

CHE 154 General Chemistry II

Section A — MW 8:30 – 9:50 AM — Lecture Hall B

Instructor: Dr. Matthew Wilson

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Office Hours: Dr. Wilson will be available 1:00 – 2:30 PM Monday through Thursday, and at other times by appointment.

Course Description: A continuation of General Chemistry I. Topics include solution chemistry, kinetics, equilibrium, thermodynamics, electrochemistry, and nuclear chemistry.

Prerequisites: CHE 152 and CHE 153L (both with a grade of “C” or better), and current enrollment in or successful completion of CHE 155L (with a grade of “C” or better). Prerequisite or corequisite: MAT 170.

Learning Objectives:

- Understand how intermolecular forces affect the physical properties of substances.
- Learn how reaction kinetics relates to reaction mechanism.
- Apply the concept of thermodynamic equilibrium to chemical reactions.
- Understand the thermodynamic parameters enthalpy, entropy, and Gibbs free energy.
- Understand how electrochemistry relates to redox reactions.
- Apply nuclear chemistry to understand radioactivity.

Required Materials: *Chemistry: A Molecular Approach*, N. J. Tro, 4th ed. and a non-programmable scientific calculator (a phone or other electronic device may *not* be substituted for a calculator).

Recommended Material: *Chemistry: A Molecular Approach Selected Solutions Manual*, K. T. Shaginaw, 4th ed. and *ACS Study Guide for General Chemistry Exam* (on reserve at the UT Library and available for purchase at <http://chemexams.chem.iastate.edu/guides/index.cfm>)

Attendance: Attendance is not mandatory, but necessary. Supplemental materials may be distributed in class, and topics may not always be covered in the text.

Communication: Class announcements, lecture notes, course documents, and grades will be posted on Blackboard (<http://ut.blackboard.com>). Students are responsible for monitoring their UT email account and the course Blackboard site.

Homework: The MasteringChemistry online homework system (<http://www.masteringchemistry.com>) will be used in conjunction with this course. Assignments labeled “Practice” are not required and not graded. Assignments labeled “Graded” are graded for correctness, with the opportunity to earn partial credit if multiple attempts are needed. No credit will be given for late submissions. The maximum number of course points that can be earned from homework is 100 points.

Schedule: The following is a tentative schedule of chapter sections to be covered and exam dates:

August 28	Liquids, Solids and Intermolecular Forces (Sections 11.2-11.3)
August 30	Liquids, Solids and Intermolecular Forces (Sections 11.4-11.6)
September 4	<i>No Class</i>
September 6	Liquids, Solids and Intermolecular Forces (Sections 11.7-11.8)
September 11	Solutions (Sections 13.2, 13.4-5)
September 13	Solutions (Section 13.6)
September 18	Chemical Kinetics (Sections 14.2-4)
September 20	Exam 1 (Chapters 11 & 13)
September 25	Chemical Kinetics (Sections 14.5-7)
September 27	Chemical Equilibrium (Sections 15.2-4)
October 2	Chemical Equilibrium (Sections 15.5-6, 15.8)
October 4	Chemical Equilibrium (Sections 15.7, 15.9)
October 9	Acids and Bases (Sections 16.3-4, 16.7)
October 11	Exam 2 (Chapters 14-15)
October 16	Acids and Bases (Sections 16.5-6)
October 18	Acids and Bases (Sections 16.8-9, 16.11)
October 23	Aqueous Ionic Equilibria (Sections 17.2-4)
October 25	Aqueous Ionic Equilibria (Section 17.5)
October 30	Free Energy and Thermodynamics (Sections 18.2-4, 18.7)
November 1	Exam 3 (Chapters 16-17)
November 6	Free Energy and Thermodynamics (Sections 18.5-6, 18.8)
November 8	Free Energy and Thermodynamics (Sections 18.9-10)
November 13	Electrochemistry (Sections 19.2-3)
November 15	Electrochemistry (Sections 19.4-5)
November 20	Electrochemistry (Sections 19.6, 19.8)
November 22	<i>No Class</i>
November 27	Radioactivity and Nuclear Chemistry (Sections 20.3, 20.6, 20.10)
November 29	Exam 4 (Chapters 18-19)
December 4	Radioactivity and Nuclear Chemistry (Sections 20.7-9)
December 6	Review
December 11	Final Exam (8:30 – 10:30 AM)

Exams: Each exam will be worth 120 course points. A missed exam will count as a zero, unless excused by your instructor. A decision to excuse an absence from an exam will only be considered if supported by written documentation. An excused in-class exam will be replaced by the average of the student's other three in-class exam grades; no make-up exams will be given. Any requests regarding the regrading of an exam must be made within one week of receiving the graded exam; your instructor reserves the right to regrade the entire exam. The final exam will be a standardized exam prepared by the American Chemical Society, covering all of the material from the first semester of general chemistry, and will be graded on a curve.

Grades: A total of 700 points are possible in the course. Letter grades will be assigned as follows:

A	700 – 630 points	100.0 – 90.0%
AB	629 – 595 points	89.9 – 85.0%
B	594 – 560 points	84.9 – 80.0%
BC	559 – 525 points	79.9 – 75.0%
C	524 – 490 points	74.9 – 70.0%
D	489 – 420 points	69.9 – 60.0%
F	419 – 0 points	59.9 – 0.0%

This course and CHE 155L have separate grades; a student must make a grade of “C” or better in *both* courses to be eligible to take any chemistry class that requires them as prerequisites.

Additional Resources: The Academic Center for Excellence (ACE, <http://www.ut.edu/ace/>) in the Academic Success Center offers tutoring in several subjects, including chemistry. This is available at no charge above your tuition.

Disclosures: The University of Tampa syllabus disclosures may be found on this course's Blackboard site.

Syllabus Modifications: The professor reserves the right to make changes to this syllabus as necessary.