

CHEM 121a – 001 **GENERAL CHEMISTRY** Fall 1998

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Lecture Times: MTWRF, 10:00–10:50 am, SL 3114

Office Hours: MWF, 11:00–11:50 am; TR, 8:00–8:50 am; or by appointment

Course Description:

University-level modern chemistry for science and engineering students, atomic structure, molecular bonding, structure, stoichiometry, chemical change, equilibrium, qualitative analysis. Five lecture hours per week.

Prerequisites: High school chemistry or CHEM 113, high school algebra.

Note: A grade of C or better is required in order to proceed to CHEM 121b.

Textbooks:

Zumdahl, S. S. *Chemistry*, 4th ed; Houghton Mifflin: Boston, 1997.
ISBN 0-669-41794-7. Available at Textbook Rental.

Hummel, T. J.; Zumdahl, S. A.; Zumdahl, S. S. *Partial Solutions Guide: Chemistry*, 4th ed; Houghton Mifflin: Boston, 1997. ISBN 0-669-41798-X. Available at Textbook Rental.

Optional Resource:

Kotz, J. C.; Vining, W. J. *Saunders Interactive General Chemistry CD-ROM*; Harcourt Brace: Fort Worth, TX, 1996. ISBN 0-03-018417-7. Available at the University Center Bookstore.

Laboratory Discussion:

Once a week a short preview will be given to explain the upcoming laboratory experiment. Every effort has been made to coordinate experiments in the laboratory with material covered in lecture.

Demonstrations:

Chemical Demonstrations will be presented throughout the term. All material covered in demonstrations is fair game for examinations.

Grading: The overall course grade will be calculated as follows:

Attendance and Activities	10%
Quizzes	20%
Hour Exams (Four)	50% (12.5% each)
Final Exam	20%

Attendance:

Regular attendance is required, and will be taken at random times throughout the semester. Attendance accounts for 10% of the course grade. Included in the attendance grade is active participation in class activities. Students not in attendance will be withdrawn from the course by the instructor.

Quizzes:

Previously announced multiple-choice quizzes account for 20% of the course grade. Students will not be allowed to make-up missed quizzes.

Examinations:

Hour exams will include conceptual questions from lecture and reading assignments and problems similar to those worked out in class and on homework problems. Make-up exams will be given only under the most serious circumstances. Documentation must be provided in advance to establish that the seriousness of the event precludes the student from being present for an examination.

Exam 1	Thursday, September 17	Chapters 1–3
Exam 2	Tuesday, October 13	Chapters 4–6
Exam 3	Thursday, November 5	Chapters 7–8
Exam 4	Tuesday, December 8	Chapters 9–11

Final Examination:

The final examination will be a comprehensive exam over all lecture material covered in CHEM 121a. The final examination is scheduled for **Wednesday, December 16 from 10:00 to 11:40 am.**

Tutorial Assistance:

The Department of Chemistry offers tutors in room SL 1109. Check the schedule posted outside of the tutor room for more details.

Review/Problem Solving Sessions:

A few review/problem solving sessions will be given throughout the semester. Details will be announced in class.

Calculator Policy:

Calculators are allowed for all quizzes and examinations. However, **programmable calculators are not allowed**. The problems encountered in General Chemistry do not require programming capabilities, and programmable calculators are viewed (by students without one) as an unfair advantage. Students who do not own a calculator without programmable features must obtain one to use for the quizzes and exams. (They are available for well under \$10 at any discount store.)

Problem Sets:

Assigned problems will not be collected, although doing problems on a daily basis is highly recommended for success in CHEM 121a. Answers to the assigned problems are given in the back of the textbook, and solutions are worked out in the *Partial Solutions Guide*.

**Department of Chemistry
Academic Misconduct by Students**

Faculty members retain their traditional authority to take disciplinary action in the event of academic misconduct such as cheating, plagiarism, or classroom disruption. In the event of academic misconduct, the instructor may request The Student Assessments and Standards Committee of the Department of Chemistry to impose on a student the sanction of a failing grade on an individual assignment or on a course as a whole. The Chair of the Department may recommend to the Dean of Students other sanctions such as dismissal from a major or from the University.

From Sciences & Mathematics Handbook, 1996-1997:

Guidelines for Students

1. **Students are expected to be in attendance (on time) for all class meetings and laboratories.** Entering or leaving a room at times other than the announced beginning and ending of the class is disruptive.
2. **Students are expected to take examinations at the scheduled times except for an excused absence.** Make-up examination availability is subject to the policy of the specific instructor.
3. Students should make good use of learning opportunities provided, such as, conferences with the instructor during office hours, tutorials, and/or help sessions.
4. Assigned work should be submitted in neat form and on time.
5. Students should preserve the academic atmosphere of the classroom and not engage in any disruptive or distractive activity such as whispering, talking, walking around, eating, and drinking, etc.
6. **Students are expected to devote sufficient study time to accomplish the stated goals and objectives of the course (customary recommendation is two hours of study outside class for every hour in class).**
7. Prerequisites for all College of Arts and Sciences courses are listed in the Catalog. A student should earn a grade of C or better in each course that is a prerequisite for a given course.

Students have the right to learning experiences that are free of favoritism, prejudice, discrimination, or harassment.

Tentative Lecture Schedule:

Day	Date	Topic	Reading	Problems	Saunders CD
Monday	Aug 24	Chapter 1	1–10	21, 25, 33, 37	Intro, 1.2, 1.4–1.6
Tuesday	Aug 25	Chapter 1	10–21	41, 51, 53, 57	1.15–1.17, 1.7–1.10
Wednesday	Aug 26	Chapter 1	21–30	61, 67, 69, 71	1.3, 1.11–1.14
Thursday	Aug 27	Skills Test			
Friday	Aug 28	MISC 371	Prelab Lecture, Demonstrations, Problems		
Monday	Aug 31	Chapter 2	39–45	21, 25, 39	2.3, 2.4, 4.3, 2.5–2.12
Tuesday	Sep 01	Chapter 2	45–52	47, 55, 57	2.2, 2.13, 2.14
Wednesday	Sep 02	Chapter 2	52–57	59, 61, 63	3.2–3.4, 2.16, 2.17
Thursday	Sep 03	Chapter 2	57–71	65, 67, 69, 75	3.5–3.8, 3.13, 3.14
Friday	Sep 04	PROP 393	Prelab Lecture, Demonstrations, Problems		
Monday	Sep 07	No Class	Labor Day Vacation		
Tuesday	Sep 08	Chapter 3	79–87	13, 15, 19, 23	2.15, 2.18
Wednesday	Sep 09	Chapter 3	87–93	31, 33, 37, 45	2.19, 3.15–3.17, 5.7
Thursday	Sep 10	Chapter 3	93–102	53, 59, 65, 75	3.18, 3.19, 5.8, 4.2
Friday	Sep 11	PROP 353	Prelab Lecture, Demonstrations, Problems		
Monday	Sep 14	Chapter 3	102–112	77, 83, 85, 89	4.4, 5.2, 5.3
Tuesday	Sep 15	Chapter 3	112–123	91, 95, 111	5.4, 5.5
Wednesday	Sep 16	Chapter 4	133–141	7, 11, 13, 19	4.5–4.9
Thursday	Sep 17	Exam 1	Chapter 1, Chapter 2, Chapter 3		
Friday	Sep 18	STOI 423	Prelab Lecture, Demonstrations, Problems		
Monday	Sep 21	Chapter 4	141–148	21, 25, 29, 37	5.9–5.12, 4.11
Tuesday	Sep 22	Chapter 4	148–155	41, 49, 53, 55	4.10, 4.12, 4.14, 5.13
Wednesday	Sep 23	Chapter 4	155–164	57, 59, 61	5.6, 4.13, 5.14, 5.15
Thursday	Sep 24	Chapter 4	164–179	69, 79, 89	4.15–4.18
Friday	Sep 25	STOI 420	Prelab Lecture, Demonstrations, Problems		
Monday	Sep 28	Chapter 5	187–196	21, 27, 29	12.2, 12.3
Tuesday	Sep 29	Chapter 5	196–204	31, 35, 41	12.4, 12.5
Wednesday	Sep 30	Chapter 5	205–218	47, 53, 55	12.8, 12.9
Thursday	Oct 01	Chapter 5	218–224	61, 65, 69	12.10, 12.11
Friday	Oct 02	PROP 331	Prelab Lecture, Demonstrations, Problems		
Monday	Oct 05	Chapter 5	224–229	73, 79, 83	12.12

Day	Date	Topic	Reading	Problems	Saunders CD
Tuesday	Oct 06	Chapter 6	239–246	19, 21, 27, 31	6.2–6.6
Wednesday	Oct 07	Chapter 6	246–253	33, 39, 43, 47	6.7–6.10
Thursday	Oct 08	Chapter 6	254–257	49, 51, 53, 57	6.11–6.13, 6.18
Friday	Oct 09	Lab Challenge Prelab Lecture, Demonstrations, Problems			
Monday	Oct 12	Chapter 6	257–265	61, 65, 67, 69	6.14–6.16
Tuesday	Oct 13	Exam 2 Chapter 4, Chapter 5, Chapter 6			
Wednesday	Oct 14	Chapter 6	265–278	73, 81, 85, 87	6.17
Thursday	Oct 15	Chapter 7	287–296	35, 41, 43	7.2–7.5
Friday	Oct 16	THER 428 Prelab Lecture, Demonstrations, Problems			
Monday	Oct 19	Chapter 7	297–305	47, 51, 57, 59	7.6, 7.7
Tuesday	Oct 20	Chapter 7	305–308	67, 71, 73	7.8–7.12
Wednesday	Oct 21	Chapter 7	308–312	77, 81, 83	7.13, 7.14, 8.2–8.4
Thursday	Oct 22	Chapter 7	312–321	87, 93, 95	8.5–8.7
Friday	Oct 23	ANAL 395 Prelab Lecture, Demonstrations, Problems			
Monday	Oct 26	Chapter 7	322–333	105, 107, 119	8.9–8.16
Tuesday	Oct 27	Chapter 8	343–353	15, 17, 25	9.2, 9.3, 9.9, 9.11
Wednesday	Oct 28	Chapter 8	353–361	31, 33, 37	8.8, 8.11, 8.17, 8.18
Thursday	Oct 29	Chapter 8	362–366	41, 43, 53	9.10, 9.4, 9.5
Friday	Oct 30	ANAL 350 Prelab Lecture, Demonstrations, Problems			
Monday	Nov 02	Chapter 8	366–370	57, 59, 61	9.7, 9.8
Tuesday	Nov 03	Chapter 8	370–378	67, 71, 77	9.6, 9.12, 9.13
Wednesday	Nov 04	Chapter 8	378–397	79, 81, 85	9.14–9.17
Thursday	Nov 05	Exam 3 Chapter 7, Chapter 8			
Friday	Nov 06	REAC 456 Prelab Lecture, Demonstrations, Problems			
Monday	Nov 09	Chapter 9	407–420	13, 23, 27	10.3–10.8
Tuesday	Nov 10	Chapter 9	420–424	31, 33, 35	10.9, 10.10
Wednesday	Nov 11	Chapter 9	424–431	37, 41, 43	10.11–10.13
Thursday	Nov 12	Chapter 9	432–435	45, 53, 57	10.2
Friday	Nov 13	REAC 390 Prelab Lecture, Demonstrations, Problems			
Monday	Nov 16	Chapter 10	443–450	7, 29, 31	13.2–13.7
Tuesday	Nov 17	Chapter 10	450–461	35, 37, 41	13.12, 10.14–10.16
Wednesday	Nov 18	Chapter 10	462–470	45, 51, 55	13.14–13.16
Thursday	Nov 19	Chapter 10	470–482	63, 67, 73	3.9–3.12, 13.13

Day	Date	Topic	Reading	Problems	Saunders CD
Friday	Nov 20	ANAL 503	Prelab Lecture, Demonstrations, Problems		
Monday	Nov 23	No Class	Thanksgiving Vacation		
Tuesday	Nov 24	No Class	Thanksgiving Vacation		
Wednesday	Nov 25	No Class	Thanksgiving Vacation		
Thursday	Nov 26	No Class	Thanksgiving Vacation		
Friday	Nov 27	No Class	Thanksgiving Vacation		
Monday	Nov 30	Chapter 10	483–493	75, 79, 83	13.9–13.11, 13.17
Tuesday	Dec 01	Chapter 11	505–514	27, 31, 33	14.3, 14.4
Wednesday	Dec 02	Chapter 11	515–520	35, 39, 43	14.2, 14.5, 14.6
Thursday	Dec 03	Chapter 11	520–526	45, 47, 51	14.7
Friday	Dec 04	Lab Final	Prelab Lecture, Demonstrations, Problems		
Monday	Dec 07	Chapter 11	527–530	57, 59, 61	14.8, 14.9
Tuesday	Dec 08	Exam 4	Chapter 9, Chapter 10, Chapter 11		
Wednesday	Dec 09	Chapter 11	531–537	65, 67, 69	14.10
Thursday	Dec 10	Chapter 11	537–541	71, 73, 77	14.11
Friday	Dec 11	Final Review			
Wednesday	Dec 16	Final Exam	10:00 to 11:40 am, SL 3114.		