

College of Arts & Sciences

General Chemistry II – CHEM 1312 Syllabus

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Office: STEM 311

Class Hours: MWF 10:00 – 10:30
Class Location: STEM 242
Office Hours: WF 8:30 – 9:30

Course Materials

Access Code: Your homework and e-text subscription are included with this course. In order to obtain your access code, follow the Kortext link in Blackboard under the Getting Started folder. Alternatively, follow the instructions sent by the campus bookstore (search for Kortext in your inbox).

Textbook: Chemistry, A Molecular Approach by Nivaldo J. Tro (6th Edition). The e-book is provided with the course.

Homework: Mastering Chemistry is required. To access Mastering Chemistry for the first time, follow the instructions on the Student Registration Handout in the Getting Started folder on Blackboard. After registering for Mastering, all homework can be accessed either on Mastering by clicking on the Access Pearson link or by clicking on the homework link in each unit.

Calculator: Scientific calculators are required for this course. Only the use of models without data storage capabilities are approved for exams: for example, TI-30Xa, TI-30X, Casio FX-300ES Plus, or Casio FX-300MS.

Course Description

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, rate and mechanisms of reactions, changes of state, solution behavior, electrochemistry, and nuclear chemistry.

Prerequisite: CHEM 1311 and CHEM 1111 with a grade of “C” or better.

Corequisite: CHEM 1112 (Laboratory) and CHEM 1012 (Recitation).

Learning Objectives

1. Identify different types of intermolecular forces present in a molecule and rank them by strength.

2. Understand phase changes, phase diagrams and heat of vaporization and apply those concepts to predict states of matter at different environmental conditions.
3. Calculate concentrations of solutions, convert between concentration units and determine how concentration affects boiling point, freezing point, vapor pressure and osmotic pressure.
4. Write solubility equilibrium expressions and calculate solubility product constants and explain how different parameters affect solubility.
5. Demonstrate their understanding of chemical kinetics by determining and analyzing reaction rate laws, identifying order of reaction and determining what factors affect reaction rates.
6. Write equilibrium constant expressions for chemical reactions as well as calculate the value of the equilibrium constant and the concentration of reactants and products at equilibrium.
7. Define and identify strong and weak acids and bases as well as make dissociation predictions based on their structure.
8. Solve acid-base problems, calculate pH and explain acid-base properties of oxides.
9. Develop a procedure to make a buffer given a specific pH.
10. Construct a titration curve for an acid-base couple and determine the chemical species present during various points of the titration.
11. Express the three laws of thermodynamics and interrelate the enthalpy, free energy and equilibrium constant for the reaction
12. Balance redox reactions, calculate cell potentials and make quantitative calculations based on electrolysis.
13. Identify modes of radioactive decay, balance nuclear reactions, calculate energy changes associated with nuclear reactions and explain, based on the kinetics of nuclear processes, how quantities of radioactive elements relate with time.

Student Responsibilities

Communication: The best way to contact me is through email, awolfer@tamusa.edu. 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 sahelp@tamusa.tamus.edu or at 210-784-4357. 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.

Attendance Policy: While attendance is monitored for lectures, it is not required. However, lecture attendance and participation is taken into consideration for grading at the end of the semester. Attendance for recitation is required. Absences will be excused if due to illness, death of a close family member, religious holiday (see Religious Observances in Important Policies and Resources), official university activity or cancellation of classes, military duties, pregnancy & related conditions, and participation in legal proceedings.

Conduct and Behavior: As an instructor, my goal and duty is to create a safe and engaging learning environment. Class disruptions are unacceptable; asking questions to clarify material during class does not qualify as a disruption and is encouraged. If you are disrupting the class, you may be asked to leave for the day.

Technology in the classroom may be a great resource but it can also hinder the learning process. Therefore, students are not allowed to wear ear buds or headphones without a DSS accommodation. Cellphone use is not permitted unless specifically requested for a demonstration. All cellphones must be on vibrate or turned off for the entirety of the class. In case of an emergency call, please leave the room before answering the call. Texting during class is prohibited. The use of laptops, tablets, or other devices for non-class related activities is not allowed.

Behavior During Exams: All electronic devices, including phones, tablets, and smart watches, must be completely stored during exams and quizzes. This does not include approved scientific calculators. Academic misconduct and attempts to cheat during the exam will be pursued according to Texas A&M-San Antonio code of conduct policy.

Aggressive Behavior: The academic environment is meant for discussing ideas in a respectful manner. Tolerance, empathy, respect, and courtesy help us create a safe environment. Abusive and aggressive behavior will result in an immediate Instructor Drop from the course.

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.

Grading

Your final grade will be assigned based on your performance in these areas:

Mastering Homework	10%
Quizzes	15%
Exams (3)	50%
Final Exam	25%

Letter Grade	A	B	C	D	F
Total Points	100-90.0%	89.9-80.0%	79.9-70.0%	69.9-60.0%	0-59.9%

Exams: There will be three exams, each worth 16.67% of your final grade. The exams will be held on scheduled class days and will be made up of a mixture of matching, multiple choice, and short answer questions. The use of technology will not be permitted during exams. Students will need to provide their own calculator, as they will not be provided.

Homework: All homework will be assigned via Mastering chemistry, which is available through Blackboard. Homework will be due after the last lecture for each chapter. It is

recommended to work on the homework assignments throughout the unit. Late work is permitted; however, 5% will be taken off the final grade for each day that the assignment is late.

Quizzes: At the end of each chapter, there will be an online, 10-question quiz on Mastering, covering the lecture material. Quizzes will be due one week after the last lecture for the chapter. Late work is permitted; however, 5% will be taken off the final grade for each day that the quiz is late. Each quiz also has a follow-up assignment for students who did not pass the quiz. This assignment is worth 0 points, but is good practice for the exam. The follow-up will be due two days after the quiz and will review missed learning concepts.

Recitation: Recitations are additional class time outside of the lecture during which students will work in an group setting to solve practice problems and earn bonus points. Attendance is monitored during recitation and bonus points are awarded for attendance. At the end of the semester, students will be allowed to assign bonus points as they choose.

Semester Schedule

Week	Day	Topic	Exams
1	August 24	Introduction/Syllabus	
	August 26	Chapter 12	
	August 28	Chapter 12	
2	August 31	Chapter 12	
	September 2	Chapter 13	
	September 4	Chapter 13	
3	September 7	NO CLASS	
	September 9	Chapter 14	
	September 11	Chapter 14	
4	September 14	Chapter 14	
	September 16	Chapter 14	
	September 18	Chapter 15	
5	September 21	Chapter 15	
	September 23		Exam 1 Day 1
	September 25		Exam 1 Day 2
6	September 28	Chapter 15	
	September 30	Chapter 15	
	October 2	Chapter 16	
7	October 5	Chapter 16	
	October 7	Chapter 16	
	October 9	Chapter 17	
8	October 12	Chapter 17	
	October 14	Chapter 17	
	October 16	Chapter 17	
9	October 19	Chapter 18	

Week	Day	Topic	Exams
	October 21	Chapter 18	
	October 23	Chapter 18	
10	October 26	Chapter 18	
	October 28	Chapter 19	
	October 30	Chapter 19	
11	November 2		Exam 2 Day 1
	November 4		Exam 2 Day 2
	November 6	Chapter 19	
12	November 9	Chapter 19	
	November 11	Chapter 20	
	November 13	Chapter 20	
13	November 16	Chapter 20	
	November 18	Chapter 21	
	November 20	Chapter 21	
14	November 23	Chapter 21	
	November 25	NO CLASS	
	November 27	NO CLASS	
15	November 30	Review	
	December 2		Exam 3 Day 1
	December 4		Exam 3 Day 2
16	Dec 5-11		Final Exam

*This schedule is subject to change at instructor discretion.

Texas A&M University San Antonio Important Policies and Resources

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@tamusa.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 Fall 2026 Dates

Dates	Event
August 20	Tuition & Fee Payments deadline
August 24	First day of class
September 7	Labor Day Holiday – no classes
September 9	Census Date
October 5 – October 16	Midterm grading period
November 13	Last day to drop with an automatic “W”
November 25	Study Day – no classes
November 26 – November 28	Thanksgiving Holiday – no classes
November 30	Last day to withdraw from the university
December 4	Last day of classes
December 5 – December 11	Final examinations

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

Artificial Intelligence Policy

No Use of Generative AI Permitted CHEM 1311

This assumes that all work submitted by students will be generated by the students themselves, working individually or in groups. Students should not have another person/entity do the writing of any portion of an assignment for them, which includes hiring a person or a company to write assignments and/or using artificial intelligence (AI) tools like ChatGPT. Use of any AI-generated content in this course qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

***Professor's Note:** If you've actually read this far, congratulations! Here's a warning for you: there will be a syllabus quiz on the first day of class. But! If you've read all of this, then you don't actually have to answer the questions on the quiz. The only thing you need to do to earn a perfect score on your quiz is to write your name at the top and tell me if you think blackberries are just blue raspberries.