

## CHEM11A - General Chemistry I – Summer 2024 Syllabus

### Professor Deno Del Sesto

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### Meeting Times:

MTRF 8:30 – 11:00 am  
Room: Gerstenzang 121  
Student Hours: MTR 11:30am – 1pm

**Course Overview** Chemistry 11A covers a wide array of topics, embracing aspects of descriptive, as well as quantitative, chemistry. No prior study of chemistry is assumed. The course begins by looking at the atomic foundation of matter, the elements, and the organization of the Periodic Table, working its way up to an examination of how atoms are bonded together to form larger units of matter. Students who complete this course will gain understanding of the laws that govern the behavior of matter in the gas phase, as well as knowledge of the major types of chemical reactions and how to represent them. A strong focus is put on learning methods of *creative problem-solving*—using the material to develop the critical thinking tools essential to solving unfamiliar problems—skills that carry students far beyond the confines of the classroom. When taken in conjunction with Chemistry 11B and the associated lab courses (Chemistry 18A and 18B), this course meets the general, analytic, and inorganic requirements of medical, dental, and veterinary schools.

**Goals of the Course** This course seeks to advance problem-solving skills in the context of a solid foundation in general chemistry. Students should leave the course with the ability to use the tools they have learned to solve chemical problems and to clearly explain chemical concepts in writing. One of the major goals of this course is to develop the ability to think both critically and creatively about different methods of problem solving.

Grading	Percentage
Exams (2)	40%
Problem Solving	10%
Quizzes (2)	25%
Final Exam	25%

### Required Textbook

- Tro, Nivaldo J. *Chemistry, A Molecular Approach*. Pearson Prentice Hall, 6<sup>th</sup> ed., 2022. Previous editions are acceptable but please be sure to double check the section numbers. The eTextbook is also acceptable.

### Additional Recommended Materials

- Scientific Calculator: Bring your calculator to each lecture to follow along with problem solving and for performing calculations during experiments.

**Semester Schedule** During the course of the summer, we will cover approximately two chapters of the textbook per week, completing the first ten chapters.

### Chapters and Topics

Chapter 1 – Matter, Measurement, and Problem Solving  
Chapter 2 – Atoms and Elements  
Chapter 3 – Molecules and Compounds  
Chapter 4 – Chemical Reactions and Chemical Quantities  
Chapter 5 – Introduction to Solutions and Aqueous Reactions  
Chapter 6 – Gases  
Chapter 7 – Thermochemistry  
Chapter 8 – The Quantum Mechanical Model of the Atom  
Chapter 9 – Periodic Properties of the Elements  
Chapter 10 – Chemical Bonding I: The Lewis Model

	Monday	Tuesday	Wednesday	Thursday	Friday
June	<b>3</b> Introduction; Chapter 1 Lecture; Chapter 1 practice problems	<b>4</b> Chapter 2, Lecture 1; Chapter 2 Practice Problems 1	<b>5</b>	<b>6</b> Chapter 2, Lecture 2; Chapter 2 Practice Problems 2	<b>7</b> Chapter 3, Lecture 1; Chapter 3 Practice Problems 1
	<b>10</b> <b>Quiz 1</b> Chapter 3, Lecture 2; Chapter 3 Practice Problems 2	<b>11</b> Chapter 4, Lecture 1; Chapter 4 Practice Problems 1	<b>12</b>	<b>13</b> <b>No Class</b>	<b>14</b> Chapter 4, Lecture 2; Chapter 4 Practice Problems 2
	<b>17</b> <b>Exam 1</b>	<b>18</b> Chapter 5, Lecture 1; Chapter 5 Practice Problems 1	<b>19</b>	<b>20</b> Chapter 6, Lecture 1; Chapter 6 Practice Problems 1	<b>21</b> Chapter 6, Lecture 2; Chapter 6 Practice Problems 2
	<b>24</b> <b>Quiz 2</b> Chapter 7, Lecture 1; Chapter 7 Practice Problems 1	<b>25</b> Chapter 8, Lecture 1; Chapter 8 Practice Problems 1	<b>26</b>	<b>27</b> Chapter 9, Lecture 1; Chapter 9 Practice Problems 1	<b>28</b> Chapter 9, Lecture 2; Chapter 9 Practice Problems 2
July	<b>1</b> <b>Exam 2</b>	<b>2</b> Chapter 10, Lecture 1; Chapter 10 Practice Problems 1	<b>3</b> <b>Final Exam</b> <b>9 am</b>	<b>4</b> <b>No Class</b>	<b>5</b> <b>No Class</b>

**Exams** There are 3 exams (2 regular exams and a cumulative final) scheduled throughout the summer term. Make up tests are **not** allowed. Calculators that are programmed with any course material are *strictly forbidden*. Cell phones and smart watches cannot be used in any capacity during exams. You will be allowed a one-sided, hand-written 8.5" x 11" sheet paper with any notes you feel you need. Sheets will be checked before you receive your exam, and must be turned in with your exam. All lectures, practice problem sets, and reading assignments will be covered on the exams. *You are not permitted to leave the room during the exam period unless it is an emergency, so make sure to use the restroom ahead of time!* If you have any concerns regarding this policy, please feel free to discuss it with me. The final exam is required for all students and will include all material covered during the summer term.

Exam Dates:**June 17** and **July 1****July 3** (Final Exam)

**Quizzes** There will be two quizzes during the summer term. Each quiz will cover material since the previous quiz or exam. There will be **no makeup quizzes**, so if you are not in class (unexcused) you will get a grade of zero for that quiz.

Quiz Dates:**June 10** and **June 24**

**Practice Problem Sets** In order to do well in this course, you will need to be able to *communicate and explain chemical principles to others* and you will need to *learn problem solving strategies*. The **best** way to do this is by doing **as many problems as possible** - working through examples and writing written explanations is excellent practice, and the more problems you work through, the better your chances of learning the material and getting a good grade in the course. We will be doing practice problem sessions during each lecture, and the problems must be completed by the beginning of the next class period. These problem sets will be graded for completion only, and not accuracy.

**Teaching Assistants**

Zoe Zachary (zoezachary@brandeis.edu)

Declan Woodring (declanwoodring@brandeis.edu)

**Attendance** You will be expected to be in-person for every class. If you must miss class, please arrange with Prof. Del Sesto beforehand. If you cannot, you must do so within 24 hours. Documentation for your excuse may be requested.

**Course Grading Guidelines**

Letter Grade	Percentage	Letter Grade	Percentage
A	93.0 – 100.0	C	73.0 – 76.9
A-	90.0 – 92.9	C-	70.0 – 72.9
B+	87.0 – 89.9	D+	67.0 – 69.9
B	83.0 – 86.9	D	63.0 – 66.9
B-	80.0 – 82.9	D-	60.0 – 62.9
C+	77.0 – 79.9	E	0 – 59.9

**Academic Honesty** You are expected to be familiar with, and to follow, the University's policies on academic integrity. You are expected to be honest in all of your academic work. Please consult Brandeis University Rights and Responsibilities for all policies and procedures related to academic integrity. Allegations of alleged academic dishonesty will be forwarded to Student Rights and Community Standards. Sanctions for academic dishonesty can include failing grades and/or suspension from the university. Citation and research assistance can be found on the university library website. *If you have any questions, please contact Alex Rosett (arossett@brandeis.edu), Assistant Dean, Student Rights and Community Standards.*

**Accommodations** Brandeis seeks to welcome and include all students. If you are a student who needs accommodations as outlined in an accommodations letter, I want to support you. In order to provide test accommodations, I need the letter more than 48 hours in advance. I want to provide your accommodations, but cannot do so retroactively. If you have questions about documenting a disability or requesting accommodations, please contact Student Accessibility Support (SAS <https://www.brandeis.edu/accessibility/>) at 781.736.3470 or [access@brandeis.edu](mailto:access@brandeis.edu).

**Apps or Tools/Equipment** In order to complete work for this course you must have access to the following:

- ☐ The internet.
- ☐ A laptop or tablet capable of accessing and completing tasks in LATTE, Echo360, Zoom, G-Suite, and Gradescope.
- ☐ A method of uploading images of handwritten work to LATTE and Gradescope. There are many options for this including a scanner, a digital camera that can connect to your computer/tablet, a scanner app on your phone/tablet, the "Notes" app on an iPhone, etc.

**LATTE** LATTE is the Brandeis learning management system: <http://latte.brandeis.edu>. Login using your UNET ID and password.

**Library** The Brandeis Library collections and staff offer resources and services to support Brandeis students, faculty and staff. These include workshops, consultations, collaboration, materials and instruction on emerging trends in technologies such as machine learning, emerging trends in research such as data visualization, and emerging trends in scholarship such as open access. Librarians at the Circulation Desk, Research Help Desk, Archives & Special Collections, Sound & Image Media Studios, MakerLab, AutomationLab, and Digital Scholarship Lab are available to help you. <https://www.brandeis.edu/library/about/index.html>

**Privacy** This class requires the use of tools that may disclose your coursework and identity to parties outside the class. To protect your privacy, you may choose to use a pseudonym/alias rather than your name in submitting such work. You must share the pseudonym/ alias with me and any teaching assistants as needed. Alternatively, with prior consultation, you may submit such work directly to me.

**Student Support** Brandeis University is committed to supporting all our students so they can thrive. The following resources are available to help with the many academic and non-academic factors that contribute to student success (finances, health, food supply, housing, mental health counseling, academic advising, physical and social activities, etc.). Please explore the many links on this Support at Brandeis page (<https://www.brandeis.edu/support/undergraduatestudents/browse.html>) to find out more about the resources that Brandeis provides to help you and your classmates to achieve success

**Teaching Continuity** The goal for this course is to provide clear and consistent expectations to students. Things may change over the course of the semester that may require us to adapt assignments, due dates, expectations, content delivery, policies, and potentially other aspects of this course. My goal is to be as transparent and honest with you as possible throughout the semester when these changes are necessary. That means I might not always have all the answers all the time, plans might need to change multiple times, and there may be times of uncertainty as we await guidance from the university. I promise to communicate openly and honestly with you throughout this semester. In return, I ask for your patience during times of uncertainty and your willingness to adapt with me. If you ever feel confused or overwhelmed by the expectations of this course, please do not hesitate to contact the instructor.