



TEXAS A&M UNIVERSITY SAN ANTONIO

College of Arts & Sciences

General Chemistry II – CHEM 1312 Syllabus

Instructor and class information

Instructor: Yulun Han, Ph.D.

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Office: STEM 311J

Class Hours: MWF 14:00 – 14:50

Class location: Science and Technology Building, Room 242

Office hours: Wednesday: 15:00 – 16:00, Friday: 12:00 – 14:00, and by appointment

Required Course Materials

Access code: Your homework and e-text subscription is included with this course. To obtain your access code, follow the BryteWave link on the blackboard. Alternatively, follow the instructions sent by the bookstore (search for BryteWave in your inbox).

Homework: Mastering Chemistry is required. To access it through blackboard, go to the homework folder. Click on the first assignment, which will prompt you to link an account to your blackboard course. Log in or create an account if it is the first time using Mastering. Use the access code described above. If there are any issues obtaining your access code, you can get a 2-week temporary access while we sort your code with the bookstore.

Textbook: Chemistry, A Molecular Approach by Nivaldo J. Tro (6th ed). The e-book is included with this course. To access your book, please link your account to blackboard as explained above first. Then click on the textbook folder in blackboard followed by Pearson etext.

Calculator: You need a scientific calculator for this course. Any non-graphing calculator is acceptable.

Course Description

Being the second semester of a two-semester sequence, this course introduces many chemical concepts, problems, and calculations. Principles and quantitative relationships in chemistry that will be introduced include stoichiometry, chemical equilibrium, acid-base chemistry, thermochemistry, rates and mechanisms of reactions, changes of state, solution behavior, atomic structure, periodic relationships, and chemical bonding.

Prerequisite: CHEM 1311, MATH 1314 or equivalent. **Corequisite:** CHEM 1112 (Laboratory).

Learning Objectives

By the end of this course students will be able to:

1. Identify the fundamental units of the SI system, perform dimensional analysis calculations, gain conceptual understanding of the mole, explain how matter is organized and classified as well as distinguish between kinetic and potential energy.
2. Apply the scientific method as a strategy to solve problems through science and creativity.
3. Define and explain Dalton's atomic theory and describe the structure of an atom.
4. Describe and explain the properties of electromagnetic radiation, the photoelectric effect, the Bohr model and use the quantum mechanical model to describe the structure of an atom.
5. Utilize the periodic table to make predictions as to how elements react to form matter based on their properties. In addition, the student will be able to use the Aufbau principle and Hund's rule to determine the electronic configuration of an atom.
6. Demonstrate their understanding of basic facts, principles, theories, and methods of modern science as well as use general chemistry concepts and theories to solve complex multi-variable chemical problems.
7. Describe the fundamental properties of chemical bonds, perform lattice energy calculations, draw Lewis structures with possible resonance structures and name simple compounds.
8. Utilize the VSEPR model to predict molecular structure the properties of a molecule, identify molecular orbitals according to shape and energy, calculate bond order, predict

paramagnetism and use both the molecular orbital and delocalized electron models to describe resonance in molecules.

9. Calculate percent composition, determine molecular and empirical formulas, balance chemical reactions, apply stoichiometry to solve limiting reactant problems and calculate percent yield.

10. Identify weak, strong and nonelectrolytes, calculate the amount of mass product formed in precipitation reactions, determine the amount of titrant required for a neutralization reaction, and specifically describe how to determine the amount of analyte using volumetric analysis and balance redox reactions.

11. Perform enthalpy change calculations for a given reaction, utilize Hess law to determine the enthalpy formation for a compound, define and use heat capacity to perform calorimetry calculations, identify exothermic and endothermic reaction and predict how temperature affects such reactions.

12. Perform calculations using the ideal gas law and describe why chemists modify the ideal gas equation to describe real gas behavior.

Class policies

Communication: The best way to contact me is through email. Students are expected to access Blackboard for updates on the course, announcements and other course materials. All students are strongly encouraged to come to office hours or make appointments at other times to discuss course material and answer questions.

Emails should be professional (I am happy to explain this, but professional emails are NOT text messages), clear, and preferably sent within working hours (8 am-6 pm). If you do not hear back in 48 hours, please reach back again.

Attendance Policy: All students are expected to attend lectures and actively engage in class discussion, activities, and online assignments. Attendance will be monitored and can be used to make decisions on cases of borderline grades. If you are absent, you are responsible for the material covered and are expected to get notes, announcements and any other material from another student in the class.

Absences will be excused if due to illness (medical excuse), death of a close family member, religious holiday, official university activity or cancellation of classes, military duties, pregnancy & related conditions and participation in legal proceedings. Students are STILL REQUIRED TO MAKEUP THE MISSED WORK DUE TO EXCUSED ABSENCE WITHIN SEVEN CALENDAR DAYS AFTER DISCUSSING WITH THE INSTRUCTOR.

Excessive absences (more than 3) and tardiness will not be tolerated. Accumulation of more than three unexcused absences can result in the student being dropped from the class or in one letter lecture grade decreased at the discretion of the instructor.

Conduct and Behavior: As an instructor my goal is to create a safe and engaging learning environment for ALL. Class disruptions are unacceptable, asking questions to clarify material during class does not qualify as a disruption and is encouraged. Disruption of the learning environment means creating a situation where other students cannot learn and if such situations arise, the instructor reserves the right to ask the disruptive party to leave the classroom. This includes but is not limited to talking loudly about things not discussed in the class, physical or verbal hostility, texting, use of headphone/listening to music during the class, actively disrupting others or the instructor from learning/teaching.

Use of electronic devices during the class session is not allowed unless instructed by the instructor. During the exams all electronic and transmitting devices MUST be placed in the silent mode and stored in the bag.

Academic misconduct and attempts to cheat during the exam will be pursued according to Texas A&M-San Antonio code of conduct policy. If you need to use the restroom, ask and leave all electronic devices with the instructor.

Visitors: Only students enrolled in the course are allowed in the classroom. No visitors are allowed.

IMPORTANT: Each student receives this information during the first lecture. It is your responsibility to read this material and be familiar with the course content, procedures, and grading.

Recording (audio/video) lectures: If a student wishes to record (audio or video) the lectures, they must take written permission from the instructor prior to start recording.

Grading

Your final grade will be assigned based on your performance in five areas: (1) three 100 points exams, (2) homework assignment within Mastering Chemistry, (3) a final examination, (4) recitation and lecture attendance. **Any extra credit opportunities (if any) will be announced in class during the semester.**

Table. Grading

Item	Total points
Three regular exams	300 points
Final exam	100 points
Homework	80 points
Attendance at lecture sessions	60 points
Attendance at recitation sessions	60 points
Total	600 points

$$\% \text{ of Total Points} : \left(\frac{\text{You total points}}{600} \right) \times 100$$

Table. Letter grade assignment

Letter Grades:	A	B	C	D	F
% of Total Points	90.00 - 100%	80.00 - 89.99%	70.00 - 79.99%	60.00 - 69.99%	0 - 59.99%

Exams: Exams will be done during the class hour. There will be **no makeup examinations for unexcused absences!** Should you miss two or more exams via an unexcused absence a grade of F will be assigned. Should you have a question concerning the way that your examination was graded, or if you think that there was an error in calculation the exam score, then it is your responsibility to bring the matter to the attention of the instructor within three calendar days of the date when your exam was given. The three-day policy applies to all 100-point exams, except the last 100-point examination. Students have until the day of their final examination to bring up grading concerns. No extra examination time will be given, the only time that the students have to work on the examination is the allotted time.

Homework: All homework will be assigned via Mastering chemistry which is available through blackboard. I encourage you to work on a few problems after every class to reinforce the lecture material. If you miss a homework deadline due to university excused absence, you **MUST** contact your instructor within 48 hours of the missed homework to plan an extension. Requests made after this period will not be granted.

Table. Tentative schedule*

Week #	Week of	Chapter	Assignment Due
1	Jan 19	Course Syllabus/Ch12	
2	Jan 26	Ch 12	
3	Feb 02	Ch 14	HW1
4	Feb 09	Ch 14	
5	Feb 16	Ch 15	HW2, Exam1
6	Feb 23	Ch 15	
7	Mar 02	Ch 16	HW3
8	Mar 09	Spring break – No Classes	
9	Mar 16	Ch 16	
10	Mar 23	Ch 17	HW4
11	Mar 30	Ch 17	Exam 2
12	Apr 06	Ch 18	HW5
13	Apr 13	Ch 18	
14	Apr 20	Ch 19	HW6
15	Apr 27	Ch 20/21	HW7
16	May 04	Last day of class	HW8; Exam 3
	May 06-12	ACS Final exam	

*Dates, topics and exam coverage are tentative. The instructor reserves the right to make changes as deemed necessary. Please check course announcement on your blackboard for actual schedule and due date.

University Email Policy and Course Communications

All correspondence between professors and students must occur via university email accounts. You must have your Jaguar email account ready and working. If it is not working, contact the help desk at helpdesk@tamusa.edu or at 210-784-HELP (4357). If you don't hear back within 48 hours, contact them again. They have many requests during the first part of the semester, so you may need to follow up with them.

Academic Accommodations for Individuals with Disabilities

Texas A&M University-San Antonio is committed to providing all students with reasonable access to learning opportunities and accommodations in accordance with The Americans with Disabilities Act, as amended, and Section 504 of the Rehabilitation Act. If you experience barriers to your education due to a disability or think you may have a disability, Disability Support Services is in the Central Academic Building, Suite 210. You can also contact us via phone at (210) 784-1335, visit us at the website or email us at dss@tamusa.edu. Disabilities may include, but are not limited to, attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their academic accommodation with Disability Support Services and their instructors as soon as possible.

Academic Learning Center

All currently enrolled students at Texas A&M University-San Antonio can utilize the Academic Learning Center for subject-area tutoring. The Academic Learning Center provides free course-based tutoring to all currently enrolled students at Texas A&M University-San Antonio. Students wishing to work with a tutor can make appointments through the Brainfuse online tutoring platform. Brainfuse can be accessed in the Tools section of Blackboard. You can contact the Academic Learning Center by emailing tutoring@tamusa.edu, calling (210) 784- 1307, or visiting the Central Academic Building, room 202. Online tutoring is also available for after hours and weekend assistance.

While tutoring hours may change based on tutor schedules and availability, the current tutoring hours for MATH in the ALC are as follows:

Day of the Week	Appointments Available	Walk-in Tutoring (no appointment needed)
Monday	8:00 AM – 6:00 PM	9:00 AM – 5:00 PM
Tuesday	8:00 AM – 6:00 PM	9:00 AM – 5:00 PM
Wednesday	8:00 AM – 6:00 PM	9:00 AM – 5:00 PM
Thursday	8:00 AM – 6:00 PM	9:00 AM – 5:00 PM
Friday	8:00 AM – 5:00 PM	11:00 AM – 4:00 PM

Counseling/Mental Health Resources

As a college student, there may be times when personal stressors interfere with your academic performance and negatively impact your daily functioning. If you are experiencing emotional difficulties or mental health concerns, support is available to you through the Student Counseling Center (SCC). To schedule an appointment, visit our website, call 210-784-1331 or visit Madla 120 between the hours of 8:00 AM and 5:00 PM.

All mental health services provided by the SCC are free and confidential (as the law allows). The Student Counseling Center provides brief individual and group therapy, crisis intervention, consultation, case management, and prevention services. Crisis support is available 24/7/365 by calling the SCC at 210-784-1331 or through the TELUS student support App.

The [TELUS Student Support App](#) provides a variety of mental health resources to include 24/7/365 support for in the moment distress, crisis support, an anonymous peer-to-peer support network, mental health screenings, podcasts, and articles to improve your mental wellbeing.

Emergency Preparedness

JagE Alert is Texas A&M University-San Antonio's mass notification system. In the event of an emergency, such as inclement weather, students, staff and faculty, who are registered, will have the option to receive a text message, email with instructions and updates. To register or update your information visit the [Jag E Alert System website](#). You can access more information about [Emergency Operations Plan and the Emergency Action Plan on our website](#). Download the [SafeZone App](#) for emergencies or call (210) 784-1911. Non-Emergency (210) 784-1900.

Financial Aid and Verification of Attendance

According to the following federal regulation, 34 CFR 668.21: U.S. Department of Education (DoE) Title IV regulation, a student can only receive Title IV funds based on Title IV eligibility criteria which include class attendance. If Title IV funds are disbursed to ineligible students (including students who fail to begin attendance), the institution must return these funds to the U.S. DoE within 30 days of becoming aware that the student will not or has not begun attendance. Faculty will provide the Office of Financial Aid with an electronic notification if a student has not attended by the published Census Date (the first week of class). Any student receiving federal financial aid who does not attend prior to the published Census Date (the first week of class) will have their aid terminated and returned to the DoE. Please

note that any student who stops attending at any time during the semester may also need to return a portion of their federal aid.

Jaguar Writing, Language, and Digital Composing Center (WLDCC)

The Jaguar Writing Center provides writing support to graduate and undergraduate students in all three colleges as well as faculty and staff. Writing tutors work with students to develop reading skills, prepare oral presentations, plan, draft, and revise their written assignments. Our language tutors support students enrolled in Spanish courses and students composing in Spanish for any assignment. Our digital studio tutors support students working on digital projects such as e-portfolios, class presentations, or other digital multimedia projects.

The Writing Center offers face-to-face, synchronous online, and asynchronous digital appointments. Students can schedule appointments with the Writing Center in JagWire under the **Student Services tab**. Click on **Writing, Language, and Digital Composing Center** to make your appointment. Students wanting to work in real time with a tutor can schedule an **Online Appointment**. Students wishing to receive asynchronous, written feedback from a tutor can schedule an **e-Tutoring appointment**. More information about what services we offer, how to make an appointment, and how to access your appointment can be found on the [Writing Center's website](#). The Writing Center can also be reached by emailing: writingcenter@tamusa.edu.

Meeting Basic Needs

Any student who has difficulty affording groceries or accessing sufficient food to eat every day or who lacks a safe and stable place to live and believes this may affect their performance in the course, is urged to [submit a CARE report for support](#). Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to direct you to available resources. The [General's Store is a food pantry](#) that is available on campus as well.

Military Affairs

Veterans and active-duty military personnel are welcomed and encouraged to visit the Office of Military Affairs for any question involving federal or state VA Education Benefits. Visit the Patriots' Casa building, room 202, or to contact the Office of Military Affairs with any questions at military.va@tamusa.edu or (210)784-1397.

Religious Observances

Texas A&M University-San Antonio recognizes the wide variety of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided with an opportunity to make up any examination, study, or course work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes for regular session classes.

The Six-Drop Rule

Students are subject to the requirements of Senate Bill (SB) 1231 passed by the Texas Legislature in 2007. SB 1231 limits students to a maximum of six (6) non-punitive course drops (i.e., courses a student chooses to drop) during their undergraduate careers. A non-punitive drop does not affect the student's GPA. However, course drops that exceed the maximum allowed by SB 1231 will be treated as "F" grades and will impact the student's GPA.

Statement of Harassment and Discrimination

Texas A&M University-San Antonio is committed to the fundamental principles of academic freedom, equal opportunity, and human dignity. To fulfill its multiple missions as an institution of higher learning, A&M-San Antonio encourages a climate that values and nurtures collegiality and the uniqueness of the individual on our campus and within our state, nation, and world. All decisions and actions involving students and employees are to be based on applicable law and individual merit. Texas A&M University-San Antonio, in accordance with applicable federal and state law, prohibits discrimination, including harassment, based on race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, or pregnancy/parenting status. Individuals who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the University's Civil Rights Officer at 210-784-2061 or titleix@tamus.edu. Texas A&M University-San Antonio faculty are committed to providing a safe learning environment for all students and for the university. If you have experienced any form of sex discrimination or harassment, including sexual assault, sexual harassment, domestic or dating violence, or stalking based on sex, know that help and support are available. A&M-San Antonio's Title IX Coordinator can support those impacted by such conduct in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The university strongly encourages all students to report any such incidents to the Title IX Coordinator. Please be aware that all A&M-San Antonio employees (other than those designated as confidential

resources such as counselors and trained victim advocates) are required to report information about such discrimination and harassment to the university. This means that if you tell a faculty member about a situation of sexual harassment, sexual violence, or other related sex-based misconduct, the faculty member must share that information with the university's Title IX Coordinator (titleix@tamusa.edu, 210-784-2061, CAB 439K). If you wish to speak to a confidential employee who does not have this reporting requirement, you can contact the Student Counseling Center at (210) 784-1331 or visit them in Madla 120.

Pregnant/Parenting Students

Texas A&M-San Antonio does not require a pregnant or parenting student, solely because of that status or issues related to that status, to (1) take a leave of absence or withdraw from their degree or certificate program; (2) limit the student's studies; (3) participate in an alternative program; (4) change the student's major, degree, or certificate program; or (5) refrain from joining or cease participating in any course, activity, or program at the University. The university will provide reasonable accommodation for pregnant students as it would be provided to a student with a temporary medical condition that is related to the health and safety of the student and the student's unborn child. These could include maintaining a safe distance from substances, areas, and activities known to be hazardous to pregnant individuals and their unborn child; excused absences because of illness or medical appointments; modified due dates for assignments; rescheduled tests/exams; taking a leave of absence; and being provided access to instructional materials and video recordings of lectures for excused absences, if these would be provided to any other student with an excused absence. Pregnant/parenting students are encouraged to contact the Title IX Coordinator with any questions or concerns related to their status (titleix@tamusa.edu; 210-784-2061; CAB 439K).

Texas A&M-San Antonio has also designated the Title IX Coordinator as the liaison officer for current or incoming students who are the parent or guardian of a child younger than 18 years of age. The Title IX Coordinator can provide students with information regarding support services and other resources. Young Jaguars can support parenting students with daycare if students meet this criteria: (1) must be enrolled in classes at Texas A&M-San Antonio in the current semester, (2) must be Pell eligible or a single parent, (3) child(ren) must be aged 3 to 12-years-old, and (4) child(ren) must be enrolled in Pre-K-3 through 6th grade. For more information, please contact Young Jaguars at youngjaguars@tamusa.edu or call (210) 784-2636.

Students' Rights and Responsibilities

The following statement of students' rights and responsibilities is intended to reflect the philosophical base upon which University Student Rules are built. This philosophy acknowledges the existence of both rights and responsibilities, which is inherent to an individual not only as a student at Texas A&M University-San Antonio but also as a citizen of this country.

Students' Rights

1. A student shall have the right to participate in a free exchange of ideas, and there shall be no University rule or administrative rule that in any way abridges the rights of freedom of speech, expression, petition and peaceful assembly as set forth in the U.S. Constitution.
2. Each student shall have the right to participate in all areas and activities of the University, free from any form of discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, and pregnancy/parenting or veteran status in accordance with applicable federal and state laws.
3. A student has the right to personal privacy except as otherwise provided by law, and this will be observed by students and University authorities alike.
4. Each student subject to disciplinary action arising from violations of university students' rules shall be assured a fundamentally fair process.

Students' Responsibilities

1. A student has the responsibility to respect the rights and property of others, including other students, the faculty, and administration.
2. A student has the responsibility to be fully acquainted with the published University Student Rules found in the Student Handbook, Student Code of Conduct, on our website, and University Catalog, and to comply with them, as well as with federal, state, and local laws.
3. A student has the responsibility to recognize that student actions reflect upon the individuals involved and upon the entire University community.
4. A student has the responsibility to recognize the University's obligation to provide a safe environment for learning.
5. A student has the responsibility to check their university email for any updates or official university notifications.

Students are expected to exhibit a high level of honesty and integrity in their pursuit of higher education. Students engaging in an act that violates the standards of academic

integrity will find themselves facing academic and/or disciplinary sanctions. Academic misconduct is any act, or attempt, which gives an unfair advantage to the student. Additionally, any behavior specifically prohibited by a faculty member in the course syllabus or class discussion may be considered as academic misconduct. For more information on academic misconduct policies and procedures please review the [Student Code of Conduct](#) or visit the resources available in the [OSRR website](#).

Important Spring 2026 Dates

Dates	Event
January 13	Tuition and Fee Payments deadline
January 19	Marling Luther King Jr. Day – No Classes
January 20	First Day of Class
February 4	Census Date
March 6-23	Midterm grading period
March 9-14	Spring Break
April 3	Study Day – No classes
April 17	Last day to drop with an automatic withdrawal
May 1	Last day to drop a course or withdraw from the university
May 4	Last Day of Classes
May 5	Study Day – No classes
May 6-12	Final Exams
May 19	Commencement

The complete [Academic Calendar](#) as available on our website.

Artificial Intelligence Policy

Use of artificial intelligence (AI) tools, including ChatGPT, is permitted in this course for students who wish to use them. To adhere to our scholarly values, students must cite any AI-generated material that informed them of their work (this includes in-text citations and/or use of quotations, and in your reference list). Using an AI tool to generate content without proper attribution qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.