



## Chem 2000: General Chemistry I Syllabus

Department Name:	Natural Sciences and Mathematics
Course Number:	Chem 2000
Course Title:	General Chemistry I
Semester Offered:	Summer 2024 June 17, 2024 – July 9, 2024
Credits:	3 units
Modality:	Hybrid
Course Meeting Days:	Monday, Tuesday, Thursday / Exam days: Monday and Tuesday
Course Meeting Times:	8:00 am – 11:55 pm
Course Meeting Place:	Meadowlands Room 333
Co-requisite:	Chem 2005 (General Chemistry I Lab)
Pre-requisites:	Math 1400 and Chem 1500/1505

### Instructor Information:

Instructor:	Sofia Odrón, sofia.odron@dominican.edu
Office Location:	Science Center Room 110 & Zoom
Office Hours:	Tuesday and Thursday 12:00 - 1:00pm

## Description of Syllabus Contents

- 1. Course Description.** This course is the first of a two-course series focused on the fundamental principles and theories of chemistry with special emphasis on chemical calculations. Topics include atomic structure, stoichiometry and chemical reactions, gases, kinetic-molecular theory, periodicity and bonding, chemical thermodynamics, molecular geometry, etc.
- 2. Course Objectives.**
  - a. To provide a comprehensive understanding of the basic principles of general chemistry at the undergraduate level.
  - b. To combine lectures and labs to help students get hands on experience in the applications of general chemistry in the chemical industry as well as in everyday life.
  - c. To prepare students in the principles of general chemistry required to continue in the organic chemistry courses at the undergraduate level.
  - d. To provide adequate general chemistry in preparation for admittance into health-related professional fields including dental, medical and pharmacy programs.
- 3. Required and Recommended Texts and Resources.**

**Textbook (Required)** and solution manual (recommended):  
Chemistry: The Central Science. 13<sup>th</sup> Edition (Brown, LeMay, Bursten, Murphy and Woodard).  
Prentice Hall. 2012. ISBN-13: 978-0321910417.

The solutions manual is also available in Science Center Room 110. Please come by my office hours to check your answers.

**Scientific Calculator (Required):** A simple, inexpensive, non-programmable scientific calculator with capabilities for square roots, logarithms, exponentiation, and exponential (scientific) notation operations is required for this class. Programmable calculators are **not** allowed during exams. No exceptions will be made.

Molecular Model Set (Optional but Highly Recommended): Prentice Hall Molecular Model Set for General and Organic Chemistry. 1998. ISBN-13: 9780139554445.

- 4. Online Components of the Course.** Course material, including handouts, homework assignments, practice exams, announcements and grades, will be posted on the course page on Moodle. Students are expected to monitor this site frequently to stay current on the material.
- 5. Academic Honesty Honor Code.** Students are expected to adhere to the academic honesty honor code stated in the [Catalog](#). Students should practice academic integrity in all of its forms, including abstaining from plagiarism, cheating, and other forms of academic misconduct. The University reserves the right to determine in any given instance what action constitutes a violation of academic honesty and integrity.

Our course police on cheating involves the following guidelines which include:

1. Any student caught cheating using a smart phone, smart watch, or unauthorized supplementary device during an exam will receive a 0.
2. Students are encouraged to use the restroom prior to the exam.

- 6. Diversity.** Dominican University of CA is committed to promoting diversity. In recognition of our diverse backgrounds, the inclusion of diverse thought is encouraged in this course and in all classroom interaction. In addition, in this course, an effort will be made to provide a learning environment which is conducive for all students.
- 7. Assignments.** Students are expected to read the textbook based on the tentative schedule. Assignments include homework and worksheets. In-person exams will be administered.

**Problem sets.** Textbook problems will be assigned to help master the course material. The textbook homework will **NOT** be turned in or graded for points. It is the responsibility of the student to complete the assigned homework for the course on time following the schedule outlined in the syllabus. **Our homework questions will serve as approximately 50% of our exam material.**

**IMPORTANT NOTE:** Though not being graded for points, completing the assigned problem sets serves as practice which is crucial to understanding the material. It is to your advantage to use the solutions manual or come by office hours to check your answers. Keeping all of your worked-out problems in an *organized folder* provides the foundation for review material involving our exams.

- 8. Grading.** Lecture (CHEM2000) and Lab (CHEM 2005) will be graded separately. A separate grade will be reported for both courses to assess your strengths or weaknesses in the lecture and or laboratory setting. Exams will be administered **in-person** for this course.

Exam 1	200 pts	93-100%	A
Exam 2	200 pts	90-92%	A-
Exam 3	200 pts	83-89%	B+
		80-82%	B-
		77-79%	C+
		73-76%	C
		70-72%	C-
		60-69%	D
<b>Total</b>	<b>600 pts</b>		

### 9. Expectations for Student Conduct.

- Turn off **all electronic devices** (cell phones, smart watches etc.) during exams.
- Materials posted to the Moodle course website are only for class use and may not be duplicated and distributed or sold. Students may download and print information for personal use as a student in the class. This is consistent with Fair Use under intellectual property protection
- It is the students responsibility to watch lectures pertaining to each exam promptly as this is a self-paced course.

**10. Students Who Require Accommodations.** Dominican University of California is committed to equal access for all students in accordance with the American's with Disabilities Act of 1990. Students who feel they may need accommodations based on the impact of a disability should contact the Office of Accessibility and Disability Services at 415-257-1388 ASAP to discuss specific accommodations. Please submit the subsequent the paperwork to the instructor ASAP.

**11. Course Evaluations.** Dominican University of California is committed to an ongoing evaluation of its programs and courses through a culture of constructive dialogue and feedback. It is expected that students will complete the course evaluation either in class or outside of class. The instructor will determine time for the course evaluation to be completed. A link to the course evaluation will be sent to all the students enrolled in the class by the IT Department. The evaluation may be completed on a laptop, tablet, or mobile device.

### 12. Student Learning Outcomes:

- Comprehension and integration of fundamental scientific concepts in the biological and physical sciences.
- The ability to perform techniques in modern science.
- The ability to apply scientific and mathematical principles in developing an independent research project, utilizing appropriate scientific techniques, including information and data analysis technology.
- Objectivity in scientific investigations by suspending preliminary judgments, drawing conclusions only from observable and testable data, and attempting to exclude cultural assumptions and biases.
- Understanding of a spectrum of chemical principles and knowledge in all major areas of chemistry.
- Skills in analysis, synthesis, and quantitative reasoning that are essential to establish and rigorously test hypotheses.
- Competency in working in a chemistry laboratory, especially with respect to:
  - general laboratory practice guidelines, including safety.
  - qualitative and quantitative chemical analyses, reactions, and synthesis;
  - and the use of modern chemical instrumentation
- The ability to organize and present chemical information in written and oral format using the available information technology.
- Understanding of the importance of chemistry in society, environment, and industry.
- The skills necessary to pursue employment or further education in chemistry or interdisciplinary areas involving chemistry.

**13. Title IX.** As instructors, one of our responsibilities is to help create a safe learning environment for our students and for the campus as a whole. As part of our commitment to students' well-being, we have the responsibility to report any instances of sexual harassment, sexual violence, relationship violence, or stalking to our Title IX coordinator, Jessie Andrews, so he can inform students about their reporting options in the various support resources available. Student privacy is a priority for us and will be maintained to the extent permissible by law and policy. For more information about your rights and reporting options, including confidential and anonymous reporting, please visit the website listed [here](#).

**Chemistry 2000: General Chemistry I**

**14. Tentative Class Schedule.** *We reserve the right to adjust and make changes accordingly.*

Date	Lecture #	Topic	Chapter	HW
6/17	1	Introduction: Matter and Measurement	1	
	2	Atoms, Molecules, and Ions	2	
6/18	3	Atoms, Molecules, and Ions	2	
	4	Stoichiometry: Calculations w/ Chemical Formulas & Equations	3	
6/20	5	Stoichiometry: Limiting reagents	3	
		Practice exam		
6/24		<b>Exam 1</b>		
	6	Aqueous Reactions and Solution Stoichiometry	4	
	7	Aqueous Reactions and Solution Stoichiometry	4	
6/25	8	Thermochemistry	5	
	9	Thermochemistry	5	
6/27	10	Electronic Structure of Atoms	6	
	11	Electronic Structure of Atoms	6	
	12	Periodic Properties of the Elements	7	
7/1	13	Periodic Properties of the Elements	7	
		Practice exam		
7/2		<b>Exam 2</b>		
	14	Basic Concepts of Chemical Bonding	8	
	15	Basic Concepts of Chemical Bonding	8	
	16	Molecular Geometry and Bonding Theories	9	
7/8	17	Molecular Geometry and Bonding Theories	9	
	18	Gases	10	
		Practice exam		
7/9		<b>Exam 3</b>		

**Chem 2000 Homework**  
**Sourced from Chemistry: The Central Science, Brown 13<sup>th</sup> Edition**

Chapter	Problems
1	13, 27, 32, 35, 37, 41, 47, 53
2	27, 35, 54, 67, 69, 71, 73, 75, 77
3	15ab, 23a-c, 35bd, 44, 53b, 67
4	7, 21a-c, 23c, 37, 39, 49a-d, 51, 73, 77, 83, 87a-d
5	19, 23, 29ac, 43, 45, 55, 63, 65, 73
6	19, 29, 37, 47, 57, 73, 75a-d, 77ac, 105
7	13, 17, 25, 34, 43, 45
8	9, 13, 37, 39, 41, 47, 63, 69
9	17, 25, 29, 41, 51, 59, 61,
10	23, 39, 43, 51, 57, 63, 83, 91, 95

**Chem 2000/5: General Chemistry I**  
**Summer Session 2024**  
**Tentative Course Calendar**

Summer Session I  
 6/17 – 7/9/2024  
 General Chemistry I (Chem 2000)  
 Laboratory (Chem 2005)

# JUNE 2024

SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17 <a href="#">Lect 1-2</a> <a href="#">Lab 1</a>	18 <a href="#">Lect 3-4</a> O.H. 12-1pm <a href="#">Lab 2</a>	19 Holiday	20 <a href="#">Lect 5</a> O.H. 12-1pm	21	22
23	24 <a href="#">Exam 1</a> <a href="#">Lect 6-7</a> <a href="#">Lab 3</a>	25 <a href="#">Lect 8-9</a> O.H. 12-1pm <a href="#">Lab 4</a>	26	27 <a href="#">Lect 10-12</a> O.H. 12-1pm	28	29
30	1	2	3	4	5	6

Summer Session I  
 6/17 – 7/9/2024  
 General Chemistry I (Chem 2000)  
 Laboratory (Chem 2005)

# JULY 2024

SUN	MON	TUE	WED	THU	FRI	SAT
30	1 <a href="#">Lect 13</a> O.H. 12-1pm <a href="#">Lab 5</a>	2 <a href="#">Exam 2</a> <a href="#">Lect 14-16</a> <a href="#">Lab 6</a>	3 O.H. 12-1pm	4 Holiday	5 Campus closed	6
7	8 <a href="#">Lect 17-18</a> O.H. 12-1pm <a href="#">Lab 7</a>	9 <a href="#">Exam 3</a> <a href="#">Lab 8</a>	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3