

CHM131L General Chemistry I Lab

(1 credit hours)

Course Syllabus

Course Description

This course is a general introduction to experimental chemistry including safety in a lab environment, general lab skills, Calorimetry, electrochemistry, and other analytical concepts. The course will also address physical and chemical properties of substances and chemical reactions.

Course Learning Outcomes

By the end of this course, you will be able to:

1. Identify steps of the scientific method, conduct calculations and measurement using The SI units.
2. Identify and characterize physical and chemical properties of substances.
3. Describe the structure of atomic and sub-atomic particles, and the rules of nomenclature.
4. Balance chemical equations, calculate percent composition of compounds, and predict mass-energy relationships in chemical reactions.
5. Differentiate between aqueous reactions, and use properties of gases to solve practical applications.
6. Construct electronic structures of atoms and identify periodic classifications of the elements.
7. Apply theories of molecular geometry and hybridization in predicting bonding and anti-bonding of molecules, and energy in chemical reactions.

Prerequisites/Corequisites

None.

Required Textbook(s) and Resources

Nivaldo, J. (2020). Chemistry: A Molecular Approach. (5th Edition). Pearson MyLab.

Be sure to also review the weekly **Explore** sections for additional library or web resources. For access to databases, research help, and writing tips, visit the [Tiffin University Library](#).

Time Commitment

Effective time management is possibly the single most critical element to your academic success. To do well in this online class you should plan your time wisely to maximize your learning through the completion of readings, discussions, and assignments. Because of our accelerated, seven-week term, TU online courses are designed with the expectation that you dedicate a little over **six (6)** hours per credit hour to course activities and preparation **each week**. For example, for successful completion of a three-credit, seven-week online course you should reserve roughly **twenty (20) hours per week**.

To help plan your time and keep on track toward successful course completion, note the distinctive rhythm of assignment due dates:

1. All times assume Eastern Time (GMT-4).
2. Weeks begin at 12:00 a.m. ET on Monday and end at 11:55 p.m. ET on Sunday.
3. Unless otherwise noted, initial assignments or discussion posts are due by **11:55 p.m. ET on Wednesdays**.
4. Additional assignments or follow-up discussion posts are due by **11:55 p.m. ET on Saturdays, and**
5. Major assignments and reflections are typically due by **11:55 p.m. ET on Sundays**.

Learning Activities

Learning activities include interactive assignments through the MasteringChemistry site along with weekly At-Home labs and lab reflections. A digital or physical lab notebook is required for this course. This must be maintained and submitted after each lab assignment is completed.

Grading

The chart below identifies the individual contributions from each type of activity, per week.

Activity	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Total
Interactive Assignments	11	20	18	39	34	7	8	137
At-Home Labs	28	25	25	25	25	25	25	178
Quiz	10	0	0	0	0	0	0	10

Lab Reflections	15	10	10	10	10	10	10	75
Total	64	55	53	74	69	42	43	400

Grading Scale

A: 90-100% | B: 80-89% | C: 70-79% | D: 60-69% | F: <60%

Course Schedule and Weekly Checklist

Topic	Learning Activities (Due by 11:55 p.m. ET on day designated)
Start Here	<input type="checkbox"/> MON: Class Introductions (Forum)
Week 1: Matte, Measurement, and Problem Solving	<input type="checkbox"/> SUN: Activity 1.1: Chapter 1 Interactive (in Mastering Chemistry) <input type="checkbox"/> SUN: Activity 1.2: Safety Lab <input type="checkbox"/> SUN: Activity 1.3: MSDS Quiz <input type="checkbox"/> SUN: Activity 1.4 (Forum): Safety Lab Reflections
Week 2: Atoms, Elements, Molecules, & Compounds	<input type="checkbox"/> SUN: Activity 2.1: Chapter 2 Interactive (in Mastering Chemistry) <input type="checkbox"/> SUN: Activity 2.2: Chapter 3 Interactive (in Mastering Chemistry) <input type="checkbox"/> SUN: Activity 2.3: Burning Candle Lab <input type="checkbox"/> SUN: Activity 2.4 (Forum): Burning Candle Reflections
Week 3: Chemical Reactions and Qualities & Solutions and Aqueous Reactions	<input type="checkbox"/> SUN: Activity 3.1: Chapter 4 Interactive (in Mastering Chemistry) <input type="checkbox"/> SUN: Activity 3.2: Components of Aspirin Lab <input type="checkbox"/> SUN: Activity 3.3 (Forum): Components of Aspirin Lab Reflections
Week 4: Solutions, Aqueous Reactions, and Gases	<input type="checkbox"/> SUN: Activity 4.1: Chapter 5 Interactive (in Mastering Chemistry) <input type="checkbox"/> SUN: Activity 4.2: Chapter 6 Interactive (in Mastering Chemistry) <input type="checkbox"/> SUN: Activity 4.3: Acid Base Lab <input type="checkbox"/> SUN: Activity 4.4 (Forum): Acid Base Lab Reflections
Week 5: Thermochemistry and Quantum-Mechanical Model of the Atom	<input type="checkbox"/> SUN: Activity 5.1: Chapter 7 Interactive (in Mastering Chemistry) <input type="checkbox"/> SUN: Activity 5.2: Chapter 8 Interactive (in Mastering Chemistry) <input type="checkbox"/> SUN: Activity 5.3: Fitness and Nutrition Lab <input type="checkbox"/> SUN: Activity 5.4 (Forum): Fitness and Nutrition Lab Reflections
Week 6:	<input type="checkbox"/> SUN: Activity 6.1: Chapter 9 Interactive (in Mastering Chemistry) <input type="checkbox"/> SUN: Activity 6.2: Gak Lab <input type="checkbox"/> SUN: Activity 6.3 (Forum): Gak Lab Reflections

Periodic Properties of the Elements and Chemical Bonding: The Lewis Model	
Week 7: Chemical Bonding II.: The Molecular Structure of Molecules	<ul style="list-style-type: none"><input type="checkbox"/> SUN: Activity 7.1: Chapter 11 Interactive (in Mastering Chemistry)<input type="checkbox"/> SUN: Activity 7.2: Oil and Water Lab<input type="checkbox"/> SUN: Activity 7.3 (Forum): Oil & Water Lab Reflection

Tips for Success

Successful online learning requires a good deal of self-discipline and self-direction. As seekers of the truth, we should be willing to challenge and review one another's academic work in a spirit of respectful comradery and constructiveness. You should accept constructive feedback as a gift. Your course is a place for you to stretch and grow as you benefit from the expertise, knowledge, experience and diverse perspectives of your instructor and peers. Constructive feedback will challenge you to stretch your own thinking, thereby expanding your knowledge, understanding and application.

To get the most out of your learning experience, you should actively engage (participate) in **ALL** course activities. Course elements in any given week are arranged chronologically. To complete a week, simply work your way "down the page" through all of the course materials and activities.

For More Information:

Be sure to review the [Support, Policies, and Procedures](#) addendum.