Name: Dr. Brian Barngrover  
Department: Chemistry & Biochemistry  
Email: barngrovbm@sfasu.edu  
Phone: (936) 468-1568  
Office: M-124  
Office Hours: Tues. and Thur. 8:00 – 10:00 am, Wed. and Thur. 1:00 – 2:30 pm; other times by appointment

Name: Dr. J. Brannon Gary  
Department: Chemistry & Biochemistry  
Email: garyjb@sfasu.edu  
Phone: (936) 468-2189  
Office: M-116  
Office Hours: Tues. and Thur. 10:00 am – noon, Tues. 4:00 – 5:00 pm; other times by appointment

Course Prerequisites and Corequisites:  
Prerequisite: MTH 138  
Corequisite: CHE 133

REQUIRED TEXTS AND OTHER MATERIALS:  
Chemistry Laboratory Notebook with duplicate pages.  
TI Graphing Calculator.  (Model 82, 83, 83+, 84, 86, 89, 92, 92+)


COURSE GOALS: The student should learn basic laboratory techniques and be able to apply them in a practical chemistry setting.

STUDENT OUTCOME OBJECTIVES:  
Upon completion of this course students will:  
- Understand and apply method and appropriate technology to the study of natural sciences.  
- Recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.  
- Demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.  
- Demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.
Course Calendar:

<table>
<thead>
<tr>
<th>Date</th>
<th>Lab Experiment</th>
<th>Lab Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 30</td>
<td>Orientation, Safety, Check-In, and Sig. Fig. Dry Lab I</td>
<td></td>
</tr>
<tr>
<td>September 6</td>
<td>Dimensional Analysis and Sig. Fig. Dry Lab II</td>
<td>Sig. Fig. Dry Lab I</td>
</tr>
<tr>
<td>September 13</td>
<td>Identification of an Unknown Solid</td>
<td>Dimensional Analysis and Sig. Fig. Dry Lab II</td>
</tr>
<tr>
<td>September 20</td>
<td>M&amp;M Chromatography Nomenclature Dry Lab</td>
<td>Identification of an Unknown Solid</td>
</tr>
<tr>
<td>September 27</td>
<td>Measuring Liquid Volumes</td>
<td>M&amp;M Chromatography Nomenclature Dry Lab</td>
</tr>
<tr>
<td>October 4</td>
<td>Formula of a Hydrate</td>
<td>Measuring Liquid Volumes</td>
</tr>
<tr>
<td>October 11</td>
<td>Titration Macroscale</td>
<td>Formula of a Hydrate</td>
</tr>
<tr>
<td>October 18</td>
<td>Titration Microscale</td>
<td>Titration Macroscale</td>
</tr>
<tr>
<td>October 25</td>
<td>Sugar Content of Juice</td>
<td>Titration Microscale</td>
</tr>
<tr>
<td>November 1</td>
<td>Acid Content of Juice</td>
<td>Sugar Content of Juice</td>
</tr>
<tr>
<td>November 8</td>
<td>Vitamin C Content of Juice</td>
<td>Acid Content of Juice</td>
</tr>
<tr>
<td>November 15</td>
<td>Lab Practical</td>
<td>Vitamin C</td>
</tr>
<tr>
<td>November 29</td>
<td>Check-Out and Review</td>
<td></td>
</tr>
<tr>
<td>December 6</td>
<td>Final</td>
<td></td>
</tr>
</tbody>
</table>

Grading Policy:

*Experiments (10 points per report)*: Lab reports will be done for each experiment performed. These reports will be due at the beginning of the indicated lab period. Turning in a report late will result in a 20% point deduction. Failure to turn in a report on the day it is due will result in a grade of zero (0).

*Dry Labs (10 points per)*: The concepts on these exercises will be covered both in lecture and laboratory. Turning in a report late will result in a 20% point deduction. Failure to turn in a report on the day it is due will result in a grade of zero (0).

*Final Exam (50 points)*: The final exam will be comprehensive for the whole semester and cover nomenclature as well.

*Lab Practical (25 points)*: During this exam, you will be expected to perform skills from the whole semester.

*Written Report (20 points)*: You will be writing one laboratory report over the project information.
**Method of Evaluation:**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>POINT VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiments</td>
<td>100</td>
</tr>
<tr>
<td>Dry Labs</td>
<td>20</td>
</tr>
<tr>
<td>Written Report</td>
<td>20</td>
</tr>
<tr>
<td>Lab Practical</td>
<td>25</td>
</tr>
<tr>
<td>Final Exam</td>
<td>50</td>
</tr>
<tr>
<td><strong>TOTAL POINTS</strong></td>
<td><strong>215</strong></td>
</tr>
</tbody>
</table>

**Grading Scale (Based on 215 Total Points Possible)**

215-193 = A; 192-171 = B; 170-150 = C; 149-128 = D; 127-0 = F

**Make-up Policy:** There will be no make-ups in this class. This refers to both recitation and laboratory. Please make the instructor aware of any university related absences well in advance.

**Attendance Policy:**

Attendance of class is mandatory. Two (2) or more absences will result in an ‘F’ for the course. Absences may be assigned to anyone that disrupts class, sleeps in class, or consistently comes in late or leaves early.

**Academic Integrity (A-9.1):**

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

**Definition of Academic Dishonesty**

Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)
**WITHHELD GRADES SEMESTER GRADES POLICY (A-54):**

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

**STUDENTS WITH DISABILITIES:**

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

**LAB NOTEBOOK:**

The laboratory notebook must be a permanently bound book with alternating white and yellow quadrille ruled sheets. The yellow sheets will be used to make carbon copies of the original white sheets. The carbon copy sheets are to be handed in as the lab report.

---

**RULES FOR LAB NOTEBOOK**

a.) ALL DATA IS TO BE RECORDED IN BLACK/BLUE INK DIRECTLY IN THE NOTEBOOK!!!!
b.) Label and date all entries.
c.) An error should be lined through with a single horizontal line, initialed and briefly explained.
d.) A single diagonal line should be drawn across any page that is to be ignored, initialed and briefly explained. This includes completely blank pages.
e.) The backs of the yellow pages may be used for scratch work BUT, measurements and readings are to be recorded as DATA.
f.) Number all the pages in the notebook in the upper right hand corner of the page. The yellow carbon copies must bear the same number as the white originals.
g.) Use page 1 for a TABLE OF CONTENTS. This should be maintained on a current basis at all times.
h.) Use page 2 for a PREFACE and a table of abbreviations. Include your name, classification, major, course title, number, section, semester, year, and instructor.
i.) BE SURE TO WRITE HARD ENOUGH SO THE CARBON SHOWS UP!!!! If I can’t read it, I can’t grade it.
j.) Do not tear pages out of your lab notebook.
NOTEBOOK FORMAT - Begin each experiment on a new page. – The Format of your laboratory notebook counts two (2) points towards every experiment grade.

1.) **Purpose: (done before recitation)**
   Give the title of the experiment and a 1 or 2 sentence description of the purpose of the experiment. This should be written in a complete sentence in 3rd person (that means not using I, we, you). Your purpose should also describe the technique used to accomplish the experiment. This should be done in your own words -- do not copy from the manuals. Important chemical reactions and mathematical equations should also be included here.

2.) **Procedure: (done before recitation)**
   Outline the procedure of the experiment. This can be as simple or as extensive as you wish. Remember, this procedure should be complete enough so that you could complete the experiment without your laboratory manual. If you don’t include a direction, how will you finish the experiment?

3.) **Questions/Data Tables: (done before recitation)**
   You should have any data tables that are in your lab manual reproduced in your notebook. All you should have to is gather data and put it in the table. If there are questions or calculations to be completed, make sure you write these out before you come to class. Be sure to leave enough room on the paper to answer the questions.

4.) **Calculations**
   Give one example of each type of calculation used in the experiment that has not been included in the previous section. In general, this section will deal with the calculation of the final results. Be sure to include a set-up with all appropriate units. Whenever multiple samples of the unknown are analyzed, the average and the average and standard deviation (s) should be calculated.

5.) **Conclusion**
   Report your final results. Final results will be graded on quantitative/qualitative basis, depending on the experiment. You should include your results and state if you accomplished the purpose of the experiment. Your results should support your conclusion. This should also include an error analysis/problems associated with the experiment.