



EAST TEXAS A&M
UNIVERSITY

CHEMISTRY 101: CHEMISTRY TUTORIAL I

Instructor Information

Dr. Stephen Starnes

Email: Stephen.Starnes@etamu.edu

Office: Science 339

Phone: 903-886-5389

Office Hours: T, R: 4:00 pm – 5:00 pm, F: 1-3 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-textbook 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 \$101.84). The inclusive access also provides you access to the online homework system (ALEKS).

Option 2. General Chemistry, 10th 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 8th, 9th or 10th edition is fine to use as a cheap hardcopy if desired or the 11th 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.

Class Sections:

Section 01E: M 12:00-12:50 pm in STC 107 (Instructor: Ms. Joy Zhang)

Section 02E: T 3:00-3:50 pm in TBA (Instructor: Ms. Joy Zhang)

Section 03E: T 4:00-4:50 pm in STC 146 (Instructor: Ms. Joy Zhang)

Section 04E: W 10:00-10:50 am in NHS 162 (Instructor: Ms. Joy Zhang)

Section 05E: R 3:00-3:50 pm in NHS 162 (Instructor: Dr. Starnes)

Section 06E: F 11:00-11:50 pm in NHS 162 (Instructor: Dr. Starnes)

Section 07E: F 12:00-12:50 pm in NHS 162 (Instructor: Dr. Starnes)

**** If you cannot attend your regularly scheduled class, you can attend one of the other sections IF you have prior instructor approval.**

Contact information for each instructor:

Qianying.Zhang@etamu.edu, Stephen.Starnes@etamu.edu

Course Description: 1 Semester Hour: The course will act as a support to understand the fundamental chemistry covered in Chemistry 1311. Topics include the scientific method, making measurements, the SI system, dimensional analysis, atomic and molecular structure, chemical formulas, chemical reactions, chemical equations, thermochemistry, quantum theory, electron configurations, periodicity, chemical bonding, states of gases, and states of matter and solutions.

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 stepwise 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, East Texas A&M 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 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

Instructional Methods

Class Procedure: The intent of the course is for you to work in small groups to complete the lesson for that day. You will be required to work in groups of 3-5 students. Groups made of less than 3 students or more than 5 students will not be allowed. I may change the groups periodically. You are expected to work together as a team to answer the questions posed in the lesson. Thus, you are highly encouraged and expected to discuss, with your group members, the lesson and the answers to the questions posed. The instructor for the course is not present to answer the questions for you. Rather, the instructor is present to guide you in your learning efforts. This has proven to be an effective way to learn Chemistry; we will be using methods

similar to a National Science Foundation sponsored program called POGIL (Process Oriented Guided Inquiry Learning, www.pogil.org).

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

Material will be covered at the rate indicated by the *Tentative Class Schedule*. *Be sure to read the textbook and notes before coming to the lectures.* The class will focus on important chemistry concepts but will not serve as a substitute for individual studying. Reading the textbook and completing the ALEKS homework is essential for success in the course. Chemistry is a physical science and it is imperative to master calculations to pass the course.

Grading

Your course grade will be based on your participation (80%) and a weekly class assignment(s) grade (20%), as illustrated in the Table below. There are 15 class days in the semester.

The final letter grade will be based on a standard scale 90-100% A, 80-89% B, 70-79% C, 60-69% D, and below 60% F. The grades may be curved, if warranted. 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. The last drop date for the course is **October 29, 2026**. If you drop the Chem 1311 course you must also drop the Chem 101 course. You can remain enrolled in Chem 1111 (lab) if you drop Chem 101/1311.

If you fail to sign the attendance sheet for a class period, you will be counted as absent even if you were in class that day; the sign-in sheet is the official record of your attendance in class. If you will miss your class one week, you can attend one of the other sections that same week with instructor approval. This will be your only option for earning credit for that week. There will be absolutely no make-ups for missed class attendance.

Your participation grade is not based on you simply showing up to class. To receive participation credit for the class period you must meet the following requirements:

1. You cannot be *late to class*. Missing the introductory lesson at class time will equate to a non-attendance for that day.
2. You must *participate in the class or group discussion*. Non-participation will equate to a non-attendance for that day.
3. Disorderly conduct will equate to a non-attendance for that day.
4. Your group must work diligently to complete the lesson for that day. If your group does not work diligently to complete the lesson you will receive a non-attendance for that day.

Learning Assistants and Peer-Led Team Learning: There will be two 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, learn how to solve chemistry problems and successfully pass this course.

TENTATIVE COURSE OUTLINE / CALENDAR

Date	PS	Chapter	Problem Set Related To:
August 20-26	1	Ice breaker, math review	
August 27-Sept 2	2	Chapter 1: Chemistry: The Science of Change	Mass conservation, matter, Physical Measurements, Dimensional analysis, significant figures, SI system
Sept 3-9	3	Chapter 2: Atoms and the Periodic Table	Atomic theory and structure, isotopes, nuclide symbols
Sept 10 - 16	4	Chapter 2: Average Atomic Mass and the Mole	mass and moles of a substance, Avogadro's number
Sept 17 - 23	5	Chapter 3: Quantum Theory and the Electronic Structure of Atoms	Light wave and photons, Electronic structure of atoms, Bohr theory, Quantum mechanics, Atomic orbitals
Sept 24 - 30	6	Chapter 3 and 4. Quantum Theory and the Electronic Structure of Atoms / Periodic Trends of the Elements	Quantum mechanics, Atomic orbitals, Periodicity of the elements
Oct 1 – 7	7	Chapter 4: Periodic Trends of the Elements	Periodic trends: atomic radii, ionization energies, electron affinity
Oct 12 – 16	8	Chapter 5: Ionic and Covalent Compounds	Covalent and ionic bonding, resonance, formal charge, Lewis Dot Structures, naming chemical compounds, expanded octet
Oct 19 – 23	9	Chapter 5 and 6: Ionic and Covalent Compounds, Molecular Geometry and Chemical Bonding Theory	Valence bond theory, molecular orbital theory, polarity, dipole moment, electronegativity, VSEPR model and geometry
Oct 26 – 30	10	Chapter 6: Molecular Geometry and Chemical Bonding Theory	Valence bond theory, molecular orbital theory, polarity, dipole moment
Nov 2 – 6	11	Chapter 7 and part of 12: States of Matter; Liquids and Solids, Intermolecular Forces	London dispersion forces, dipole-dipole attractions, hydrogen bonding, viscosity, solubility, phase diagrams
Nov 9 – 13	12	Chapter 8: Chemical Reactions	Stoichiometry of reactions, theoretical yield, percent yield, empirical formulas
Nov 16 – 20	13	Chapter 9: Chemical Reactions in Aqueous Solution	Ions in aqueous solution, electrolytes, acids and bases, solutions, dilutions, volumetric analysis, oxidation-reduction reactions
Nov 23 – 27	14	Chapter 11: Gases	Gas laws, Kinetic-molecular theory
Nov 30 – Dec 4	15	Chapter 10: Energy Changes in Chemical Reactions	Reaction heat, enthalpy heat changes in processes, heat capacity, calorimetry, Hess's Law, standard heats of reaction
Dec 7-11		No class	No class

Detailed Tentative Schedule – Correlate Chem 1311 with Chem 101

	Monday	Tuesday	Wednesday	Thursday	Friday
<u>August</u>	17th	18th	19th	20th 1311 - Chap 1 PS 1 (ice breaker)	21st 1311 - Chap 1 PS 1 (ice breaker)
<u>August</u>	24th 1311 - Chap 1 PS 1 (ice breaker)	25th 1311 - Chap 1 PS 1 (ice breaker)	26th 1311 - Chap 1 PS 1 (ice breaker)	27th 1311 - Chap 1 PS 2 (Chap 1)	28th 1311 - Chap 1, 2 PS 2 (Chap 1)
<u>September</u>	31st 1311 - Chap 2 PS 2 (Chap 1)	1st 1311 - Chap 2 PS 2 (Chap 1)	2nd 1311 - Chap 2 PS 2 (Chap 1)	3rd 1311 - Chap 2 PS 3 (Chap 2)	4th 1311 - Chap 2 PS 3 (Chap 2)
<u>September</u>	7th Holiday 101-01E solve PS 3 at home	8th 1311 - Chap 2, 3 PS 3 (Chap 2)	9th 1311 - Chap 2, 3 PS 3 (Chap 2)	10th 1311 - Chap 3 PS 4 (Chap 2)	11th 1311 - Chap 3 PS 4 (Chap 2)
<u>September</u>	14th 1311 - Chap 3 PS 4 (Chap 2)	15th 1311 - Chap 3 PS 4 (Chap 2)	16th 1311 - Chap 3 PS 4 (Chap 2)	17th 1311 - Chap 4 PS 5 (Chap 3)	18th 1311 - Chap 3, 4 PS 5 (Chap 3)
<u>September</u>	21st 1311 - Chap 4 PS 5 (Chap 3)	22nd 1311 - Chap 4 PS 5 (Chap 3)	23rd 1311 - Chap 4 PS 5 (Chap 3)	24th 1311 - Exam 1, (Chap. 1 and 2) PS 6 (Chap 3/4)	25th 1311 - Exam 1, (Chap. 1 and 2) PS 6 (Chap 3/4)
<u>September - October</u>	28th 1311 - Chap 4 PS 6 (Chap 3/4)	29th 1311 - Chap 4, 5 PS 6 (Chap 3/4)	30th 1311 - Chap 4, 5 PS 6 (Chap 3/4)	1st 1311 - Chap 5 PS 7 (Chap 4)	2nd 1311 - Chap 5 PS 7 (Chap 4)
<u>October</u>	5th 1311 - Chap 5 PS 7 (Chap 4)	6th 1311 - Chap 5 PS 7 (Chap 4)	7th 1311 - Chap 5 PS 7 (Chap 4)	8th Fall Break – no classes	9th Fall Break – no classes
<u>October</u>	12th 1311 - Chap 5 PS 8 (Chap 5)	13th 1311 - Chap 6 PS 8 (Chap 5)	14th 1311 - Chap 6 PS 8 (Chap 5)	15th 1311 - Exam 2 (Chap. 3, 4) PS 8 (Chap 5)	16th 1311 - Exam 2 (Chap. 3, 4) PS 8 (Chap 5)
<u>October</u>	19th 1311 - Chap 6 PS 9 (Chap 5/6)	20th 1311 - Chap 6 PS 9 (Chap 5/6)	21st 1311 - Chap 6 PS 9 (Chap 5/6)	22nd 1311 - Chap 6 PS 9 (Chap 5/6)	23rd 1311 - Chap 6, 7 PS 9 (Chap 5/6)
<u>October - November</u>	26th 1311 - Chap 7 PS 10 (Chap 6)	27th 1311 - Chap 7 PS 10 (Chap 6)	28th 1311 - Chap 7 PS 10 (Chap 6)	29th 1311 - Chap 7, 8 PS 10 (Chap 6) <i>Last day to drop</i>	30th 1311 - Chap 7 PS 10 (Chap 6)
<u>November</u>	2nd 1311 - Chap 8 PS 11 (Chap 7)	3rd 1311 - Chap 8 PS 11 (Chap 7)	4th 1311 - Chap 8 PS 11 (Chap 7)	5th 1311 - Chap 8 PS 11 (Chap 7)	6th 1311 - Chap 9 PS 11 (Chap 7)
<u>November</u>	9th 1311 - Chap 9 PS 12 (Chap 8)	10th 1311 - Chap 9 PS 12 (Chap 8)	11th 1311 - Chap 9 PS 12 (Chap 8)	12th 1311- Exam 3 (Chap. 5, 6, 7, 12) PS 12 (Chap 8)	13th 1311 - Exam 3 (Chap. 5, 6, 7, 12) PS 12 (Chap 8)
<u>November</u>	16th 1311 - Chap 9 PS 13 (Chap 9)	17th 1311 - Chap 9 PS 13 (Chap 9)	18th 1311 - Chap 11 PS 13 (Chap 9)	19th 1311 - Chap 9, 11 PS 13 (Chap 9)	20th 1311 - Chap 11 PS 13 (Chap 9)
<u>November</u>	23rd 1311 - Chap 11 PS 14 (Chap 11)	24th 1311 - Chap 11 PS 14 (Chap 11)	25th <i>Thanksgiving</i> PS 14 (Chap 11) – solve at home	26th <i>Thanksgiving</i> PS 14 (Chap 11) – solve at home	27th <i>Thanksgiving</i> PS 14 (Chap 11) – solve at home

<u>December</u>	30th 1311 - Chap 10 PS 15 (Chap 10)	1st 1311 - Chap 10 PS 15 (Chap 10)	2nd 1311 - Chap 10 PS 15 (Chap 10)	3rd 1311 - Exam 4 <i>(Chap. 8, 9, 10, 11)</i> PS 15 (Chap 10) – solve at home	4th 1311 - Exam 4 <i>(Chap. 8, 9, 10, 11)</i> PS 15 (Chap 10) – solve at home
<u>December</u>	7th No Chem 101 classes	8th No Chem 101 classes	9th No Chem 101 classes	10th No Chem 101 classes	11th No Chem 101 classes

Interaction with Instructor Statement

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

TECHNOLOGY REQUIREMENTS

LMS

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

Zoom Video Conferencing Tool

https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu

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@etamu.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 ETAMU 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>

STUDENT RESPONSIBILITIES FOR COURSE**CWID and Password**

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@etamu.edu.

Technology-Related Issues

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 ETAMU campus open computer lab, etc.

TECHNOLOGY REQUIREMENTS AND SUPPORT**Minimal Technical Skills Needed**

Students will need reliable computer and internet access for this course. Students must be able to effectively use myLeo email, myLeo Online D2L, and Microsoft Office.

Learning Management System (LMS) – D2L

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 the technical requirements:

- View the [Learning Management System Requirements Webpage](#).
- Learn more on the [LMS Browser Support Webpage](#).

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 on the [Brightspace Support Webpage](#).

COMMUNICATION AND SUPPORT**Interaction with Instructor Statement**

If you have any questions or are having difficulties with the course material, please contact your instructor. Correspondence will always be through university email (your “myLeo” mail) and announcements in myLeo online (D2L). You will not RECEIVE email through D2L, so be sure to check your ETAMU email for communication. Students are encouraged to check university email daily.

Include the Following in Emails with Instructor:

- Course name and subject in the subject line
- Salutation (Good afternoon, Dr. Jackson)
- Proper email etiquette (no “text” emails – use proper grammar and punctuation)
- Student name and CWID after the body of the email (possibly add to student signature on email)

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.

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 online in the [Student Guidebook](#).

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

ETAMU Attendance

For more information about the attendance policy, please view the [Attendance Webpage](#) and the [Class Attendance Policy](#)

Academic Integrity

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

[Undergraduate Academic Dishonesty University Procedure 13.99.99.R0.03](#)

[Undergraduate Student Academic Dishonesty Form](#)

[Graduate Student Academic Dishonesty University Procedure 13.99.99.R0.10](#)

[Graduate Student Academic Dishonesty Form](#)

Use of Artificial Intelligence

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

Students with Disabilities-- ADA Statement

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 Rm 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@etamu.edu
Website: [Office of Student Disability Services](#)

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 ETAMU 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.

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

East Texas A&M Supports Students' Mental Health – Counseling Services

The Counseling Center at East Texas A&M University, 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

Mental Health and Well-Being

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download the app and explore the resources available to you for guidance and support whenever you need it.

