

## Term Information

Effective Term Autumn 2023

## General Information

Course Bulletin Listing/Subject Area Chemistry  
Fiscal Unit/Academic Org Chemistry - D0628  
College/Academic Group Arts and Sciences  
Level/Career Undergraduate  
Course Number/Catalog 1206  
Course Title Foundations 1 of General Chemistry  
Transcript Abbreviation FoundationGenChem1  
Course Description CHEM1206 is the first course in a two-course series, for science majors, covering units & measurement, atomic structure, electron configuration, periodic trends, bonding, and molecular structure. The chemistry content is covered in the same depth and rigor as in CHEM1210, and is about ½ of the CHEM1210 content. Additionally, metacognitive learning strategies are taught in the course.  
Semester Credit Hours/Units Fixed: 3

## Offering Information

Length Of Course 14 Week, 12 Week, 8 Week, 7 Week  
Flexibly Scheduled Course Never  
Does any section of this course have a distance education component? No  
Grading Basis Letter Grade  
Repeatable No  
Course Components Lecture  
Grade Roster Component Lecture  
Credit Available by Exam No  
Admission Condition Course No  
Off Campus Never  
Campus of Offering Columbus, Lima, Marion, Newark

## Prerequisites and Exclusions

Prerequisites/Corequisites Pre-req / Co-req: Math Placement Level N or R; or completed or currently enrolled in MATH1148 or MATH1120 or above.  
Exclusions Not open to students with credit for 1210, 1220, 1610, 1620, 1910H, 1920H, 1250.  
Electronically Enforced Yes

## Cross-Listings

Cross-Listings

## Subject/CIP Code

Subject/CIP Code 40.0501  
Subsidy Level General Studies Course  
Intended Rank Freshman, Sophomore, Junior, Senior

## Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

## Course Details

### Course goals or learning objectives/outcomes

- Students understand the basic facts, principles, theories, and methods of general chemistry topics including the atom, electrons, and bonding.
- Students understand key learning strategies and how to apply these to their own learning.
- Students describe growth mindset, grit, and motivation. Specific portions of the learning portfolio will include description and reflection of self-practices on growth mindset, grit, and motivation in learning.
- Students recognize problem solving strategies and practice implementing these in a chemistry context. During in class active practice sessions students will both learn about problem solving strategies, and practices these.

### Content Topic List

- Units, Measurement and Problem solving
- Atoms
- Quantum-mechanical model of the atom
- Periodic properties of the elements
- Chemical Bonding

### Sought Concurrence

No

## Attachments

- AU23 full session 3crdthr CHEM1206 Riccardo- Syllabus\_Proposal.docx: Course Syllabus  
*(Syllabus. Owner: Ramirez, Ana G)*
- Summary Request Letter.docx: Cover Letter  
*(Cover Letter. Owner: Ramirez, Ana G)*
- Chem 1206 Rationale.docx: Rationale  
*(Other Supporting Documentation. Owner: Ramirez, Ana G)*

## Comments

- ppt not needed *(by Jackman, Jane E on 04/25/2023 02:17 PM)*

## Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Ramirez, Ana G	04/25/2023 02:14 PM	Submitted for Approval
Revision Requested	Jackman, Jane E	04/25/2023 02:22 PM	Unit Approval
Submitted	Ramirez, Ana G	04/25/2023 02:24 PM	Submitted for Approval
Approved	Jackman, Jane E	04/25/2023 02:24 PM	Unit Approval
Approved	Vankeerbergen, Bernadette Chantal	05/03/2023 12:13 PM	College Approval
Pending Approval	Jenkins, Mary Ellen Bigler Hanlin, Deborah Kay Hilty, Michael Vankeerbergen, Bernadette Chantal Steele, Rachel Lea	05/03/2023 12:13 PM	ASCCAO Approval

April 24<sup>th</sup> 2023

Dear CLSE/Arts & Sciences Curriculum Committees,

I am proposing two new General Chemistry courses CHEM1206 and CHEM1208, as a new pathway for students needing CHEM1210 here at OSU and who cannot immediately enroll CHEM1210 due to a math placement. The foundations course CHEM1205 would potentially go away, depending on enrollment (see more information below). In summary, I am proposing a two-course series that would be equivalent in content coverage, rigor, and assessment to CHEM1210.

Foundations of General Chemistry CHEM1205 began in 2019 as a parachute course for students beginning in CHEM1210 but with poor course performance on early exam(s). In its first and second iteration nearly 100% of the population came from this pathway: CHEM1210, dropCHEM1210, pick up CHEM1205 same semester. In autumn of 2020, and beyond, a large amount of the CHEM1205 enrollment were students unable to take CHEM1210 due to not meeting the math pre-requisite. Students were self-selecting to take this 2-credit hour course that was not required. This past Autumn 2022 there was an enrollment near 140 students over two sections, and less than 5% were students from dropping current CHEM1210. Over its lifetime 86% of CHEM1205 student population has been from students not-meeting-the-math-requirement for CHEM1210, and opting to take a non-required class to prepare for CHEM1210, Figure 1a. This is different than initially anticipated. It is also noteworthy to share that the demographics of CHEM1205 have not mirrored that of CHEM1210, that is there is a larger population of URM students in CHEM1205 compared to CHEM1210, Figure 1b. CHEM1205 support a deficit model, and all student taking CHEM1205 must re-start in CHEM1210 to make progress in their course pathway at OSU.

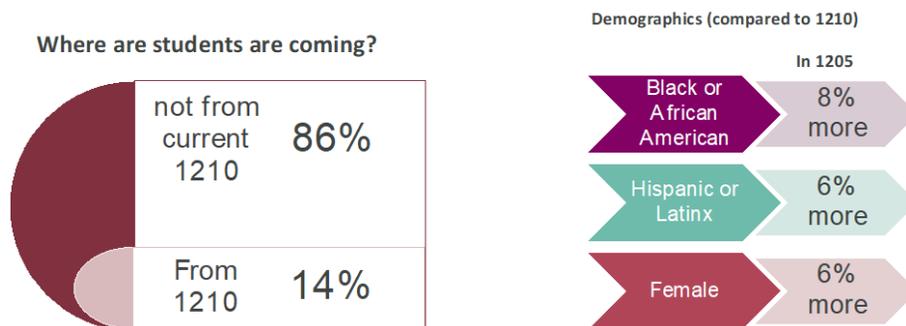


Figure 1a. Over the lifetime of CHEM1205 only 14% of the total population has been from the CHEM1210, dropCHEM1210, pick up CHEM1205 same semester pathway. Rather, 86% have been enrolled for the out-set, most unable to take CHEM1210 due to math pre-requisite. Figure 1b. Demographics of CHEM1205 relative to that of CHEM1210.

The two proposed courses CHEM1206 and CHEM1208 would be an alternate pathway for students in General Chemistry here at OSU. That is, both courses together would meet the General Chemistry 1 CHEM1210 requirement, and upon successful completion of both courses students could then enroll in CHEM1220, General Chemistry 2. These courses will allow for students with a lower math placement to begin General Chemistry at a

reduced pace, and then keep that reduced pace for the second course once meeting the math requirement. A summary of this alternate pathway and math requirements are shown in Figure 2.

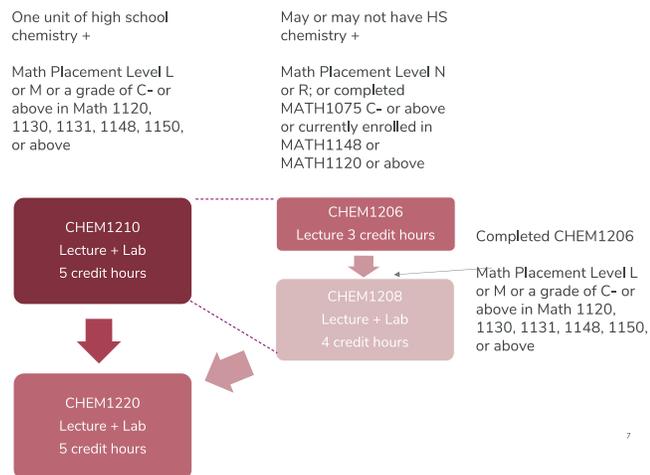


Figure 2. Two potential General Chemistry pathways: Left side traditional, Right side for students at a lower math placement initially.

In CHEM1206 students will learn about ½ of the CHEM1210 chemistry content, which is more chemistry language and structure based with less math required. This will be paired with metacognitive learning strategies (as is included in CHEM1205). This is shown in Figure 3, left side. Since the lecture course is 3-credit hours over a full semester but about ½ of the chemistry content the pace is reduced by about half compared to CHEM1210. It is anticipated that students will concurrently take the algebra math requirement.



Figure 3. Comparison of CHEM1210 content (middle) to CHEM1206 (left) and CHEM1208 (right)

Upon completion of CHEM1206 and meeting the same math prerequisite as CHEM1210, students can enroll in CHEM1208. CHEM1208 will contain the rest of the General Chemistry 1 content, more math-based content, Figure 3 right side. This will be a 4-credit hour lecture + in-person lab, foundation GEN course in alignment with the new GE program. All CHEM1208 students will complete the same exact lab experiments as CHEM1210 students. I am proposing that a student with CHEM1206 + CHEM1208 credit will have met the CHEM1210 requirement and can move on to courses for which CHEM1210 is a prerequisite, namely CHEM1220.

There is a well-studied chemistry content curriculum laid out in this manner and used in many college programs in the US. This is an Atoms First Approach and college level General Chemistry textbooks readily exist and will



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be used for this course. The Atoms First approach will naturally leave the math-heavy content for the 2<sup>nd</sup> half of general chemistry 1, in this case CHEM1208.

CHEM1210 is a co-requisite for BIO1113 and BIO1114. It is reasonable that students able to enroll in CHEM1208 (same math requirement for CHEM1210) should be able to co-enroll in these BIO courses. A letter of concurrence is being requested from the CLSE curriculum committee.

For the short term, CHEM1205 will also remain open, and if the enrollment from CHEM1210 drops warrants it, it will remain in place. Given recent enrollment history, it is likely that there will not be a high enough enrollment population to keep CHEM1205 on the schedule.

Sincerely,

Rebecca A. Ricciardo, PhD

Senior Lecturer

The Department of Chemistry & Biochemistry

The Ohio State University

110K Celeste Laboratory

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# CHEMISTRY 1206

## Foundations 1 of General Chemistry

### AU 2023 Syllabus **PROPOSAL**

**MWF** in-person | **55 min** | Active Learning Classroom

**3 credit hours lecture**

#### Introduction

##### Instructor

**Lecturer:**

**Office:**

**Office Hours:**

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#### Welcome to CHEM 1206!

We are so glad you are here and are excited to explore general chemistry concepts with you this semester. Our goal is that you leave this course with an appreciation of how chemistry impacts your everyday lives. We also want to provide you with the foundational chemistry concepts that will facilitate your success in future science courses and careers. Our team of lecturers and administrators are deeply committed to supporting your learning journey.

Chemistry 1206 is about ½ of the same content covered in CHEM1210 here at OSU. However, this course will be a reduced content-pace relative to CHEM1210. Additionally, this CHEM1206 course will incorporate active learning approaches in the classroom, and emphasis on metacognitive learning strategies will be consistently included.

This syllabus outlines the resources, policies, and procedures that will ensure your success in this course. Please familiarize yourself with this syllabus and keep it in a convenient place for reference throughout the semester. If you have questions or concerns about the syllabus itself, please contact your lecturer.

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#### COURSE DESCRIPTION CHEM1206

CHEM1206 is the first course in a two-course series, for science majors, covering units & measurement, atomic structure, electron configuration, periodic trends, bonding, and molecular structure. The chemistry content is covered in the same depth and rigor as in CHEM1210, and is about ½ of the CHEM1210 content. Additionally, metacognitive learning strategies are taught in the course.

Pre-req / Co-req: Math Placement Level N or R; or completed or currently enrolled in MATH1148 or MATH1120 or above. Not open to students with credit for 1210, 1220, 1610, 1620, 1910H, 1920H, 1250.

Note: there is a 2<sup>nd</sup> course called CHEM1208, this CHEM1208 course will be the rest of the CHEM1210 content and includes a laboratory component. The combination of CHEM1206 + CHEM1208 are equivalent to CHEM1210.

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**Carmen:** [carmen.osu.edu](https://carmen.osu.edu): Carmen is the Learning Management System (LMS) used at Ohio State. It is the central hub from which your course will be conducted. Everything you need for the course is available in and communicated through Carmen, so daily engagement with it is crucial to your success in this course. It is



important that you check your Carmen notification settings to ensure you receive course announcements in a timely manner. You can find instructions on how to set your Carmen notifications if you click option #2 [on this webpage](#).

Log in to Carmen to:

- Access your textbook, homework, and course materials
- Read important announcements
- Interact with your instructor
- Complete assignments
- Take quizzes or exams
- View your grades
- Find complete policies
- Locate learning and personal resources

A free Canvas app is available to download for both [Android](#) and [iOS](#), making it easy to log in to your course from anywhere. Some functionality is limited when in the Canvas app version.

### **Required Text and Online Homework:**

The textbook and online homework software for the lecture portion of this course are provided by and accessible through Carmen. You do not need to purchase a textbook for the course; instead, you will be charged for your access to the e-text and online homework software through a “Carmenbooks fee” of \$XX.XX on your statement of account. You can learn more about the e-textbook fee for this course by visiting the “Textbook Information” Carmen page.

If you work better with a hard copy of the textbook, you can purchase one at a bookseller of your choice. A hard copy of the text is *not* sold in the university bookstore.

The textbook is Chemistry: Structure and Properties 2<sup>nd</sup> edition by Nivaldo J. Tro

### **Other Required Materials:**

If you do not have access to the technology necessary to succeed in this class, you can review options for technology and internet access at [go.osu.edu/student-tech-access](http://go.osu.edu/student-tech-access).

**Calculator:** A scientific calculator

**Computer:** current Mac (MacOS) or PC (Windows 10) with high-speed internet connection, webcam, and microphone

**BuckeyePass:** a mobile device (smartphone or tablet) to use for authentication

**Microsoft Office 365:** All Ohio State students are eligible for free Microsoft Office 365. Visit the [installing Office 365](http://installing.Office.365) ([go.osu.edu/office365help](http://go.osu.edu/office365help)) help article for full instructions.

### **Core technology skills:**

- [Navigating CarmenCanvas](http://go.osu.edu/canvasstudent) ([go.osu.edu/canvasstudent](http://go.osu.edu/canvasstudent))

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week: <https://it.osu.edu/students>

## **Health and Safety**

**Classroom Safety Measures:** We will follow all university guidelines regarding classroom safety. Since these guidelines may change during the semester given the unpredictable nature of the COVID-19 pandemic, you can find the latest updates to university safety guidelines [here](#). As of the time this syllabus is released, all



students, faculty, and staff are not required to wear masks in shared indoor spaces. If the mask policy is changed by the university during the semester then we will follow the policy.

**COVID-19 Absences:** The university's office of Student Life Disabilities Services (SLDS) will give you the documentation and resources you need if you contract COVID-19, must quarantine due to COVID-19, or have a high-risk factor that leaves you vulnerable to COVID-19. Please request temporary accommodations for COVID-related conditions through SLDS's [online form](#) and reach out to the instructor to make a personalized plan for your academic progress while you recover.

**Accommodations for other illnesses:** If you experience a serious illness that necessitates an extended absence, please reach out to the instructor to make alternative arrangements for your success. We will request documentation if your absence requires you to take a makeup exam.

## Course Information and Policies

**Communication:** Your instructor will communicate important information to you throughout the term via Carmen announcements and your Buckeyemail email account. Please verify that your OSU email is set up appropriately on your electronic devices so we can keep in touch. We highly recommend that you check email and Carmen at least once per day.

**Enrollment Information:** In accordance with [federal regulations \(Title IV\)](#), we must report your attendance status to the University Registrar after the first week of classes. The Course Introduction Quiz (QUIZ 0) is the assignment we use to gauge your enrollment in the course. Plan to complete this quiz by DAY MONTH DATE, If you do not complete the quiz by **11:59 PM, DAY MONTH DATE**, you will be reported to the Registrar as "non-attending," which may lead to disenrollment and problems with your financial aid.

## Goals and Outcomes

Chemistry 1206 is a physical science course and has the following goals and learning outcomes:

1. Students understand the basic facts, principles, theories, and methods of general chemistry topics including the atom, electrons, and bonding.  
*This course will include general chemistry 1 content consistent with ½ of a general chemistry 1 semester college course. Students will be presented content and practice topics in class. Students will also practice on homework outside of class and assessed via take home quizzes and in-person exams. One example will be learning about the subatomic particles that make up the atom, and the electronic structure of the atom.*
2. Students understand key learning strategies and how to apply these to their own learning.  
*The Study Cycle will be presented to students, used within the course design, and students will describe and reflect using the study cycle in their own learning in the form of an e-portfolio. This portfolio will be generated via a scaffolded implementation and will involve both instructor and peer feedback before final editing.*
3. Students describe growth mindset, grit, and motivation.  
*Specific portions of the learning portfolio will include description and reflection of self-practices on growth mindset, grit, and motivation in learning. This portfolio will be generated via a scaffolded implementation and will involve both instructor and peer feedback before final editing.*
4. Students recognize problem solving strategies and practice implementing these in a chemistry context.  
*During in class active practice sessions students will both learn about problem solving strategies, and practices these. Additionally, problem comparisons will be initiated at several instances in which*



students will compare their shown work to a key or solution. They will analyze and annotate key techniques and reflect on their own problem solving practices.

## Pre-requisites

Math Placement Level N or R; or completed MATH1075 C- or above or currently enrolled in MATH1148 or MATH1120 or above.

## Course Components

Your CHEM 1206 course consists of 1 component that meet at scheduled times.

### Three lecture sessions each week

(55 minutes)

- Your lecture schedule appears on the table at the end of this syllabus.
- Your lecturer will assign homework through Mastering Chemistry. While each assignment may have a unique due date set by your lecturer, no homework assignments will be accepted after **LAST SEMESTER DAY at 11:59 PM.**
- During this course, foundational chemistry skills will be practiced during class. There will be times when students can earn points for participation and engagement during class. It is anticipated that there may be times when a student must miss class, to adjust for this, there will be 300 points possible, but a maximum of 200 points will be counted.
- Your point of contact for lecture is [Instructor].

Your performance in this course will be evaluated based on the components below. Sixty days after grades are posted, your grade in Carmen is considered final and all other records are destroyed. If you have a concern or question about a grade, please contact the instructor promptly and we will work to adjust any inconsistencies in a timely manner.

Individual assignments within these categories will be scaled to contribute toward the established percentage of your total course grade:

Item	Weighting %
Online Homework	10%
Learning Portfolio in PebblePad	10%
Participation & Engagement	10%
At home Quiz Learning Checkpoints (4 of them)	10%
In-person Exams on Carmen (3 of them)	30%
Cumulative Final Exam	30%

**Mandatory Introduction Quiz 0:** The QUIZ 0 must be completed with a 100% score to pass this course. The Course Introduction Quiz 0 not only confirms your enrollment in the course, but also teaches you about course policies. Therefore, please complete this quiz by **11:59 pm, DAY MONTH DATE**. You may take the quiz as many times as you need to receive 100%. Please note that if you do not receive a 100% on this quiz by the due date, **you will be assigned an "E" as your final course grade.**



**Online Homework:** Your course will be utilizing online homework, accessed through Carmen. There will be weekly assignments, due dates on the calendar shown below. No late work will be accepted for a grade. You will be graded on completion. It is recommended that you keep a homework notebook to show your work as a learning resource. You should always work on your own initially, no supports, and commit to an answer. Then, as needed, seek out support from notes, video, textbook, to check your work. Weekly homework will be about 1 hour in duration, but can be split up into smaller work sessions. Weekly due dates are meant for students to keep pace, but late homework will be accepted. The last day of semester classes is the absolute last deadline for all homeworks.

**Learning Portfolio in PebblePad:** Throughout the semester you will work to generate a learning assets which will contain specific learning strategies for you. Several of these will be edited and collected as assets in PebblePad. You will share a Learning Portfolio of these with your instructor for a graded work. While drafting assets, two peers will provide you feedback, and you will make edits before submitting the final copy to your e-portfolio. You will also review two peers' drafts and provide feedback to them. Your overall grade for the portfolio will be a combination of 1) the final portfolio shared from PebblePad, 2) the quality of feedback that you provide to your peers, and 3) completion of draft assignments leading up to the final asset submission. There will be 7 instances of graded work (this includes the peer review) related to the learning portfolio. It is anticipated that you will spend about 1 hour for each of the 7 graded works. Due the nature of peer feedback, late work on portfolio assignments will not be accepted, unless extenuating circumstances (that is, illness, unanticipated life event, etc. exist.) In this case a late request must be made to the instructor within one week of the due date.

**Participation & Engagement:** During this course, foundational chemistry skills will be practiced during class. There will be times when students can earn points for participation and engagement during class. These will be a mix of chemistry content questions and metacognitive questions, delivered in class for points, via one or more Carmen function (assignment, quiz, or discussion). These will be opened during class, and students present in class will be given time to complete these. These will be geared to peer-peer discussion and problem solving and will make sense for students within the space. That is, it is unreasonable for an absent student to make these up or complete them independently later. It is anticipated that there may be times when a student must miss class, to adjust for this, there will be 300 points possible, but a maximum of 200 points will be counted. No make-up participation & engagement points will be available.

**At Home Quizzes:** Quiz Learning Checkpoints on Carmen will be given in class 4 times this semester. These will be 30 minutes in duration and are open note. Multiple attempts (2 total) are available to support learning gains. All work must be your own. These will be open for 2 days total, and no late quizzes will be accepted unless extenuating circumstances (that is, illness, unanticipated life event, etc.) exist. In this case a late request must be made to the instructor within one week of the quiz.

**In-person Carmen Exams + Cumulative Final Exam:** Three exams will be given in class and will be administered using the Carmen Quizzing function. Exams will be 55 minutes in duration, these exams will be during class and will only cover select topics according to the schedule below. A program called Lockdown Browser will be used in conjunction with Carmen. More details about acquiring this free software will be given once the course begins. There will be a 4<sup>th</sup> Cumulative Final Exam that will cover Chapters E, 1 – 6. The Final exam will follow the university finals schedule and will be 105 minutes in duration. The final will also be administered via Carmen quizzing function in conjunction with Lockdown Browser. Due the nature of exams, make-up exams will only be available in extenuating circumstances (that is, illness, unanticipated life event, etc. exist.) In this case a late request must be made to the instructor within one week of the exam.



Exam	Chapters	Date
Exam 1	E	Sept 11 <sup>th</sup>
Exam 2	1, 2	Oct 2 <sup>nd</sup>
Exam 3	3, 4	Nov 6 <sup>th</sup>
Cumulative Final Exam	E, 1, 2, 3, 4, 5, 6	Finals Schdl.

**Course Workload Expectation:** This course is a three credit-hour course. In accordance with Faculty Rule 3335-8-24, a semester credit hour is defined as the following: One credit hour shall be assigned for each three hours per week of the average student's time, including class hours, required to earn the average grade of "C" in this course. That is, you may anticipate spending ~9 hours of time on this class per week. Three of those hours will be in-class lecture meetings. The other ~6 hours will be working on course homework, at home quizzes, learning portfolio take-home tasks, and self-directed studying the content for this course.



## Course Lecture Topics

<b>Chapter E</b>	<b>Essential: Units, Measurement, and Problem Solving:</b> Units of measurement, Reliability of measurement, Significant figures in calculations, density, Energy and its units, Converting between units, Problem solving strategies, Solving problems involving equations <b>Using an e-text</b>
<b>Chapter 1</b>	<b>Atoms:</b> Classifying matter a particulate view, Scientific approach to knowledge, Early ideas about the building blocks of matter, Modern atomic theory and the laws that led to it, Discovery of the electron, Structure of the atom, Subatomic particles, Atomic mass, Atoms and the mole, Origins of atoms and elements <b>The Study Cycle</b>
<b>Chapter 2</b>	<b>The quantum-mechanical model of the atom:</b> Nature of light, Atomic spectroscopy and the Bohr model, Wave nature of matter, Quantum mechanics of the atom, Shapes of atomic orbitals <b>Growth Mindset</b>
<b>Chapter 3</b>	<b>Periodic properties of the elements:</b> Periodic law and the periodic table, Electron configurations, Valence electrons, Elemental properties, Periodic trends: $Z_{\text{eff}}$ , size, Ion electron configurations and size, Magnetic properties, Ionization energy, Electron affinity, Metallic character <b>Grit and Drive</b>
<b>Chapter 4</b>	<b>Molecules and Compounds:</b> Types of chemical bonds, Chemical formulas, Molecular models, The Lewis model, Ionic bonding and lattice energy, Ionic compounds formulas and names, Covalent bonding and simple Lewis structures, Molecular compounds: formulas and names, Formula mass, Mole concept, Composition of compounds, Chemical formula from experimental data, organic compounds <b>Reflection on Learning progress</b>
<b>Chapter 5</b>	<b>Chemical Bonding I:</b> Electronegativity and bond polarity, Lewis structures for molecular compounds and polyatomic ions, Resonance and formal charge, Exceptions to the octet rule, Bond energies and bond lengths, VSEPR theory: shapes, lone pair effects, predicting geometries, Molecular shape and polarity <b>Re-working a learning plan</b>
<b>Chapter 6</b>	<b>Chemical Bonding II:</b> Valence bond theory: orbital overlap and hybridization, Molecular Orbital Theory: electron delocalization, polyatomic molecules <b>Planning forward</b>



Week		Monday	Wednesday	Friday
1	Date		Aug 23	Aug 25
	Content		Introduction	E1, E2 + e-text
	Graded Work		<b>HW#0 intro</b>	<b>Quiz 0 Due</b>
2	Date	Aug 28	Aug 30	Sept 1
	Content	E3, E4	E4, E5 + e-text	E6, E7
	Graded Work		<b>HW#1</b>	<b>Quiz 1 Due</b>
3	Date	Sept 4	Sept 6	Sept 8
	Content	Labor Day No Classes	E8, E9	Review
	Graded Work		<b>HW#2</b>	
4	Date	Sept 11	Sept 13	Sept 15
	Content		1.1 – 1.3 + The Study Cycle	1.4 – 1.6 + The Study Cycle
	Graded Work	<b>EXAM 1 Chapter E</b>		<b>Portfolio Intro Assignment #1</b>
5	Date	Sept 18	Sept 20	Sept 22
	Content	1.7, 1.8 + The Study Cycle	1.9 – 1.11	2.1 – 2.3
	Graded Work		<b>HW#3</b>	<b>Quiz 2 Due</b>
6	Date	Sept 25	Sept 27	Sept 29
	Content	2.4 + Growth Mindset	2.5	2.6
	Graded Work	<b>Portfolio Assignment #2</b>	<b>HW#4</b>	
7	Date	Oct 2	Oct 4	Oct 6
	Content		3.1, 3.2 + Grit & Drive	3.3, 3.4 + Grit & Drive
	Graded Work	<b>EXAM 2 Chapters 1 &amp; 2</b>		
8	Date	Oct 9	Oct 11	Oct 13
	Chem Content	3.4	3.5	Fall Break No Classes
	Graded Work	<b>Portfolio Assignment #3</b>	<b>HW#5</b>	
9	Date	Oct 16	Oct 18	Oct 20
	Content	3.6, 3.7	3.8, 3.9 + Grit & Drive	4.1, 4.2 + Learning Reflection
	Graded Work		<b>HW#6</b>	
10	Date	Oct 23	Oct 25	Oct 27
	Content	4.3, 4.4 + Learning Reflection	4.5, 4.6	4.6, 4.7
	Graded Work	<b>Portfolio Assignment #4</b>	<b>HW#7</b>	<b>Quiz 3 Due</b>
11	Date	Oct 30	Nov 1	Nov 3
	Content	4.8, 4.9	4.10, 4.11	4.12 + Review
	Graded Work		<b>HW#8</b>	
12	Date	Nov 6	Nov 8	Nov 10
	Content		5.1, 5.2 + Reworking Plan	Veteran's Day No Classes
	Graded Work	<b>EXAM 3 Chapters 3 &amp; 4</b>		
13	Date	Nov 13	Nov 15	Nov 17
	Content	5.3, 5.4 + Reworking Plan	5.5, 5.6	5.7, 5.8
	Graded Work	<b>Final Portfolio Draft Due</b>	<b>HW#9</b>	<b>Quiz 4 Due</b>
14	Date	Nov 20	Nov 22	Nov 24
	Content	Flex	Thanksgiving Break No Classes	Thanksgiving Break No Classes
	Graded Work			
15	Date	Nov 27	Nov 29	Dec 1
	Content	5.9 + Planning forward	5.10	6.1, 6.2
	Graded Work	<b>Portfolio Peer Reviews Due</b>	<b>HW#10</b>	



16	Date	Dec 4	Dec 6	
	Content	6.3	6.4, 6.5	
	Graded Work	<b>Final Portfolio Due</b>		



## Course Final Grade Assignments

To ensure consistent and fair grading, grading scales in all 1000-level chemistry courses are assigned by your lecturer in consultation with the Director of General Chemistry, Dr. Patrick Woodward.

**Course Letter Grade Assignment:** Once your overall point total (final score) has been calculated using the weighting scheme shown above, your letter grade will be assigned based on the following scale:

Total Score (%)	Letter Grade
$92 \leq \text{score} \leq 100$	A
$88 \leq \text{score} < 92$	A-
$84 \leq \text{score} < 88$	B+
$80 \leq \text{score} < 84$	B
$76 \leq \text{score} < 80$	B-
$72 \leq \text{score} < 76$	C+
$67 \leq \text{score} < 72$	C
$62 \leq \text{score} < 67$	C-
$56 \leq \text{score} < 62$	D+
$50 \leq \text{score} < 56$	D
$< 50$	E

*If exam performance falls outside of historical norms the department retains the right to make changes in the grading scale.*

*The instructor is happy to clarify the grading process and discuss your performance in this course.*



## Important Resources for Academic Success

**Supplemental Lecture Videos:** To support your learning, we provide short lecture videos to *supplement* (not replace) *some* of the topics covered in your in-person lectures. Your actual lecture will be more interactive, personalized to your needs, tailored to the content on your exams, and, of course, fun, fun, fun. That said, the videos can help you review or better understand some of the topics covered in lecture. Links to the videos are—you guessed it—available on Carmen Modules.

**Learning Resource Center (LRC):** Located in Celeste Lab (CE) 170, the LRC is where TAs hold office hours and where students can come for individual help and instruction. While there are no TA's for CHEM1207, you are welcome to use this help room. These TA's teach General Chemistry. Stop by when convenient during posted hours. You do not need to make an appointment. Limited evening and weekend hours will also be available through Zoom. [Check here and the LRC for the schedule.](#)

Additionally, the LRC has computers with general chemistry instructional programs. These programs offer single-concept problems that must be understood in order to grasp the more difficult multi-concept questions on exams. Computers are available for student use any time the LRC is open, and on a first-come, first-serve basis.

**Additional Resources:** The Resources module in your Carmen page offers links for help with everything from course content to mental health to finances and extracurricular involvement. It is a good place to start if you aren't sure where to go for information or assistance. Carmen is truly the beginning and end of all things.

**Disability Services:** The University strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; [slds.osu.edu](http://slds.osu.edu); 098 Baker Hall, 113 W. 12<sup>th</sup> Avenue.

The general chemistry department strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), reasonable accommodations can be established in partnership with Student Life Disability Services (SLDS).

*Please note:* Applying for SLDS accommodations in general chemistry is a multi-step process that involves working with both the SLDS office and our office. To start, first register with SLDS using [this webpage.](#)



We understand that this setting up SLDS accommodations can be a confusing and daunting process, but Holly Wheaton is especially good at navigating the process, so please reach out to her if you have any questions or uncertainties. You can stop in the office, call (614-292-6009), or [email Holly](#) for help.

## Disability Services Contacts

### Contact SLDS

Email: [slds@osu.edu](mailto:slds@osu.edu)

Phone: 614-292-3307

Address: 098 Baker Hall

### Contact Holly Wheaton

Email: [wheaton.4@osu.edu](mailto:wheaton.4@osu.edu)

Phone: 614-292-6009

Address: 110 Celeste Lab

**Commitment to Diversity:** Advancing diversity, inclusion, and student success is central to the mission of the Department of Chemistry and Biochemistry. We are excited to serve and support students from diverse backgrounds with respect to race, ethnicity, gender, sexual orientation, socioeconomic status, disability, religion, and national origin. The department's faculty and staff have collectively committed to create a welcoming and inclusive learning environment, both virtually and in-person. We want every student to successfully learn and achieve their academic and career goals.

We acknowledge that systemic racism and various forms of injustices have contributed to the marginalization and exclusion of many student populations in scientific fields of study including chemistry. As a department, we have made progress towards enacting equity-minded actions to address systemic inequities and barriers that students encounter in the classroom, department, and university. However, we continually strive to do more to advance the success of our diverse student body. As we do the important work of teaching and supporting students, we welcome your feedback and look forward to learning from you! Please email Dr. Ricciardo or the Vice Chair of Undergraduate Studies, [Dr. Jane Jackman](#), with your suggestions, concerns, and questions. We value each student's perspectives and are excited to collectively work towards ensuring Black, Latinx, Indigenous, LGBTQ+, and female students are well-represented in scientific disciplines and professions.

**Mental Health Resources:** As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, feeling down, difficulty concentrating and/or lack of motivation. Mental health concerns or stressful events may lead to diminished academic performance or impact a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing.

You can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting [ccs.osu.edu](https://ccs.osu.edu) or calling 614-292-5766. You can reach an on-call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at the new 3 digit number: 988 or at [suicidepreventionlifeline.org](https://suicidepreventionlifeline.org).

## Academic Conduct

### ACADEMIC CONDUCT IN GENERAL CHEMISTRY

The university expects us all to know and adhere to the University Code of Student Conduct, so please do check it out [here](#). Below are some highlights you need to know for the purposes of CHEM 1207.

Any graded material you submit (for any component of this course) must be your own work. We are obligated by university rules to report any suspicions that you have compromised academic integrity or committed academic misconduct.

Here are some examples of academic misconduct in chemistry courses:



### On exams:

- Having another person take your exam.
- Receiving assistance from another person while taking the exam.
- Taking screenshots or photos of the exam.
- Having a secondary device out during the exam, like a phone
- Using screen sharing software during the exam.
- Sharing or receiving exam questions or materials in group chats, text messages, phone calls, or on websites, apps, and the like.

And here are some hints on how you can avoid academic misconduct<sup>1</sup>:

1. Acknowledge Your Sources. Whenever you use words or ideas that are not your own, use quotation marks, cite your source in a footnote, and end your work with a list of sources consulted.
2. Protect Your Work. In examinations, do not allow your neighbors to see what you have written; you are the only one who should receive credit for what you know.
3. Avoid Suspicion. Do not put yourself in a position where you can be suspected of having copied another person's work, or of having used unauthorized notes to complete an assignment or exam.
4. Do your own work. The purpose of assignments is to develop your skills and measure your progress. Letting someone else do your work defeats the purpose of your education and may lead to serious charges against you.
5. Know Your Rights. Do not let other students in your class diminish the value of your achievement by taking unfair advantage. Report any academic dishonesty you see.

*If you are unsure about what constitutes academic misconduct in CHEM 1207, PLEASE ASK Dr. R*

## **ACADEMIC CONDUCT IN THE UNIVERSITY**

The university requires that all course syllabi include the following statement on academic integrity:

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

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<sup>1</sup> From Northwestern University, “Academic Integrity: A Basic Guide.” Pg. 5. Sept 2020. Available at <https://www.northwestern.edu/provost/policies/academic-integrity/academic-integrity-guide-20201.pdf>

## Rationale-

This proposal is for a new course, CHEM 1206, which will be offered as part of a 2 course sequence designed to meet the needs of students who are not able to enroll directly in the standard General Chemistry course CHEM 1210, typically due to not meeting the math pre-requisite for direct enrollment in the course. This course seeks to move away from the deficit model of offering a shorter (half-semester) parachute course (CHEM 1205) that did not have a pathway for students to continue to advance in their general chemistry coursework, and instead put students back at the starting line to take CHEM 1210 even after successful completion of the course. After completing this 2-course series (CHEM 1206 and CHEM 1208), students will have completed all of the content, including in the laboratory, that are covered in the single semester CHEM 1210 course. The attached letter provides more detail about the motivation for proposing CHEM 1208 and our expectations that this will provide a productive pathway forward for students to complete their general chemistry requirement at Ohio State.