

## Chemistry 0100

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Department of Chemistry, Fall, 2025

**Instructor**

Carol F. Fortney

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**Email**

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**Website**

Canvas

**Office Location**

Room 107 D

Chevron Science Center

**Office Hours**

Tuesdays at 7:00 p.m. in  
Zoom

**Course Description**

This non-lab, 3-credit course develops fundamental concepts, basic calculations, and problem-solving skills in general chemistry. This course is designed for those who seek to gain knowledge and ability as a foundation to subsequently taking General Chemistry 1, or for those students desiring to fill a Natural Science GER with a Chemistry experience, without plans of taking additional Chemistry courses. Topics typically introduced include measurement, matter, energy, atoms, elements, molecules, chemical composition, chemical reactions, stoichiometry, periodic properties of the elements, and bonding. A background in chemistry is not necessary, while a fundamental knowledge of math is required and facility with basic algebraic concepts is recommended. Students concerned about their success in Chem 0110 are encouraged to talk to their advisor about the benefits of completing the Introduction to Chemistry course prior to enrolling in General Chemistry I.

Exams are administered in person either at the University of Pittsburgh Testing Center or at a testing center near your home if you do not live on or near campus.

**Course Prerequisites**

No chemistry background is required. A strong math background with basic algebra skills is recommended.

**Course Objectives**

Students who successfully complete this course will be able to:

1. Recognize chemistry's role, relevance, and importance in everyday life.
2. Distinguish between molecular and ionic compounds based on formula, structure and properties.
3. Represent chemical reactions with balanced chemical equations and predict the products of reactions.
4. Predict the effect of concentration changes and temperature changes on the rate and the extent of a reaction.
5. Explain macroscopic properties based on interactions in the microscopic domain
6. Combine math skills, conceptual knowledge, and critical thinking, to interpret observations and outcomes in class and in real life situations.

**Required Course Texts and Materials inclusive access (included with tuition)**

**Text:** Introductory Chemistry by Kevin Revell, 2<sup>nd</sup> Edition, 2021, by W. H. Freeman and Company New York

**Online homework platform:** Achieve, Macmillan Learning

## Communication, Course Structure, and Participation

This course will take place in the [Canvas learning management system](#). Please use e-mail to contact me. Provide this subject line in all e-mail messages: 0100 F25 Your Last Name Topic of Message. For example, if your last name is Smith and you would like to schedule an appointment, your subject line would be:

0100 F24 Smith Appointment

Include the days and times you can meet in the text of your message. I will reply to inquiries within 48 hours.

Course content, which includes lectures, readings, videos, activities, and assessments, is organized in modules by chapter. To be successful in this course, plan to log into the Canvas course shell three times each week and to check your University of Pittsburgh email three times each week. Course work outside of class should take 6 to 9 hours per week. For information about navigating and using Canvas, refer to the tutorials posted in the course shell and the [Canvas Student Guide](#).

## Assignments Submission and Grading

All assignments are due by 11:59 p.m. Eastern Standard Time (EST) on the dates listed on the course schedule. All assignments should be submitted electronically through Canvas.

All exams and assignment dates are provided on the course schedule. Please mark your calendar accordingly. There are no make-up exams. If you miss an exam due to illness or emergency, you will be assigned an excused absence. Please be aware that proper documentation must be provided for an excused absence. If you have to miss an exam day, and if you know in advance that you have to miss an exam day, you can take one exam early. Early exams will be given on a case-by-case basis at my discretion. Early exams may differ in both content and format. Exams are administered in person either at the University of Pittsburgh Testing Center or at a testing center near your home if you do not live on or near campus. You can schedule your exam for any time before the end of the day when the exam is scheduled. [Check with the testing center regarding open hours](#). If you live off campus, visit the testing [center's website to find a testing center near your home](#).

If you experience technology difficulties, you are responsible for contacting the [University Help Desk](#) to resolve problems. Technology difficulties or illness without an official medical excuse does not excuse late work.

Detailed assignment descriptions and grading tools are posted in the Canvas course shell. Your course grade will be calculated as follows:

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Exam I (due Monday, September 22)

50 points 10.2 % of total score

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Covers modules 1-4. Includes matching questions (10 terms to match one point each), true/false questions (five questions, two points each), multiple choice questions (five questions, two points each), and free response questions on concepts, calculations, and both concepts and calculations (number and type will vary with content, twenty points total)

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Exam II (due Monday, October 20)

50 points 10.2% of total score

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Covers modules 5-8. Includes matching section (10 terms to match one point each), true/false questions (five questions, two points each), multiple choice questions (five questions, two points each), and free response

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questions on concepts, calculations, and both concepts and calculations (number and type will vary with content, twenty points total)

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Exam III (due Monday, November 17) 50 points 10.2 % of total score

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Covers modules 9-12. Includes matching section (10 terms to match one point each), true/false questions (five questions, two points each), multiple choice questions (five questions, two points each), and free response questions on concepts, calculations, and both concepts and calculations (number and type will vary with content, twenty points total)

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Final Exam (due Friday, December 12) 100 points 20.4 % of total score

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The final exam is 110 minutes. The exam is cumulative with an emphasis of chapters 13 and 14. The exam includes matching section (10 terms to match two points each; five terms from previous exams, five terms from chapters 13 and 14), true/false questions (ten questions, two points each; five questions adapted from previous exams, five questions from chapters 13 and 14), multiple choice questions (ten questions, two points each; five questions from previous material; five questions from Chapters 13 and 14), and free response questions on concepts, calculations, and both concepts and calculations (twenty five points from previous material; fifteen points from chapters 13 and 14)

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Module Knowledge Checks 70 points total, 14.3 % of total score

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There is a brief five point knowledge check at the end of each module. There are fourteen modules for a total of 70 points. The knowledge checks are sets of questions related to the module material. The knowledge check is to check your readiness to move to the next module.

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Graded Achieve online homework 70 points total, 14.3 % of total score

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There will be one five point Achieve graded homework assignment per module. You will have three attempts per question without penalty. Due dates for each assignment are posted. Due dates are one week after the respective module is completed with some exceptions due to breaks. While there is no penalty for late homework submissions, it is best to meet the suggested due dates so that you are prepared for the material that follows. The lowest three Achieve homework scores will be dropped.

The last day to submit Achieve graded homework is Friday, December 12, at 11:59 p.m.

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Video discussion of exam question 30 points total, 6.1 % of total score

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You will have the opportunity to make up for a missed open ended exam question by uploading a brief, 3-5 minute, video discussion of the correct answer to a free response question that you missed on each mid-term exam. Each video is worth 10 points for a total of thirty points. In the video you will discuss the correct answer to the question and reflect on why you might have missed the question. If you did not miss any questions, then you can describe material or a question that you studied for the exam, but that was that not covered on the exam. Video due dates are 11:59 p.m. Sunday, September 28, Sunday October 26, and Friday, November 23 (with a grace period through Sunday, December 1). These exam videos will be viewable by me only.

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**Math Review Module**40 Points total, 8.2 % of total score

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There will be four math review modules, each worth ten points. The first module covers significant digits, units, scientific notation, and significant digits in calculations (due Sunday, August 31, at 11:59 p.m.) The second module covers unit conversions and includes mass to mol and mol to mass calculations (due Sunday, September 7, 11:59 p.m.). The third module (due Sunday October 5, 11:59 p.m.) covers percent calculations in general, percent yield calculations, and calculations involving reaction stoichiometry. The fourth module (due Sunday November 9, at 11:59 p.m.) module covers pH, pOH calculations and acid-base related calculations in preparation for the Acid-Base chapter.

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**Three Discussion Questions**30 Points total, 6.1 % of total score

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Throughout the semester you will have the opportunity to upload three brief discussion posts worth ten points each. The first discussion is on chemistry curiosity, the second discussion is on an element, and the third discussion is on an advance in chemistry. You will also comment of the discussion posts of two classmates.

**Total:** \_\_\_\_\_ [100%] \_\_\_\_\_

**Grade Scale (tentative)**

A = 93-100, A- = 90-92, B+ = 87-89, B = 83-86, B- = 80-82, C+ = 77-79, C = 73-76, C- = 70-72, D+ = 67-69, D = 63-66, D- = 60-62, F < 60

**Course Policies**

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***Academic Integrity Policy***

Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.

To learn more about Academic Integrity, visit the [Academic Integrity Guide](#) for an overview of the topic. For hands-on practice, complete the [Academic Integrity Modules tutorial on Canvas](#). You will be prompted to sign up with your Pitt ID and password.

Failure to abide by the academic integrity policy will result in a minimum sanction of zero for the assignment. Dietrich School instructors, please see the [Academic Integrity Statement on the DSAS website here.](#)]

### ***Disability Services Policy***

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and Disability Resources and Services (DRS), 140 William Pitt Union, (412) 648-7890, [drsrecep@pitt.edu](mailto:drsrecep@pitt.edu), (412) 228-5347 for P3 ASL users, as early as possible in the term. DRS will verify your disability and determine reasonable accommodation for this course.

### ***Statement on Classroom Recording***

To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

### ***Copyright Notice***

Course materials may be protected by copyright. United States copyright law, 17 USC section 101, et seq., in addition to University policy and procedures, prohibit unauthorized duplication or retransmission of course materials. See [Library of Congress Copyright Office](#) and the [University Copyright Policy](#).

### ***Accessibility***

Canvas is ADA Compliant and has fully implemented the final accessibility standards for electronic and information technology covered by Section 508 of the Rehabilitation Act Amendments of 1998. Please note that, due to the flexibility provided in this product, it is possible for some material to inadvertently fall outside of these guidelines.

### ***Civil Rights and Title IX***

The University of Pittsburgh does not tolerate any form of discrimination, harassment, or retaliation based on disability, race, color, religion, national origin, ancestry, genetic information, marital status, familial status, sex, age, sexual orientation, veteran status or gender identity or other factors as stated in the University's Title IX policy. The University is committed to taking prompt action to end a hostile environment that interferes with the University's mission. For more information about policies, procedures, and practices, visit the [Civil Rights & Title IX Compliance web page](#).

I ask that everyone in the class strive to help ensure that other members of this class can learn in a supportive and respectful environment. If there are instances of the aforementioned issues, please contact the Title IX Coordinator, by calling 412-648-7860, or e-mailing [titleixcoordinator@pitt.edu](mailto:titleixcoordinator@pitt.edu). Reports can also be [filed online](#). You may also choose to report this to a faculty/staff member; they are required to communicate this to the University's Office of Diversity and Inclusion. If you wish to maintain complete confidentiality, you may also contact the University Counseling Center (412-648-7930).

### ***Nonstandard Grades (G Grade)***

The “G” grade is applied only when students who have been attending a course and making regular progress are prevented from completing the course by circumstances beyond their control, such as a major medical emergency. These grades will only be given in very rare, documented circumstances governed by the current University G Grade Policy. Students in CGS Online classes will be asked to complete a G-Grade Contract with their instructor.

### ***Religious Observances***

The observance of religious holidays (activities observed by a religious group of which a student is a member) and cultural practices are an important reflection of diversity. As your instructor, I am committed to providing equivalent educational opportunities to students of all belief systems. At the beginning of the semester, you should review the course requirements to identify foreseeable conflicts with assignments, exams, or other required attendance. If at all possible, please contact me (your course coordinator/s) within the first two weeks of the first class meeting to allow time for us to discuss and make fair and reasonable adjustments to the schedule and/or tasks.

## **COURSE SCHEDULE**

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See the [University of Pittsburgh Academic Calendar](#) for important dates like the final dates to add and drop or withdraw from courses.

All assignments are due at 11:59 p.m. on the dates noted.

The course schedule is subject to change if I determine that changes will improve your learning experience. If I change the course schedule, I will notify you well in advance and post a new copy of the course schedule immediately.

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<b>Week/Date</b>	<b>Topics/Activities</b>	<b>Homework Due/Due Dates</b>
<b>1: Monday, August 25</b> <b>Chapter 1 Foundations</b>	Foundations, describing matter, energy and change, and the scientific method	<b>Sunday, August 31</b> <i>Module 1 Knowledge Check, Math Review 1, Discussion: Chemistry Curiosity, Syllabus Quiz (Bonus)</i> <b>Sunday, September 7</b> <i>Graded Achieve Chapter 1 Homework</i>

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<b>Week/Date</b>	<b>Topics/Activities</b>	<b>Homework Due/Due Dates</b>
<b>2: Tuesday September 2</b> (No classes Monday, September 1 due to Labor Day) <b>Chapter 2 Measurements</b>	Measurement, scientific notation, accuracy and precision, significant digits, density, unit conversions	<b>Sunday, September 7</b> <i>Module 2 Knowledge Check, Math Review 2</i> <b>Sunday, September 14</b> <i>Chapter 2, Graded Achieve Homework</i>
<b>3: Monday, September 8</b> <b>Chapter 3 Atoms</b>	Atoms, atomic structure, identity and mass of atoms, conservation of mass, Dalton's atomic theory, Bohr model of the atom, periodic table.	<b>Sunday, September 14</b> <i>Module 3 Knowledge Check</i> <b>Sunday, September 21</b> <i>Chapter 3, Graded Achieve Homework</i>
<b>4: Monday, September 15</b> <b>Chapter 4</b> <i>Light and Electronic Structure</i>	Light and Electronic Structure, electromagnetic spectrum, line spectra, quantum numbers and orbitals, electron configurations, octet rule	<b>Sunday, September 21</b> <i>Module 4 Knowledge Check</i> <b>Monday, September 22</b> <i>Exam 1</i> <b>Sunday, September 28</b> <i>Chapter 4, Graded Achieve Homework</i>
<b>5: Monday, September 23</b> <b>Chapter 5</b> <i>Chemical Bonds and Compounds</i>	Chemical Bonds in Compounds, Lewis symbols, ions, ionic compounds, covalent compounds, aqueous solutions, acids	<b>Sunday, September 28</b> <i>Module 5 Knowledge Check, Exam 1 Question Video, Discussion, Properties of an Element</i> <b>Sunday, October 5</b> <i>Chapter 5, Graded Achieve Homework</i>
<b>6: Monday, September 30</b>	Chemical Reactions, balancing chemical equations, types of reactions, identify	<b>Sunday, October 5</b>

<b>Week/Date</b>	<b>Topics/Activities</b>	<b>Homework Due/Due Dates</b>
<b>Chapter 6</b> <i>Chemical Reactions</i>	oxidized and reduced species, combustion reactions, reactions, precipitation reactions, neutralization reactions.	<i>Module 6 Knowledge Check, Math Review 3</i> <b>Sunday, October 12</b> <i>Chapter 6, Graded Achieve Homework</i>
<b>7: Monday, October 6</b> <b>Chapter 7</b> <i>Mass Stoichiometry</i>	Stoichiometry, formula mass, percent composition, the mole concept, convert between mass and moles, limiting reagent, theoretical yield, and percent yield	<b>Sunday, October 12</b> <i>Module 7 Knowledge Check</i> <b>Sunday, October 19</b> <i>Chapter 7, Graded Achieve Homework</i>
<b>8: Monday, October 13</b> <b>Chapter 8</b> <i>Energy</i> Fall break 10/14 and 10/15	Energy, heat, work, temperature, heat and chemical reactions	<b>Sunday, October 19</b> <i>Module 8 Knowledge Check</i> <b>Sunday, October 26</b> <i>Chapter 8, Graded Achieve Homework</i>
<b>9: Monday, October 20</b> <b>Chapter 9</b> <i>Covalent Bonding and Molecules</i>	Covalent Bonding and Molecules, Lewis structures, single bonds, double bonds, triple bonds, formal charge, resonance, VSEPR theory, polar bonds and polar molecules	<b>Monday, October 20</b> <i>Exam 2</i> <b>Sunday, October 26</b> <i>Module 9 Knowledge Check</i> <b>Sunday, November 2</b> <i>Chapter 9, Graded Achieve Homework</i>
<b>10: Monday, October 28</b> <b>Chapter 10</b> <i>Solids, Liquids, and Gases</i>	Solids, Liquids and Gases, intermolecular forces, gases, pressure, partial pressure, gas laws, diffusion, effusion, gas stoichiometry	<b>Sunday, November 2</b> <i>Module 10 Knowledge Check</i> <b>Sunday, November 9</b> <i>Chapter 10, Graded Achieve Homework</i>

<b>Week/Date</b>	<b>Topics/Activities</b>	<b>Homework Due/Due Dates</b>
<b>11: Monday, November 3</b> <b>Chapter 11</b> <i>Solutions</i>	Solutions, concentration, molarity, electrolytes colligative properties, reactions in aqueous solution	<b>Sunday, November 9</b> <i>Module 11 Knowledge Check, Math Review 4 Graded Achieve Questions</i> <b>Sunday, November 16</b> <i>Chapter 11, Graded Achieve Homework</i>
<b>12: Monday, November 10</b> <b>Chapter 12</b> <i>Acids and Bases</i>	Acids and Bases, Arrhenius, Bronsted-Lowry, and Lewis definitions, strong and weak acids, acid equilibria, pH, pOH, buffers	<b>Sunday, November 16</b> <i>Module 12 Knowledge Check</i> <b>Friday, November 21 with grace period through November 23</b> <i>Chapter 12, Graded Achieve Homework, Discussion: Recent Advances in Chemistry</i>
<b>13: Monday, November 17</b> <b>Chapter 13</b> <i>Reaction Rates and Equilibrium</i> (Thanksgiving break November 24 through December 1)	Reaction Rates and Equilibrium, effect of concentration changes and temperature changes on reaction rate, equilibrium constant expressions, relate extent of reaction to magnitude of equilibrium constant, LeChatelier's principle	<b>Monday, November 17</b> <i>Exam 3</i> <b>Friday, November 21 (with grace period until Sunday, November 23)</b> <i>Module 13 Knowledge Check Exam 3 Question Video</i> <b>Sunday, December 7</b> <i>Chapter 13, Graded Achieve Homework</i>
<b>14: Monday December 1</b> <b>Chapter 14</b> <i>Oxidation-Reduction Reactions</i>	Oxidation-Reduction Reactions, assign oxidation states, identify oxidized and reduced species, recognize redox	<b>Sunday, December 7</b> <i>Module 14 Knowledge Check</i> <b>Friday, December 12</b>

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<b>Week/Date</b>	<b>Topics/Activities</b>	<b>Homework Due/Due Dates</b>
	reactions, balance redox reactions, batteries, electroplating,	<i>Chapter 14, Graded Achieve Homework</i> <b>Friday, December 12 Final Exam</b>

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