Welcome to Chem-251, Analytical chemistry. In this course, you will learn the tools and master the techniques for chemical analysis. You will carry out experimental acquisition and data analysis in order to develop skills in chemical qualitative and quantitative procedures. Although we need to cover a set number of topics, it is customary for me to adjust the pace of the course depending on the interest of the class. It is my goal to provide you with the tools to be successful in this class but ultimately it is up to you to use these resources and make it part of your core skills set. If you work hard and are honest in this course, we will have a successful semester. If you cut corners and are dishonest, you will be setting yourself up for failure. If you have any questions or concerns about this class, please do not hesitate to contact me via office hours, voice mail or email. If at any time you need an update on your progress, contact me. Let’s make this a fun and educational semester.

Many of the fundamentals that you learned in your previous chemistry courses will be practiced in this course. Note however that many of the material in this course will be new to you and will require that you have a good foundation of basic science, especially in general chemistry, with an emphasis on GenChem-II. Topics include basic laboratory techniques, record keeping, statistical analysis (using Excel and hand calculations). Methods of analysis include, classical chemical methods, electrochemical methods, spectrophotometric methods such as paper chromatography, HPLC, GC and LCMS. The laboratory component of the course stresses both quantitative and qualitative analyses.

Student Learning Outcome:
1. Carry out a calibration curve and apply statistical analysis to experimental measurements.
2. Use modern instruments and classical techniques to design experiments and to properly record the results.
3. Communicate through print and presentation the result of an experimental analysis to chemist and non-chemists.

Course Objective: This course will address the following topics: A review of basic chemistry and classic methods of analysis, which includes stoichiometry, solution, equilibrium and acid/bases; classical analytical method of gravimetric and volumetric analyses. The second half of the course covers instrumental methods of analysis which covers electrochemical method of potentiometric and voltametric analyses, spectrophotometric methods such as atomic absorption, fluorescence, UV-Vis, IR, and NMR; and chromatographic methods such as paper chromatography, HPLC, GC and LCMS. The laboratory component of the course stresses both quantitative and qualitative analyses.

Prerequisite:
You must have completed (currently) taking General Chemistry II (201 & 201L) and Math 150 with a grade of "C" or better. Advisories are English 101 or Assessment Skill level R6/W6 or English 105 (C or better).

Text and Supplies: Bring all supplies by the second-class meeting.
1) Gloves: Surgical nitrile gloves
2) Calculator: Capable of scientific notation.
3) Soap and towel: Supplies to clean glassware and equipment.
4) Lab coat: You should purchase a lab coat for the lab experiments, ($20, Miramar Bookstore).
5) Safety goggles: You must have your safety goggles at the beginning of the second week.
6) Paper supply: Two dozen of 5 x 8 " index cards and 100 sheets of printer paper for laser printer.
7) USB Thumb Drive: We will be working with computers. You will need to store your data.
8) Master Combination Lock. You are responsible for your locker equipment after the beginning of the second week. You will need to purchase the master combination lock from the bookstore, located at cashier's station.
9) Laboratory Notebook: Absolutely required. Bring notebook on the second day, we start first experiment. $ 19.00
10) Textbook: Harris, "Quantitative Chemical Analysis", 9th Ed., Freeman Pub., with Sapling Learn access code
Sapling access code separately (~$40). Try and get a hard copy because exams are open book (no computers).
<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture/Reading</th>
<th>Laboratory Assignments</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Salutation, Course Outline, Syllabus</td>
<td>Safety (08/21, 25 pts)&lt;br&gt;Syllabus (09/01, 25 pts)&lt;br&gt;Activities: Exercise 1: Chem Review (08/26, 10 pts)&lt;br&gt;Exercise 2: Pennie Stats, Excel &amp; Statistical Analysis (09/25, 20 pts)</td>
</tr>
<tr>
<td>2</td>
<td>Ch02: Tools of the Trade (Due9/01)</td>
<td>Ex00: Basic Laboratory Tech: Calibration of Glassware (09/22, 25 pts)&lt;br&gt;Quiz 01. (Due 09/22)</td>
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<tr>
<td>3</td>
<td>Ch04: Statistics (Due9/08)</td>
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<td>4</td>
<td>Ch05: Quality Assurance and Calibration Methods (Due9/15)</td>
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<tr>
<td>5</td>
<td>Ch06: Chemical Equilibrium (Due9/22)</td>
<td>Activities: Exercise 3: Equilibrium, Acid Base (10/09, 20 pts)</td>
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<tr>
<td>6</td>
<td>Ch07: Let the Titration Begin (Due9/29)</td>
<td>Experiments: (50 pts)&lt;br&gt;Read: Chp27 &amp; 28: Gravimetric Analysis and Sample Prep&lt;br&gt;Ex01: Gravimetric Analysis of a Metal (09/29)&lt;br&gt;Ex02: EDTA Titration of a Metal (10/06)</td>
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<tr>
<td>7</td>
<td>Ch08: Activity and Systematic Treatment of Equilibrium (Due10/06)</td>
<td>Quiz 02. (Due 10/13)</td>
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<td>8</td>
<td>Ch09: Monoprotic Acid-Base Equilibrium (Due10/06)</td>
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<td>9</td>
<td>Ch10: Polyprotic Acid-Base Equilibrium (Due10/06)</td>
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<tr>
<td>10</td>
<td>Ch11: Acid-Base Titration (Due10/06)</td>
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<tr>
<td>11</td>
<td>Ch12: EDTA Titrations (Due10/13)</td>
<td>Week</td>
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<tr>
<td>5</td>
<td>Ch14: Fundamentals of Electrochemistry (Due10/20)</td>
<td>Electrochemical Techniques (Due10/20)</td>
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<td>6</td>
<td>Ch15: Electrodes and Potentiometry (Due10/20)</td>
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<td>7</td>
<td>Ch16: Redox Titration (Due10/20)</td>
<td>Experiments: (50 pts)&lt;br&gt;Ex03: Iodometric Titration of Vitamin-C in an Unknown. (10/20)&lt;br&gt;Ex04: Cyclic Voltammetry of Vitamin-C (10/27)</td>
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<td>8</td>
<td>Ch17: Electroanalytical Techniques (Due10/20)</td>
<td>Midterm, Oct 21 (50 pts)</td>
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<td>9</td>
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<tr>
<td>10</td>
<td>Ch18: Fundamentals of Spectrophotometry (Due11/10)</td>
<td>Activities: Exercise 5: Spectroscopy Analysis (11/20, 20 pts)</td>
</tr>
<tr>
<td>11</td>
<td>Ch19: Applications of Spectrophotometry (Due11/10)</td>
<td>Experiments: (50 pts)&lt;br&gt;Ex05: Atomic and UV Spectroscopy Analysis of a Metals (11/10)&lt;br&gt;Ex06: Fluorescence Spectroscopy of a Metal (11/17)&lt;br&gt;Ex07: Spectroscopic Identification of an Organic Unknown (11/24)&lt;br&gt;Quiz 03. (Due 11/17)</td>
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<tr>
<td>12</td>
<td>Ch20: Spectrophotometry (Due11/17)</td>
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<tr>
<td>13</td>
<td>Ch21: Atomic Spectroscopy (Due11/17)</td>
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<td>14</td>
<td>Ch22: Mass Spectroscopy (Due11/17)</td>
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<tr>
<td>15</td>
<td>Ch23: An Introduction to Analytical Separation (Due12/01)</td>
<td>Activities: Exercise 6: Chromatography, (12/11, 20 pts)</td>
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<tr>
<td>16</td>
<td>Ch24: Gas Chromatography (Due12/01)</td>
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<tr>
<td>17</td>
<td></td>
<td>Lab Practical, Dec 09 (50 pts)</td>
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<tr>
<td>18</td>
<td></td>
<td>Final Exam, Dec 11 (150 pts)</td>
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</tbody>
</table>

Please do not ask to take any of the assessment earlier than the scheduled date.

BB = Blackboard assignment  All end of homework problems will be access through Sapling Learn

Aug 30 - Last date to drop with no "W" in transcript.  
Oct 25 - Last day to withdraw from classes with a "W"  
Nov 25 to 29 - Thanksgiving Break, No Class
Attendance is mandatory. It is your responsibility to drop this class if you are no longer attending. If you miss more than three (4) class meetings before the drop deadline (Oct 25st.) you will be dropped from this course. If you miss more than six meetings for the entire semester, your grade will drop one letter grade and you will forfeit all extra credit points. If you miss class during an in-class activity then you will not be allowed to make up the activity - even if it is a take home assignment. If you have perfect attendance, have not recorded a tardy, and turn in your assignments (homework) on time, you will be awarded 20pts extra credit at the end of the term. This is my way of rewarding students who attend class meetings regularly and in a timely manner. **There is no makeup for quizzes. If you ask for an extension you will forfeit the 20pts bonus (no exception).** Any assignment (except Sapling Interactive Online homework) turned in late will not earn a higher grade than the lowest score that was earned by the students who did submit their assignment on time. In addition, a minimum 25% penalty will be assessed for late assignments. No assignments will be accepted if it is more than 1-week late. There are no make-ups for end of chapter Sapling Interactive Online homework assignments.

**Chapter Reading.** Read assigned material from your textbook or the online notes. If you do this, you will be amazed by the amount of material you will understand. In general, it is good practice in all science courses to go over the material covered in the course at least three times. The first is a quick scan to survey the topics and concepts being covered. The second is for comprehension to understand the fundamental ideas. The third, but by no means the last, is to review and reflect on the concepts that you just covered. If you need to review a concept go back and read the material again and seek outside help. If you use this study habit approach, you will achieve a level of understanding that will allow you to be successful in this course.

**Homework / Activities.** End of chapter homework is assigned through an online "Sapling" Interactive website. Most of the problems are those found at the end of the chapter in your textbook. See the end of this syllabus for directions on how to sign up. If you want good grades in your exams, do the homework and if you have to, do extra problems at the end of the chapter. By taking time to work on extra problems before the exam, you will be better prepared for the exam problems. Working problems in the book and other sources (i.e., sample test) is an ideal way to prepare for this course. When you have trouble with a problem, see me immediately—if you have to wait the day before an exam then it is too late! Due dates for these assignments, are in the Sapling website, and late submissions will not be accepted. There will be 25 assignments (5pts each) but only your best 20 will count. If you miss an assignment(s) then complete the other assignments since only the best 20 counts. The extra assignments you work on will count as bonus points (for a max of 25pts).

**Experiment / Activities:** There will be 10 experiments during the semester with the lowest dropped. In a week and a half time after the experiment is complete, reports (notebook checks) are due. These must be turned in at the beginning of the lab meeting, unless otherwise indicated. Each write-up will be worth 50pts. The lowest report will be dropped which means late assignments will be penalize by 5 pts each lab period the assignment is late, but after not turning in the lab after two meetings, the lab automatically receives a zero. In general, missed lab work cannot be made-up without advance permission and at the discretion from the instructor. Due to limited equipment and the fact that you get to drop one assignment, the general policy is no make-ups lab work. If you performed the experiment however, you can submit your report up to 1-week past the due date with penalty, after that the lab receives a zero. On the second day of class, you will calibrate your glassware so bring the required **lab notebook and PPE (Personal Protective Equipment)** for the course otherwise you will not be allowed to start work in lab. **PPE include:** proper attire, lab coat, glasses and safety goggles.

**Scientific paper or Special project:** There is a possibility that one of the experiments will be written as a peer-review publication. This paper is worth the 10 pts. More information will be provided later in the semester.

**Exams / Quizzes.** There will be a safety and syllabus quiz (25 pts total) and four quarterly quizzes worth 25pts each. The lowest of these four quarterly quizzes will be dropped and the average of the remaining three will be use to replace the dropped score. The midterm exam (50 pts) will emphasize the first half of the semester. The final exam (100 pts) is comprehensive. **There are absolutely no make-ups for quizzes or set assignments. Do not ask for an extension, none will be given.** *One quiz and one activity assignment will be dropped to accommodate late or miss assignments. If you miss the midterm exam, then you will need to provide a doctor’s note within a week after the exam. In addition, an original term paper may be assigned. The topic will be selected by your instructor. Your makeup will be given as part of your final exam and will be more difficult than the original exam. If you are committed to this course, you will keep up with the pace. All who complete assignments and stay current with the assignments generally pass this course.

**Course Grade:** Grade for the semester will be determined as outline below with evidence of improvement to be considered for final grade.

<table>
<thead>
<tr>
<th>Assessment Points</th>
<th>Pts ea.</th>
<th>Total Pts</th>
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<tbody>
<tr>
<td>Safety/Syllabus Quiz</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Homework (20) *</td>
<td>5</td>
<td>100</td>
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<tr>
<td>Quarterly Quizzes (4)</td>
<td>25</td>
<td>100</td>
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<tr>
<td>Activity Exercise* (5)</td>
<td>20</td>
<td>100</td>
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<tr>
<td>Midterm Exam</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Calibration of Glassware</td>
<td>25</td>
<td>25</td>
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<tr>
<td>Experiments Lab Notebook (8)</td>
<td>50</td>
<td>450</td>
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<tr>
<td>Lab Demo / Project</td>
<td>25</td>
<td>25</td>
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<tr>
<td>Lab Practical</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Attendance, Participation Misc</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total Points</strong></td>
<td><strong>1000</strong></td>
<td></td>
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**Points**

<table>
<thead>
<tr>
<th>Accomplishment Level</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90-100 %</td>
<td>Excellent</td>
</tr>
<tr>
<td>80-89 %</td>
<td>Good</td>
</tr>
<tr>
<td>65-79 %</td>
<td>Acceptable</td>
</tr>
<tr>
<td>55-64 %</td>
<td>Mediocre</td>
</tr>
<tr>
<td>Below 54</td>
<td>Unacceptable</td>
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</table>

**One Final Note:** Although it should not be necessary to make this comment, **dishonesty in any form will not be tolerated** in this class. Anyone involved in cheating on the exams, homework, lab report etc., will fail the class and will be reported to campus authorities. If an assignment is submitted that has identical answers (verbatim) to another, all parties involve will receive a score of zero and will fail the course. Please review Miramar College academic integrity policy.
Taking this Analytical Chemistry Course

(Keep a copy of this so you can include this in your resume)

It is not uncommon for students completing this course to work as an entry level Biotech scientist.

LEARNING OUTCOMES, activities and evaluation procedures:

Knowledge, as evident by-

· How to following advanced procedures for operating quantitative analysis experiments.
  · Evaluation: the grading of laboratory reports and lab notebooks.
· How to collect and organize complex experimental data.
  · Evaluation: the grading of laboratory reports and lab notebooks.
· The operation of modern analytical instrumentation such as computer-based interface (Vernier), Polarimetry, UV-Vis spectrophotometer, fluorimeter, atomic absorption spectrophotometer, FTIR, NMR, GC, HPLC and LCMS
  · Evaluation: administer midterm and final examinations.
  · Observation and evaluation of lab practical in which students demonstrating instrument operation, data collection and data processing.
· Development of procedures for operating analytical equipment.
  · Evaluation: the grading of laboratory reports and midterm and final examinations.
  · Observation and evaluation of lab practical.
· The important safety precautions that should be practiced in the laboratory.
  · Evaluation: administer safety quiz, midterm and final examinations.
  · Observation of students while students conduct work in the laboratory.
· How to prepare in a professional manner data in an informative graphical representation
  · Evaluation: the grading of laboratory reports and midterm and final examinations.
· How to explain the equipment principles, procedures, data, results and conclusions?
  · Evaluation: the grading of the lab practical and lab reports.
· How to report experimental principles, procedures, data, results and conclusions?
  · Evaluation: the grading of laboratory reports.

Skills as demonstrated by-

· The capability to use modern analytical instrumentation.
· The capacity to collect and evaluate experimental data
· The competence to write a scientific laboratory report.
· A comprehension of analytical instrumentation through hands on use.
  · Evaluation (all of the above): The grading of laboratory reports and lab notebooks.

Abilities, as observed by-

· Develop and conduct experiments utilizing analytical instrumentation.
· Organize data gathered in the chemistry laboratory to produce meaningful reports.
· Draw appropriate conclusions based on the analysis of data collected in the laboratory.
  · Evaluation (all above): The grading of laboratory reports and notebook.
· Display a thorough understanding of the laboratory instruments studied.
  · Evaluation: Administer a midterm and final examination.
Important Policies

1. Demonstration of Work:
   - For all assignments that are completed via hard copy, i.e., activity-exercises, group work, quizzes and exams: **No credit** will be given for any numerical problem unless they are accompanied by a complete step-by-step solution that clearly shows how the answer was obtained. **Always box your final answer** and remember that neatness will count. If your work cannot be clearly followed, **you may not be given credit for that problem**. Please do not use a pen for numerical calculations. In fact, do not bring a pencil to class. Write your name on all sheets of paper you turn in. Assignments with no name will not be graded.
   - You must perform all your laboratory experiments and write-up in your laboratory notebook (do not use notebook, legal-pad paper or the data work sheet of the hand-out). Failure to comply will result in 25% penalty on your lab grade for that experiment. **Be sure to purchase all the lab material and supplies before the second lab meeting.**

2. Exam, Quizzes, Labs, Assignment Policy:
   - Online quizzes: When completing a quiz on Blackboard, note the timer because that is the time you have to complete the quiz. Blackboard is deceiving in that it will state:

     **Timer Setting**  
     You will be notified when time expires, and you may continue or submit.

     **Force Completion**  
     This test can be saved and resumed later. The timer will continue to run if you leave the test.

     **Due Date**  
     This Test is due on February 16, 2014 11:59:00 PM PST. Test cannot be started past this date.

     The statement "This test can be saved and resume later" means that it can be saved and if there is a disruption on the quiz, you can continue to work on it but within the time allocation set for the quiz. Suppose you are taking a quiz that has a time allocation of 1-hr. You start the quiz and 30 min. into the quiz you take a 25min break, so you log out and 55 min from when you first open the quiz you continue, well you will only have 5 min to complete the remaining portion of the quiz. Another thing to note is that if the quiz is due by midnight and you start at 11:30pm, then you will only have 30 min to complete the quiz before it closes on you and submit automatically.

   - For all in class exams you must bring a calculator. No sharing of calculators will be permitted. It is your responsibility to bring your calculator on the day of a quiz or exam. If you do not, you are not allowed to take the exam with someone else calculator. Scratch paper will not be permitted unless provided by your instructor. Write your name on all sheets of paper you turn in. Furthermore, for exams and quizzes, all backpacks and cell phones (turn off your cell phones) must be placed at the front of the room and out of the way. You are only allowed to use a pencil or pen and a pre-approve calculator for the exams. Your instructor will announce ahead of time if textbooks can be used. If computers are to be used, then internet access will not be allowed. Your smart phones cannot be used as a calculator or as a substitute for a laptop computer.

   - If you miss a midterm exam or final exam due to illness, you will need a doctor's excuse and you must contact the instructor to obtain a late authorization form. This must be turned in by writing to the instructor no more than a week after the scheduled, missed exam. No work will be accepted without the authorization form with the accompanying excuse. The make-up for the midterm will be part of the final exam. The makeup exams will always be different from the original and will generally be more difficult than the regular exam. In addition, a 10-page term paper is due within a week after completing the make-up exam otherwise the exam is not counted.

   - A seating chart may be posted for any quiz or exam. If you are not seated in your assigned seat, then you will be asked to comply with the seating chart. **If you refuse to comply, you will not be allowed to take the exam.**

3. Calculators, Cell phones and Gadgets:
   - By the second class meeting you must bring a calculator that has the following function: scientific notation, base 10 and natural logarithms, and powers or roots (e.g. \( y^x \) or \( \sqrt{x} \)). If you need help in determining whether your calculator contains these functions or in using any of your calculator's function, please see your instructor immediately. **It will be your responsibility to understand the use of your calculator and its functions.** It is a good idea to bring your calculator to each class meeting. Smart devices (phones) cannot be used.

   - **Cell Phone Policy** When arriving to class please turn off your cell phone or put it in vibrate mode. You are not allowed to use your smart device as a calculator during exams. You should place all your belongings on the floor and not on the desk when taking the exam.

4. Administrative Issues:
   - **Class attendance.** Every student is expected to attend each meeting of all classes for which they are registered, to arrive on time and to stay for the full class period. Furthermore, students who miss 4 class meetings before the withdrawal deadline (Oct 27th) will be dropped from the course. Students who miss 6 total class meetings (excused or unexcused) for the entire semester will have their grade dropped one letter grade and they will forfeit all their extra credit points. **Remember that tardiness and leaving class early are treated in the same manner as absences.** You may be dropped from this course (before the withdrawal deadline, if you accumulate points to date drops below 25%.

   - If you drop this course it is your responsibility to go to the registration office so you can file the proper paper work to withdraw from the course. Simply not completing assignments or not taking part of the online activities does not constitute dropping the course. At the same time completing assignments does not constitute that you will pass this course. Completing all assignments and performing all courses work at the 65-percentile, or better will insure a grade of C or better for the course. Not completing any of the assignment will guarantee a failing grade for this course however.

   - **Incomplete grades will only be given to students who have completed 85% of the assignments, i.e., students who have extenuating circumstance that prevents them from taking the final exam. If it is a medical issue, a doctor's note is required.**
5. Academic Honesty Policy, Disruptive Behavior and Plagiarism

- **Disruptive Behavior:** You have the responsibility to conduct yourself in a mature manner in class. Any behavior that interferes with the legitimate instructional, administrative or service functions of the class is considered to be disruptive behavior. In some instances, if the behavior threatens the personal safety of others then it is classified, as a crisis and District Police Dispatch will be contacted. Please respect your instructor and your fellow classmates.

- **Plagiarism and cheating will not be tolerated.** If you engage in either of these activities on any assignment (quizzes, lab assignments, etc.) then you will receive no credit for the assignment and will be dismissed from the course, receive a failing grade and referred to the Dean of Students for disciplinary action. Plagiarism may include, but not limited to, assignments submitted from students that have identical written answers. All parties involved will automatically receive a score of zero and may be subjected to other disciplinary actions. For further information, please read the Miramar College catalog under the section on "Student Rights, Responsibilities of all San Diego Community College District students"). Special software is available to the faculty at Miramar College to check if a paper is plagiarized from the literature or the web.

- **Academic Misconduct and Cheating.** In this course, you are encouraged to study and prepare for quizzes and examinations with other students. However, when taking quizzes and examinations, and when writing laboratory reports, you are to work alone. The College regulations are very explicit about academic misconduct and cheating and these regulations will be fully enforced. During examinations, we will apply a code of honor, under which you are to work alone and neither give nor receive help from any source. You are expected to help enforce this code.

6. Communication

- **eMail, Office hours and voice mail:** If you want to discuss anything about the course or your progress in the course, you can contact me via email (fgarces.ch251@gmail.com), voice mail (619-388-7493) or stopping by my office (please contact me first to make sure I will be in). When emailing me, be sure you include in your email, the course you are enrolled in (Chem100), the CRN of the course and your name. Too many times your email address tells me nothing of who you are. Some of you have very flowery email address but there is no indication of who you are, i.e., PowerKid96@yahoo.com (I doubt if I have a student name PowerKid96). If you do not indicate who you are, there is no guarantees I will get back to you. If you are contacting me by voice mail, state clearly what class you are in, the CRN, your name, and the number that I can contact you. Leave a detail message so that I can ascertain the content of your concerns. When planning to stop by to visit, it is always a good idea to confirm that I will be in my office, too many times I will be out in a meeting or in the lab. Always check ahead of time.

7. Special Services:

- **Help Room and Tutoring:** Free tutoring will be available at the ASC (Academic Success Center), or the Help Room in S6-112C. The schedule of tutors that are manning the help room is posted outside each of the chemistry classroom. Find an instructor that is knowledgeable in chem201 to be as efficient in using the help room resource. Don't expect the instructor in the help room to do your assignment. They are just there to give you guidance. The ASC is a peer-to-peer tutorial center supervised by a credential instructor. Their offices on the south-east side of the LRC.

- **Disability Support Program & Services:** If you have a learning or physical disability which requires special accommodations for classroom participation and/or examinations, please notify your instructor and the DSPS office on campus by the second-class meeting. If you do not provide information a week before and exam, then special accommodations will not be provided during an exam.

- **American Chemical Society (ACS), Student Affiliates:** Join the science club for exciting experiences related to science and to meet other people who share an interest in science. The ACS Student Affiliate (not to be confused with ACS above) also sponsors the recycling program on campus. The proceeds from recycling allow the club to award tuition scholarships to science majors at Miramar College. Meeting times will be announced throughout the semester. Open to all Miramar students, faculty and staff.

Famous last words- From Ask Quora


Igor Markov, EECS Professor at Michigan - currently at Google

This situation is not rare, so you are right that some instructions could be useful. Students often assume that effort itself is rewarded, whereas university courses (unlike high school courses) increasingly reward skills and knowledge. Freshman courses may include many routine assignments, but the most advanced courses value insight beyond anything else. This comes as a shock for students with poor study habits. Students who ended up disappointed by their grades often spend time on things that aren’t useful. For example, when given a medium-difficulty practice assignment, some students try to “do research on the Web” to find a solution, not to actually come up with a solution. This can take time and often succeeds, but is an absolutely wrong approach because it does not teach problem-solving and will almost guarantee a failure on the exam (such students expect that on the exam they will be given one of those problems for which they know solutions).

So, what should you do? - Ask for an appointment with the instructor and do two things.

- Go over your course performance by component (homework, exams, projects, etc..) to understand what your main weaknesses are. Keep in mind that some students end up repeating the same courses several times before they learn necessary skills.
Honesty and integrity are integral components of the academic process. Students are expected to be honest and ethical at all times in their pursuit of academic goals.

1.0 DEFINITIONS:

Cheating: The act of obtaining or attempting to obtain credit for academic work by the use of any dishonest, deceptive, or fraudulent means. Examples of cheating include, but are not limited to:

1. Copying, in part or in whole, from another’s test or other examination;
2. Discussing answers or ideas relating to the answers on a test or other examination without the permission of the instructor;
3. Obtaining copies of a test, an examination, or other course material without the permission of the instructor;
4. Using notes, “cheat sheet” or other devices considered inappropriate under the prescribed testing condition;
5. Collaborating with another or others in work to be presented without the permission of the instructor;
6. Falsifying records, laboratory work, or other course data;
7. Submitting work previously presented in another course, if contrary to the rules of the course;
8. Altering or interfering with grading procedures;
9. Plagiarizing, as defined herein;
10. Knowingly and intentionally assisting another student in any of the above.

Plagiarism: The act of incorporating ideas, words, or specific substance of another, whether purchased, borrowed, or otherwise obtained, and submitting the same as one’s own work to fulfill academic requirements without giving credit to the appropriate source. Examples of plagiarism include but are not limited to the following:

1. Submitting work, either in part or in whole, completed by another;
2. Omitting footnotes for ideas, statements, facts or conclusions, which belong to another;
3. Submitting work, including computer works, without giving credit to the appropriate source;
4. Close and lengthy paraphrasing of the writing or work of another, with or without acknowledgment;
5. Submitting artistic works, such as musical compositions, photographs, paintings, drawings, and sculpting, of another;
6. And submitting papers purchased from research companies (or downloaded from electronic source) as one’s own work.

2.0 ACADEMIC AND ADMINISTRATIVE SANCTIONS

• Cheating and plagiarism may warrant two separate and distinct courses of disciplinary action which may be applied concurrently in response to a violation of this policy.
• Academic Sanctions, such as grade modifications, are concerned with the student’s grades and are the sole responsibility of the faculty member involved.
• Administrative Sanctions, includes any disciplinary action up to and including expulsion, and are the responsibility of the College president or designated representative.

2.1 ACADEMIC SANCTIONS

When a student is accused of cheating or plagiarism, it is recommended that the faculty member arrange an informal office conference with the student and the department chair, or designee, to advise the student of the allegation as well as the evidence, which supports it. The purpose of the informal conference is to bring together the persons involved so that the situation might be discussed informally and an appropriate solution might be decided upon. If more than one student is involved in the incident, the faculty member may call the students together to confer as a group at the discretion of the faculty member. All notes and discussion between the student and faculty member are confidential, in accordance with the Family Rights and Privacy Act, and may be used as evidence in subsequent campus disciplinary proceedings or any subsequent legal action.

Guidelines:

It is the faculty member’s responsibility to determine the type of academic sanction, if any. In reaching the decision, the faculty member may use the following guidelines:

1. The faculty member should advise the student of the alleged violation and should have reasonable evidence to sustain that allegation. Reasonable evidence, such as documentary evidence or personal observation or both, is necessary if the allegation is to be upheld.
2. The usual sanction is “grade modification.” This sanction is to be used only if the faculty member is satisfied that cheating or plagiarism did, in fact, occur.
3. The “grade modification” is left to the discretion of the instructor and may include a zero or F on the paper, project or examination, a reduction in one letter grade (e.g., C to D in the course), or an F in the course.
4. In addition to grade modification, certain instructional departments/programs may have policies, which state that cheating can show unsuitability for continuation in the program and/or profession.
5. In all cases, faculty should make the student aware of the penalties for cheating or plagiarism and of their appeal rights. It is recommended that a statement be included in the course syllabus. (See District Procedures 3100.1 and 2).

If an academic sanction is imposed, the incident must be reported in writing within ten instructional days to the School Dean who shall send a copy of the report to the Disciplinary Officer. Notice to the Disciplinary Officer will ensure that there is documentation of the incident with the college in the event of a challenge or legal action.

2.2 ADMINISTRATIVE SANCTIONS

The School Dean will consult with the Disciplinary Officer as to whether the matter warrants administrative sanction in accordance with 3100.2. All actions related to discipline under Policy 3100.2 are the responsibility of the Disciplinary Officer.

1. In the memorandum to the School Dean, the faculty member should state what the nature of the offense was, the evidence, and the academic sanction imposed.
2. The memorandum will be retained on file with the Disciplinary Officer.
3. The Disciplinary Officer will notify the faculty member if an administrative sanction will be pursued.

Note: If you haven’t yet created an account, you will not be able to log in and register for a course. For instructions on how to create an account, please see Creating Accounts. If you are coming directly from your e-mail verification link, you can jump to View course list.

For video instructions please click on the image below.

https://youtu.be/b5i7sf8vKhk

Find your course
Click on the term to expand the menu further (note that Semester 1 refers to the first course in a sequence and not necessarily the first term of the school year).

Once the menus are fully expanded, you’ll see a link to a specific course. If this is indeed the course you’d like to register for, click the link. Otherwise, continue expanding the other menus until you locate the correct link and click it.

Enter key code if necessary
You may be asked to enter a Key code, which is not the same thing as an Access Card Code from a scratch-off card. The key code (if necessary) should have been provided to you by your instructor.

Enter your Zipcode and pay if necessary
Most courses require payment using a credit card, a PayPal account, or an Access Card Code from a scratch-off card purchased at your bookstore. In some cases, you may have additional options to enter the course for free for x days or to use your Sapling Learning credit. You can also buy multiple terms for a bulk discount.

When you return from paying, you will be enrolled in your course. If your credit card is not accepted, it may help to create a PayPal account, store your credit card info there, then use the PayPal option to pay for Sapling Learning.

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments. During sign up - and throughout the term - if you have any technical problems, send an email to support@saplinglearning.com or go to https://community.macmillan.com/docs/DOC-6915-students-still-need-help. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor.
Update 8.15.19

Fundamental of Chem 251 Survey

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First name</th>
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</table>

I typically post the points accumulated in the course up in my website so that students can see their points to date. In order for me to do so, I will need your permission. If it is okay for me to do this, please provide me with a four-digit code by which you can identify yourself, and sign.

<table>
<thead>
<tr>
<th>ID# or Digit code</th>
<th>Signature to post score</th>
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</thead>
</table>

Email address: ____________________________  Contact info Optional (phone#): ____________________________

In order for me to emphasize topics the class is most interested in covering, please answer these questions. (Write behind this page if you run out of room.)

<table>
<thead>
<tr>
<th>Major</th>
<th>Date</th>
<th>Pretest</th>
<th>Midterm</th>
<th>Final</th>
<th>Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frosh</td>
<td>Soph</td>
<td>Jr</td>
<td>Sr</td>
<td>Return College</td>
<td>Other (please state)</td>
</tr>
</tbody>
</table>

1. Colleges and year completed General Chemistry and Organic Chemistry

<table>
<thead>
<tr>
<th>General Chemistry</th>
<th>College</th>
<th>Year complete</th>
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<tbody>
<tr>
<td>Gen-Chem I</td>
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<tr>
<td>Gen-Chem II</td>
<td></td>
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<tr>
<td>Organic I</td>
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<td></td>
</tr>
<tr>
<td>Organic II</td>
<td></td>
<td></td>
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</tbody>
</table>

What other chemistry courses above OChem (if any) have you taken? ____________

2. What is your major? What is your career goal?

3. Please rate yourself in the following categories and elaborate each of the categories listed. (Circle your rating)

   a. Laboratory lab skills
      1. No clue
      2. Limited exposure
      3. Average
      4. Better than most
      5. Excellent
      Please elaborate

   b. Lab notebook writing
      1. Never had to do this
      2. Limited exposure
      3. Able to get by
      4. Better than most
      5. Outstanding
      Please elaborate

   c. Excel / statistic programs
      1. Never had opportunity
      2. Limited exposure
      3. Used in previous labs
      4. Better than most
      5. Great understanding
      Please elaborate

   d. Blackboard
      1. Never had opportunity
      2. Limited exposure
      3. Used in previous labs
      4. Better than most
      5. Great understanding
      Please elaborate

4. One Final Note: Although it should not be necessary to make this comment, dishonesty in any form will not be tolerated in this class. Anyone involved in cheating on the exams, etc., will fail the class and will be reported to campus authorities. Please review Miramar College academic integrity policy.

Please attach your resume or curriculum vitae to this survey (optional).

In this course, you are encouraged to study and prepare for quizzes and examinations with other students. However, when taking quizzes and examinations, and when writing laboratory reports, you are to work alone. The College regulations are very explicit about academic misconduct and cheating and these regulations will be fully enforced. During examinations, we will apply a code of honor, under which you are to work alone and neither give nor receive help from any source. Also, you are expected to help enforce this code. By signing below, you agree to abide by this code of honor.

Signature _______________________________  Date ________________

Any additional comments?
I would like to get an indication of your knowledge of chemistry before the course begins. There is no correct answer to the following questions, but please employ your full personal knowledge in answering the questions. Blank answers or answers like I don't know will receive less credit. (Write behind this page if you run out of room).

1. What is the difference between precision and accuracy?

2. Which number has the Most and Least number of significant figures. (Write M and L below your choice)
   
   - 0.00100
   - 10000
   - 0.100000
   - All have the same significant figures

3. Which measurement has the most and least uncertainty? (Write M and L below your choice)
   
   - 0.0010 g
   - 1000 g
   - 0.1000 g
   - 1.00 \cdot 10^{-4} g
   - All have the same significant figures

4. What is the chemical difference (if any) between a strong acid such as 1.0M HCl and a weak acid such as 1.0M HF?

5. What part of the electromagnetic radiation spectrum does the following instrument measure? (Gamma, X-rays, Vis, microwave...)
   
   - NMR
   - IR
   - UV-Vis

4. Indicate your knowledge in theory and operation of the following instrument
   (N) no experience    (H) heard of it    (K) Know a little    (B) Beginner user    (I) Intermediate    (A) Advance user
   (R)ank instruments in terms of your interest.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Instrument</th>
<th>Theory</th>
<th>Operation</th>
<th>Comment on your experience with instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UV-Vis spectroscopy</td>
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<td></td>
<td>FTIR</td>
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<td>Atomic absorption (IP-AAS)</td>
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<td>Nuclear Magnetic Spectroscopy</td>
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<td>Luminescence Spectroscopy</td>
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<td>Electrochemistry</td>
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<td>Gas Chromatography MS (GCMS)</td>
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<td>High Performance LC (UPHPLC)</td>
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<td></td>
<td>Liquid-Chromatography MS</td>
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</table>

5. Rate your skill in using technology and computers,
   i.e., converting docs to pdf, take photo with phone and upload to Blackboard, zipping files, uploading screenshots to MS Word.
   
   1 --------------------------- 2 --------------------------- 3 --------------------------- 4 --------------------------- 5

   Never had opportunity   Limited exposure   Used in previous labs   Better than most   Great understanding

Please elaborate