 or find a list of campus pastors at pointloma.edu/title-ix.

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PLNU 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 instructor 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.

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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 Life & Formation](#)

PLNU ACADEMIC BEHAVIOR POLICY

Both faculty and students at Point Loma Nazarene University have the right to expect a safe and ordered environment for learning. Students are expected to take the initiative to learn and conduct themselves in a mature and civil manner in the classroom environment. Any student behavior that is disruptive or threatening is a serious affront to Point Loma Nazarene University as a learning community. Students who fail to adhere to these behavioral standards may be subject to disciplinary action, including removal from class or further university sanctions. For a

full definition of disruptive behavior, response procedures, and the appeal process, please consult the Academic Behavior Policy in the University Catalog.

ARTIFICIAL INTELLIGENCE (AI) POLICY

You are allowed to use Artificial Intelligence (AI) tools (e.g., ChatGPT, Gemini Pro 1.5, GrammarlyGo, Perplexity, etc.) in this course. Any work that utilizes AI-based tools must be clearly identified as such, including the specific tool(s) used. Please use [this Purdue resource](#) [Links to an external site.](#) to guide your citations when using AI.

Note that this policy applies to the CHE1003 lecture course only. The policy for lab reports is different!

PLNU RECORDING NOTIFICATION

In order to enhance the learning experience, please be advised that this course may be recorded by the professor for educational purposes, and access to these recordings will be limited to enrolled students and authorized personnel.

Note that all recordings are subject to copyright protection. Any unauthorized distribution or publication of these recordings without written approval from the University (refer to the Dean) is strictly prohibited.

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LOMABOOKS INSTRUCTIONS FOR STUDENTS:

For both digital and print materials, please add these student instructions to your syllabus and canvas Course. Prior to the start of class, the PLNU Bookstore will also be sharing student instructions in a standalone email on how to access their content.

This course is part of our course material delivery program, [LomaBooks](#). The bookstore will provide each student with a convenient package containing all required physical materials; all digitally delivered materials will be integrated into Canvas.

You should have received an email from the bookstore confirming the list of materials that will be provided for each of your courses and asking you to select how you would like to receive any printed components (in-store pick up or home delivery). If you have not done so already, please confirm your fulfillment preference so the bookstore can prepare your [LomaBooks](#) materials.

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 distance education outside California.