

Chemistry 1001 (Chemistry and Society)

Spring, 2024

Dr Marc Perry
Rohr Science 366
619-849-2976

email: mperry1@pointloma.edu

Section 1: 2:30-3:35; MWF; 1/08/24 - 4/26/24; LBRT 203

This is a four unit course taught by the Department of Chemistry. Designed to introduce non-science students to the major ideas of modern chemistry and their relevance in contemporary society. Chemical principles are examined and applied to areas such as nutrition, medicine, agriculture, pollution, and energy issues.

Meets a Foundational Explorations requirement; does not count toward any Chemistry Department majors.

Prerequisite(s): [MTH 0099](#) or equivalent.

1. **Student Outcomes:** The following outcomes are expected and will be assessed on exams and quizzes:
 - a) Demonstrate knowledge of fundamental principles of atomic structure, bonding, acids and bases, oxidation and reduction, and basic nomenclature
 - b) Demonstrate knowledge of fundamentals of nuclear chemistry
 - c) Demonstrate knowledge of key terminology in organic chemistry and biochemistry.
 - d) Demonstrate knowledge of key concepts in air and water quality as well as energy production and consumption.
 - e) Perform research on a topic and make a presentation intended to teach others about the key concepts.

FE learning outcome 1e will be assessed in this course using student performance on problems that are quantitative in nature on the comprehensive final exam.

2. **Texts:** Hill, J.W.; McCreary, T.W.; Kolb, D.K. **Chemistry for Changing Times**, 15th edition, Prentice Hall, 2020. This text is **required**.

Mastering Chemistry Allocation: This is a web based homework site. You are required to purchase access. If you bought a new book from the book store you already received access to Mastering Chemistry in your bundle.

3. **Internet Resources and Communication:** You will be required to access this course on Canvas. I will place chapter notes for the class on this sight that you will have to print out prior to class. The notes will contain blanks which you will be required to fill in during lecture. The notes may contain some information that is not in the text. You will also be required to access the Mastering Chemistry web site (www.masteringchemistry.com) in order to do your assigned homework.
4. **Mastering Chemistry Homework:** You will be assigned a set of homework for every chapter to be completed online at the Mastering Chemistry web site. The assignment for each chapter will be due by 11:59 pm two days after the completion of a chapter in lecture. A late penalty of 1% per day past the due date will be enforced. These assignments are invaluable in preparing you for the in-class exams. If you answer 70% of the assigned problems or more, you will get full credit. I strongly encourage you to solve as many problems as possible as working problems is the only practical way for learning the material, and you should try your best to solve the problems before looking at the solutions. The online homework will count for 10% of your overall course grade. Register at www.masteringchemistry.com with the course ID **perry59824**.

5. **Group Work:** We will also have regular in-class group work and three in-class group assignments. Group work will count for 10% of your overall course grade.
6. **Christian Practice:** There ought to be something different about a course taken at PLNU when compared to an institution that is not faith based. This difference, at least for Chemistry, is not in content. It is, instead a difference in the class community. I desire for our class to be one in which the needs of others in the class are considered by the community. You will be assigned to a group at the beginning of the semester and you will be asked to pray for members of the group throughout the semester. You will meet as a group at least three times during the semester with the first meeting occurring in the first two weeks of class. You will be required to fill out a log that includes the times you met as a group, the times you have prayed for group members, as well as times that you have encouraged a classmate or helped them in some way. You will hand this log in at the end of the semester and will be required to have at least 10 entries total with entries from at least two of the three categories (prayer, encouragement, and help) in addition to the three group meetings. There will be two check-in assignments during the semester worth 10 points each. The final completed log will count for 70 points. In addition, you will be required to write a brief reflection on the overall assignment. This will also be worth 10 points. This Christian practice, love of neighbor, assignment will be worth 5% of your overall course grade.
7. **Office Hours:** I will make every effort to be available in my office during the times I've indicated below for office hours. You are welcome to take your chances and drop by, especially if you find these times inconvenient. I am also available outside of these times by appointment.

Office Hours

Monday: 4-5

Thursday: 10-11:30

Friday: 1-2

8. **Help Sessions:** I will do my best to schedule some class time prior to each exam for me to answer any questions that you might have.
9. **Quizzes:** There will be three quizzes worth 20 points each given over the course of the semester. These quizzes can take on different forms, which may include but are not limited to the following: take home, in-class, in-class open book, or in-class group work. These quizzes will count for 6% of your overall course grade.
10. **Examinations:**
- a) **Major Exams:** Exams will cover material in the text and the lecture material as well as any other assigned material. There will be 3 major exams worth 100 points each. These will count for 39% of your overall course grade. There will be no exam scores dropped. **Makeup examinations will be given only for excused absences provided the appropriate documentation is provided.** You should make sure to contact me before your scheduled exam time. My phone (619-849-2976) has a 24-hour message service so you may leave a message (always leave a phone number where you may be reached). If you are unable to call me then have your roommate, parents, etc. make the contact for you. If you find that there are errors in the grading of your exam, you should come by my office as soon as possible.
- b) **Final Exam:** Successful completion of this class requires taking the final examination **on its scheduled day and time (Friday, May 3 1:30-4 pm)**. The final examination schedule is posted on the [Undergraduate Records](#) 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.

- c) **Exam Schedule:** A tentative, but reasonably accurate, schedule for the 4 hour exams and final exam is given below. Changes in exam dates will be announced at least two days in advance. If you miss class and do not find out about the changes, that is your problem and it is not a valid reason for requesting a make-up exam. The date for the final exam is firm as set by University policy.

Exam #1	February 7 (Wednesday)
Exam #2	March 1 (Friday)
Exam #3	April 5 (Friday)
Final	May 3 (Friday 1:30-4 pm)

11. **Course Grade:** Your overall course grade will be based on your performance in both the lecture and laboratory. The weighting of each course activity is shown below.

Homework	10%
Group Work	10 %
Christian Practice	5%
Quizzes	6%
Hour exams	39% (13% each)
Final	15%
Group Project	15%

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%
NC/F	< 60%

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

12. **Course Syllabus:** Listed below is a syllabus with approximate lecture coverage and approximate examination points indicated.

Date	Chapter	Content	Approximate % of Lecture
1-8		Introduction	100
1-10	1	Chemistry	100
1-12	1	Chemistry	100
1-17	1	Chemistry	100
1-19	2	Atoms	100
1-22	2	Atoms	100
1-24	3	Atomic Structure	100
1-26	3	Atomic Structure	100
1-29	4	Chemical Bonds	100
1-31	4	Chemical Bonds	100
2-2	4	Chemical Bonds	100
2-5		Review/Activity #1	100
2-7		EXAM #1 (Chpt. 1-4)	
2-9	5	Chemical Accounting	100
2-12	5	Chemical Accounting	50
	6	Gases. Liquids. Solids	50
2-14	6	Gases. Liquids. Solids	100

Date	Chapter	Content	Approximate % of Lecture
2-16	6	Gases. Liquids. Solids	50
	7	Acids and Bases	50
2-19	7	Acids and Bases	100
2-21	7	Acids and Bases	100
2-23	8	Oxidation and Reduction	100
2-26	8	Oxidation and Reduction	100
2-28		Review/Activity #2	100
3-1		EXAM #2 (Chpt. 5-8)	
3-11	9	Organic	100
3-13	9	Organic	100
3-15	9	Organic	100
3-18	11	Nuclear Chemistry	100
3-20	11	Nuclear Chemistry	100
3-22	16	Biochemistry	100
3-25	16	Biochemistry	100
3-27	16	Biochemistry	100
4-3		Review/ Activity #3	100
4-5		EXAM #3 (Chpt. 9,11,16)	
4-8	15	Energy	100
4-10	15	Energy	100
4-12	15	Energy	100
4-15		Work on Presentations	100
4-17		Work on Presentations	100
4-19		Group Presentations	100
4-22		Group Presentations	100
4-24		Group Presentations	100
4-26		Final Exam Review	100
5-3		FINAL EXAM (Friday: 1:30-4 pm)	

13. Attendance: Attendance will be taken and will be used for advising purposes. If your absence is not excused, then you will get a zero for any group work done on that day. If you miss 8 or more classes (20%), you can be dropped from the course.

14. Academic Accommodations: 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.

15. **University Mission:** 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.
16. **FE 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 cultures.
17. **Copyright:** 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.
18. **Academic Honesty:** 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.
19. **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. 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 or find a list of campus pastors at pointloma.edu/title-ix

20. **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.
21. **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 your professor or the [Office of Spiritual Life and Formation](#)