CHEM 1312 General and Quantitative Chemistry II

COURSE SYLLABUS: Summer II 2026

INSTRUCTOR INFORMATION

Instructor: Mrs. Qianying Zhang (Joy)
Office: Science 336
Office Hours: Virtual office at D2L or by appointment
Contact information: Tel: 903-468-8140; Qianying.Zhang@etamu.edu

COURSE INFORMATION

Lectures (Web Based Class): Meets 7/6/2026 through 8/6/2026

Textbook: Burdge et al.: Chemistry: Atoms First, 5th Ed. (McGraw Hill) - ALEKS 360

Reference book: *General Chemistry*, 9th or 10th Edition, Ebbing, Gammon, Brooks/Cole Cengage learning.

COURSE DESCRIPTION

General and Quantitative Chemistry II. This course is part of the University Studies core courses and will meet criteria for laboratory science credits.

This is the second part of a two-course sequence of general chemistry. The course is designed primarily for the students majoring in sciences or in pre-professional programs. By the end of the course you will be familiar with a range of fundamental chemistry topics including chemical reaction rates, chemical equilibrium, acid-base chemistry, solubility, thermodynamics, electrochemistry, nuclear chemistry, organic chemistry, inorganic chemistry and biochemistry. Chemists deal with these subject areas every day, but these concepts are also crucially important to other branches of science and technology.

Prerequisite: The student must have completed Math 1314 or be concurrently enrolled in math 142 or other higher level courses in mathematics. Students who had adequate high school preparation in mathematics or were exempted from Math 1341 will be allowed to enroll with the instructor's consent. Concurrent enrollment of Math 1341 with CHEM 1312 generally is not encouraged. Students who are currently enrolled in math remediation courses such as PJCM 300, PJCM 306, or Math 131 will not be eligible for enrollment in CHEM 1312.

Student Learning Outcomes

1. Students will be able to analyze, evaluate, or solve problems when given a set of circumstances or data. Such as use Le Chatelier's Principle to predict the effects of concentration, pressure and temperature changes on equilibrium mixtures.
2. Student communication will be clear, purposeful, and make appropriate use of evidence, data and technology as applicable. Such as show the detail procedure how to solve the equilibrium problems.
3. Students will be able understand and utilize mathematical functions and empirical principles and processes. Such as use the Henderson-Hasselbalch equation to find the PH for the buffer solution.
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.

COURSE REQUIREMENTS

Student Responsibilities or Tips for Success in the Course

Student Responsibilities or Tips for Success in the Course: This is an online class therefore attendance is flexible! You are required to access D2L while you participate various activities. Your regular participation activities, login times, visit time spent will be checked regularly. You are strongly encouraged to log into the course several times a unit. Excessive "absence" in online activities may result in loss of points (including in your overall performance points).

Pointers to Succeed in CHEM 1312:

1. The lectures in this course will cover topics from Chapters 12 through 20, and 23 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 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. *Use your homework to practice the concepts you learned in lecture*. Even though the homework is not turned in or graded, working the problems will help you succeed in the course. The more problems that you work the better prepared you will be for exams.

3. *Review the lecture notes after each chapter.* Write down the questions you have and ask the instructor by email or make an appointment with her.

GRADING

Final grades in this course will be based on the following scale:

A = 86%-100%
B = 73%-85%
C = 60%-72%
D = 45%-59%
F = 45% or Below

The grade for this course will be derived as follows:

Quizzes:	10%
Four examinations	80 %
Final Exam	10 %

Late work will not be accepted, and makeup quizzes or exams will not be given.
Students are strongly encouraged to set up text and email notifications in the settings in Brightspace so you will receive emails and texts about important announcements, due dates of assignments, quizzes, and exams. Also make sure to check the email from the instructor.
If you miss an examination or quiz, you will be assigned a zero for that assignment. Your performance and final grade in the lecture will be evaluated on the basis of total points earned. The distribution of points will be based on the following: Quiz (10 points), which will be assigned and discussion throughout the semester. Four partial exams and one comprehensive final exam/group project will carry 80 points and 10 points, for a total of 90 points. The final exam will be comprehensive and cover material from Chapters 12-20, and 23.

The last drop date for the course please sees the website:
http://www.tamuc.edu/Admissions/registrar/academiccalendars/

Incomplete grades may be given only if the student has a current average ≥70% and is precluded from completion of the course by a documented illness or family crisis.

Communication: If the instructor needs to contact an individual student, it will be via the student's e-mail account. Students should check e-mail frequently. Email is the best, easiest and fastest way to communicate with me.

COURSE OUTLINE / CALENDAR

Tentative Lecture Calendar

Week	Date	Chapter	Topics
1	7/6	Chapter 12	Solutions
	7/7	Chapters 12/13	Solutions/ Rates of Reaction
	7/8	Chapters 13	Rates of Reaction
	7/9	Chapter 14	Chemical Equilibrium
2	7/13	Chapter 14	Chemical Equilibrium
	7/14		**Exam 1 (Charpter12-14)**
	7/15	Chapter 15	Acids and Bases
	7/16	Chapter 16	Acid-Base Equilibria
3	7/20	Chapter 16	Acid-Base Equilibria
	7/21	Chapter 17	Solubility and Complex-Ion Equilibria
	7/22	Chapter 17/18	Solubility and Complex-Ion Equilibria/ Thermodynamics and Equilibrium
	7/23		**Exam 2 (Charpter15-17)**
4	7/27	Chapter 18	Thermodynamics and Equilibrium
	7/28	Chapter 19	Electrochemistry
	7/29	Chapter 19	Electrochemistry
	7/30		**Exam 3 (Charpter18-19)**
5	8/3	Chaper23	Organic Chemistry
	8/4	Chapter 23/20	Organic Chemistry/ Nuclear Chemistry
	8/5	Chapter 20	Nuclear Chemistry/**Exam 4 (Charpter 20 and 23)**
	8/6	**Final Examination**	**Covers chapters 12-20,23**

Recommended HW problems and examples (10th edition book)
Chap. 12: 47, 49, 53, 55, 57, 69
Chap. 13: 43,45,46,51,55,63,77
Chap. 14: 35, 43,51,65,73
Chap. 15: 36,51,53,59,67,79
Chap. 16: 33,35,38,50,52,75
Chap. 17: 27,29,37,41,47,59,61
Chap. 18: 31,35,39,41,45,59
Chap. 19: 35,37,49,54,57,63,66,78,82,86
Chap. 20: 19,33,35,37,39,41,43
Chap. 23: 27, 37, 38,39

The following is a comparison of the chapters between textbook and reference book.

Chemistry: Atoms First, 5th Ed. (McGraw Hill)	***General Chemistry*, 9th or 10th Edition, Ebbing, Gammon, Brooks/Cole Cengage learning.**
Chapter 13 Physical properties of solutions	Chapter 12 Solution
Chapter 14 Chemical Kinetics	Chapter 13 Rates of Reaction

Chapter 16 Chemical Equilibrium	Chapter 14 Chemical Equilibrium
Chapter 17 Acids, Bases and Salts	Chapter 15 Acids and Bases
Chapter 18 Acid-Base Equilibria and Solubility Equilibria	Chapter 16 Acid-Base Equilibria
Chapter 18 Acid-Base Equilibria and Solubility Equilibria	Chapter 17 Solubility and Complex-Ion Equilibria
Chapter 15 Entropy and Gibbs Energy	Chapter 18 Thermodynamics and Equilibrium
Chapter 19 Electrochemistry	Chapter 19 Electrochemistry
Chapter 23 Organic Chemistry	Chapter 23 Organic Chemistry
Chapter 20 Nuclear Chemistry	Chapter 20 Nuclear Chemistry

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 https://www.etamu.edu/attendance/

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.

http://telusproduction.com/app/5108.html