
 <p><b>POINT</b><sup>19</sup>  <b>LOMA</b><sup>02</sup> NAZARENE UNIVERSITY</p>	Department of Chemistry College of Natural & Social Sciences Chemistry 1001, <b>Chemistry &amp; Society</b> 4.0 units
Fall 2020	

## SYLLABUS

<b>Chemistry 1001: Chemistry &amp; Society</b>	Instructor: <b>Dr. David Lingner</b>
Meeting days/times: <b>MWF 8:15-9:25 am</b>	Phone: <b>619-849-2470</b> ( <i>seldomly used</i> )
Meeting location: <b>LSCC 202 / Online</b>	Email: <a href="mailto:dlingner@pointloma.edu">dlingner@pointloma.edu</a> ( <i>frequently used</i> ) --- for Online Course: <b>Use Canvas email system</b>
Course Duration: <b>8/17/2020-12/4/2020</b>	Office: <b>Rohr Science 328</b>
Final Exam: (Day/Time TBD)	( <i>Enter the chemistry office suite through RS 330.</i> )
Student-Led Review Sessions: Andrew (Thursdays, 4-5pm)	Professor Office Hours: (Days/Times TBD)
PLNU Tutorial Center, 619-849-2593 <a href="mailto:Tutorialservices@pointloma.edu">Tutorialservices@pointloma.edu</a>	

## Course Description

Chemistry 1001, Chemistry and Society, is a 4.0-unit course offered by the College of Natural & Social Sciences, Department of Chemistry, which is designed to introduce non-science major students to the basic 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 general education requirement; does not count toward any Chemistry Department majors.) Prerequisite: Math 099 or equivalent.

## 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.

# Philosophy of Learning

I want you to gain confidence in your ability to learn chemistry, your ability to evaluate policy decisions based on scientific data and theories, and your appreciation for science in our world. The knowledge you gain here will enrich your world and make future learning easier and more fun. This quote from Cicero's orations in defense of liberal arts has stuck with me since my high school Latin classes and it nicely summarizes the benefits of general education / liberal arts studies.

*“Haec studia adolescentiam alunt, senectutem oblectant, secundas res ornant, adversis perfugium ac solacium praebent delectant domi, non impediunt foris, pernoctant nobiscum, peregrinantur, rusticantur.” – Marcus Tullius Cicero (Pro Archia Poeta, 62 BC).*

Translated: “These studies nourish youth and divert old age, enhance prosperity, offer refuge in solace and adversity, delight us at home, are not a hindrance away from home, serve as our companions through the night, on journeys, and in rural retreats.”

My wish for you is that, with a little effort, this course will be fun and interesting for you. I pray that you will look back fondly on our time together in Chemistry 1001 at Loma.

## Course Learning Outcomes

These outcomes are expected and will be assessed on exams and various activities:

- Demonstrate knowledge of fundamental principles of atomic structure, bonding, acids and bases, oxidation and reduction, and basic nomenclature
- Demonstrate knowledge of fundamentals of nuclear chemistry
- Demonstrate knowledge of key terminology in organic chemistry and biochemistry
- Demonstrate knowledge of key concepts in air and water quality as well as energy production and consumption
- Perform research on a topic and make a presentation intended to teach others about the key concepts.

## Foundational Explorations Learning Outcomes

Students will acquire knowledge of human cultures and the physical and natural world while developing skills and habits that foster life-long learning. Specifically, Foundational Education Learning Outcome 1e (***Quantitative Reasoning***: Students will be able to solve problems that are quantitative in nature.) will be assessed in this course using student performance on problems that are quantitative in nature on the comprehensive final exam.

# Required Texts & Recommended Study Resources

## TEXTBOOK

Chemistry for Changing Times, 15th Edition, by JW Hill, TW McCreary, MD Duerst, RA Reuter. Pearson Education, 2020. You must purchase access to Mastering (Pearson's online homework site). The actual textbook is advantageous but not absolutely necessary, as other similar textbooks and resources exist. See below for purchasing options, as described by the publisher.

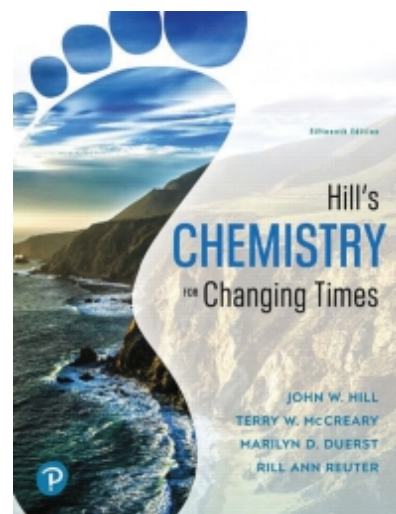
Mastering WITH ebook  
Access Length: Subscription 12 Months  
Bookstore ISBN(s): 9780134988955  
Online Purchase: \$114.99

---

Mastering WITHOUT ebook  
Access Length: Subscription 18 Months  
Bookstore ISBN(s): 9780134986661  
Online Purchase: \$69.99

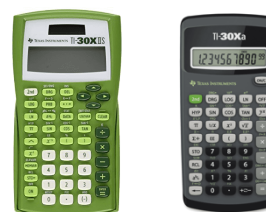
---

Mastering + Print Text  
Includes Pearson eText: Y  
Bookstore ISBN(s): 9780135720721  
Price To Bookstore: \$169.99



## ADDITIONAL REQUIRED MATERIALS

*Scientific Calculator:* Non-graphing, non-programmable calculator required. Any calculator that can accept or display text is not allowed. If the front of your calculator has the letters A-Z on it, then you may not use the calculator. Recommended TI-30 or similar.



*Course Website (Canvas):* <http://canvas.pointloma.edu> - You are required to access this course on Canvas, where you will find grades, notes, answer keys, study guides, this syllabus, and other course materials. Canvas will also enable you to directly access the Mastering Chemistry online homework site to complete assignments there.



*Mastering Chemistry:* This is our online homework system from the textbook publisher. You need access to this, so you can complete the Mastering Chemistry homework assignments (about 2-3 rather short assignments per chapter). You are **required** to use Mastering Chemistry for online homework assignments. With a new book you may have already received Mastering Chemistry access in your bundle. If you have a used book, you may purchase access directly from the website. Click on the **MyLab and Mastering** tab in your Canvas course to access Mastering. You should be prompted to enter your access code or to buy one. Once you're in, the assignments will populate on your Canvas calendar.



## 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 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.

## 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.

I expect all students to exhibit exemplary integrity, reflecting the spirit and high standards of our shared community, and I view any dishonesty as an insult to your classmates and to the University. Cheating or plagiarism in our chemistry class includes but is not limited to direct copying of another student's homework; allowing or not preventing another student to look at your paper during a quiz or exam; looking at another student's paper during a quiz or exam; using notes, books, disallowed calculators (see above, under "Additional Required Materials"), cell phones, camera, or other text-capable devices during a quiz or exam. The use of portable electronic devices (phones, laptops, iPods, etc.) not related to the course is not permitted in the classroom unless otherwise authorized. Use of cell phones or other disallowed methods during quizzes or exams will result in a grade of zero and an academic dishonesty report to your department chair and/or dean.

Exams and Quizzes will be monitored using Honorlock software, which is already integrated into Canvas. Honorlock involves live audio and video data, screen monitors, and other protections to encourage academic honesty. Additional details regarding Honorlock are provided below.

# Honorlock

Honorlock will proctor your exams this semester. Honorlock is an online proctoring service that allows you to take your exam from the comfort of your home. You DO NOT need to create an account, download software or schedule an appointment in advance. Honorlock is available 24/7 and all that is needed is a computer, a working webcam, and a stable Internet connection.

To get started, you will need Google Chrome and to download the Honorlock Chrome Extension. You can download the extension at [www.honorlock.com/extension/install](http://www.honorlock.com/extension/install)

When you are ready to test, log into Canvas, go to your course, and click on your exam. Clicking "Launch Proctoring" will begin the Honorlock authentication process, where you will take a picture of yourself, show your ID, and complete a scan of your room. Honorlock will be recording your exam session by webcam as well as recording your screen. Honorlock also has an integrity algorithm that can detect search-engine use, so please do not attempt to search for answers, even if it's on a secondary device.

Good luck! Honorlock support is available 24/7/365. If you encounter any issues, you may contact them via live chat, phone (844-243-2500), and/or email ([support@honorlock.com](mailto:support@honorlock.com)).

## PLNU Academic Accommodations Policy

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center ([DRC@pointloma.edu](mailto:DRC@pointloma.edu) or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 prohibits discrimination against students with special needs and guarantees equal access to and benefits of PLNU programs and activities for all qualified students. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

## “In-Class” Activities

I plan to put you to work in class almost every class period. We will have regular “in-class” activities (ICA), designed to help you actively learn the concepts presented in class, in your textbook, and elsewhere. I expect and encourage collaboration between you and your peers on in-class activities, but **not** on quizzes or exams. Make sure you understand an answer before you write it. These ICAs and quizzes, along with the online homework, are given to help you determine which parts of each chapter are more important than others, and what to expect on exams. Your activity percentages will be averaged to determine your overall activity score. These in-class activities will be submitted via Canvas and they count for 10% of your overall course grade.

## Mastering Chemistry, Online Homework

Our publisher (Pearson) has created Mastering Chemistry (MC), a web-based homework system that we have integrated with Canvas at the “MyLab and Mastering” tab. As detailed above, you must have an access code to access Mastering Chemistry.

You will be assigned one or more sets of homework problems for each chapter, each due on a certain date and time. These assignments may be found within the course “Modules” on the Canvas site. Late homework completion will **not** be allowed. These online assignments will be invaluable in preparing you for the exams. Working problems is the only practical way to learn the material, and you should try your best to solve the problems before looking at the solutions.

The relative value of each online homework assignment will be calculated in two ways, and your overall online homework (Mastering Chemistry or MC) average will be the higher of the two calculated results: (1) Each individual MC homework assignment will count equally and the overall MC grade will be the average of the chapter assignments; alternatively, (2) the overall MC grade will be the weighted average of the individual assignments based on the number of questions from each assignment. Your online homework average will count as 15% of your overall grade.

## Group Presentations Project

During the semester, we will enjoy in-class presentations by you, the students! Your group will select a topic for which you are expected to research, work collaboratively outside of class, prepare for, and deliver a presentation using PowerPoint, whiteboards, Zoom, etc. The overall group project score will be determined by averaging your scores from several assignments, including a topic proposal, planning, slides, outline, references, questions and answers, self-evaluations, professor evaluations, and your responses to presentations from other groups. Overall, the group project assignments will count for 10% of your overall course grade.

## Chapter Discussions

For each chapter, I would like you to share your learning strategies with your fellow students. Specifically, you will create a discussion post identifying the most difficult topic or concept in each chapter and explaining what makes it so difficult. In addition, you will respond to similar posts from your classmates, explaining your strategies for mastering their most difficult topics. These chapter discussions will count for 5% of your overall course grade.

## Exams

There will be four (4) 1-hour exams given throughout the semester. These exams will cover material in the textbook and the lecture material as well as any other assigned material. No book or notes or other aides will be allowed during the exams and the calculator policy will be strictly enforced. Exams will have a fixed time limit. Therefore, your understanding of the material must be clear enough to produce answers to most of the exam questions rather quickly. Extra time will not be allowed. For problems that call for work to be shown or explanation of reasoning on an in-class activity, quiz, or exam, no credit will be given for an answer alone; the method or reasoning must also be shown. Your answers and written reasoning (including unit conversions) should be clear enough so that one of your peers could easily follow what you did if they had not worked the problem before. Makeup exams will only be given with prior notice of University-excused absences supported by the appropriate documentation. Be sure to contact your professor *before* your scheduled exam time. If you are unable to give prior notice personally, then have your roommate, parents, etc., make contact for you prior to the start time of the exam. If you find that there are errors in the grading of your exam or any graded material, you should submit a written regrade request (including the original assignment) as soon as possible. Changes to exam dates will be announced at least one week 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 makeup exam. After the lowest exam score is dropped, your other exams will count 10%, 15%, or 20% of your overall course grade. See the table on the following page for details.

## Final Exam

The date for your comprehensive final exam is firmly set as per University policy. Successful completion of this class requires taking the final examination *starting and ending on its scheduled day and time*. The final examination schedule is posted on the PLNU website. No requests for alternative days or times will be approved. Your final exam will count for either 15% or 20% of your overall course grade, as shown in the Assessment and Grading table in the following section.

# PLNU Attendance & Participation Policy

Regular and punctual attendance at all **synchronous** class sessions is considered essential to optimum academic achievement. In some courses, a portion of the credit hour content will be delivered **asynchronously**, and attendance will be determined by submitting the assignments by the posted due dates. See Academic Policies in the Undergraduate Academic Catalog. If absences exceed these limits but are due to university excused health issues, an exception will be granted.

**Asynchronous Attendance/Participation Definition:** A day of attendance in asynchronous content is determined as contributing a substantive note, assignment, discussion, or submission by the posted due date.

**For Chemistry 1001** in the Fall 2020 semester, attendance will be monitored using:

1. *Zoom for synchronous sessions.* Live Zoom sessions will be held each Monday, Wednesday, and Friday, 8:30-9:30 am, Pacific Time. You are required to attend at least one synchronous class sessions on Zoom per week. I will schedule some office hours at other times of day during each week, and these would count in this category as well. Occasionally, the Zoom sessions may end early, so it is best to get there for the start, to make sure your presence is counted. Note: Attendance at all synchronous class sessions is recommended.
2. *Assignments on class session days.* For each Monday, Wednesday, and Friday class session, you have an assignment to complete. These will be “In-Class” Activities, or Group Project assignments, or Exams. You will be considered present for the day if you submit the assignment or exam by the time that it is due for the given day; you will be marked absent if the assignment or exam is missing at the due date and time.

For each week, a total of four attendance points can be accumulated, one for your attendance at a Zoom session, and one for each of the three class session day assignments, for a total of 56 points (14 weeks and 4 points per week). If the student misses more than 10 percent of the attendance points for the semester (i.e., 6 points missing), the faculty member will issue a written warning of de-enrollment. If the missing attendance points exceed 20 percent (i.e., 12 points missing), 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.

## Course Credit Hour Information

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 4.0-unit class delivered over 15 weeks. It is anticipated that students will spend a minimum of 37.5 participation hours per credit hour on their coursework. For this course, students will spend an estimated 150 total hours (or about 10 hours per week) meeting the course learning outcomes. The time estimations are provided in the Canvas modules.



## Assessment & Grading

The weighted average of each grading category described above will determine your final grade, with the following weights given to each type of assignment:

"In-Class" Activities	10%
Chapter Discussions	5%
Mastering Chemistry (MC), Online Homework	15%
Group Project	10%
Highest of Top Two Exams & Final	20%
2nd Highest of Top Two Exams & Final	15%
3rd Highest of Top Two Exams & Final	15%
2 <sup>nd</sup> Lowest of Four Exams	10%
Lowest of Four Exams	0%
TOTAL	100%

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%

Plus (+) and minus (–) grades may apply to the top and bottom 30% of each range, with allowances or deductions for attendance, responsibility, professionalism, interest, and active participation in class. There is no A+ grade.

## Incompletes & Late Assignments

All assignments, including exams, quizzes, activities, online homework, discussions, and group projects, are to be submitted prior to the dates and times on which they are due, as shown on Canvas. Missing assignments will receive a grade of zero, and will count against your attendance requirements. "Incomplete" grades will only be assigned in extremely unusual circumstances.

## Use of Technology

In order to be successful in the online environment, you'll need to meet the minimum technology and system requirements; please refer to the *Technology and System Requirements* information. Additionally, students are required to have headphone speakers compatible with their computer available to use. If a student is in need of technological resources please contact [student-tech-request@pointloma.edu](mailto:student-tech-request@pointloma.edu).

Problems with technology do **not** relieve you of the responsibility of participating, turning in your assignments, or completing your class work.

## 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](#)

## Success in Chemistry

Force yourself, if necessary, to be interested in the Chemistry 1001 concepts. You're lucky to be at a college where general education courses are taken seriously. The University wants you to be able to understand scientific concepts and know something about how scientists think. It's likely you'll become more interested in proportion to your effort. Use the activities and homework to figure out what may show up on exams. Please ask questions. It is my job to answer them. Scientists are curious characters. People either know all the answers or they ask. Those who ask typically will become the smartest people in the class. I have never heard an unnecessary question.

*"In every job that must be done, there is an element of fun."* – M. Poppins.

With so many local, national, and global issues and policies centered around scientific data and theories, it is critical that you as a responsible citizen can separate the good science from the rhetoric, advertising, and scare tactics, so you can make informed decisions as we all strive to keep society functioning and growing, safely and sustainably, into the future.

# Schedule At-A-Glance (page 1 of 2)

## CHEMISTRY 1001 – Fall 2020 Tentative Calendar (first half)

Wk	Monday	Wednesday	Friday
1	8/17 Chapter 1 - Intro, Orientation	8/19 Chapter 1 - Chemistry, Matter	8/21 Chapter 1 - Measurements, Conversions
2	8/24 Chapter 1 - Quantitative Methods	8/26 Chapter 2 - Atoms, Moles, Periodicity	8/28 Chapter 3 - Nuclear Atom, Isotopes
3	8/31 Chapter 3 - Electrons, Shells, Orbitals	9/2 Chapter 4.1-4.5 - Ionic Compounds	9/4 Chapter 4.5, 4.7, 4.9 - Chemical Nomenclature
4	9/7 Group Projects - Proposal	9/9 Review Day	9/11 EXAM 1 - Chapters 1, 2, 3, 4
5	9/14 Chapter 4 - Covalent (Lewis) Structures	9/16 Chapter 4 - Covalent Shapes & Polarity	9/18 Chapter 5 - Chemical Reactions
6	9/21 Chapter 5 - Chemical Accounting	9/23 Chapter 5 - Solutions	9/25 Chapter 6 - Intermolecular Forces
7	9/28 Chapter 6 - Gases	9/30 Group Projects - Planning	10/2 Review Day
8	10/5 EXAM 2 - Chapters 4-6	10/7 Chapter 7 - Acids and Bases	10/9 Chapter 7 - Acids and Bases

*The topics for each date (and the dates of exams) may change as the semester moves along.*

## Schedule At-A-Glance (page 2 of 2)

### CHEMISTRY 1001 – Fall 2020 Tentative Calendar (second half)

Wk	Monday	Wednesday	Friday
9	10/12 Chapter 8 – Redox	10/14 Chapter 8 – Redox	10/16 Chapter 11 - Nuclear Chemistry
10	10/19 Chapter 11 - Nuclear Chemistry	10/21 Chapter 15 - Energy	10/23 Review Day
11	10/26 EXAM 3 - Chapters 7,8,11,15	10/28 Chapter 9 - Organic Chemistry	10/30 Chapter 9 - Organic Chemistry
12	11/2 Chapter 10 - Polymers	11/4 Chapter 16 - Biochemistry	11/6 Chapter 16 - Biochemistry
13	11/9 Group Project - Presentation & Reactions	11/11 Group Project - Presentation & Reactions	11/13 Group Project - Presentation & Reactions
14	11/16 Group Project - Presentation & Reactions	11/18 Review Day	11/20 EXAM 4 - Chapters 9,10,16, Projects
15	11/23 Review Day	11/25 Thanksgiving Holiday – no class	11/27 Thanksgiving Holiday – no class
	11/30 Finals Week – No class	12/2 <b>FINAL EXAM 7:30-10:00 am</b> Comprehensive	12/4 Finals Week – No class

*The topics for each date (and the dates of exams) may change as the semester moves along.*