



CHEM 1405 088 – Introductory Chemistry I Online/Dual Credit

Course Syllabus: Fall 2026

“Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed.”

Instructor: Sarah Whitfield (lecture)

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Weekday	Office Hours
Monday	By appointment
Tuesday	8:30 – 9:30 am 4:30 – 5:30 pm
Wednesday	8:30 – 9:30 am 10:30 am – noon 1:00 – 5:30 pm
Thursday	8:30 – 9:30 am
Friday	None

Co-Instructor: Althea Carling (lab)

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This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.

Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.

Course Description:

4 credit hours.

Lecture/Lab/Clinical: Three hours of lecture and three hours of lab each week.

A general course for the non-science major. An introduction to the discipline of chemistry including scientific measurements, atomic structure, bonding, stoichiometry, physical and chemical properties, energy, and chemical notation is presented. Relationship of chemistry to our daily lives is emphasized. Successful completion of CHEM 1405 with a C or better allows the student to continue on to CHEM 1407. May be taken to prepare for CHEM 1411 but cannot be substituted for CHEM 1411. Offered as dual credit only.

Note: Additional course fee(s) required.

Prerequisite(s): TSI complete.

Core Curriculum Purpose and Objectives:

Through the core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning. Courses in the foundation area of life and physical sciences focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses

involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

Student Learning Outcomes:

Upon completion of this course, students will:

1. Define the fundamental properties of matter; classify matter, compounds, and chemical reactions; and identify trends in chemical and physical properties of the elements using the periodic table.
2. Write chemical formulas, write and balance equations, use the rules of nomenclature to name chemical compounds, and define the types and characteristics of chemical reactions.
3. Demonstrate the ability to solve stoichiometric problems, to convert units of measure, and to demonstrate dimensional analysis skills.
4. Obtain an introductory understanding of quantum mechanics, apply the octet rule, draw resonance structures, and use VSEPR, valence bond, and molecular orbital theories.
5. Use the gas laws and basics of the Kinetic Molecular Theory to solve gas problems, determine the role of energy in chemical reactions and solve thermochemistry problems.
6. Use basic apparatus and apply experimental methodologies used in the chemistry laboratory.
7. Demonstrate safe and proper handling of laboratory equipment and chemicals.
8. Conduct basic laboratory experiments with proper laboratory techniques.
9. Working in teams of two, demonstrate critical thinking and scientific problem-solving skills in the laboratory including the ability to carry out experiments in a safe and efficient manner.

These learning outcomes will be assessed throughout the course and on the final exam. Teamwork and Communication Skills will be assessed through laboratory reports.

College Student Learning Outcomes:

Critical Thinking Skills

CT.1 Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

Communication Skills

CS.1 Students will effectively develop, interpret, and express ideas through written communication.

Empirical and Quantitative Skills

EQS.1 Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical form.

EQS.2 Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.

Teamwork

TW2. Students will work with others to support and accomplish a shared goal.

Evaluation/Grading Policy:

The breakdown of the course requirements is as follows:

%	Requirement
45%	Unit Exams (9% each exam)
10%	Final Exam
25%	Labs
10%	ALEKS assignments/other
10%	ALEKS Pie Progress

Semester grades will be earned as follows

Percentage	Letter Grade
90% and above	A
80 %–89%	B
70 %–79%	C
60%–69 %	D
59.9% and below	F

Grades are posted to Blackboard during the term. The student should email the instructor for any questions or concerns about grades. The instructor typically returns graded work within a week. Overall grades will be rounded according to standard rounding rules (i.e., an 89.4 = 89 but an 89.5 = 90), but grades must be earned (not “bumped up” to a higher letter grade when it was not earned).

Required Instructional Materials:

Inclusive Access: NTCC has negotiated with the publisher to obtain a discounted price for the lecture course materials. The students’ access to the eBook and ALEKS is included in the price of tuition and will be available on the first day of class through a link at the top of the course page in Blackboard. The materials are required for this class and essential for student success. Through September 9, 2026, the student may opt out of purchasing these materials from the College Store. If a student chooses to opt out, NTCC will issue a refund for the Inclusive Access, and the student will be responsible for purchasing the eBook and ALEKS access from another vendor. If hard copies of the textbook are desired in addition to electronic access, they may be purchased in the College Store at a discounted price.

Introduction to Chemistry with ALEKS 360 (18-week access) IA DC; Bauer 6th edition

Publisher: McGraw-Hill

ISBN Number: 9781266627620

Optional Instructional Materials:

Scientific calculator: A TI-30X is recommended; No programmable or cell phone calculators are allowed on quizzes and exams. Calculators are also available in the PHS classroom.

Spiral notebook: To stay organized, it is recommended that students take notes from the PowerPoint slides in a spiral notebook and use it for scratch paper working through homework problems in ALEKS (Note: The homework is totally online, but when reviewing, it is helpful to have ready access to these homework solutions.). Ideally the spiral should contain notes only for this class and pages should not be torn out. One of the challenges of taking an online class is staying organized. A spiral notebook is not the only method to stay organized, but *some* system of organization is imperative.

Minimum Technology Requirements:

Laptop or computer with high-speed internet access

Microsoft Office 365 (available as a free download for all NTCC students)

Scientific calculator as described above.

Required Computer Literacy Skills:

- Ability to use a web browser to access NTCC Blackboard Learning Management System for course information, eBook, and ALEKS assignments, and Messaging.
- Ability to access NTCC student email system and communicate professionally and competently with instructor;
- Ability to create and complete Word documents, save on your computer, and upload into Bb assignment links as needed.

Course Structure and Overview:

This course is a dual credit course which allows a student to satisfy high school graduation requirements while also earning four college credits for a lab science at NTCC. The student learns through Online instruction such as reading assignments, lessons, tutorials, simulations, visualizations, and homework practice to reach mastery using the learning management system Blackboard with the eBook, *Introduction to Chemistry*, and the online homework system ALEKS. We cover approximately one chapter per week with an exam approximately every third week. Students should direct lecture questions to the online instructor; this gives the online instructor insight into any difficulties the students are having with the content. Students complete laboratory experiments face-to-face with the co-instructor on the high school campus. The lab co-instructor will provide all needed supplies for labs. Both lecture and lab learning activities support and enrich a student's understanding of the topics covered.

Exams – Students will take five exams, each covering a couple of chapters, in person at the high school campus according to the posted schedule, usually on Wednesdays except for Exam 5 (on a Friday). Questions may come from lecture, homework, videos, and labs; the format may include multiple choice, short answer, and problem-solving questions. Review materials will be provided on Blackboard for each exam. Students may use instructor-provided reference information such as periodic tables and equations during the exams, as well as a non-programmable calculator, but may not share calculators.

A **comprehensive Final Exam** will be given on Tuesday of finals week, December 8, 2026. As with the chapter tests, students take the final exam in person at the high school and may use a non-programmable calculator and instructor-provided reference material. The format of the final exam will be announced in class the week before the final exam.

Laboratory Assignments - The experiments will reinforce topics covered in lecture and help the student apply knowledge to real world problems. Work in the laboratory is central to the topic of chemistry, so it is imperative that students arrange with the instructor to make up any missed lab work. Labs are typically due at the end of class on Fridays.

ALEKS Homework & Modules and Other Assignments – This category includes assignments in ALEKS, an online homework system, as well as any other assignments that do not fit into another category.

- To register for the ALEKS materials, the student simply clicks on the ALEKS link found at the top of the course page in Blackboard and completes the registration using the NTCC email address (to facilitate NTCC tech help if needed during the semester); no access code is needed.
- The student will use this same link at the top of Blackboard to access homework assignments throughout the semester.
- ALEKS homework is due on Mondays at midnight (see schedule for specific due dates). Students should NOT wait until the night before the due date to start these assignments but rather should pace themselves. Learning chemistry requires practice.
- There are two kinds of ALEKS assignments:
 - Traditional, non-adaptive Homework assignments are open from the first day of class until the due date.
 - Students have 5 attempts to answer each question correctly.
 - Students have 2 attempts to submit each Homework assignment until the due date.
 - Students may retake the incorrect problems after the first submission; ALEKS keeps the best score.
 - Students have access to embedded resources (on the right bar in ALEKS) such as the eBook, periodic table, tables of reference material, and sometimes short instructional videos. Students may have access to explanations on some questions, but it will “cost” them one of their 5 attempts on the question.
 - After the due date, students may submit an ALEKS Homework assignment late with a 2% per day penalty.
 - Modules are available only during the “open” window. Only one Module can be open at a time, but if the student completes and submits a Module before the due date, all future and past-due modules are open. Modules are non-traditional assignments:
 - ALEKS Modules require a student to answer correctly 3 – 5 related questions on a topic to “prove” mastery and receive credit; the required number of correct answers varies for each question.
 - The student earns full credit for a Module by *completing* the required number of correct answers before the due date, regardless of the number of questions missed before getting the required number of correct answers. After the due date, the Module grade is locked in. If the student works on the Module later, it will improve the Pie Progress grade but not the Module grade (see next paragraph).
 - Students have access to embedded resources like the eBook, periodic table, reference material, explanations, and sometimes short instructional videos.
 - When a student clicks Explanation, the Module provides a detailed solution and then presents a new problem to answer for credit. It also deducts one of the correct answers; for example, if the student had correctly answered three questions in a row for a topic that required five correct answers in a row, then clicking Explanation would reset the student to only two correct answers.
 - **The goal is to *master* the topic.**
 - Students may use the Message Center button on the right bar in ALEKS to send a screenshot with a question or concern to the instructor.
 - Notice that the numbers of exams and modules match. For example, Exam 3 tests content from Modules 3A and 3B and HW 3C and 3D.
 - Both kinds of ALEKS assignments require great attention to detail; this is a needed skill in chemistry and one that will transfer to any career path.

Just as there are two kinds of assignments in ALEKS, there are also two kinds of grades earned in ALEKS:

- The **Assignment grade** from Modules and Homework assignments
- The **Pie Progress grade** which tracks topics the student has mastered (as evidenced through Homework,

Modules, and Knowledge Checks). As the student masters more topics, more pie chart is shaded.

- ALEKS Knowledge Checks assess the student's mastery at the beginning and end of the semester and a couple of times during the semester. They help to personalize learning and ensure retention of learning. They may contain up to 25 questions.
- It is to the student's advantage to think through each question and give the best answer on these knowledge checks because ALEKS updates the Pie Progress pie chart and adapts the cycles of learning/assessing based on these answers.
- It is possible to *lose* part of the Pie Progress if mastery is not retained (and it is possible to re-gain it later). Again, the goal is to master the topics and retain that knowledge.
- Only one module may be open at a time in ALEKS. Because of this, there are only two times a student can work on past-due modules to show increased mastery and improve the Pie Progress grade: during scheduled Open Pie times (see schedule) and when submitting the current module *before* its due date. Open Pie refers to times when no module is open, allowing students to work on *any* Module, future or past due. Only the Pie Progress grade will improve, not the Assignment grade.
- Please note that Pie Progress starts out as a low percentage and increases as the student gains more mastery; a low Pie Progress grade at the beginning of the semester is not a cause for concern.

Communications:

NTCC email is the official form of communication used by the college. When off campus, the student will access NTCC email using the 2-factor authentication and a cell phone. When on the high school campus, the student will access NTCC email via the Institution page in Blackboard (the Institution Page link works only on the high school campus). Course announcements will be made through Blackboard and copied to the student's NTCC email account. To schedule a virtual TEAMS appointment with the instructor, the student should email the instructor. Students may email anytime, even after hours and weekends. The instructor typically responds to email messages within 24 hours.

Institutional/Course Policy:

Attendance:

Regular and punctual attendance at all scheduled classes is expected for all students. Attendance is necessary for successful completion of course work. Students are expected to communicate with the instructor regarding any absence. The student is responsible for initiating procedures for make-up work. All course work missed, regardless of cause, is to be completed to the satisfaction of the instructor. Students verify attendance at the start of the semester by completing the Student Questionnaire in the Start Here folder of Blackboard. Submission of assignments counts as attendance in the online portion for the rest of the semester.

Student responsibilities: The lecture portion of this course is online. The student will study the lecture material in Blackboard on his own time.

- The student will do the same amount of work as if attending in-person.
- The student will need self-discipline and organization to complete assignments by the due date.
- The student will need to log into Blackboard and NTCC email at least four times a week, preferably daily.
- The student will need to read any announcements from the instructor (which will pop up at login).
- The student will need to take the initiative to contact the online instructor for help as needed.

Late work: Chemistry is a sequential course; each topic builds on previously taught topics. Therefore, it is critical to meet the assignment deadlines each week. Students have access to most instructional material from the first day of class and may work ahead.

- Students must take exams on the scheduled day unless prior arrangements have been made with the instructor before the exam date.
- Students must take the final exam at the scheduled time.

- Students may turn in labs up to one day late with a 10% penalty. The late penalty may be waived if the student has an excused absence and informs the instructor before the due date.
- ALEKS assignments follow the late policy as explained in the **ALEKS Homework & Modules and Other Assignments** section of this syllabus.

Withdrawing: There is a procedure for withdrawing from this course; the student should not simply quit attending. If the student determines that it is in his best interest to withdraw from this course, the student must contact the Registrar's office to initiate the withdrawal process (903-434-8139 or mgtorres@ntcc.edu). **The last day to drop this course with a grade of W is Tuesday, Nov. 17, 2026.** Failure to officially withdraw by this date will result in the student's earned grade being factored into the GPA.

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

Statement Regarding the Use of Artificial Intelligence (AI) Technology:

Employees and students shall be permitted to explore artificial intelligence (AI) and implement its use in and out of the classroom in accordance with policy and administrative regulations. The use of AI shall only be as a support tool to enhance student outcomes or as necessary to engage in research and shall never take the place of faculty, staff, and student decision-making. Any use of AI must comply with law, policy, and administrative regulations relating to student and employee privacy and data security. A student shall only use AI tools with faculty permission and shall be expected to produce original work and properly credit sources, including AI tools used in creating the work.

Example:

APA (7th edition)

OpenAI. (2026). ChatGPT (March 25 version) [Large language model]. <https://chat.openai.com/>

MLA (9th edition)

OpenAI. ChatGPT. 25 Mar. 2026, <https://chat.openai.com/>.

Employees or students who use AI tools to deceptively harm, bully, or harass others shall be disciplined in accordance with policy. [See DH, DIA series, FFD series, FFE, FLB, and the FM series] AI Use by Employees and Students. Northeast Texas Community College 225500 TECHNOLOGY RESOURCES CRB ARTIFICIAL INTELLIGENCE (LOCAL) DATE ISSUED: 12/8/2025 1 of 1 UPDATE 50 CRB(LOCAL)-AJC Adopted: 12/16/2025

NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and

may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

ADA Statement:

It is the policy of NTCC to provide reasonable accommodation for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodation as required to afford equal educational opportunity. It is the student's responsibility to request accommodation. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

Family Educational Rights and Privacy Act (FERPA):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

Tentative Course Schedule:

A printable, detailed schedule is found in the Start Here folder in Blackboard.

Week 1	Introduction; matter, measurement
Week 2	Atomic theory, ions, isotopes, periodic table
Week 3	Ionic and Molecular compounds and nomenclature, Exam 1
Week 4	Acids nomenclature, percent composition, the mole
Week 5	Empirical and molecular formulas, concentrations of solutions
Week 6	Balancing equations, types of reactions, Exam 2
Week 7	Activity series, double displacement reactions, solubility rules, stoichiometry
Week 8	Limiting reactants, percent yield, thermochemistry, calorimetry
Week 9	Dual nature of matter, Exam 3
Week 10	Quantum model of atom; electron configurations
Week 11	Periodicity of atomic radii, ionic radii, ionization energy
Week 12	Lewis structures, resonance, Exam 4
Week 13	Molecular geometry, polarity, bonding theories
Week 14	VSEPR lab
Week 15	Empirical gas laws, ideal gas laws, kinetic molecular theory, gas stoichiometry, Exam 5
Week 16	Finals week