

**General Chemistry I**
**3 credits**
**Prerequisite: CHE 30**

Class Information		Instructor Information		First day of classes:	Wed., Sept. 6
Days	WF	Lecture Instructor	Dr. Liza Abraham	Last day to add/drop, or change to audit:	Sun, Sept 17
		Lab Instructor	Daniel Liebert		
Time:	9:45-11:00	Email	<a href="mailto:labraham@ambrose.edu">labraham@ambrose.edu</a>	Last day to request revised exam:	Mon., Oct. 23
Room:	A 2133	Phone:	403-410-2000 ext.6921	Last day to withdraw from course:	Mon, Nov. 13
Lab/Tutorial:	M 8:00-11:00 & 11:15-2:15	Office:	A2160	Last day to apply for time extension for coursework:	Mon, Nov 20
<b>FINAL EXAM:</b> W December 13 (1:00-4:00) Airhart		Office Hrs.:	W/F: 9:00-10:00; 1:00-2:00 M: 9:00-2:00 T/R:9:00-11:00	Last day of classes:	Mon, Dec 11
<b>Textbook:</b> <a href="https://www.openstaxcollege.org/textbooks/chemistry">https://www.openstaxcollege.org/textbooks/chemistry</a> (available in electronic form), and the Student Solutions Manual (available online).					

**Course Description:**

This course looks at atomic and molecular structure; it examines the elements and chemistry of the periodic table, bonding, and the basis of chemical reactions.

**Learning Outcomes:**

- Generate and analyze valid Lewis structures and resonance structures
- Identify functional groups  
Build VSEPR diagrams, build Line drawings from valid VSEPR diagrams and vice versa. Assign electronic geometry and molecular shapes to atoms, assign approximate bond angles.
- Recognize and generate constitutional, conformational, geometric and optical isomerism and isomers.
- Contrast VB and MO Theories, Draw the sigma and pi overlaps for a chemical species, Name hybridized orbitals and orbital overlaps according to VBT, Draw and name the molecular orbitals for bonding and antibonding interactions in MOT.

- Distinguish bond polarities, Identify polar and non-polar molecules, Identify the intermolecular forces present within a collection of chemical species (pure samples and mixtures). Use IMF to explain or predict relative boiling points, viscosities, solubility or mixing. Use IMF to rationalize why molecules react at the site of functional groups. Use curly arrows and Lewis diagrams to explain bond breaking and bond making.

### **Academic Accommodation:**

Ambrose University is committed to ensuring that each student is afforded an academic environment that has been developed on the principles of equal and equitable access, respect for individual differences, and academic integrity. Accessibility and Support Services offers services to students with documented disabilities including learning disabilities, chronic health issues, hearing and visual impairment, disabilities and temporary impairment due to accident, illness or injury. It is the student's responsibility to contact the Accessibility and Support Services office to request academic accommodation. The nature and type of academic accommodations vary from student to student and are dependent upon the student's disability and the academic requirements.

If you are a student with a documented disability who may require academic accommodation and have not registered with Student Accessibility and Support Services, please contact their office at [accessibility@ambrose.edu](mailto:accessibility@ambrose.edu) or (403) 410-2000 ext. 2956. Students who have not registered with Student Accessibility Services are not eligible for formal academic accommodation. For additional information on support services and accommodations for students with disabilities, visit: [https://ambrose.edu/student\\_life/accessibility-and-support-services](https://ambrose.edu/student_life/accessibility-and-support-services)

### **Requirements:**

**LABORATORY SAFETY COURSE:** All students are **required to complete a safety course on chemistry laboratory safety before your first laboratory session.** This course can be accessed online; it will appear on your Moodle site. You need to obtain a minimum of 80% to pass this course. Read the information provided in the PowerPoint presentation there, watch the video and complete the quiz and hand it in to the Lab Instructor in your first lab (week of sep.21).

**Pre-lab quizzes will help** you to perform the necessary calculations, to make the lab quicker and easier. Pre-lab quizzes will be available on Moodle for you to print and make a copy of it. Complete it and hand it in to the Lab Instructor before start of each lab. Students wearing inappropriate laboratory attire or with incomplete pre-laboratory assignments will not be permitted to conduct experiments for safety reasons (see online lab manual for details). The grade for each experiment will be based on your pre-laboratory assignment, your performance in the laboratory, and the required experimental report.

You will have five labs to perform; three of them requires to fill in worksheets and two of them to submit formal lab reports. Worksheets are due at the end of the lab. Formal lab reports are due next week at the beginning of the tutorial. Each lab is out of 20 marks. Each worksheet or lab reports are worth 15 marks. Pre-lab quizzes for each lab count to 5 marks. Refer to the lab manual on Moodle for details.

All classes are cumulative so what will be learned at the start of the course will be continually applied throughout the term. Tutorials are opportunities to work in groups and learn how to take good notes. You will have several opportunities for formal feedback on your progress throughout the term. During each tutorial, students work collaboratively in groups of 3 or 4 on a series of problems before writing an individual quiz. There will be six to seven tutorial quizzes, one term test, one final exam, five pre-lab assignments, and five laboratory reports (two formal reports and three work sheets). Tutorial activities and pre-lab assignments, and experiments will all help you to prepare for Term Tests and Final Examinations. Examinations are a combination of multiple choice, short answer and written answer questions. During exams students are allowed to bring only pencils, pens, erasers, model kits, their ID card, and ***non-programmable calculators.***

**Attendance:**

Class participation is extremely important to your learning in this course. If you miss any class please make sure to complete the notes from your peers.

**Grade Summary:**

The available letters for course grades are as follows:

<u>Letter Grade</u>	<u>Description</u>
A+	Excellent
A	
A-	
B+	Good
B	
B-	
C+	Satisfactory
C	
C-	
D+	Minimal Pass
D	
F	Failure

In determining the overall grade in the course the following weights will be used:

Laboratory Experiments	25%
Tutorial Assignments/Quizzes	10%
Term Test 1	15%
Term test 2	15%
Assignments	5%
Final Examination	30%

A mark of less than 50% in the laboratory component and/or on the weighted average of the midterm and final examinations will result in a final grade of no greater than D. Completion and submission of reports for fewer than three laboratory experiments will result in a final grade of no greater than D. A grade of D does not satisfy the pre-requisite requirements for further chemistry courses or admission to programs in Biological Sciences.

**Grading Scale:**

A+	A	A-	B+	B	B-
95% - 100%	87% - 94.99%	82% - 86.99%	77% - 81.99%	72% - 76.99%	66% - 71.99%

C+	C	C-	D+	D	F
62% - 65.99%	58% - 61.99%	54% - 57.99%	50% - 53.99%	45% - 49.99%	< 44.99%

Because of the nature of the Alpha 4.00 system, there can be no uniform College-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of

the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

**Material that is expected as background knowledge:**

Chapters 1 to 4 review high school material and, therefore, are expected pre-requisite material.

### Course Schedule: (Tentative Lecture / Tutorial / Laboratory Schedule)

Week of	Lecture	Tutorial	Lab
Sep 4	Introduction to the course Ch6: Electronic Structure and Periodic properties of Elements	No tutorial	No Lab
Sep 11	Ch6: Electronic Structure and Periodic properties of Elements	<b>Lab Safety</b> <b>WHMIS Quiz</b> <b>Tutorial 1 / Quiz1</b>	No Lab
Sep 18	Ch6: Electronic Structure and Periodic properties of Elements	No Tutorial	Lab 1: Mass percent of Acetic Acid
Sep 25	Ch7: Chemical Bonding and Molecular Geometry  Sep 27-28 (W & Th): Spiritual Emphasis days (no class)	No Tutorial	
Oct 2	Ch7: Chemical Bonding and Molecular Geometry	<b>Tutorial 2/Quiz 2</b>	No Lab
Oct 9	Ch7: Chemical Bonding and Molecular Geometry  Oct 9 Mon Thanksgiving: No class  Term Test 1 Oct 11	No Tutorial	No Lab
Oct 16	Ch7: Chemical Bonding and Molecular Geometry	No Tutorial	Lab 2: Determination of Vitamin C Content
Oct 23	Ch8: Advanced Theories of Covalent Bonding	Tutorial 3/Quiz 3	No Lab
Oct 30	Ch8: Advanced Theories of Covalent Bonding	No Tutorial	Lab 3: Dry Lab Lewis structures:VSEPR diagrams
Nov 6	Ch8: Advanced Theories of Covalent Bonding  Nov.6-10, M-F (mid-semester break; no classes)	No Tutorial	No Lab
Nov 13	Ch10: Intermolecular Forces  Term Test 2 Nov.15	No Tutorial	Lab 4: Synthesis of Aspirin

Nov 20	Ch10: Intermolecular Forces	<b>Tutorial4/Quiz 4</b>	No Lab
Nov 27	Chapter 20- Organic Chemistry	No Tutorial	<b>Lab 5: Structure and Physical Properties of Compounds</b>
Dec 4	Chapter 20- Organic Chemistry	<b>Tutorial 5/Quiz 5</b>	No Lab
Dec 11	Final Exam :Wednesday, December 13	Tutorial: Final Exam Review	No Lab

**Policies:**

**Communication**

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, they will need to forward all messages from the Ambrose account to another personal account.

### **Registration**

During the **Registration Revision Period** students may enter a course without permission, change the designation of any class from credit to audit and/or voluntary withdraw from a course without financial or academic penalty or record. Courses should be added or dropped on the student portal by the deadline date; please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a "Request to Withdraw from a Course" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline**; please consult the List of Important Dates on the my.ambrose.edu website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their transcript.

### **Exam Scheduling**

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

Students, who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the

deadline date; please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

### **Electronic Etiquette**

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. Some professors will not allow the use of any electronic devices in class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

### **Academic Policies**

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact

the Privacy Compliance Officer at [privacy@ambrose.edu](mailto:privacy@ambrose.edu).

### **Extensions**

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a course Extension from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date; please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

### **Appeal of Grade**

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Registrar's Office in writing and providing the basis for appeal within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal. If the appeal is sustained, the fee will be refunded.

### **Academic Integrity**

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another

person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

**Note:** Students are strongly advised to retain this syllabus for their records.