CHEM 111
Introductory Chemistry I
Fall 2015

Dr. Maria V. Schiza
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Office Hours: M, W, Th 10:00-11:00am
Fri 10:00-12:00pm
*(other office hours by appointment)

Lecture: M W F 9:00-9:50am (Caputo 149)
Recitation/Lab:
Section A: Mon 1:00-1:50pm (Caputo 153)/
          2:00-3:50pm (Caputo 328)
Section B: Tue 8:00-8:50am (Caputo 153)/
          9:00-10:50am (Caputo 328)
Section C: Tue 1:00-1:50pm (Caputo 153)/
          2:00-3:50pm (Caputo 328)

Course Materials and Supplies:

- **Laboratory Notebook:** Permanently bound notebook (NOT a ring binder), approximately 7” x 9.5”, quadrille-ruled (Bookstore)
- **Safety Glasses/Goggles:** (Bookstore or Chemistry supply room: Caputo 330)
- **Calculator:** Scientific calculator ONLY capable of performing logarithmic (log, ln) and exponential (10^x, e^x, y^x) functions. (Mobile device usage is not allowed during exams)

Course Description and Learning Objectives:
CHEM111 is the first semester course of General Chemistry (followed by CHEM112) for students majoring in chemistry as well as biology, earth science and physics. Learning the material covered in CHEM111 provides students with a foundational understanding of scientific principles needed in future studies in any field of science. Students who successfully complete CHEM111 should have a fundamental understanding of chemical stoichiometry, atomic structure, ideal gas behavior, chemical energy, intermolecular forces, covalent and ionic bonding, and properties of liquids, solutions, and solids. **Chapters 1 through 11 are covered in CHEM111.**

Tentative Exam Schedule:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Chapters</th>
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<tbody>
<tr>
<td>Chapter 1</td>
<td>Chemical Foundations</td>
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<tr>
<td>Chapter 2</td>
<td>Atoms, Molecules, and Ions</td>
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<tr>
<td>Chapter 3</td>
<td>Stoichiometry</td>
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<tr>
<td>Exam 1</td>
<td>Chapters 1-3</td>
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<tr>
<td>Chapter 4</td>
<td>Types of Chemical Reactions and Solution Stoichiometry</td>
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<tr>
<td>Chapter 5</td>
<td>Gases</td>
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<tr>
<td>Chapter 6</td>
<td>Thermochemistry</td>
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<tr>
<td>Exam 2</td>
<td>Chapters 4-6</td>
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</tbody>
</table>
Chapter 7  Atomic Structure and Periodicity
Chapter 8  Bonding: General Concepts
Chapter 9  Covalent Bonding: Orbitals
Exam 3  Chapters 7-9
Chapter 10  Liquids and Solids
Chapter 11  Properties of Solutions

Final Exam  Chapter 1-11 (Comprehensive) - Wednesday, December 9th, 2015
Time (8:00-10:00 am)

*Note* The final will include a portion of the standardized ACS final.

**RECIPIATION:** Recitation sessions are dedicated to problem solving, quizzes, and brief pre-laboratory discussions. Each recitation session is followed by the lab.

- **a) PROBLEMS:** will be assigned in class and additional handouts/problems will be given out for extra practice (the handouts will also be posted on D2L).
- **b) QUIZZES:** They will be based on assigned homework/handouts and previous covered material in lecture. The quizzes will be given in the first 10-15 minutes of the recitation, every other week. There will be no quiz the first week of classes or the last week of classes.
- **c) PRE-LABORATORY DISCUSSION:** A pre-laboratory discussion will describe the basic concepts and theory of each experiment as well as safety and calculations for each experiment.

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**Laboratory Schedule:**
Monday and Tuesday Labs (Sections A, B and C)

<table>
<thead>
<tr>
<th>Section A</th>
<th>Sections B &amp; C</th>
<th>Title</th>
<th>Experiment #</th>
</tr>
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<tbody>
<tr>
<td>Aug 24</td>
<td>Aug 25</td>
<td>Check-in - Measurements and Density</td>
<td>Experiment 1, Part II</td>
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<tr>
<td>Aug 31</td>
<td>Sept 1</td>
<td>Formula and Composition of a Hydrate</td>
<td>Experiment 2, Part B</td>
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<tr>
<td>Sept 7</td>
<td>Sept 8</td>
<td>Labor Day - No Lab</td>
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<tr>
<td>Sept 14</td>
<td>Sept 15</td>
<td>Identification of Common Chemicals</td>
<td>Experiment 6 (2 Weeks)</td>
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<tr>
<td>Sept 21</td>
<td>Sept 22</td>
<td>Identification of Common Chemicals</td>
<td>Experiment 6</td>
</tr>
<tr>
<td>Sept 28</td>
<td>Sept 29</td>
<td>Titration of Acids and Bases</td>
<td>Experiment 7, Part B</td>
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<tr>
<td>Oct 5</td>
<td>Oct 6</td>
<td>Gravimetric and Volumetric Analysis</td>
<td>Experiment 8 (2 Weeks)</td>
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<tr>
<td>Oct 12</td>
<td>Oct 13</td>
<td>Gravimetric and Volumetric Analysis</td>
<td>Experiment 8</td>
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<tr>
<td>Oct 19</td>
<td>Oct 20</td>
<td>Fall Recess - No Lab</td>
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<tr>
<td>Oct 26</td>
<td>Oct 27</td>
<td>Evaluation of the Gas Law Constant</td>
<td>Experiment 10</td>
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<td>Nov 2</td>
<td>Nov 3</td>
<td>Thermochemistry: Heat of Reactions</td>
<td>Experiment 11</td>
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<tr>
<td>Nov 9</td>
<td>Nov 10</td>
<td>Spectrophotometric Analysis of Aspirin</td>
<td>Experiment 12 (2 Weeks)</td>
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<tr>
<td>Nov 16</td>
<td>Nov 17</td>
<td>Spectrophotometric Analysis of Aspirin</td>
<td>Experiment 12</td>
</tr>
<tr>
<td>Nov 23</td>
<td>Nov 24</td>
<td>Molecular Models and Covalent Bonding</td>
<td>Experiment 13</td>
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<tr>
<td>Nov 30</td>
<td>Dec 1</td>
<td>Lab Final (Experiment 6) - Timed test/Check - out</td>
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**PRE-LAB WORKSHEETS:** There will be a pre-lab worksheet for each new experiment, covering material from that lab that will be due before the experiment begins. If the experiment performed is a continuation from the previous week, there will be only one pre-lab worksheet. The pre-lab worksheets can be found in your laboratory manual. All pre-lab worksheets should be typed unless they include calculations which can be hand written. No pre-lab worksheet is due during the first week of classes.

**LABORATORY NOTEBOOKS:** Laboratory notebooks will be examined on a regular basis to assure the proper recording of experimental data and procedures. Carefully follow the instructions below:

**Briefly - How to Keep a Good Laboratory Notebook:**

The laboratory notebook is used as a record of your work during an experiment in the laboratory. **All data, observations and conclusions should be recorded in ink.** If a mistake is made, do not use white out, tear out or insert pages. Instead cross the mistake out (single line) and make a note of the reason why this was a mistake. All pages should be numbered and dated (top right corner). The title of each experiment should be recorded in the beginning, before any data is recorded. If you work with a partner, you should record your name as well as your partner’s name on the notebook. An outline of the experimental procedure should be in your notebook before coming to lab. All data should be recorded clearly and using the correct significant figures and units. **NEVER, record data in another sheet of paper and then transfer it to the notebook.** All calculations, graphs and tables should be recorded into the notebook. 

**Evaluation of the notebook would be based on the criteria below:**

1) Top of each page: title, page#, date, name(s)
2) Purpose: describe what is measured or determined
3) Brief outline of the procedure
4) Data presentation in table format (Include: significant figures, labels and units)
5) Results: sample calculations and quality of results (statistics)
6) Graphs: title, labels, units (Note: recording of the post lab questions or conclusion is not required!)
7) Format: organization, neatness, completeness

**LABORATORY REPORTS:** Laboratory reports are due a week after each experiment is completed. The laboratory reports should be typed neatly with all required areas completed. Sample calculations can be hand written. All lab reports will be posted on D2L. Reports submitted late will receive 50% of the grade as long as the actual lab has been performed. If reports are not submitted at all, they will receive a grade of zero.

**COURSE POLICIES:**

**Class and Recitation Attendance:**

Students are expected to attend all lectures and recitations. Students are responsible for all material covered in lecture and recitations. It is the responsibility of the student to obtain the material covered. If you need to be excused for a valid reason (college activities), please see me in advance in order to arrange the make-up of any missed assignments or tests. In unexpected cases (illness, death in the family), contact me as soon as possible by e-mail or phone and follow up in person within the week of the absence. Any exam conducted outside the schedule may
differ in form or exact content from the in-class exam. Making up missed work is at the discretion of the instructor, as long as proper and validated excuse is presented.

**Laboratory Attendance:**
Students **MUST** attend lab every week. Students **MUST complete all laboratories** to pass the course. Rescheduling lab absences for any reason requires significant effort on the part of the instructor. Making up missed lab work is at the discretion of the lab instructor. Students are expected to respect all safety instructions given in lab. **Eye protection MUST be worn at ALL times in lab. Students will be removed from the lab and will receive the grade of zero for that laboratory, when they fail to wear eye protection in the lab or exhibit improper behavior.**

**Absences:**
All absences need to be documented in order to be allowed to make up missed work. Absences due to illness must be documented by a physician.

**Academic Honesty:**
Students are expected to conduct all CHEM111 work in an honest and ethical manner. Cheating on coursework bypasses the learning process and will NOT be tolerated. Anyone caught cheating will be assigned a score of zero on the work. Only data collected by partners in lab is shared. **ALL other work is individual.** Habitual academic dishonesty will be penalized to the maximum.

**Cooperative Environment:**
Students with any special concerns about CHEM111 are welcome to approach me about them. Together, we can address each particular situation. Resources available include the Office of Learning Services and Tutoring Center (Lyle Hall).

**Classroom Etiquette:**
Feel free to ask questions; however, socializing and chatting during class is rude and unfair to those students interested in learning and participating. If you persist in talking during class, you will be asked to leave. **Also computers are not allowed in the lecture hall and mobile devices need to be turned off during the lecture, recitation and laboratory times.** Please note that I reserve the right to take disruptive behavior such as habitual tardiness, frequent or excessive talking during class, cell phone disruptions, or leaving before class is over into account when determining your final grade.

**Grading**

**Lecture:**
- Quizzes (15 points each)  
  - 7  
  - 105 points
- Exams (100 points each)  
  - 3  
  - 300 points
- Final  
  - 1  
  - 195 points

**Lecture subtotal**  
- 600 points

**Lab:**
- Pre-lab Worksheets (5 points each)  
  - 8  
  - 40 points
- Lab Reports (12 points each)  
  - 9  
  - 108 points
- Lab Notebook  
  - 12 points
- Lab Final  
  - 1  
  - 40 points

**Lab subtotal**  
- 200 points

**Total for the class 600+200=800 points**
### Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>92-100</td>
</tr>
<tr>
<td>A-</td>
<td>90-91.9</td>
</tr>
<tr>
<td>B+</td>
<td>88-89.9</td>
</tr>
<tr>
<td>B</td>
<td>82-87.9</td>
</tr>
<tr>
<td>B-</td>
<td>80-81.9</td>
</tr>
<tr>
<td>C+</td>
<td>78-79.9</td>
</tr>
<tr>
<td>C</td>
<td>72-77.9</td>
</tr>
<tr>
<td>C-</td>
<td>70-71.9</td>
</tr>
<tr>
<td>D+</td>
<td>68-69.9</td>
</tr>
<tr>
<td>D</td>
<td>62-67.9</td>
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<tr>
<td>D-</td>
<td>60-61.9</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60</td>
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</tbody>
</table>

*Note*

Class behavior and participation will be taken into consideration during final grading. Points can be deducted from your total for inappropriate behavior or lack of participation in the classroom.

*Note*

To pass CHEM111, you must have a passing grade in the lecture/recitation component (at least D-). Grade of C- or better is required to enroll in CHEM112. (Grade of C or better is required to enroll in CHEM 112 for chemistry majors).
Millersville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment, comply with Title IX of the Education Amendments of 1972, 20 U.S.C. §1681, et seq., and act in accordance with guidance from the Office for Civil Rights, the University requires faculty members to report to the University’s Title IX Coordinator incidents of sexual violence shared by students. The only exceptions to the faculty member’s reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Faculty members are obligated to report to the person designated in the University Protection of Minors policy incidents of sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred.

Information regarding the reporting of sexual violence, and the resources that are available to victims of sexual violence, is available at http://www.millersville.edu/socialeq/title-ix-sexual-misconduct/index.php.