Instructor: Rosa Nguyen
Email: nguyenrosa@fhda.edu
Office Hours: Thurs 9-10 @PSME center
Class Times: Lecture: Tues & Thurs 1:30-3:30 PM in Room 3525
   Lab Lecture: Tues or Thurs 10:00-10:50 AM in Room 5601
   Lab: Tues or Thurs 10:55-12:35 Room 5603
Prerequisites: Satisfactory score on the mathematics placement test or MATH 220.

Course Content: This is a 5 unit introductory course covering basic principles of chemistry more descriptive than quantitative in emphasis. Topics include atomic structure, trends in the periodic table, the three states of matter (gas, liquid and solid), energy, chemical bonding in ionic and molecular compounds, nomenclature, measurement and the metric system, chemical reactions and equations, solutions, acids, bases, salts and electrolyte systems.

Required Materials:
- Mastering Chemistry access code (packaged with custom text)
- Laboratory Manual for Chemistry 30A updated Nov 2009
- Calculator
- Safety goggles

Grading Scale Breakdown {grade scale: A = ≥90%, B = ≥80%, C = ≥70%, D = ≥60%, F = <60%
{‘/+’/-’ Given 1% within categories)
- To get a ‘C’ in this course a student must obtain over 700 points cumulative AND at least a score of 162.5/250 (65%) on the final.
- Any student that receives below 147/210 (70%) points in lab or misses 3 labs will automatically receive a grade of F for Chemistry 30A.

Grading:
- Homework (20%): 200 pts total
  Mastering Chemistry = 200 pts total
- Mastering Chemistry online HW assignments are due almost every Friday at 11:59 PM.
- Exams (55%): 550 pts total (3 Midterms & 1 Cumulative final)
  3 (2) Midterms @ 150 pts each = 300 pts (The lowest midterm grade will be dropped)
  1 Cumulative Final @ 250 pts = 250 pts
  o No advance or make up exams will be given. Re-grades will not be accepted past 1 week after exam has been returned. The lowest midterm grade will be dropped.
- Lab (21%): 210 pts total
  8 (7) Labs @ 30 pts each = 210 pts (The lowest lab score will be dropped)
  o Lab reports a due a week from the completion of the lab. The lowest lab score will be dropped. No make up labs will be allowed; no late labs will be accepted. No ‘proxy’ reports; you must do the lab. It is a departmental procedure to fail any students who receive a failing lab grade. Any student that receives below 147/210 (70%) points in lab or misses 3 labs will automatically receive a grade of F for Chemistry 30A.
- Scholarship/Evaluation/Improvement (4%): 40 pts

Academic Dishonesty: Make sure you do your own work! Cheating in any form during an exam will not be tolerated. If you work in pairs on a lab experiment, state your observations and answer the
questions in your own words. The first offense of academic dishonesty will result in a zero for that exam/lab/homework; the second offense will result in withdrawal from the course, and reported to the Dean of Student Affairs. It is your responsibility to understand what constitutes academic dishonesty (see the academic honor code at www.foothill.edu/services/honor.).

Attendance: Students are expected to attend all lectures and labs. I may withdraw a student after missing more than 4 labs/lectures without a documented reason for the absence.

Good Class Conduct
• Arrive to class and lab on time.
• Don’t disrupt the lecture by talking to others.
• Turn off your cell phone (no texting!) and iPods etc. during lecture and lab.
• No eating or drinking in lab.
• Always wear your lab goggles in lab as long as anyone is doing an experiment
• No open-toed shoes or sandals allowed in lab!

Dropping the Course: If you must drop this course, it is your responsibility to withdraw by contacting Admission and Registration (in person, by phone: (650) 949-7325, or on-line at http://www.foothill.edu). If this is not done, you may be kept on the rolls and receive an “F” grade. You must also arrange for your locker check-out by 6/17.

Important Dates to Remember:
• 4/16 is the last day to drop with a refund.
• 4/30 is the last day to drop without a grade.
• 5/28 is the last day to drop with a W.
• 6/24 12:30-2:30PM is the final exam.

Tips for Succeeding in 30A
1. Attend lectures and try to understand the material presented in class.
2. Read the material from your textbook and compare it with your lecture notes.
3. Solve the assigned homework problems.
4. Do not fall behind!

Student Resources
• Tutoring: Information (including a schedule) at http://www.foothill.edu/tut/index.htm
• EOPS (Extended opportunity program and services): tutoring, counseling, etc. to students who are educationally and/or financially disadvantaged. Visit: www.foothill.edu/services/eops/services.html.
• ALD (Adaptive Learning Division): for students with disabilities: http://www.foothill.edu/al
• KCI (Krause Center for Innovation): The KCI is the 4000 building on Foothill’s campus. At the KCI you can relax at the cyber café, use the high tech computer labs (both PC and Mac), and enjoy a great study environment.
• Please visit the following website to view and print lecture notes and to find supplemental information for this course: http://www.foothill.edu/psme/staff.php?s=1&rec_id=909
<table>
<thead>
<tr>
<th>Day</th>
<th>Assigned Reading</th>
<th>Book HW</th>
<th>Online HW Mastering Chemistry</th>
<th>Exam</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/6</td>
<td>Introduction to the course</td>
<td>Read your syllabus!</td>
<td>Intro to Mastering Chemistry due 4/9</td>
<td>None</td>
<td>Safety Video &amp; Check In</td>
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<tr>
<td>4/8</td>
<td>Ch 2: Measurements in Chemistry</td>
<td>Ch. 2: 41, 44, 48, 50, 51, 56, 60, 64, 72</td>
<td>Ch 2 due 4/16</td>
<td>None</td>
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<tr>
<td>4/13</td>
<td>Ch. 1: Matter and Life; Ch 3.1-3.5: Atoms and the Periodic Table</td>
<td>Ch. 1: 19, 25, 28, 34, 45, 48, 49, 56, 57</td>
<td>Ch 1 due 4/23</td>
<td>None</td>
<td>Measurement and Temperature</td>
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<tr>
<td>4/15</td>
<td>Ch 3.6-3.8: Electron Configuration</td>
<td>Ch. 3: 31, 37, 40, 42, 45, 50, 57, 68, 71, 78, 88, 104, 105, 106</td>
<td>Ch 3 due 4/23</td>
<td>None</td>
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<tr>
<td>4/20</td>
<td>Ch 4: Ionic Compounds</td>
<td>Ch. 4: 32, 33, 38, 42, 51, 52, 58, 60, 64 acfg only, 65, 70, 72, 77, 95, 98</td>
<td>Ch 4 due 4/30</td>
<td>None</td>
<td>Preparation of Alum Part 1 &amp; Video: The Periodic Table</td>
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<td>4/22</td>
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<td>Midterm #1 (Material up until 4/15)</td>
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<td>4/27</td>
<td>Ch 5.1-5.4 &amp; 5.10-5.11: Molecular Compounds</td>
<td>Ch. 5: 27, 28, 38, 87, 89, 104</td>
<td>Ch 5 due 5/7</td>
<td>Finish Preparation of Alum; Chemical Reactions</td>
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<tr>
<td>4/29</td>
<td>Ch 10.1-10.2: Common Acids and Bases; Summary of Nomenclature</td>
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<td>5/4</td>
<td>Ch 6.1-6.2 &amp; 6.8-6.11: Chemical Reactions; Website: <a href="http://www.usoe.k12.ut.us/CURR/Science/sciber00/8th">http://www.usoe.k12.ut.us/CURR/Science/sciber00/8th</a> matter/sciber/chemistrype.htm</td>
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<td>Finish Chemical Reactions; Stoichiometry</td>
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<tr>
<td>5/6</td>
<td>Ch 6.3-6.7: Chemical Reactions (Stoichiometry)</td>
<td>Ch. 6: 28, 29, 32, 37, 38, 42, 44, 46, 47, 62, 63, 75, 82, 90</td>
<td>Ch 6 due 5/14</td>
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<tr>
<td>5/11</td>
<td>Ch 8.1-8.10: Gases</td>
<td>Ch. 8: 22, 49, 53, 57, 58, 63, 64, 65, 66, 72, 74, 107</td>
<td>Ch 8 due 5/21</td>
<td>Finish Stoichiometry; Molar Weight of a Gas</td>
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<tr>
<td>Date</td>
<td>Section</td>
<td>Ch 5-13</td>
<td>Notes</td>
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<td>5/13</td>
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<td>Midterm #2 (Material up until 5/6)</td>
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<td>5/18</td>
<td>Ch 5.5-5.11: Molecular Structure</td>
<td>Ch. 5: 29, 31, 38, 59, 72, 77, 79 b-e, 85, 86, 102</td>
<td>Preparation of Solutions</td>
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<tr>
<td>5/20</td>
<td>Ch 8.11-8.15; Liquids and Solids</td>
<td>Ch. 8: 27 a-b, 92, 93</td>
<td>Ch 8 and 5 continuations due 5/28</td>
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<td>5/27</td>
<td>Ch 7: Reaction Rates</td>
<td>Ch. 7: 20, 21, 28, 44, 46, 47, 48, 52, 54, 62, 64, 68, 84</td>
<td>Ch 7 due 6/4</td>
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<td>6/1</td>
<td>Ch 10: Acids and Bases</td>
<td>Ch. 10: 32, 35, 44, 50, 52, 53, 58, 65, 66, 70, 74, 75, 92, 102</td>
<td>Ch 10 due 6/11</td>
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<td>6/3</td>
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<td>Midterm #3 (cover material up to 5/27)</td>
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<td>6/8</td>
<td>Ch 11: Nuclear Chemistry; Website on nuclear medicine: <a href="http://www.world-nuclear.org/info/inf55.html">http://www.world-nuclear.org/info/inf55.html</a></td>
<td>Ch. 11: 21, 22, 40, 44, 45, 82</td>
<td>Conductivity &amp; Buffers (DEMO for lab 8 and 9)</td>
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<tr>
<td>6/10</td>
<td>Ch 12: Intro. To Organic Chemistry</td>
<td>Ch. 12: 19, 23, 27, 33, 36, 42, 46, 48, 50, 52, 56, 67, 70</td>
<td>Ch 12 due 6/18</td>
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<tr>
<td>6/17</td>
<td>Catch Up/Review</td>
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<td>Check out</td>
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<td>6/24</td>
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<td>Cumulative final exam 12:30PM-2:30PM</td>
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<td>No Lab</td>
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Student Learning Outcomes:
I. Students will be able to classify matter correctly.
   a. Explain the difference between a solid, liquid and gas.
   b. Examine and classify matter and name the common elements from the periodic table.
   c. Understand chemical and physical properties.
II. Students will be able to use common laboratory equipment correctly and report measurements to
    the correct significant figures with proper units. Equipment includes Bunsen burners, beakers,
    graduated cylinders, thermometers, top loading balances, rulers and burets.
   a. Use dimensional analysis for problem solving, and show answers with correct units and with the
      correct significant figures.
   b. Use a Bunsen burner, balance and common laboratory glassware.
   c. Execute laboratory procedures safely and confidently.
   d. Be able to measure temperature, mass, length, volume, and density using lab equipment.
III. Students will be able to represent chemical changes correctly through balanced chemical equations
     with proper formulas for elements and compounds.
   a. Explain atomic theory, atomic structure, and the concept of isotopes, and be able to represent
      different isotopes using correct chemical symbols.
   b. Use the periodic table to determine electron configuration, assign oxidation numbers and
      compare elements based on periodic trends ( electronegativity, electron affinity, atomic radius,
      etc.).
   c. Name ionic and molecular compounds, and name hydrocarbons with as many as 10 carbons in
      the longest chain.
   d. Use the concept of the mole and Avogadro’s number in stoichiometry.
   e. Use Le Chatlier’s Principle to determine affects on a system at equilibrium.
   f. Write a nuclear reaction showing alpha, beta and gamma decay and understand the fundamentals
      of nuclear medicine.
IV. Students will understand solutions and be able to prepare a solution in the lab.
   a. Define acids, bases and salts and know what components of a solution will make a buffer.
   b. Draw Lewis structures, determine if a molecule is polar or nonpolar, and analyze for
      intermolecular forces of attraction and solubility.
   c. Explain osmosis and osmotic pressure.
   d. Know how to prepare a solution in units such as molarity, % w/v, % v/v and % w/w.
   e. Understand solution conductivity.

Lecture:
- **Homework (20%)**: Reading assignments and book and online homework assignments are
detailed in the tentative schedule above.
  - Reading Assignments: You are expected to read the appropriate chapters **before**
    coming to class. You will gain more from the lectures if you come prepared.
  - Book Homework: Book homework assignments are given in the tentative schedule
    above. It is the student’s responsibility to do the homework. Textbook comes with a
    solution manual so that you can check answers on your own.
  - Online Homework (Mastering Chemistry) (20%): Online homework assignments are due
    almost every Friday at 11:59 PM. Please visit masteringchemistry.com and create an
    account using your access code. Be sure to register for the correct section of Chemistry
    30A. Assignments for Mastering Chemistry are shown above in the tentative schedule,
    and they are also accessible by logging into your account online.
- **Three Midterms (30%)**: See the tentative schedule for dates. **No advance or make up exams
  will be given. Re-grades will not be accepted past 1 week after exam has been returned. The
  lowest midterm grade will be dropped [2 midterms x 150 pts = 300 pts (30%)].
- **Final Exam (25%)**: No advance or make up exams will be given. The final is cumulative.
Lab:

- **Eight Lab Reports (21%)**: Labs are due a week from the completion of the lab. Each person must turn in a separate lab report which consists of all pages of the experiment (and any supplemental pages) stapled together in order with your full name first and then your partner’s (last or full) name or “none” on the front of the report. Be sure to complete all the sections, show all calculations, include units, and answer all the questions of the assignment. No make up labs will be allowed; no late labs will be accepted. No ‘proxy’ reports; you must do the lab. It is a departmental procedure to fail any students who receive a failing lab grade. Any student that receives below 147/210 (70%) points in lab or misses 3 labs will automatically receive a grade of F for Chemistry 30A. The lowest lab report grade will be dropped [7 labs x 30 = 210 pts (21%)]

- **Scholarship/Evaluation/Improvement (4%)**: 40 pts

**Laboratory-Lecture.** The beginning of each laboratory session is designated as a Laboratory Lecture period during which I will outline important details of the procedure, overview the theory and calculations, and emphasize safety hazards and proper chemical disposal. This will be in room 5601. **If you arrive late to laboratory-lecture you will receive a zero for that lab day. NO EXCEPTIONS!**

**Laboratory Preparation, ‘Pre-Lab’ questions.** For each experiment, you must read and understand both the background information (“Discussion”) and the experimental procedure before coming to the laboratory. Be sure to have your goggles and gloves.

**Performing the Experiments.** The experiments may be done in pairs or singly. If working in a pair, you will be collecting and sharing data with a partner. However you must do your own calculations, state your observations in your own words, and formulate your own conclusions for each experiment (obvious copying will result in points lost for both people involved). After finishing the experiment, clean up, return your key to me and get my initials in your lab manual before leaving (each lab day). (My initials just mean you have started your report – you still need to check all your data and answers before turning it in.)

**If you miss check in or experiment 1 you will be dropped from Chemistry 30A. NO EXCEPTIONS!** Arriving on-time is crucial in this course, especially in lab. **If you arrive late to laboratory-lecture you will receive a zero for that lab day. NO EXCEPTIONS!**

**Stockroom.** You must pay a $20 deposit to the lab stockroom by the third week of class (the third lab meeting). This money will cover the cost of broken or lost items. If you do not break or lose any items you will be fully refunded at the end of the quarter. The deposit can be paid in cash or check, but the stockroom will require cash if you owe money at the end of the quarter. Please note that if you do not pay by the end of the third week then I will drop you from the role sheet and I will not continue grading your work. Also, if you do not pay money owed to the stockroom at the end of the quarter I will not grade your final exam. This could seriously affect your grade in this class. **If you decide to drop this class before the end of the quarter you will need to come to the regularly scheduled lab time and check out of your lab drawer in order to get your refund back from the stockroom.**