

# CHE 106: General Chemistry I Lecture, Fall 2016

## GENERAL COURSE INFORMATION

### Instructor

Professor Tim Korter

Office: Room 1-046, Center for Science and Technology

Email: [tmkorter@syr.edu](mailto:tmkorter@syr.edu)

Office Hours: by appointment, scheduled via e-mail ([tmkorter@syr.edu](mailto:tmkorter@syr.edu))

Course Website: <http://blackboard.syr.edu> (CHE.106.M045)

### Course Description

This course is designed for science and engineering students needing two semesters of general chemistry. After taking this course, students will understand the fundamental principles and applications of:

- states of matter
- chemical reactions (oxidation-reduction, acid-base, *etc.*)
- atomic and molecular structure
- nomenclature
- stoichiometry
- gas laws
- thermodynamics
- chemical bonding
- periodicity

### Class Times and Locations

- **Lectures: Mondays & Wednesdays 5:15 PM to 6:35 PM Stolkin Auditorium (Physics Building)**
- Recitations – Attend only the ONE for which you are registered (WARNING: Final locations may change.)

M046	M	08:25 AM to 09:20 AM	Sims Hall 237
M047	M	12:45 PM to 01:40 PM	Shafer Art Building 205
M048	M	03:45 PM to 04:40 PM	Shafer Art Building 121
M049	T	08:25 AM to 09:20 AM	Life Sciences Building 011
M051	T	06:30 PM to 07:25 PM	Sims Hall 241
M052	W	11:40 AM to 12:35 PM	Shafer Art Building 121
M053	Th	06:30 PM to 07:25 PM	Slocum Hall 104

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

- **Chemistry the Central Science** (13th edition or Syracuse Custom Edition) by Brown, LeMay, Bursten, Murphy, Woodward, Stoltzfus (Pearson/Prentice Hall, 2015)
- **MasteringChemistry On-Line Homework** 31-digit login/registration key  
**MasteringChemistry is accessed ONLY through the Blackboard course website.** This Blackboard version is often referred to as “modified MasteringChemistry”.
- NOTE: If you do not want to buy the textbook package from the SU Bookstore, both the e-book version of the textbook and the MasteringChemistry login can be purchased directly from: <http://masteringchemistry.com/>.

### Your basic course responsibilities include:

- Attend lectures, read the appropriate material prior to class time, and study your lecture notes.
- Attend recitations to help reinforce your learning.
- Do assigned homework ON TIME and review them before exams. **Do not fall behind!**
- Take all of the examinations.
- **BRING A CALCULATOR TO ALL EXAMS.** (cell phones/tablets/other devices are not allowed)

**If you have any questions or concerns about the homework, the in-class exams, or anything else, it is the responsibility of the student to contact Professor Korter to get help in a timely manner.**

### APPROXIMATE LECTURE SCHEDULE

The following schedule of classes lists the approximate topics that will be covered on particular dates along with the relevant readings 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
Monday, August 29	Introduction/Course Overview	Syllabus
Wednesday, August 31	Introduction to Chemistry	1.1-1.3, App. A.1
Monday, September 5	<b>NO CLASS — LABOR DAY</b>	-
Wednesday, September 7	Measurement	1.4-1.6
Monday, September 12	Atomic Theory, Periodic Table	2.1-2.5
Wednesday, September 14	Molecules, Ions, Compounds (naming)	2.6-2.8
Monday, September 19	Chemical Equations, Stoichiometry	3.1-3.4
Wednesday, September 21	Mass, Moles, Limiting Reagent	3.5-3.7
Monday, September 26	Ions/Precipitation and Acid-Base Reactions	4.1-4.3
<b>Wednesday, September 28</b>	<b>Exam #1 (Chapters 1, 2, 3)</b>	-
Monday, October 3	Oxidation - Reduction Reactions, Solutions	4.4-4.6
Wednesday, October 5	Thermochemistry	5.1-5.4
Monday, October 10	Thermochemistry	5.5-5.8
Wednesday, October 12	Light Waves, Photons	6.1-6.2
Monday, October 17	Bohr Model, Quantum Mechanics	6.3-6.6
Wednesday, October 19	Orbitals & Electron Configuration	6.7-6.9
Monday, October 24	Periodicity, Effective Charge	7.1-7.3
<b>Wednesday, October 26</b>	<b>Exam #2 (Chapters 4, 5, 6)</b>	-
Monday, October 31	Ionization, Affinity, Metal Character	7.4-7.6
Wednesday, November 2	Chemical Bonding	8.1-8.4
Monday, November 7	Lewis Structures	8.5-8.8
Wednesday, November 9	Molecular Shapes, VSEPR Model, Polarity	9.1-9.4
<b>Monday, November 14</b>	<b>Exam #3 (Chapters 7 and 8)</b>	-
Wednesday, November 16	Hybrid Orbitals, Molecular Orbitals	9.5-9.7
Monday, November 21	<b>NO CLASS — THANKSGIVING</b>	-
Wednesday, November 23	<b>NO CLASS — THANKSGIVING</b>	-
Monday, November 28	Gas Laws	10.1 - 10.5
Wednesday, November 30	Kinetic-Molecular Theory	10.6 - 10.8
Monday, December 5	<b>NO CLASS — Open Office Hours</b>	All Chapters
<b>Wednesday, December 7</b>	<b>Exam #4 (Chapters 9 and 10)</b>	-
<b>Monday, December 12</b>	<b>*OPTIONAL* CUMULATIVE EXAM NOTE: 5:15 PM to 7:15 PM</b>	<b>ALL CHAPTERS</b>

## RECITATIONS

Recitation attendance is NOT mandatory and will NOT be recorded. There is NO grade associated with the recitation.

Each week in recitation, the homework assignments specified on the MasteringChemistry website will be discussed. Students will have the opportunity to ask questions about these exercises and also the relevant text and lecture material. Recitations are designed to help you learn the material and answer particular questions that you may have. They are run as question and answer sessions and are in no way intended to replace the regular lecture. *However, I suggest that you attend the recitations to enhance your learning.*

**Please note that the assigned homework is NOT due in recitation. All homework must be performed and submitted on the MasteringChemistry website. See the MasteringChemistry website for specific due dates and times. NO EXCEPTIONS.**

Teaching Assistants (TAs) for the CHE 106 course (recitation instructors)

Corey Kroptavich	crkropta@syr.edu
Shafi Ali	sali09@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 CHE 106 TAs that are teaching this semester, not just the TA that is in charge of their particular recitation section.

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.

## RECITATION & HOMEWORK SCHEDULE

The following is an APPROXIMATE schedule of material that will be discussed in the recitations and the homework that is due on the MasteringChemistry website organized by week. ALL homework is to be done and turned in on the MasteringChemistry website. No exceptions. The textbook contains the answers to some of the odd-numbered problems. If you are having difficulty, refer to the Student Guide included in your textbook package to support your learning. Several copies of the Student Guide are held on reserve in the Carnegie Library. The TA office hours in LSB 117 are also an excellent resource.

The MasteringChemistry tutorials are MANDATORY and they are graded. It is highly recommended that you complete the Tutorial for a chapter BEFORE attempting the Homework for that chapter since the Tutorials are designed to help prepare you for the Homework problems.

**NOTE: It is strongly suggested that you complete your homework BEFORE the listed deadlines. Do not procrastinate.**

**NOTE: Notice that during exam weeks, some of the homework that will be included in the exam subject matter may be due AFTER the exam date. Despite the homework due date, you are still responsible for that material on the exam.**

**NOTE: Turning in your homework late, is better than not turning it in at all.**

The weekly schedule shown here runs from Monday to Sunday.

>> CONSULT THE MASTERINGCHEMISTRY WEBSITE FOR ACTUAL ASSIGNED PROBLEMS. <<

**NOTE: BOTH TUTORIAL AND HOMEWORK ASSIGNMENTS ARE MANDATORY.**

Recitation Weeks	General Material to be Discussed	MasteringChemistry Assignments	Due Date (due at ~midnight, 11:59PM)
Week of August 29	<b>NO RECITATIONS / NO HOMEWORK DUE</b>		
Week of September 5	Chapter 1	Introduction to MasteringChemistry, Homework & Tutorial #1	Sunday, September 11
Week of September 12	Chapter 2	Homework & Tutorial #2	Sunday, September 18
Week of September 19	Chapter 3	Homework & Tutorial #3	Sunday, September 25
Week of September 26	<b>Exam #1</b>	-	<b>NO HOMEWORK DUE</b>
Week of October 3	Chapter 4	Homework & Tutorial #4	Sunday, October 9
Week of October 10	Chapter 5	Homework & Tutorial #5	Sunday, October 16
Week of October 17	Chapter 6	Homework & Tutorial #6	Sunday, October 23
Week of October 24	<b>Exam #2</b>	-	<b>NO HOMEWORK DUE</b>
Week of October 31	Chapter 7	Homework & Tutorial #7	Sunday, November 6
Week of November 7	Chapter 8	Homework & Tutorial #8	Sunday, November 13
Week of November 14	<b>Exam #3</b>	-	<b>NO HOMEWORK DUE</b>
Week of November 21	<b>THANKSGIVING BREAK</b>	<b>THANKSGIVING BREAK</b>	<b>NO HOMEWORK DUE</b>
Week of November 28	Chapter 9	Homework & Tutorial #9	Sunday, December 4
Week of December 5	Chapter 10 & <b>Exam #4</b>	Homework & Tutorial #10	Sunday, December 11

## COURSE POLICIES

### 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 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 is not recorded in lecture. However, there is a very strong correlation with good attendance and good grades, so it is in your own best interest to attend lectures regularly.

### Syracuse University's religious observances policy ([http://supolicies.syr.edu/emp\\_ben/religious\\_observance.htm](http://supolicies.syr.edu/emp_ben/religious_observance.htm))

recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they **notify their instructors before the end of the second week of classes**. For fall and spring semesters, an online notification process is available through MySlice/Student Services/Enrollment/My Religious Observances/Add a Notification from the first day of class until the end of the second week of class. The religious observances policy requires **accommodation for the religious holiday itself, not for travel days** if a student will be observing the holiday elsewhere.

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). See: <http://health.syr.edu/students/policies.html>  
**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 NO MAKEUP EXAMINATIONS EXCEPT IN THE CASE OF ADVANCE-NOTICE APPROVED ABSENCES. ALL ADVANCED-NOTICE APPROVALS WILL RESULT IN AN OPPORTUNITY TO TAKE THE EXAM IN ADVANCE, NOT AFTER THE REGULARLY SCHEDULED EXAM TIME.

### 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, Suite 303, Phone: Voice: (315) 443-4498; TDD: (315) 443-1371, E-Mail: [odssched@syr.edu](mailto:odssched@syr.edu)). Exams **MUST** be administered by the Office of Disability Services.

## COURSE GRADING

### Exams

Exams will cover both material covered in lecture and the assigned text readings. Some questions may come from lecture (not covered in text) and others from the text (not covered in lecture). The majority of questions will be problems similar to the assigned homework and tutorial exercises. Lots of practice with problems is the key to success in this course. Each exam will focus on specific chapters as noted in the syllabus and in the lecture notes.

Exams are given during the regular class period, with the exception of the OPTIONAL cumulative exam.

<b>First Exam</b>	<b>Wednesday, September 28</b>
<b>Second Exam</b>	<b>Wednesday, October 26</b>
<b>Third Exam</b>	<b>Monday, November 14</b>
<b>Fourth Exam</b>	<b>Wednesday, December 7</b>
<b>*OPTIONAL* Cumulative Exam</b>	<b>MONDAY, DECEMBER 12 from 5:15 PM to 7:15 PM</b>

**>>>>> MAKE YOUR TRAVEL PLANS NOW! <<<<<<**

**NO ACCOMMODATIONS FOR STUDENT TRAVEL/EXAM CONFLICTS WILL BE MADE.**

### What is the Optional Cumulative Exam?

The exam scheduled for **December 12** is a *completely optional exam* that students may choose to take to replace the lowest score they have received on any of the regular in-class exams taken during the semester. For example, a student scores 80%, 30%, 75%, and 85% on the in-class exams, and chooses to take the cumulative exam. They score a 60% on the cumulative exam, which then replaces the 30% grade they scored on Exam #2. There is no penalty for receiving a low score on the cumulative exam. Warning: The cumulative exam will be more difficult than a regular in-class exam.

### Final Grade Determination

Course grades are based on the exams and the on-line homework. The grading scale shown below is based on historical class averages and grade distributions for the first-semester general chemistry course. Additional “curving” of the class grades will normally NOT be applied, but Professor Korter reserves the right to do so in extraordinary cases. In such a case, scores will only be curved up (not down) and therefore will never negatively impact your letter grade.

There will be no “extra credit” offered in this course.

The final grade will be computed using the following items and weightings:

Four, In-Class Exams (20% each)	80%
MasteringChemistry Online Homework	20%
<b>Course Total:</b>	<b>100%</b>

The equation to calculate your overall course raw score percentage is:

$$(\text{Exam \#1 \%}) \times 0.20 + (\text{Exam \#2 \%}) \times 0.20 + (\text{Exam \#3 \%}) \times 0.20 + (\text{Exam \#4 \%}) \times 0.20 + (\text{Homework \%}) \times 0.20 = \text{Overall \%}$$

Letter grade ranges based upon raw score percentages:

A- = 89%	A = $\geq 90\%$	
B- = 79%	B = 80-87%	B+ = 88%
C- = 69%	C = 70-77%	C+ = 78%
	D = 60-68%	
	F = $\leq 59\%$	