

## CHEM 1311 GENERAL AND QUANTITATIVE CHEMISTRY I

### Instructor Information

Dr. Stephen Starnes

Email: Stephen.Starnes@tamuc.edu

Office: Science 339

Phone: 903-886-5389

Office Hours: MWR: 2:00 pm – 3:30 pm, F: 12:00 pm – 1:00 pm, or by appointment

### Course Materials

#### Lecture textbook:

Option 1. Burdge et al.: Chemistry: Atoms First, 4th Ed. (McGraw Hill) - ALEKS 360. You do not need to purchase the textbook unless you want your own copy – the e textbooks can be found within ALEKS). You have access to the electronic textbook for the course through the Inclusive Access McGraw Hill package purchased, which was automatically charged to your tuition bill (the charge was \$82.25). The inclusive access also provides you access to the online homework system (ALEKS).

Option 2. General Chemistry, 10<sup>th</sup> Edition, Ebbing, Gammon, Brooks/Cole Cengage learning. You do NOT need to purchase this textbook unless you want a copy that was used to formulate my notes. If you want a hard copy of a textbook, any textbook in General Chemistry is fine to use as a study resource. Older editions such as the 8<sup>th</sup>, 9<sup>th</sup> or 10<sup>th</sup> edition is fine to use as a cheap hardcopy if desired or the 11<sup>th</sup> edition of the textbook is also fine for you to use as a study resource, but a hard copy of a textbook is NOT required.

Classroom: Lecture

Section 01E: MWF 1:00 -1:50 pm in STC 127

Section 02E: TR 12:30-1:45 pm in STC 127

\*\* If you cannot attend your regular lecture one day, you can attend the other section's lecture.

**Course Description:** 3 Semester Hours: 2 hours and 30 minutes lecture per week. This course is part of the University Studies core courses and will meet criteria for science credits. This is the first part of a two-course sequence of general chemistry. This course is designed primarily for students majoring in sciences or in pre-professional programs. Topics covered include the scientific method, characteristics and transformations of matter, atomic theory, chemical reactions, the behavior of gases, an introduction to energy, bonding and shapes of molecules, and intermolecular forces Chemists deal with these topics every day, but these concepts are also crucially important to other branches of science.

### Lecture Learning Outcomes / Course Objectives

Upon completion of the course, I intend for my students to have realized a number of objectives.

1. Students will be able to analyze, evaluate, or solve problems when given a set of circumstances, data, text or art. Be able to critically analyze a chemical problem and deduce a solution to the problem utilizing step-wise processes.
2. Students will be able to interpret, test and demonstrate principles revealed in empirical data and/or observable facts. General chemistry requires good algebra skills. By the end of this course, you should be able to utilize algebraic skills to solve chemical problems.
3. In written, oral, and/or visual communication, A&M-Commerce students will communicate in a manner appropriate to audience and occasion, with an evident message and organizational structure.
4. Students will be able to work together toward a shared purpose relevant to the course or discipline with a sense of shared responsibility for meeting that purpose.

### **General Content Knowledge Students Should Obtain**

1. Know the nature of the bonding in compounds.
2. Relate the structure found in a given molecule to its physical and properties.
3. All students must know the basics of IUPAC nomenclature of compounds.
4. Know the importance of chemistry and its relationship to other disciplines and our daily lives.
5. Understand the basic structures of atoms, ions, and molecules, and ways to quantitatively describe the properties of atoms and molecules in the various phases of pure matter and in mixtures.
6. Understand the reactivity of atoms, ions, and molecules, and the various qualitative and quantitative methods for describing or depicting chemical reactions.
7. Understand the concept of chemical equilibrium, and the energies that drive chemical reactions: an introduction to the field of thermodynamics.
8. Understand the relationship between the electronic configurations of atoms and molecules and their chemical properties: an introduction to the field of quantum mechanics.
9. Understand the basic properties of gases with respect to temperature, pressure, volume and amount of gas.

### **Course Requirements: Minimal Skills Needed**

**Prerequisite:** The student must have completed Math 1314 or be concurrently enrolled in math 142. Students who had adequate high school preparation in mathematics or were exempted from Math 1314 will be allowed to enroll with the instructor's consent. Concurrent enrollment of Math 1314 with CHEM 1311 generally is not encouraged. Students who are currently enrolled in math remediation courses such as Math 131 will not be eligible for enrollment in CHEM 1311.

### **Student Responsibilities or Tips for Success in the Course: Pointers to Succeed**

1. The lectures in this course will cover Chapters 1 through 11 of the assigned textbook. This material will be covered at the rate indicated by the *Tentative Class Schedule*. *Be sure to read the textbook before coming to the lectures*. The lectures will focus on important chemistry concepts but will not serve as a substitute for reading the textbook. The textbook is a more detailed presentation with a more extensive set of example problems. Chemistry is a physical science and it is imperative to master calculations to pass the course.
2. *Finish your homework promptly*. Working the problems will help you succeed in the course. The more problems that you work the better prepared you will be for exams.

There will be assigned HW problems using the ALEKS program. Beyond this, for further work, I recommend working as many chapter end problems in the textbook as you can. The answers to the odd numbered problems can be found in the appendix of most textbooks. If you can answer the ALEKS problems and odd numbered questions in a textbook correctly, this will be a good indication that you understand the material and you should be able to find success in the course.

Cramming the week of an exam is discouraged, you should study on a consistent basis in this course.

### Grading

Your course grade will be based on 1000 points total, broken down as follows:

four examinations (150 points each, 600 points total, 15% each, 60% total)

a comprehensive final examination (150 points, 15%)

homework (200 points total, 20% total) – ALEKS program

written report relating Chem 1311 content to everyday life (50 points, 5%)

Late work will not be accepted. There will be NO make-up exams except for those missing an exam due to an A&M-Commerce sponsored event (such as an athlete participating in an A&M-Commerce athletic event or a student giving a conference presentation). Prior notification of participation in such an event MUST be given and make-up exam arrangements made in advance of the regularly scheduled exam.

If you have an **acceptable, documented reason** for missing an exam (such as a documented illness, auto accident, observance of religious holiday), AND you have notified the instructor of this, you will be allowed to replace one missed exam with your score on the final. Otherwise, you will receive a "zero" for that exam, that zero will not be replaced by the final, and will be included in the calculation of your final class grade. The only opportunity for extra credit in this class will be through your attendance at a 90 minute supplemental instruction (SI) session each week – attendance at an SI session is **OPTIONAL**. There will 15 weeks of supplemental instruction offered where students can earn up to a maximum of 50 points extra credit (so a 5.0% bonus in the class). There are no SI sessions during the Spring Break break.

The final exam will be comprehensive over all material covered in the class. The last drop date for the course is **March 28, 2025**. Grading will be based on a standard percentage scale: 100-90 = A; 89-80 = B; 79-70 = C; 69-60 = D; 59-below = F. Dishonest scholarship will earn an automatic zero (0) and initiate prosecution to the fullest extent. Incomplete grades may be given only if the student has a current average  $\geq 70\%$  and is precluded from completion of the course by a documented illness or family crisis. **If you miss 5 or more class periods and do not have a passing grade in the class, you may be administratively dropped from the class.**

### Exam details:

During exams, students are not allowed to have the following items with them: scratch paper (unless provided by the instructor), course materials, textbooks, notes (including formula sheets), or electronic devices, including iPads, iPhones or any other type of smart phone or cellular phone, iPods, MP3 players, earphones, radios, cameras, multi-functional timepieces, computers, smart watches, or ANY device capable of accessing cellular or wireless networks.

When possible, students will sit in alternating seats, face forward at all times, and remove any clothing which might conceal eye movements, reflect images of another's work, or hide course materials for copying.

I recommend purchase of one of the following calculators, which are available for approximately \$10.00-\$15.00: TI-30X IIS (solar) or TI-30X IIB (battery) or TI-30Xa.

**Learning Assistants and Peer-Led Team Learning (opportunity for extra credit):** There will be five undergraduate students helping with this class. These students have recently completed this course and have demonstrated excellence in the subject matter. These students are employed as Learning Assistants (LAs). The purpose and goal of these student assistants is to help you learn chemistry and successfully pass this course. Each week, starting the second week of class, you will have the **voluntary option** of attending a Supplemental Instruction (SI) session, which will be instructed by an LA. This will be a 90 minute session where the LA will provide an active learning experience in which students can gain the skills and confidence to be successful learners in General Chemistry and other science courses and review the material covered in Chem 1311 the previous week(s). In the weekly ninety-minute LA-SI sessions, the LA will work with students to solve problems related to the most recent material covered in the Chem 1311 lecture. If the SI sessions do not meet your schedule, you can attend a tutoring session in the "JAMP" room (Academic Success Center), where you can study with one of the JAMP tutors. If you are a student athlete, you can work with a tutor in the Thrower Center if the LA and JAMP room schedules do not meet your athletic schedule. If you attend tutoring in the JAMP room or Thrower Center, the dates and times of these tutoring sessions **MUST** be documented by the tutor and reported to Dr. Starnes on a regular basis throughout the semester. There will be **NO** exceptions. To succeed in Chem 1311, you must adopt a habit of studying on a consistent basis, keeping up with the material as it is covered in class. LAs and tutors can help you do this. If you attend a 90 minute LA review session or study with a tutor in the JAMP room or Thrower Center 90 minutes a week, you will receive 3.35 bonus points each week that you attend; attendance all 15 weeks would accumulate 50.25 bonus points (5.25%). There will be no opportunity to make up any week that you miss.

### COURSE OUTLINE / CALENDAR

Exam 1:	Thursday or Friday	February 13th or 14th	Chapters 1, 2, Part of 3
Exam 2:	Thursday or Friday	March 6th or 7th	Chapters 7, 8
Exam 3:	Thursday or Friday	April 10th or 11th	Chapters 9, 10, 11
Exam 4	Monday or Tuesday	May 1st and 2nd	Chapters 4, 5, 6, part of 3
Final Exam:	Thursday or Friday	May 8th or 9th	Cumulative (Chapters 1-11)

### Lecture Tentative Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
<u>January</u>	13th Chapter 1	14th Chapter 1	15th Chapter 1	16th Chapter 1	17th Chapter 1
<u>January</u>	<b>Holiday</b>	21st Chapter 1	22nd Chapter 1 Chapter 2	23rd Chapter 2	24th Chapter 2
<u>January</u>	27th Chapter 2	28th Chapter 2	29th Chapter 2	30th Chapter 2	31st Chapter 3-Part 1
<u>February</u>	3rd Chapter 3-Part 1	4th Chapter 3-Part 1	5th Chapter 7	6th Chapter 3-Part 1 Chapter 7	7th Chapter 7

**CHEM 1311****Course Information****Spring 2025**

<u>February</u>	10th Chapter 7	11th Chapter 7	12th Chapter 7	13th <i>Exam 1, (Chap. 1, 2, Part of 3)</i>	14th <i>Exam 1, (Chap. 1, 2, Part of 3)</i>
<u>February</u>	17th Chapter 8	18th Chapter 7 Chapter 8	19th Chapter 8	20th Chapter 8	21st Chapter 8
<u>February</u>	24th Chapter 8 Chapter 9	25th Chapter 8 Chapter 9	26th Chapter 9	27th Chapter 9	28th Chapter 9
<u>March</u>	3rd Chapter 10	4th Chapter 10	5th Chapter 10	6th <i>Exam 2 (Chap. 7, 8)</i>	7th <i>Exam 2 (Chap. 7, 8)</i>
<u>March</u>	10th <i>Spring Break</i>	11th <i>Spring Break</i>	12th <i>Spring Break</i>	13th <i>Spring Break</i>	14th <i>Spring Break</i>
<u>March</u>	17th Chapter 10	18th Chapter 10	19th Chapter 10	20th Chapter 10 Chapter 11	21st Chapter 10 Chapter 11
<u>March</u>	24th Chapter 11	25th Chapter 11	26th Chapter 11	27th Chapter 11 Chapter 3 part 2	28th Chapter 11 <i>Last day to drop</i>
<u>March-April</u>	31st Chapter 3 part 2	1st Chapter 3 part 2	2nd Chapter 3 part 2	3rd Chapter 3 part 2	4th Chapter 3 part 2 Chapter 4
<u>April</u>	7th Chapter 4	8th Chapter 3 Chapter 4	9th Chapter 4	10th <i>Exam 3 (Chap. 9, 10, 11)</i>	11th <i>Exam 3 (Chap. 9, 10, 11)</i>
<u>April</u>	14th Chapter 4	15th Chapter 4	16th Chapter 4	17th Chapter 4	18th Chapter 5
<u>April</u>	21st Chapter 5	22nd Chapter 5	23rd Chapter 5	24th Chapter 5 Chapter 6	25th Chapter 6
<u>April-May</u>	28th Chapter 6	29th Chapter 6	30th Chapter 6	1st <i>Exam 4 (Chap. 4, 5, 6, part of 3)</i>	2nd <i>Exam 4 (Chap. 4, 5, 6, part of 3)</i>
<u>May</u>	5th	6th	7th	8th <i>Final Exam 10:30 – 12:30 (02E section)</i>	9th <i>Final Exam 10:30 – 12:30 (01E section)</i>

**Interaction with Instructor Statement**

The best way to communicate with the instructor is via e-mail: [stephen.starnes@tamuc.edu](mailto:stephen.starnes@tamuc.edu) or stop by the instructor's office (Science 339) for clarification of course material and expectations.

**TECHNOLOGY REQUIREMENTS****LMS – myLeo Online – D2L Brightspace**

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

[https://documentation.brightspace.com/EN/brightspace/requirements/all/browser\\_support.htm](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

## ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@tamuc.edu](mailto:helpdesk@tamuc.edu).

**Note:** Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAM campus open computer lab, etc.

## COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

### Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here: <https://community.brightspace.com/support/s/contactsupport>

## COURSE AND UNIVERSITY PROCEDURES/POLICIES

### Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

### University Specific Procedures

#### Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: [Netiquette](#)

<http://www.albion.com/netiquette/corerules.html>

#### East Texas A&M University Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

### **Academic Integrity**

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

### **ADA Statement**

#### **Students with Disabilities**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

#### **Office of Student Disability Resources and Services**

East Texas A&M University

Velma K Waters Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)

Website: [Office of Student Disability Resources and Services](http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

### **Nondiscrimination Notice**

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

### **Campus Concealed Carry Statement**

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

### **A&M-Commerce Supports Students' Mental Health**

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit [www.tamuc.edu/counsel](http://www.tamuc.edu/counsel)

### **AI use policy**

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course. Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism). Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed. In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty