

OnRamps College Chemistry

CH 301: Principles of Chemistry I

Course Syllabus: 2020 – 2021

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1. COURSE DESCRIPTION

Principles of Chemistry I introduces students to the nature of matter and energy in the physical world. Throughout the course, students will learn to think like a scientist by seeing the underlying theoretical foundations for chemistry and making intuitive arguments for how the world works that are supported by quantitative measures. Built with an intention to bring in students from a variety of different backgrounds, students in the course will learn how to successfully study science by organizing their learning around mastery and ownership of materials.

Natural Science & Technology, Part I (Texas core curriculum code 030)
TCCNS Equivalency CHEM 1311

A. Course Pre-requisites

- a. Algebra I

B. Course Learning Outcomes

- a. Fundamentals
 - i. The ways in which matter is described and measured are reviewed.
- b. The Atom
 - i. The behavior of sub-atomic particles in the atom is examined and then applied to explain the periodic table of elements and its trends.
- c. Chemical Bonding
 - i. The nature of the chemical bond is examined and then applied to predict the structure and properties of chemical compounds.
- d. States of Matter

- i. Concepts derived from kinetic molecular theory and intermolecular forces explain the properties of gas, liquid and solid states of matter.
- e. Thermodynamics
 - i. Energy changes in the form of heat and work are examined during physical and chemical reactions governed by the first and second laws of thermodynamics.

C. Course Format and Procedures

The OnRamps approach to teaching chemistry integrates a variety of learning experiences to help students achieve the learning outcomes stated above. This course uses, mainly, three pedagogies: Flipped Classroom, Retrieval Practice and Peer Instruction. The High School Instructor of Record employs these pedagogies to increase student engagement and encourage student construction of understanding of chemistry concepts.

All of the course materials are posted in Canvas and are organized chronologically by the learning activities that will help students to prepare for the exams. Students are expected to prepare for class by completing the Learning Modules made up of videos, text and short answer questions. During class, the High School Instructor of Record facilitates learning activities that include Chemistry Theater, collaborative group work, lab simulations, direct instruction and Peer Instruction. Students will take an Exit Ticket once they have completed two consecutive learning modules. These Exit Tickets will occur during class and are part of the college grade. These in-class activities will require students to apply new knowledge in a variety of contexts and collaborate with their peers to achieve an enduring understanding of course material.

D. University Course Staff

- a. *UT Austin Faculty Lead* – A UT Austin faculty member who designs and oversees delivery of the OnRamps college distance course and ensures its alignment to the course as it is delivered at the residential university campus.
- b. *OnRamps Course Staff* – A UT Austin staff member and designee of the UT Austin Faculty Lead who serves as a primary subject-matter expert in the academic discipline of the OnRamps course and provides yearlong support to high school Instructors to ensure the course is delivered with fidelity. As a designee of the UT Austin Faculty Lead, the Course Staff assist with academic integrity investigations, sends official University communication to students, and ensures students have access to all course resources and policies.
- c. *UT Austin Instructor of Record* – A UT Austin-appointed staff member who grades or oversees grading of college course work and determines student eligibility and credit award. The UT Austin Instructor of Record also

investigates and resolves suspected incidents of academic integrity violations in the distance college course. The UT Austin Faculty Lead, Course Coordinator/Manager, or other UT Austin-appointed staff member may also serve as the UT Austin Instructor of Record.

E. Course Outline

Unit & Topic
Unit 0 Part 1: Fundamentals
Unit 1: Quantum Mechanics – Atoms and Periodicity
Unit 2: The Chemical Bond – Structure and Bonding Theory
Unit 0 Part 2: Fundamentals
Unit 3: States of Matter
Unit 4: Thermodynamics

2. COURSE REQUIREMENTS

A. Required Materials and Devices

- a. **Canvas Learning Management System.** OnRamps provides an online learning environment in Canvas Learning Management System (LMS) for all students in this class. You will have access to two (2) Canvas courses for the purpose of the dual-enrollment experience: the OnRamps high school course and the OnRamps college course. You are expected to access Canvas daily for assignments, quizzes, exams. You will get many of your assignments and turn in your college work in Canvas. You are responsible for reading course information, including assignment instructions and due dates, that is posted in Canvas. You are also responsible for frequently checking your Canvas Inbox and viewing course announcements.
 - i. URL: <https://onramps.instructure.com>
- b. **Quest.** This course uses Quest, a web-based content delivery and homework server system maintained by the College of Natural Sciences at UT Austin. You will have access to additional review materials for your college exams within a Quest Review Course. Quest can be accessed using a computer, tablet and/or smartphone.
 - i. URL: <https://quest.cns.utexas.edu>
- c. **Learning Catalytics.** This course uses Learning Catalytics (LC), a web-based interactive student response tool. LC can be accessed using a computer, tablet and/or smartphone.

- i. URL: <https://learningcatalytics.com>
- d. **OnRamps Portal.** You will access the OnRamps Portal throughout the term to view information about your current OnRamps distance college course enrollment(s), including whether you are eligible for the opportunity to earn college credit, request accommodations for your distance college course, and make decisions such as whether you wish to accept or decline college credit, if earned, at the end of the course.
 - i. URL: <https://utdirect.utexas.edu/apps/ce/osis/>
- e. **Email.** Email is an official means of communication at UT Austin. OnRamps staff will use email to communicate course, enrollment, and credit information to you. It is your responsibility to keep your email address updated in Canvas and the OnRamps Student Portal at all times. You are expected to check email frequently in order to stay current with OnRamps-related communications, recognizing that certain communications may be time-critical. Failure to check email is not acceptable reason for missed communication or missed deadlines.

B. Classroom Expectations

- a. **Class participation.** OnRamps College Chemistry is an interactive class and you are expected to actively participate in class discussions, Peer Instruction sessions, and Chemistry Theater. You will also collaborate with peers during laboratory investigations and small group work.

C. How to Succeed in this Course

This is a college level course. Expect to be challenged while learning the material but be confident that consistent hard work will produce the desired results. The course moves at a faster pace than most high school courses, so it is important manage time effectively to meet assignment deadlines. Success on exams will require regular daily engagement and frequent, disciplined study beyond assigned course work.

Effective study habits are earned over time and with practice. Review the tips below and integrate them into a daily schedule.

10 Effective Study Habits

1. Engage daily with the course and be an active participant
2. Take and review thorough notes and stay organized with class materials.
3. Schedule study time, spread out your studying, and study often.
4. Mix up problems and topics when you study.
5. Instead of re-reading something, explain it to yourself or someone else.
6. Generate your own questions and ask why something makes sense.
7. Study with a group or partner.

8. Eliminate distractions when studying.
9. Use the practice exams to practice how to solve the question types that will be tested.
10. Take care of yourself - Get plenty of rest, exercise to release stress, and eat well.

Students should ask for help when needed. Attend tutorials and seek assistance from your High School Instructor of Record. Student success is of utmost importance.

D. Assignments & Grading

Assessment	Description	Frequency	Assignment Type	% Course Grade
Fall Unit Exams	Each examination will consist of 20 5-point multiple choice questions.	Two per unit	Exam	25%
Spring Unit Exams	Each examination will consist of 20 5-point multiple choice questions.	Two per unit	Exam	25%
Fall Midterm and Spring Final Exams	Cumulative semester exam	Once per semester	Exam	20%
Fall Exit Tickets	Four-question Canvas assessment taken at the end of class after every two learning modules.	Two per week*	Quiz	10%
Spring Exit Tickets	Four-question Canvas assessment taken at the end of class after every two learning modules.	Two per week*	Quiz	10%
Fall Learning Modules	Pre-class Canvas Learning Modules to prepare for daily classwork	Four per week*	Quiz	4%
Spring Learning Modules	Pre-class Canvas Learning Modules to prepare for daily classwork	Four per week*	Quiz	4%
OnRamps Orientation	Orientation to the college course	Single orientation	Orientation	1%
Course Overview	Course tour videos and eight-question Learning Module introducing OnRamps Chemistry Course.	Once per year	Quiz	1%
Total				100%

*Except for weeks that include a lab or exam review.

E. College Course Grading Scale

A	91.50 – 100	
A-	88.50 – 91.49	
B+	85.50 – 88.49	
B	81.50 – 85.49	
B-	76.50 – 81.49	
C+	71.50 – 76.49	
C	64.50 – 71.49	
C-	59.50 – 64.49	
D	54.50 – 59.49	<i>Minimum Eligibility Grade</i>
F	0 – 54.49	

- a. Unit 0 Exam 1 and Unit 0 Exam 2 are not included in the College Grade.
- b. At the end of the fall semester, students will take a comprehensive Fall Midterm exam composed of content from Units 1 and 2. The Fall midterm will be mandatory and may serve as a replacement grade in the Fall Unit Exams grading category.
- c. In the spring semester, students will take a comprehensive Spring Final exam composed of content from Units 3 and 4. Spring Final exam will be mandatory, unless student is eligible for exemption, and may serve as a replacement grade in the Spring Unit Exams grading category.
- d. During each semester students may be offered extra credit. Students are encouraged to take advantage of these extra credit assignments.
- e. Learning Modules
 - i. A total of sixty learning modules are scheduled. In the Fall Semester, the 20 best learning modules scores out of the 30 will be used to determine the college grade. Similarly, in the Spring Semester the 20 best learning modules scores out of 30 learning modules will be used.
- f. Exit Tickets
 - i. During the school year there are a total of thirty exit tickets to be completed to earn the college grade. In the Fall Semester, the 10 best exit ticket scores out of 15 Fall exit tickets will be used to determine the college grade. In the Spring Semester the 10 best scores out of the 15 Spring exit tickets will be used to determine the college grade.
 - ii. Because a large number of exit tickets and learning modules are dropped from the college grade, no make-up work or extensions will be permitted.

- g. Missed Work
 - i. Missed exams due to unplanned and excused absences will convert to zero if the work is not made up within five school days after return to school. Students missing exams due to approved appointment and extracurricular activities are encouraged to make arrangements to reschedule the exam with the High School Instructor of Record prior to the absence.
 - ii. UT assignments must be submitted by the due date to receive credit. If students are unable to complete a college assignment on time, the UT Course Coordinator should be contacted through OnRamps Support at support@onramps.zendesk.com to request that late work be accepted. There may be a grade reduction for late work.
- h. You must earn a minimum average grade of D on college assignments and assessments during the course eligibility period in order to be eligible for the opportunity to earn college credit. If you do not earn a D or higher, there may be other ways you can gain eligibility. For more information about eligibility, see Section 3. College Credit below.

3. COLLEGE CREDIT

This is a college course delivered via distance education through a dual-enrollment program, which means you may earn credit for CH 301: Principles of Chemistry I in addition to earning high school credit.

A. Eligibility for the Opportunity to Earn College Credit

You may become eligible for the opportunity to earn college credit in two ways:

- a. **Eligibility by Grade.** If you meet the minimum eligibility grade on college assignments and assessments completed during the first part of the course, you are determined eligible for the opportunity to earn college credit based on your grade.
- b. **Eligibility by Texas Success Initiative (TSI).** If you do not meet the eligibility by grade criteria, you may submit proof of scores on certain standardized assessments, as outlined in the table below, to achieve eligibility by TSI.

Assessment	Subject Area	Minimum Score
TSI	Math	350
SAT (Administered prior to March 2017)	Math	Score of 530 on the mathematics test; no combined score required

ACT	Math	Composite score of 23 with at least a 19 on mathematics test
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B. College Credit Decision Period

Students with Eligible status may elect to accept or decline any college credit earned during the five-day College Credit Decision Period, which will occur after you receive your final college grade. You will receive an email notification from OnRamps when your Credit Decision Period begins.

If you do not make a decision During the Credit Decision Period, OnRamps will determine course credit as follows:

- **C- or above.** You earned credit and *will* be issued a UT Austin transcript unless you decline credit in the OnRamps Portal.
- **D+, D, or D-.** You earned credit but *will not* be issued a UT Austin transcript unless you accept credit in the OnRamps Portal.
- **F.** You did not earn credit and will not be issued a UT Austin transcript.

C. College Transcript

If you earned and accepted college credit, you may request an official UT Austin transcript through the UT Austin Office of the Registrar in June 2021. You will receive an email notification from OnRamps when your transcript is available.

4. POLICY INFORMATION

A. Students with Disabilities

If you receive high-school accommodations related to a disability under the Individuals with Disabilities Education Act (IDEA) or Section 504 of the Rehabilitation Act, you may also receive certain accommodations in your OnRamps college course. Accommodations in an OnRamps course must follow accommodations in your Individual Education Plan or 504 Individual Accommodation Plan and be allowable under the university assessment practices. Accommodations are individualized and based on need and disability.

You must make your need for accommodations known to OnRamps Course Staff prior to the due date for an assignment in order to access accommodations for that assignment. You are strongly encouraged to provide information about your need for accommodations during registration at the beginning of the course or immediately following changes to your Individual Education Plan or 504.

B. Academic Integrity

OnRamps students are subject to the University's academic integrity policies. Academic integrity is honesty in your academic work. Each student in the course is expected to abide by the University's Student Honor Code:

"As a student of The University of Texas at Austin, I shall abide by the core values of the University and uphold academic integrity."

This means that work you produce on assignments and exams is all your own work, unless it is assigned as group work. The UT Austin Instructor of Record or your high school Instructor will make it clear for each assignment or exam whether collaboration is allowed. Refer to **Section 2, Part D: Assignments and Grading** for further details about assignment types in your course.

You are responsible for understanding UT Austin's Academic Honesty Policy which can be found here: <https://deanofstudents.utexas.edu/conduct/academicintegrity.php> You must respond to email requests from OnRamps staff for investigations of potential academic integrity violations. If you fail to respond to email requests about potential academic integrity violations from OnRamps staff, you may receive an academic disciplinary action.

More information about academic integrity may be found in the OnRamps Orientation in Canvas.

C. Student Code of Conduct

As a participant in the UT Austin OnRamps program, you are expected to uphold a high standard of integrity and ethical behavior. This includes using UT Austin resources in an appropriate, ethical manner for the purpose of learning. Prohibited behavior includes:

- Unauthorized use of institutional technology and services
- Providing false or misleading information about an academic record
- Engaging in violent or disruptive conduct, including hazing, stalking, or behavior that impedes, interferes with, or disrupts any University teaching, research, administrative, disciplinary, public service, learning, or other authorized activity.

Failure to abide by the student code of conduct may result in an academic sanction or removal from the course. For more information about standards of behavior, refer to The University of Texas catalog, Chapter 11, Student Discipline and Conduct: <http://catalog.utexas.edu/general-information/appendices/appendix-c/student-discipline-and-conduct/>

D. FERPA

All students in OnRamps are college students and subject to the federal Family Educational Rights and Privacy Act (FERPA). As a participant in the UT OnRamps program, it is important that you understand these rights as they apply to you.

Under FERPA, university staff may not share information regarding a student's college coursework or academic standing (grade point average, academic transcript, academic probation, or discipline records).

Exceptions:

1. If the student signs a waiver stating that FERPA-protected information may be released to the student's parent/guardian, university staff may share the FERPA-protected information with the parent/guardian.
2. If university staff share FERPA-protected information with high school staff, including the high school Instructor, and the student is under 18 years of age, then the high school staff may share that information with the student's parent or guardian.
3. If university staff suspect a student presents a significant risk of harm to self or others, university staff may disclose FERPA-protected information with a student's parent/guardian, high school Instructor, principal, or other appropriate authority to ensure the safety of the student and/or other individuals.

For more information about FERPA, refer to The University of Texas catalog, chapter 9, Educational Records: <https://catalog.utexas.edu/general-information/appendices/appendix-c/educational-records/>