# Chemistry 116:

# General Chemistry II Lecture

# Spring Semester 2017

**General Course Information:**

**Instructor:** Dr. Jonathan French
**Office:** Life Sciences Complex 117
**Office Hours:** Tuesday 5:10-6:10 PM
**Email:** jmfrench@syr.edu
**Teaching assistants:**
Andrew Davis: adavis11@syr.edu
Laxmikant Pathade: lpathade@syr.edu

**Class Time: Tu and Th 3:30-4:50 PM HB Crouse Gifford**

**Recitations:** Attend the ONE for which you are registered

| | | | |
|---|---|---|---|
| CHE 116 M010 | W | 03:45 PM to 04:40 PM | Life Sciences 200 |
| CHE 116 M011 | M | 12:45 PM to 01:40 PM | Physics Building 106 |
| CHE 116 M012 | M | 05:15 PM to 06:10 PM | Life Sciences 156 |
| CHE 116 M013 | M | 06:45 PM to 07:35 PM | Life Science 011 |
| CHE 116 M014 | Tu | 09:30 AM to 10:25 AM | Link Hall 103 |
| CHE 116 M015 | Tu | 02:00 PM to 02:55 PM | Life Sciences 300 |
| CHE 116 M016 | Tu | 05:00 PM to 05:55 PM | Life Sciences 011 |
| CHE 116 M017 | W | 10:35 AM to 11:30 AM | Sims Hall 331 |
| CHE 116 M020 | M | 10:35 AM to 11:30 AM | Life Sciences 200 |

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

1. **Chemistry the Central Science** (**13th edition** or Syracuse Custom Edition) by Brown, LeMay, Bursten, Murphy, Woodward, Stoltzfus (Pearson/Prentice Hall, 2015)

2. **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".

   Course Code: french47856

**Your basic course responsibilities include:**

1. Attend lectures, read the appropriate material prior to class time, and study your lecture notes.
2. Attend recitations to help reinforce your learning.
3. Do assigned homework ON TIME and review them before exams.
4. If you need help or fall behind please contact either Dr. French or your TAs for additional help

## APPROXIMATE LECTURE SCHEDULE

Please complete the reading before the scheduled lecture.

| DATE | TOPIC | TEXT READING |
|---|---|---|
| Tuesday, January 17th | Syllabus/Course Overview | Syllabus |
| Thursday, January 19th | Reaction Rates, Concentration, and Rate | 14.1 – 14.3 |
| Tuesday, January 24th | Conc. Vs. Time, Temperature. and Rate | 14.4 – 14.5 |
| Thursday, January 26th | Reaction Mechanism, Catalysis | 14.6 – 14.7 |
| Tuesday January 31st | Chemical Equilibrium, Equilibrium Constants | 15.1 – 15.3 |
| Thursday, February 2nd | Equilibrium Constants, Le Chatelier's Principle | 15.4 – 15.7 |
| Tuesday, February 7th | Acids and Bases, pH | 16.1 – 16.4 |
| **Thursday, February 9th** | **Exam #1 (Chapters 14, 15)** | - |
| Tuesday, February 14th | Strong/Weak Acids and Bases | 16.5 – 16.8, 16.11 |
| Thursday, February 16th | Common Ion Effect, Buffers | 17.1 – 17.2 |
| Tuesday, February 21st | Solubility Equilibria | 17.4 |
| Thursday, February 23rd | Solubility Equilibria, Precipitation | 17.5 – 17.6 |
| Tuesday, February 28th | Intermolecular Forces, Liquids | 11.1 – 11.3 |
| **Thursday, March 2nd** | **Exam #2 (Chapters 16, 17)** | - |
| Tuesday, March 7th | Phase Changes, Phase Diagrams | 11.4 – 11.6 |
| Thursday, March 9th | Entropy, Laws of Thermodynamics | 19.1 – 19.2 |
| **Tuesday, March 14th** | **NO CLASS – SPRING BREAK** | - |
| **Thursday, March 16th** | **NO CLASS – SPRING BREAK** | - |
| Tuesday, March 21st | Entropy, Laws of Thermodynamics | 19.3 – 19.4 |
| Thursday, March 23rd | Gibbs Free Energy | 19.5 – 19.7 |
| Tuesday, March 28th | Solutions | 13.1 – 13.3 |
| Thursday, March 30th | Solutions, Colligative Properties | 13.4 – 13.6 |
| Tuesday, April 4th | Green Chemistry | 18.3 – 18.5 |
| **Thursday, April 6th** | **Exam #3 (Chapters 11, 13, 19)** | - |
| Tuesday, April 11th | Hydrocarbons: Alkanes, Alkenes, Alkynes | 24.1 – 24.3 |
| Thursday, April 13th | Functional Groups, Chirality | 24.4 – 24.5 |
| Tuesday, April 18th | Biochemistry | 24.6 – 24.10 |
| Thursday, April 20th | Structure of Solids, Semiconductors | 12.1 – 12.4 |
| Tuesday, April 25th | Solids (continued) | 12.5 – 12.7 |
| Thursday, April 27th | Materials: Polymers, Nanomaterials | 11.7, 12.8 – 12.9 |
| **Tuesday, May 2nd** | **Review Chapters 11.7, 18, 12, 24** | - |
| **Tuesday May 9th** | **FINAL EXAM 3:00 PM to 5:00 PM** | ALL CHAPTERS |

**RECITATIONS (Attendance is NOT mandatory)**

Recitations will serve two purposes this semester: first recitation will consist of an optional quiz, and second recitation will provide students with an opportunity to get help on homework or other material from teaching assistants. The quiz will consist of 3-5 questions and will be given within the first five minutes of recitation. If you are late to recitation (after the quiz has been given and collected) you can not take the quiz, no exceptions. There will be 10 quizzes and they will count toward **2 bonus points** on your final course grade. I will take the average of your 8 highest quizzes and multiply that by the 2 bonus points available. For example, if your quiz average is 50%, I would give you 1 bonus point added on your final average.

Each week in recitation, the homework assignments specified on the MasteringChemistry website will be discussed. You 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.

**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.**

TA office hours will be held in Room 115 of the Life Science Complex (LSC). 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 116 TAs that are teaching this semester, not just the TA that is in charge of your particular recitation section.

**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.

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. Late assignments will be penalized at 5% off per day late. Turning in your homework late, is better than not turning it in at all.**

**CONSULT THE MASTERINGCHEMISTRY WEBSITE FOR ACTUAL ASSIGNED PROBLEMS.**

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

| Recitation Week | General Material to be Discussed | MasteringChemistry Assignments | Due Date (due at ~midnight, 11:59PM) |
|---|---|---|---|
| January 16th | **NO RECITATIONS / NO HOMEWORK DUE** | | |
| January 23rd | Chapter 14 | Homework & Tutorial #1 | Sunday, January 29th |
| January 30th | Chapter 15 | Homework & Tutorial #2 | Sunday, February 5th |
| February 6th | **Exam #1** | - | **NO HOMEWORK DUE** |
| February 13th | Chapter 16 | Homework & Tutorial #3 | Sunday February 19th |
| February 20th | Chapter 17 | Homework & Tutorial #4 | Sunday, February 26th |
| February 27th | **Exam #2** | - | **NO HOMEWORK DUE** |
| March 6th | Chapter 11 | Homework & Tutorial #5 | Sunday, March 12th |
| March 13th | **Spring Break** | **Spring Break** | **NO HOMEWORK DUE** |
| March 20th | Chapter 19 | Homework & Tutorial #6 | Sunday, March 26th |
| March 27th | Chapter 13 | Homework & Tutorial #7 | Sunday, April 2nd |
| April 3rd | **Exam #3** | - | **NO HOMEWORK DUE** |
| April 10th | Chapter 18 | Homework & Tutorial #8 | Sunday April 16th |
| April 17th | Chapter 24 | Homework & Tutorial #9 | Sunday, April 23rd |
| April 24th | Chapter 12 | Homework & Tutorial #10 | Sunday, April 30th |
| May 1st | Review | - | **NO HOMEWORK DUE** |

**NOTE: The CHE 116 (General Chemistry *Lecture*) Instructor and TAs have no connection to the CHE 117 (General Chemistry *Laboratory*) course in any way. CHE 117 is taught and graded totally separately from CHE 116. If you have questions regarding CHE 117, you must contact the CHE 117 Instructor or TAs.**

## COURSE POLICIES

### Academic Honesty:

"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 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 work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. 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 about the policy, see http://academicintegrity.syr.edu.

**Attendance**

Attendance is not recorded in lecture. However, I am providing a second opportunity to obtain bonus points. There will be a series of in-class "clicker" questions given during the semester. Credit will be given for simply answering questions (it will help me track the class progress). There are 24 lectures total and **2 bonus** points will be awarded if you answer 70% of the clicker questions in at least 18 of those lectures.

**Syracuse University's religious observances policy**

(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 contact me 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). 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. Each exam will focus on specific chapters as noted in the syllabus and in the lecture notes.

Exam pickup: will be limited to one calendar month. This means that if you take an exam on February 25th, that exam will be available in the main office for you to look at, with the scantron, through March 25th.

**BRING A NON GRAPHING CALCULATOR TO ALL EXAMS.**
**cell phones/tablets/other devices are not allowed**

Exams are given during the regular class period, except for the **FINAL** exam.

| | |
|---|---|
| **First Exam** | **Thursday, February 9th** |
| **Second Exam** | **Thursday, March 2nd** |
| **Third Exam** | **Thursday, April 6th** |
| **Final Exam** | **Tuesday, May 9th**<br>**from 3:00 PM to 5:00 PM** |

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

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

### Final Grade Determination

Course grades are based on the exams and the on-line homework. Additional "curving" of the class grades will normally NOT be applied, but the Chemistry Dept. 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.

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

| | |
|---|---|
| Four Exams (20% each) | 80% |
| MasteringChemistry Online Homework | 20% |

Course Total: 100%

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

(Exam #1 %)×0.20 + (Exam #2 %)×0.20 + (Exam #3 %)×0.20 + (Exam #4 %)×0.20 + (Homework %)×0.20 = Overall % + Bonus Points %

Letter grade ranges based upon raw score percentages:

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

*Dr. French reserves the right to change this syllabus at any time during the semester*