

**CHE 106 – General Chemistry I Lecture (M013)**  
**Fall 2016 Semester**  
**MWF 12:45 – 1:40 PM**  
**Stolkin Auditorium – Physics Building**

<b>Instructor</b>	Prof. Dustin McCall
<b>Contact Information</b>	dmccall@syr.edu
<b>Office</b>	Center for Science and Technology 2-020
<b>Office Hours</b>	Monday 2:00 – 3:00 PM
<b>Website</b>	<a href="http://blackboard.syr.edu">http://blackboard.syr.edu</a> (CHE.106.M013)
<b>Recitation Teaching Assistant Office Hours</b>	Yuetian Chen (ychen208@syr.edu) Valerie Lopez (valopez@syr.edu) Annastacia Stubbs (adstubbs@syr.edu) 115 Life Sciences Building*

\* Teaching assistant office hours to be announced

**Course Description:**

Fundamental principles and laws underlying chemical action, states of matter, atomic and molecular structure, chemical bonding, stoichiometry, properties of solutions, chemical equilibria, and introductory thermochemistry (3 credits)

This course is composed of a lecture and recitation component. Please check with your course schedule for the time and meeting place of your recitation section.

**Co-requisite:**

CHE 107 – General Chemistry Laboratory I (1 credit). *Please note that this course should be taken in concert with CHE 106 but is a separate course with separate staff and grading. Please check with your course schedule for the time and meeting place of your laboratory class. All questions regarding CHE 107 should be forwarded to the CHE 107 instructor or teaching assistants.*

**Learning Outcomes:**

- Interpret and predict chemical phenomena through chemical behavior
- Understand selected chemical processes
- Solve new problems related to chemical behavior
- Understand atomic structure, chemical reactions, stoichiometry, energy, thermochemistry, bonding, and gases
- Understand topics at the conceptual and quantitative levels

### **Student Responsibilities:**

- Attend lectures, participate, listen, and learn
- Read the assigned material in the text
- Study lecture notes and assigned material in the text
- Do the assigned online homework assignments before they are due and review them regularly
- Regularly attend recitation sections and participate
- Take all examinations, including the final examination
- Always have a scientific calculator
- Contact Prof. McCall or a teaching assistant if you have any questions about the course or the material covered in the course
- Do your best not to fall behind in the course as it difficult to recover

### **Required Texts and Supplemental Material:**

**Text:** Chemistry, The Central Science, 13<sup>th</sup> ed. by Brown, LeMay, Bursten, Murphy, Woodward, and Stoltzfuz (Pearson Education, Inc. - 2015)

**Online Homework:** *MasteringChemistry* which is now accessed through Blackboard

The text and MasteringChemistry access code can be purchased through the Syracuse University Bookstore as a package.

### **Additional Texts and Supplemental Material:**

The Student Guide, 13<sup>th</sup> ed. by Brown and Hill (Pearson Education, Inc. – 2015)

Solutions Manuals are available on reserve at the Science and Technology Library. The Solutions Manual contains detailed solutions to odd-numbered problems from the text.

### **Grading:**

In-Class Examinations:	<b>60%</b>
Comprehensive Final Exam:	<b>30%</b>
MasteringChemistry Homework Assignments:	<b>10%</b>
Course Total:	<b>100%</b>

A	≥ 90%
A-	≥ 88%
B+	≥ 85%
B	≥ 80%
B-	≥ 75%
C+	≥ 70%
C	≥ 60%
C-	≥ 55%
D	≥ 45%
F	< 45%

No “extra credit” will be offered in this course.

### **Examinations:**

Examinations will cover material from the text, lectures, and MasteringChemistry homework assignments. Please bring a scientific calculator to all exams. **Graphing calculators and cell phones are not allowed during examinations and will be confiscated during the examination if used.**

**Examination I**.....Wednesday, September 28, 12:45-1:40 PM  
**Examination II**.....Wednesday, October 26, 12:45-1:40 PM  
**Examination III**.....Wednesday, November 30, 12:45-1:40 PM  
**FINAL EXAMINATION**.....**MONDAY, DECEMBER 12, 12:45-2:45 PM**

All examinations will be held in Stolkin Auditorium in the Physics Building

### **Online Homework Assignments:**

1. Log into Blackboard and select “CHE.106.M013.FALL16.General Chemistry I Lecture” from “My Courses”
2. Select “Tools” on the left side menu.
3. Select “Pearson’s MyLab & Mastering”
4. Select any course link in the top area of the Pearson’s MyLab & Mastering Tools page
5. If you have a Pearson account already, log in using your Pearson username and password. If you do not have a Pearson account, select “Create” and follow instructions
6. Enter you access code purchased from the Syracuse University Bookstore
7. From the “You’re Done” page, select “Go to My Courses”

Online homework assignments will be posted on MasteringChemistry once per week and will reflect content material learned in lecture for that week. Online homework assignment due dates will be posted on MasteringChemistry. It is your responsibility to stay vigilant regarding the online homework assignment due dates.

Each student is expected to independently complete online homework assignments using their individual MasteringChemistry account.

**All tutorials are graded so please remember to complete them!**

### **Attendance:**

Attendance for lecture is not mandatory but is strongly recommended as not all course material covered during the examination will come from the text but rather from the lecture notes.

Attendance for examinations is mandatory and all unexcused absences will result in an examination grade of zero. All planned, excused absences (religious observances) must be discussed with Prof. McCall at least one week prior to the examination date and the make-up examination will be given before the regularly scheduled examination date.

Unplanned excused absences include medical emergencies which require a **WRITTEN EXCUSE** signed by the Health Center or a health-care provider. The signed, written excuse must explain why you were unable to attend that specific examination and the time and date that you were seen by the health-care provider. All absences will be approved by Prof. McCall and the Chemistry Department Staff. NO VERBAL EXCUSES WILL BE ACCEPTED.

### **Recitations:**

Recitation will be held once a week and students will have the opportunity to ask questions regarding course material or homework assignments for that week. Recitation is designed so students can ask questions to clarify confusion regarding course material but are NOT a replacement for lecture. Attendance for recitation is not mandatory but students are strongly encouraged to attend.

<b>Section</b>	<b>Day</b>	<b>Time</b>	<b>Place</b>	<b>Teaching Assistant</b>
M014	Monday	3:45 – 4:40 PM	Link Hall 103	Annastacia Stubbs
M015	Tuesday	3:30 – 4:25 PM	Life Sciences Building 011	Valerie Lopez
M016	Monday	2:15 – 3:10 PM	Shaffer Art Building 121	Yuetian Chen
M017	Monday	10:35 – 11:30 AM	Bowne Hall 104	Valerie Lopez
M019	Monday	8:25 – 9:20 AM	Sims Hall 241	Annastacia Stubbs
M021	Monday	9:30 – 10:25 AM	Sims Hall 237	Valerie Lopez
M022	Tuesday	5:00 – 5:55 PM	Shaffer Art Building 221D	Yuetian Chen

### Tentative Lecture Schedule:

The schedule is tentative and is subject to change at the instructor's discretion.

<b>Monday</b>	<b>Wednesday</b>	<b>Friday</b>
<b>8/29</b> Course Overview and Introduction to Chemistry/ Math Skills (Chapter 1)	<b>8/31</b> Introduction to Chemistry/ Math Skills and Classification of Matter (Chapter 1)	<b>9/2</b> Measurements (Chapter 1)
<b>9/5</b> Labor Day No Classes	<b>9/7</b> Unit Conversion and Dimensional Analysis (Chapter 1)	<b>9/9</b> Atomic Theory, Atomic Structure, and the Periodic Table (Chapter 2)
<b>9/12</b> Molecules, Compounds, and Ions (Chapter 2)	<b>9/14</b> Naming Inorganic and Simple Organic Compounds (Chapter 2)	<b>9/16</b> Chemical Equations, Chemical Reactivity, and Stoichiometry (Chapter 3)
<b>9/19</b> Mass and Formula Weight (Chapter 3)	<b>9/21</b> Mole Theory (Chapter 3)	<b>9/23</b> Limiting Reactants and Theoretical Yield (Chapter 3)
<b>9/26</b> Precipitation and Acid/Base Reactions (Chapter 4)	<b>9/28</b> <b>EXAMINATION I</b> (Chapters 1,2,3)	<b>9/30</b> Oxidation-Reduction Reactions (Chapter 4)

<b>10/3</b> Solution Calculations and Stoichiometry (Chapter 4)	<b>10/5</b> Energy and Thermodynamic Laws (Chapter 5)	<b>10/7</b> Enthalpy of Reaction (Chapter 5)
<b>10/10</b> Calorimetry and Hess's Law (Chapter 5)	<b>10/12</b> Enthalpy of Formation and Special Topics (Chapter 5)	<b>10/14</b> Electromagnetic Spectrum, Light Waves, and Photons (Chapter 6)
<b>10/17</b> Bohr Model and Quantum Mechanics (Chapter 6)	<b>10/19</b> Quantum Mechanics and Orbitals (Chapter 6)	<b>10/21</b> Electron Configuration and Pauli Exclusion Principle (Chapter 6)
<b>10/24</b> Periodic Trends and Effective Nuclear Charge (Chapter 7)	<b>10/26</b> <b>EXAMINATION II</b> (Chapters 4,5,6)	<b>10/28</b> Ionization Energy and Electron Affinity (Chapter 7)
<b>10/31</b> Metals, Nonmetals, and Metalloids (Chapter 7)	<b>11/2</b> Covalent and Ionic Bonding (Chapter 8)	<b>11/4</b> Polarity and Electronegativity (Chapter 8)
<b>11/7</b> Lewis Structures and Resonance Structures (Chapter 8)	<b>11/9</b> Comparing Covalent Bonds (Chapter 8)	<b>11/11</b> Molecular Shapes and VSEPR Theory (Chapter 9)
<b>11/14</b> Molecular Polarity and Orbital Overlap (Chapter 9)	<b>11/16</b> Hybrid Orbitals and Multiple Bonds (Chapter 9)	<b>11/18</b> Molecular Orbital Theory (Chapter 9)
<b>11/21</b> Thanksgiving Break No Classes	<b>11/23</b> Thanksgiving Break No Classes	<b>11/25</b> Thanksgiving Break No Classes
<b>11/28</b> Introduction to Gases and Gas Laws (Chapter 10)	<b>11/30</b> <b>EXAMINATION III</b> (Chapters 7,8,9)	<b>12/2</b> Ideal Gas Law (Chapter 10)
<b>12/5</b> Gas Mixtures, Partial Pressures, and Kinetic Molecular Theory of Gases (Chapter 10)	<b>12/7</b> Effusion, Diffusion, and Real Gases (Chapter 10)	<b>12/9</b> Review for Final Examination (Chapters 1-10)
<b>12/12</b> <b>FINAL EXAMINATION</b> <b>STOLKIN AUDITORIUM</b> <b>12:45 PM – 2:45 PM</b> (Chapters 1-10)		

## **Academic Integrity:**

Complete academic honesty is expected of all students. Students are expected to complete examinations and online homework assignments independently and the examinations and online homework assignments must represent the work of the individual student. Please refer to Syracuse University's Academic Integrity Policy and the statement below:

“Syracuse University’s academic integrity policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The university policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same written work in more than one class without receiving written authorization in advance from both instructors. The presumptive penalty for a first instance of academic dishonesty by an undergraduate student is course failure, accompanied by a transcript notation indicating that the failure resulted from a violation of academic integrity policy. SU students are required to read an online summary of the university’s academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice. For more information and the complete policy, see <http://academicintegrity.syr.edu/>.”

## **Disability-Related Accommodations:**

If you believe that you need accommodations for a disability, please speak with Prof. McCall within the first two weeks of the course to arrange for accommodations. No accommodations will be made if the instructor is notified after an examination.

“If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498, TDD: (315) 443-1371 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.”

### **Diversity and Disability Statement:**

“Syracuse University values diversity and inclusion; we are committed to a climate of mutual respect and full participation. Our goal is to create learning environments that are useable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, we invite any student to meet with the instructor to discuss additional strategies beyond accommodations that may be helpful to your success.”

### **Religious Observances Policy:**

“SU religious observances notification and policy, found at <http://hendricks.syr.edu/spiritual-life/index.html>, recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays 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 regular session classes and by the submission deadline for flexibly formatted classes.

For fall and spring semesters, an online notification process is available for students in **My Slice / StudentServices / Enrollment / MyReligiousObservances / Add a Notification**. Instructors may access a list of their students who have submitted a notification in My Slice Faculty Center.”

***By enrolling in this course, you agree to abide by all conditions outlined in this syllabus. The contents of this syllabus can be changed at any time by Prof. McCall at his discretion.***