

CHE 106: General Chemistry Lecture, Fall 2009

GENERAL COURSE INFORMATION

Instructor

Professor Tim Korter
Office: 1-046 Center for Science and Technology
Office Hours: Wednesday, 3:00-5:00 PM and by appointment
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Course Description

This course concentrates on the fundamental principles and laws underlying chemical action, states of matter, atomic and molecular structure, chemical bonding, stoichiometry, properties of solutions, chemical equilibrium, and introductory thermodynamics.

Class Times and Locations

Lectures: Tuesday & Thursday 3:30-4:50 PM Gifford Auditorium (HB Crouse Hall)

Recitations:	Monday (M039)	11:40-12:35	Link 103
	Monday (M032)	2:15-3:10	Link 371
	Monday (M033)	3:45-4:40	Lyman 320
	Tuesday (M030)	12:30-1:25	Archbold 203
	Tuesday (M031)	12:30-1:25	Life Sciences Building 100
	Tuesday (M040)	5:00-5:55	Link 142
	Wednesday (M034)	9:30-10:25	Sims 237
	Wednesday (M041)	11:40-12:35	Sims 237
	Wednesday (M035)	2:15-3:10	Crouse Hinds 001
	Wednesday (M036)	5:15-6:10	Lyman 320
	Thursday (M037)	8:00-8:55	Center for Science and Tech 1-019
	Thursday (M038)	9:30-10:25	Life Sciences Building 100

Textbook and Supporting Materials (ALL AVAILABLE AT THE SU BOOKSTORE)

- Chemistry, The Central Science, 11th ed. by Brown, LeMay, Bursten, and Murphy (Pearson-Prentice Hall, 2009)
- Student's Guide, 11th ed. by Hill (Pearson-Prentice Hall, 2009)
- MasteringChemistry login information (<http://www.masteringchemistry.com/>)
Register using your SUID number and Course ID: MCKORTER07572.
- iClicker (electronic remote for in-class participation)
Register the iClicker at <http://www.iclicker.com/registration/> using your NetID (SU login name, not SUID number) and your iClicker serial number (8 characters) from the back of the device.

Your basic responsibilities include:

- Attend lectures, bring your iClicker to class, read the assigned material.
- Study your lecture notes and assigned text reading.
- Attend recitations.
- Do assigned homework on time and review them before exams. **Do not fall behind!**
- **BRING A CALCULATOR TO ALL LECTURES, RECITATIONS, AND EXAMS.**
- Take all of the examinations.

APPROXIMATE LECTURE SCHEDULE

The following schedule of classes lists the topics that will be covered on a particular date along with the relevant reading in the textbook. Complete the reading before the scheduled lecture time since it will make the lecture much easier to follow. Copies of the lecture notes will be put on the course web site.

DATE	TOPIC	TEXT READING (Chapter.Section)
Tues. Sep. 1	Syllabus/Course Overview Technology: MasteringChemistry, iClicker	Study the syllabus and blue pages of Preface
Thurs. Sep. 3	Introduction to Chemistry	1.1 – 1.3 Appendix A.1
Tues. Sept. 8	Measurement	1.4 - 1.6
Thurs. Sept. 10	Atomic Theory & Structure, Periodic Table	2.1 - 2.5
Tues. Sept. 15	Molecules, Ions, Compounds	2.6 - 2.9
Thurs. Sept. 17	Chemical Formulas, Reactions, Stoichiometry	3.1 - 3.2
Tues. Sept. 22	Mass, Moles	3.3 - 3.5
Thurs. Sept. 24	Limiting Reactant; Yields	3.6 - 3.7
Tues. Sept. 29	Ions/Precipitation and Acid-Base Reactions	4.1 - 4.3
Thurs. Oct. 1	FIRST EXAMINATION	Appendix A.1, Chapters 1,2,3
Tues. Oct. 6	Oxidation - Reduction Reactions, Solutions	4.4 - 4.6
Thurs. Oct. 8	Thermochemistry	5.1 - 5.4
Tues. Oct. 13	Thermochemistry	5.5 - 5.8
Thurs. Oct. 15	Light Waves, Photons	6.1 - 6.2
Tues. Oct. 20	Bohr, Quantum Mechanics	6.3 - 6.6
Thurs. Oct. 22	Electron Configurations, Pauli Principle	6.7 - 6.9
Tues. Oct. 27	Periodicity, Effective Charge	7.1 - 7.3
Thurs. Oct. 29	SECOND EXAMINATION	Chapters 4,5,6
Tues. Nov. 3	Ionization Energy	7.4 - 7.5
Thurs. Nov. 5	Metals, Nonmetals, Metalloids	7.6 - 7.8
Tues. Nov. 10	Ionic and Covalent Bonds, Polarity	8.1 - 8.4
Thurs. Nov. 12	Lewis Structures, Resonance	8.5 - 8.8

Tues. Nov. 17	Molecular Shapes, VSEPR Model, Polarity	9.1 - 9.4
Thurs. Nov. 19	Hybrid Orbitals, Molecular Orbitals	9.5 - 9.8
Tues. Nov. 24	NO CLASS	-
Thurs. Nov. 26	THANKSGIVING (NO CLASS)	-
Tues. Dec. 1	Gas Laws	10.1 - 10.5
Thurs. Dec. 3	THIRD EXAMINATION	Chapters 7,8,9
Tues. Dec. 8	Kinetic-Molecular Theory	10.6 - 10.9
Thurs. Dec. 10	<u>Optional</u> : Course Review Q & A	-
Mon. Dec. 15	CUMULATIVE FINAL EXAMINATION (12:30 PM – 2:30 PM)	All material

If you have any questions about the homework, the quizzes, the final, or anything else, it is the responsibility of the student to find the appropriate TA or Professor Korter to get help in a timely manner.

NOTE: The CHE 106 (General Chemistry *Lecture*) Instructor and TAs have no connection to the CHE 107 (General Chemistry *Laboratory*) course in any way. CHE 107 is taught and graded totally separately from CHE 106. If you have questions regarding CHE 107, you must contact the CHE 107 Instructor or TAs.

RECITATIONS

Each week in recitation, the homework exercises specified below will be discussed. Students will have the opportunity to ask questions about these exercises and also the relevant text and lecture material. At the end of each recitation, students will be given a short quiz taken from that week's homework set. If your recitation is canceled, you have no quiz that week, but your homework must be completed and turned in to your TA as they specify. Recitation grades are based on **quizzes, homework, and attendance.**

Teaching Assistants for this Course (TAs, recitation instructors)

Andrew Banyikwa (abanyikw@syr.edu)
 Christopher Fazen (cfazen@gmail.edu)
 Casey Simons (crsimons@syr.edu)
 Debbie Valentin (devalent@syr.edu)

TA office hours will be held in Room 115 of the Life Science Building (LSB). A schedule of office hours will be posted on the door of Room 115. Students are free to seek help from any of the ten CHE 106 TAs that are teaching this semester, not just the TA that is in charge of their particular recitation section.

RECITATION SCHEDULE

The textbook contains the answers to the odd-numbered problems. The Solutions Manual contains detailed solutions to these problems and several copies are held on reserve in the Science and Technology Library (Carnegie Library Building). If you are having difficulty, refer to the Solutions Manual and Students Guide to support your learning. The TA office hours in LSB 115 are also an excellent resource.

Recitation Dates	Chapter.Section	Exercises Due in Recitation	Exercises Due on MasteringChemistry
<i>Week of August 31</i>	NO RECITATIONS		
<i>Week of September 7</i>	1.1-1.5	1.16, 21, 24, 25, 27, 30, 31, 34, 39, 40	1.12, 14, 18, 36
<i>Week of September 14</i>	1.6 2.1-2.7	1.47, 49 2.9, 13, 16, 19, 26, 30, 31, 41, 42, 49, 58	1.42 2.20, 23, 38, 43, 46, 48, 56, 60
<i>Week of September 21</i>	2.8-2.9 3.1-3.5	2.65, 68, 71, 78 3.9, 10, 11, 14ab, 15, 20, 24ab, 25a, 28, 29, 34, 35, 43, 50a	3.22, 38, 48
<i>Week of September 28</i>	3.6-3.7 Review for Exam 1	3.57, 63ab, 68, 71	3.70, 74
<i>Week of October 5</i>	4.1-4.4	4.12, 13, 22, 24, 31, 34, 39, 40, 51, 53, 56	4.16, 20, 23, 35, 38, 50, 52
<i>Week of October 12</i>	4.5-4.6 5.1-5.4	4.60, 61, 65, 75, 82 5.13, 16, 21, 25, 27, 31, 32, 34, 35, 38, 39, 45	4.70 5.26, 42
<i>Week of October 19</i>	5.5-5.7 6.1-6.4	5.48, 49, 55, 61, 67, 71, 73, 76 6.10, 11, 15, 21, 25, 31, 35, 41	5.52, 64, 70 6.14, 24, 28, 34, 38, 44
<i>Week of October 26</i>	6.5-6.9 Review for Exam 2	6.48, 49, 53, 55, 59, 60, 62, 63, 67, 69	6.52, 54, 66, 70
<i>Week of November 2</i>	7.1-7.5	7.8, 9, 12, 15, 17, 21, 23, 28, 31, 33, 41, 44, 45, 47, 53	7.20, 26, 50
<i>Week of November 9</i>	7.6-7.8 8.1-8.6	7.58, 61, 65, 67, 69, 72, 75, 78 8.9, 13, 17, 20, 21, 23, 29, 32, 33, 37, 41, 43, 45, 48, 49, 53, 55	7.60 8.12, 16, 36, 40, 46, 52
<i>Week of November 16</i>	8.7-8.8 9.1-9.2	8.61, 63, 67, 69 9.12, 13, 15, 19, 21, 25, 28	8.66 9.16, 20
<i>Week of November 23</i>	NO RECITATIONS		
<i>Week of November 30</i>	9.3-9.8 Review for Exam 3	9.31, 35, 38, 40, 41, 43, 45, 49, 51, 55, 60, 61, 63, 64, 65, 69	9.36, 48, 54
<i>Week of December 7</i>	10.1-10.8	10.13, 14, 15, 20, 21, 25, 27, 30, 31, 35, 43, 45, 47, 57, 61, 63, 75, 77	10.26, 34, 40, 50, 54, 60, 66, 82

COURSE GRADING

Academic Honesty (from <http://academicintegrity.syr.edu>)

Complete academic honesty is expected of all students. Any incidence of academic dishonesty, as defined by the Syracuse University Academic Integrity Policy (<http://academicintegrity.syr.edu>), will result in both course sanctions and formal notification of the College of Arts & Sciences. In this course, students are allowed and strongly encouraged to study together, but exams and in-class/online problem sets must represent the work of the individual student. Online problem sets must be completed by each student using his or her own access account, though reference to the text and lecture notes is allowed.

Attendance

Attendance will be recorded in each Recitation and Lecture. Recitation attendance is explicitly used in the calculation of your Recitation grade. Your presence in Lecture will be recorded *via* your iClicker, but only if you participate in the in-class iClicker question and answer sessions. Lecture attendance will be used as extra credit in the course and will be worth 20 points (2% of the total possible score) and added directly to your overall class score. This is sufficient to help students falling on the borderline between two grade levels.

Absences due to a religion's holy day requirements or official Syracuse University commitments (e.g. athletic trips) will be excused. You must notify Professor Korter and your TA **in writing** at least one week before the absence; an opportunity to make up lecture or recitation class work will be provided.

Medical absences will be excused based on **written advice** from the Health Center or a health-care provider (based upon clinical findings and prescribed treatment recommendations). **NO VERBAL EXCUSES WILL BE ACCEPTED.** The medical document must specifically indicate that you were unable to attend class/recitation. All such absences will be verified by Chemistry Department staff.

THERE WILL BE ABSOLUTELY NO MAKEUP EXAMINATIONS EXCEPT IN THE CASE OF ADVANCE-NOTICE APPROVED ABSENCES.

Disability-Related Issues

If you have a learning or physical disability, please see Professor Korter as soon as possible (**during the first 2 weeks of the course**) to arrange for appropriate accommodations. No provisions/accommodations will be made if the instructor is notified after examinations. Students requiring special accommodations **MUST** register with the Office of Disability Services (804 University Avenue Room 309, Phone: Voice: (315) 443-4498; TDD: (315) 443-1371, E-Mail: odssched@syr.edu).

Exams

Exams will cover both material covered in lecture and the assigned text readings. Some questions will come from lecture (not covered in text) and others from the text (not covered in lecture). Many questions will be problems similar to assigned homework exercises. Lots of practice with problems is the key to success in this course. Each hourly exam will focus on specific chapters. The final exam will cover the entire semester.

Regular exams (**NOT the Final**) are given during the regular class period and are scheduled as follows:

First Hourly Examination	Thursday, October 1
Second Hourly Examination	Thursday, October 29
Third Hourly Examination	Thursday, December 3
FINAL EXAMINATION	MONDAY, DECEMBER 15 from 12:30-2:30 PM

Final Grade Determination

Course grades are based on total points earned out of a possible 1000 points. "Curving" will generally not be applied, but Professor Kortner reserves the right to do so. In such a case, scores will only be curved up and never down and therefore will never negatively impact your letter grade.

The final grade will be computed as follows:

Three, In-Class Hourly Exams (200 points each)	600 (60%)
Cumulative Final Exam (250 points)	250 (25%)
Recitation (100 points)	100 (10%)
MasteringChemistry Online Homework (50 points)	50 (5%)
	<u>Course Total : 1000 points (100%)</u>

Grade ranges based upon raw score percentages:

	A = $\geq 90\%$	A- = 88-89%
B+ = 85-87%	B = 80-84%	B- = 75-79%
C+ = 70-74%	C = 60-69%	C- = 55-59%
	D = 40-54%	
	F = $< 40\%$	