

CHEM 141: PRINCIPLES OF MODERN CHEMISTRY I Fall 2026

UA Catalog name: General Chemistry Lecture I: Quantitative

Credits: 3 credit hours (lecture only)

Course description: CHEM 141 is the first part of a two-semester lecture series introducing students to the central principles of modern chemistry using a quantitative atoms-first approach. The course is intended for students who require a strong foundation in general chemistry, rooted in a technical (mathematical) approach to the discipline. It specifically targets science and engineering majors and other students interested in the systematic development of modern chemistry.

Instructor	Jeff Salyards, PhD, MFS mjs11@arizona.edu
Class time	Online (asynchronous)
Office Hours	I am available for Office Hours by request. We can schedule virtual (Zoom) or in-person meetings at The University of Arizona campus. Office Hours to cover chemistry content may be joined by other students. If you have a personal matter, please let me know, and I will arrange for a private meeting. Note: The CHEM 141 instructional team is not able to assist with CHEM 145 (labs). These are separate courses. Please contact your lab instructor or TA.
Prerequisites	Appropriate math placement level OR Proctored/Prep for College Algebra 88+ OR Proctored/Prep for Calculus 65+ OR MATH 109C, 110, 112, 113, 120, 120R, 124, 125, 129, 223. These requirements are identical to those for CHEM 151.
Textbook	Brown, LeMay, Bursten, Chemistry: The Central Science, 15th ed. (required). The textbook is a useful reference and study guide, but it is only one of the study tools. Lectures will not be strictly based on the textbook and the presentation of the material in lecture will deviate from the book's outline.
D2L	All course materials, such as the syllabus, schedule, lecture slides, etc., will be posted on D2L
Pre-Recorded Lectures	Lectures covering all material have been pre-recorded and are available through D2L. The Course Schedule PDF document posted on D2L under Content specifies the lectures that must be watched and studied on each class day. At the end of each video, you will be asked to check a box and press a button. Do check that box! The checkboxes in the videos amount to %5 of your overall grade. More importantly, it will help me track your progress and determine if you are falling behind.
Homework	This course uses the online homework system Mastering Chemistry hosted by the textbook publisher (Pearson). There will be 12 homework assignments (HW1-12). Their main objective is to guide you in the study of

	chemistry and help prepare for the exams. The HW due dates are D2L and appear later in this document. All assignments must be finished by 11:55 PM (AZ time) on the due dates. The grading rubric allows 6 attempts per question is 6. Some credit is lost for each incorrect answer. Hints can help you correctly answer the main Part question, avoiding credit loss for wrong answer attempts. Hints do not affect your score. You will lose all credit for a question if you: a) run out of answer attempts, b) request the answer, or c) fail to complete the questions before the due date/time.
Exams	There will be three midterm exams, each 50 min in duration, and a final exam, 2 hours in duration. The exams are unproctored, open-book, and administered via the Quizzes section of the D2L site. You may not use another person or AI platform to assist with completing any exams. All exams can be taken (started) at any time (AZ Time) on the day of the exam. However, they must be completed by 11:55 pm (AZ Time). Once you start the exam, you will have 60 min for midterms, and 120 min for the final to complete it. The dates of the exams and the topics covered are in D2L.
Missed and Make-up Exams and Homework	You can take (start) each exam anytime during the window when the exam is open. The exams can be taken from anywhere in the world; all you need is a computer with internet access. For this reason, except for extraordinary, documented emergencies, THERE WILL BE NO MAKE-UP EXAMS. Missed exams will be graded as zeros. Similarly, HW Assignments are all open from the first day of the course. They must be completed by the due date. Missed HW Assignments will be graded as zeros.
Calculators	Scientific (non-graphing, non-programmable) calculators with exponential, trigonometric, power/root, log, etc. functions are recommended for this class.
Grading	Course letter grades will be based solely on the total number of points earned. The weights of the graded assignments in the grade calculation will be as follows: Completion of Video Lectures: 5% Homework assignments 1-12 (combined): 20% Three midterm exams (combined): 50% Final exam: 25% The above are the only sources of points that can be earned in the class. No extra credit will be awarded for any additional work. The letter grades will be based on the total percentage of points earned during the semester ("Total") and assigned according to the following grading scheme:

A: $90.00 \leq \text{Total}$
B: $80.00 \leq \text{Total} \leq 89.99$
C: $68.00 \leq \text{Total} \leq 79.99$
D: $55.00 \leq \text{Total} \leq 67.99$
E: $\text{Total} \leq 54.99$
