

**CHEMISTRY 112**

**TTh-3:30 LEC**

**Course # 21736**

**Laboratory # 21737**

Fall 2017

INSTRUCTOR: Cheryl Shimazu

I the undersigned, have received and read the  
Chemistry 112 Lecture and Laboratory Syllabus and Information

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_

# SYLLABUS - CHEMISTRY 112 - 3:30 T/TH LEC

## Fall 2017

Course #: 21736 (Lec) & #21737 (Lab)

Instructor: Cheryl Shimazu

Office Hours: T 2:30 - 3:30 pm W 9:00-9:30 am TH 2:00-3:30 pm

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E-Mail: [cshimazu@cerritos.edu](mailto:cshimazu@cerritos.edu)

Website: [www.cerritos.edu/cshimazu](http://www.cerritos.edu/cshimazu)

School Address: 11110 Alondra Blvd. Norwalk, CA 90650

**Catalogue Course Description:** This course is designed for science majors and is a continuation of CHEM 111. It includes oxidation-reduction; electrochemistry; modern atomic structure and bonding; molecular geometry; coordination chemistry; nuclear chemistry; thermodynamics; kinetics and organic chemistry. The laboratory includes qualitative analysis

**Prerequisites:** A grade of "C" or better in Chemistry 111, First Semester General Chemistry. No exceptions to these prerequisites will be allowed.

**Recommendation:** It is strongly recommended that the preceding prerequisite be completed within four years prior to the date of enrollment in CHEM 112

### **REQUIRED MATERIALS:**

1. Chemistry, A Molecular Approach, 4<sup>rd</sup> Edition, by Nivaldo J. Tro  
including: Mastering Chemistry with Pearson eText Student Access Kit
2. Scientific Calculator
3. Safety in the Chemistry Laboratory by Cerritos Chemistry Dept. (Online)
4. Safety goggles with splash protection in compliance with ANSI 287.1-1989 as required by California State Law (see laboratory ground rules)
5. Lab Coat/Apron (see laboratory ground rules)

### **LEARNING OUTCOMES:**

1. Apply knowledge of microscopic (molecular) interactions to explain or predict macroscopic properties.
2. Apply critical thinking strategies in solving algorithmic and conceptual problems in chemistry.  
Incorporate chemical principles to explain lab results and vice versa.
3. Apply laboratory skills to perform chemical analysis including collection of data, computations, and statistical analysis of the results.
4. Use effective written communication of chemical information.
5. Make effective use of current technology to collect and analyze data

### **LECTURE OUTLINES AND WORKSHEETS:**

1. Lecture outlines and worksheets are posted on my webpage: [www.cerritos.edu/cshimazu](http://www.cerritos.edu/cshimazu) .  
You need to print out the lecture outlines and worksheets and bring them to lecture with you.
2. All chapters assigned in the schedule are from the textbook, Chemistry: A Molecular Approach, TRO 4<sup>rd</sup> Edition, by Nivaldo J. Tro

## HOMWORK:

### ONLINE HOMEWORK:

1. Online homework is required for this class. I will drop 1 online homework assignments. Late homework will not be accepted however you will still have access to the homework the entire semester for review and practice.
2. Buy the text with the online access code or go online and buy the online access code.
3. Access online homework at: [www.masteringchem.com/](http://www.masteringchem.com/)

### ANSWER KEYS TO ASSIGNED PROBLEMS FROM MY LECTURE OUTLINES:

Answer keys for problems assigned from my lecture outlines are found on my website. These problems will not be collected. It is your responsibility to do all problems assigned and check all set-ups and answers (See my website!). Similar problems will be found on exams.

### END OF THE CHAPTER TEXTBOOK PROBLEMS:

See pages 6-7 for assigned problems at the end of each chapter. Answers are in the back of the textbook. These problems will not be collected. Similar problems may be found on exams.

## METHODS OF EVALUATION:

- Hour Exams: Four exams, each worth 100 points. The lowest exam score will be dropped. All exams will be closed book/closed notes. All books and papers must be out of sight. Complete setups must be given in order to receive credit. (I.e. no credit for answers alone.) *No Make-up exams will be given.*
- In Class Quizzes: In Class Quizzes are worth 20 pts. Each. 2 Quizzes will be dropped. *No Make-up quizzes will be given.*
- Online homework: Online homework is required for this class. I will drop 2 online homework assignments during the course of the semester. Late online homework will not be accepted. (See above).
- Errors in grading: You have 1 week after the return of your exams or quizzes to see me to correct any grading errors.
- Lecture Outline Problems/Worksheets: Lecture Outline Problems /Worksheets and Lecture Outline Problems/worksheet answer keys are found on my website. These problems will not be collected. It is your responsibility to do all problems assigned and check all set-ups and answers (See my website!). Similar problems will be found on exams.
- Final: The final will be worth 150 points.
- Laboratory: See lab handout
- Lecture Grade Distribution

<u>Activity</u>	<u>Points</u>
• Exams	300
• Quizzes	100
• Final Exam	150
• Online Homework	75

- GRADING SCALE:

<u>PERCENTAGE</u>	<u>GRADE</u>
90 and above	A
80-89	B
70-79	C
60-69	D
59 and below	F

- COURSE GRADE DISTRIBUTION: LECTURE = 67% & LABORATORY = 33%  
To achieve a "C" or greater for Chem. 111 you must obtain an overall grade of 70% and:
  1. Pass the lecture portion
  2. Pass the laboratory portion
  3. Pass the lecture final

A Failing Score (With an "F"-59% and below) in Lecture, Laboratory or on the Lecture Final will result in a course grade no higher than a "D"

**Withdrawals:**

If you find it necessary to drop the course: DO NOT JUST STOP ATTENDING CLASS. Use "My Cerritos" Friday, Nov. 17, 2017 is the last day to withdraw, but a "W" will appear on your transcript.

**Accessibility:** It is the college's policy to provide, on an individual basis, reasonable accommodations to student who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to come to my office hour or talk to me after class to discuss your individual needs for accommodations. If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructors and the Disabled Student Programs and Services at (562) 860-2451 ext. 2335, as early as possible in the term.

**First Week Attendance:** You must attend both lecture and lab the first week of the semester on time. (1<sup>st</sup> and 2<sup>nd</sup> day of the semester) unless excused by the instructor. **If you have any unexcused absences during the first week, you will be dropped from the course.** It is your responsibility to contact the instructor to be excused.

**Attendance/Performance:** Past experience has shown that students must attend lecture to achieve a good course grade. It is your responsibility to regularly attend lecture and laboratory. You may be dropped if you fail to attend 3 class sessions. (One hour past two class sessions, actually)

**Absence:** Students are responsible for ALL work, announcements, handouts and material missed during an absence.

**Assistance during an absence:** Contact me by phone or e-mail so that I can keep you informed of class work including announcements of due dates of lab work, handouts, quiz/exam dates.

**Laboratory:** You must attend your assigned lab time. Make-up labs can be authorized by your lab instructor.

**Cheating policy:**

See your Spring Cerritos College Schedule of Classes: Academic Honesty/Dishonesty Policy. Essentially, if you cheat, you will be dismissed from the course with an "F" grade.

**Word to the Wise:**

Come prepared. It is your responsibility to come to lecture, lab and exams with the proper material (paper, pencils, calculator, text, lab sheets...etc.) You need to keep up with the assignments daily: last minute cramming in chemistry does not work!

## How to Join Another MasteringChemistry Course

### CHEM 112 – SHIMAZU T/Th LEC

To join another MasteringChemistry® course, see which column below applies to you. You can be in up to four MasteringChemistry courses, whether at the same time or one after another.

<p><b>If you CAN STILL LOG IN to a MasteringChemistry course</b></p> <p><b>-AND-</b></p> <p><b>Your next MasteringChemistry course uses the same textbook (including its edition) or the same resource, such as Virtual Lab, as the original course:</b></p>	<p><b>If you CANNOT LOG IN to a MasteringChemistry course anymore</b></p> <p><b>-OR-</b></p> <p><b>If your next MasteringChemistry course uses a different textbook or different resource, such as Virtual Lab, than your previous course:</b></p>
<p><b>Follow the instructions below.</b></p> <p>You don't need to register again (i.e., redeem an access code or buy access online).</p> <p><i>Note:</i> Your instructor controls the end date for each MasteringChemistry course. You can no longer log in to a course after its end date.</p>	<p><b>Follow the instructions in the student guide for getting started</b></p> <p>(available from <a href="http://www.masteringchemistry.com">www.masteringchemistry.com</a> &gt; Tours &amp; Training &gt; Getting Started). You will need to redeem an access code or buy access online.</p> <p><i>Tip:</i> To help manage your Pearson resources, use the same Pearson user account (as identified by your Login Name and Password) for all of your Pearson products.</p>

#### Join another MasteringChemistry course and open available self-study resources

1. Click **My Courses** in the upper left.
2. Choose **Join Another Course**

Enter the Course ID: **shimazu47819**

3. and click **Continue**.
  - *If the Course ID you entered applies to a different book or another resource for which you don't have access yet:* You will be asked to either redeem an access code or buy access online. Follow the on-screen instructions.
2. If asked, enter your Student ID according to the instructions provided and click **Continue**.
  - *If you want to consult with your instructor first:*  
You can add your Student ID later by clicking your name link in the upper right.

You should see the Course Home page of the additional course. From now on, logging in will take you to the Course Home page of the MasteringChemistry course you last worked in.

- *To switch your view among MasteringChemistry courses:*  
**My Courses > Switch to a Different Course** menu.
  - *To check out self-study resources:* Click **eText** and/or **Study Area**, as available.
- Support**

Go to the Support area of [www.masteringchemistry.com](http://www.masteringchemistry.com), where you will find:

- System Requirements
- Answers to Frequently Asked Questions
- Registration Tips & Tricks video
- Contact information for Support, including Live Chat

# MasteringChemistry<sup>®</sup>

## CHEM. 112 – SHIMAZU T/TH LEC

### Student Registration for New Mastering Chemistry Students

In this course you will be using MasteringChemistry<sup>®</sup>, an online tutorial and homework program that accompanies your textbook. *If you have joined a MasteringChemistry course before and can still log in:*

Save time by following the guide for joining another course found under the STUDENT heading at [www.masteringchemistry.com](http://www.masteringchemistry.com) > *Tours & Training* > *Getting Started* instead of using the steps below.

#### What You Need:

- ✓ **A valid email address**
- ✓ **A student access code**  
(Comes in the Student Access Code Card/Kit that may have been packaged with your new textbook or that may be available separately in your school's bookstore. Otherwise, you can purchase access online at [www.masteringchemistry.com](http://www.masteringchemistry.com).)
- ✓ **The ZIP or other postal code for your school: 90650**
- ✓ **A Course ID: **shimazu47819**** (Provided by your instructor.)

#### 1. Register

- Go to [www.masteringchemistry.com](http://www.masteringchemistry.com) and click **Students** under **Register**.
- To register using the student access code inside the MasteringChemistry Student Access Code Card/Kit, select **Yes, I have an access code**. Click **Continue**.

–OR– *Purchase access online:* Select **No, I need to purchase access online now**. Select your textbook, whether you want access to the eText, and click **Continue**. Follow the on-screen instructions to purchase access using a credit card. The purchase path includes registration, but the process is a bit different from the steps printed here.

- **License Agreement and Privacy Policy:** Click **I Accept** to indicate that you have read and agree to the license agreement and privacy policy.
- Select the appropriate option under “Do you have a Pearson Education account?” Continue to give the requested information until you complete the process. The **Confirmation & Summary** page confirms your registration. This information will also be emailed to you for your records. You can either click **Log In Now** or return to [www.masteringchemistry.com](http://www.masteringchemistry.com) later.

#### 2. Log In

- Go to [www.masteringchemistry.com](http://www.masteringchemistry.com).
- Enter your Login Name and Password that you specified during registration and click **Log In**.

#### 3. Join Your Instructor's Online Course and/or Open Self-Study Resources

Upon first login, you'll be asked to do one or more of the following:

- **Join a Course** by entering the **MasteringChemistry Course ID** provided by your instructor. If you don't have a Course ID now, you can return to join the MasteringChemistry course later. When you join a course, you may also be asked for a Student ID (follow on-screen instructions).
- **Explore the Study Area** or **Launch Your eText**, if these resources are available for your textbook.

#### To Access MasteringChemistry Again Later

Simply go to [www.masteringchemistry.com](http://www.masteringchemistry.com), enter your Login Name and Password, and click **Log In**.

*After you have joined a course:* You can open any assignments from the **Assignments Due Soon** area or from the **Assignments** page. For self-study, click **eText** or **Study Area**, if these options are available.

#### Support

Access Customer Support at <http://www.masteringchemistry.com/support>, where you will find:

- System Requirements
- Answers to Frequently Asked Questions
- Registration Tips & Tricks video
- Additional contact information for Customer Support, including Live Chat

## Chemistry 112, Fall 2017 Tentative Lecture Schedule and Assigned Problems

**Textbook to buy:** Chemistry, A Molecular Approach, 4<sup>rd</sup> Edition, by Nivaldo J. Tro

Answers to the text's problems are in the back of the text. Additional problems will also be handed out in lecture. Answer keys are available. These problems are assigned but not collected. It is your responsibility to work these problems; similar types of problems will be on quizzes and examinations.

Week of	TOPIC	CHAPTER READING	PAGES	TEXTBOOK ASSIGNED PROBLEMS
<b>EXAM I MATERIAL</b>				
Aug. 14	Introduction Thermochemistry (Review)	Chap 6	248-282	<b>Chap 6:</b> 47,49,63,65,71,73,79,81,85
	Free Energy & Thermodynamics	Chap 18	838-875	<b>Chap 18:</b> 35,51,61,67,73,75
Aug. 28	Oxidation Number and Redox Equations	Chap 4:9	175-182	<b>Chap 4:</b> 93,95,97
Sep. 4	Electrochemistry	Chap. 19	888-927	<b>Chap 19:</b> 39,41,43,49,51,53,55,57,61,63,65,67,69,75,77,79,81,99,101,111
Sept. 18	The Quantum-Mechanical Model of the Atom	Chap 7	296-328	<b>Chap 7:</b> 41,51,57,59,61,65,69,71
<b>EXAM II MATERIAL</b>				
Sept. 25	Review: Lewis Structures	Chap 9.7	400-402	<b>Chap 9:</b> 51,53,59,61
	Resonance Structures and bond Energies	Chap 9.8-9.10	402-415	
Oct. 2	Chemical Bonding: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory	Chap 10	426-472	<b>Chap 9:</b> 35,39,41,45,61,63,65,71,75,77,79,81,83,85, 91
<b>EXAM III MATERIAL</b>				
Oct. 16	Transitional metals and Coordination Compounds	Chap 25	1126-1150	<b>Chap 25:</b> 21,23,25,29,31,33,37,39,41,43,45,47,49,51, 65,67
Oct. 30	Complex Ion Equilibrium	Chap 17.8	821-825	<b>Chap 17:</b> 109,110,111,112,146,147
<b>EXAM IV MATERIAL</b>				
Nov. 6	Chemical Kinetics	Chap 14	622-658	<b>Chap 14:</b> 39,41,45,47,49,51,53,55,56,57,59,61,63,65,67,75,77,78,83,95,96,106,107,109
Nov. 13	Organic Chemistry	Chap 21	978-1012	<b>Chap 21:</b> 35,37,41,43,47,51,53,55,57,59,61,71,75,79 See Organic handouts
Nov. 27	Radioactivity and Nuclear Chemistry	Chap 20	938-969	<b>Chap 20:</b> 31,35,41,45,47,49,51,53,55,57,59,61
Dec. 14	<b>* FINAL EXAM</b>			
* <b>Final Exam</b> You must pass lecture, lab and lecture final and obtain a 70% overall to obtain a grade of a "C" or higher (in other words if you fail lecture or lab or the lecture final (59% or below, your highest grade will be a "D")				

## Chemistry 112 Laboratory Ground Rules

### LAB GRADE

$$\text{Laboratory \% overall} = \frac{2 (\% \text{ Laboratory quizzes}) + \% \text{ Laboratory Reports}}{3}$$

(The Laboratory quizzes are worth 66.7 % of your grade and your Laboratory reports are worth 33.3 % of your grade.)

The lecture is worth 67% of your overall Chemistry 112 grade. The laboratory is worth 33% of your overall Chemistry 112 grade. **Overall Chem. 112 Course % = 0.67 (Lecture %) + 0.33 (Lab %)**

If you fail to successfully complete more than two experiments (Both the experimental and write-up portions), your course grade will be no higher than a D.

### REQUIRED MATERIALS

1. Laboratory Safety, Cerritos Chemistry Department (Online)
2. Safety goggles in compliance with ANSI Z87.1-1989 which provide splash protection as required by California State Law. **THESE ARE TO BE WORN AT ALL TIMES IN LAB.**
3. Lab Apron
4. Student Lab Notebook, Hayden-McNeil Specially Products

### SAFETY QUIZ

Each student in the Chem. 112 lab must thoroughly read and understand the material presented in the required Safety Manual by the Chemistry department. The Safety quiz will be given in the second day of lab during the quiz section. You will need to bring a Scantron 882 to take the safety quiz. You must score 90% on the safety quiz. If you do not receive a satisfactory score, you will be allowed to retake each quiz once. If you do not get a satisfactory score after retaking a quiz, you will receive an F grade for the lab portion of the course. If you choose not to drop the class and remain, knowing that the lab grade and the course grade will be an F, you will not be allowed to do any experiments.

All safety procedures specified in the packet, Safety in the Chemistry Laboratory, must be followed at all times in the laboratory. Failure to work safely in accordance with those as well as any other safety procedures presented to you in the safety video, in written experiment instructions, or verbal instructions from your lab instructor, can result in your being removed from the lab. Failure to wear safety goggles can result in your being removed from the lab.

### EXPERIMENTS

Experiments are done on the dates shown on the lab schedule and are to be performed alone unless otherwise specified in the Chem. 112 lab manual or by the instructor. All reports will be done in either black or blue ink. All observations and data are recorded directly into the laboratory notebook. Failure to do so could result in a "zero" for the experiment. Your lab instructor must initial each page in your lab book before you leave the lab. **NO CREDIT WILL BE GIVEN WITHOUT THE INITIALS.** Late reports will be accepted no more than two lab periods late and are discounted 10% per each lab period. All work must be turned in by the Thursday before final exam week. Late work will no longer be accepted at the start of the final exam week.

### LAB QUIZZES

A lab quiz for each experiment will be given on the day the lab report is due. **THERE ARE NO MAKEUP QUIZZES.** You are expected to take the quiz regardless of whether or not you have completed the experiment.

### LOCKER RESPONSIBILITY

Each Chem. 112 student will be assigned a locker and its master lock combination. Once a locker is assigned, the master lock combination and locker contents become the responsibility of the student. You must leave the locker clean and fully equipped when you check out at the end of the semester

### COMMUNITY DRAWER RESPONSIBILITY

The community locker/drawer contains items of equipment that are not found in a student's assigned locker. These items are shared among Chem. 112 students with lockers in the same vicinity. You may use these items during a lab, but they must be returned to the community locker/drawer before you leave the laboratory.

### DROPPING THE LAB

You must check in your locker to officially drop the Chem. 112 class. This involves checking into your locker during your regularly scheduled lab period. If this is not possible, the stockroom will check you in by making an appointment with them at (562) 860-2451 extension 2695. An administrative hold will be placed on your records if you fail to check-in and pay any debt owed to the stockroom by Thursday of final exam week.



## CHEMISTRY 112 LAB SCHEDULE Fall 2017

- STUDENTS MUST BUY:**
1. Goggles
  2. Laboratory Safety by Chemistry Department (Online)
  3. Student Lab Notebook, Hayden-McNeil Specially Products
  4. Lab Apron

**REPORTS:** Reports are due at the beginning of the quiz session. 10% of the points is subtracted for a report turned-in after quiz section has started. An additional 10% is subtracted for each day the report is late.

DATE	Periods for Experiment	Experiment
Aug. 15	1	<ol style="list-style-type: none"> <li>1. Check into Lab lockers</li> <li>2. Safety-Read safety manual</li> </ol>
Aug. 17	1	<ol style="list-style-type: none"> <li>1. Safety Quizzes</li> <li>2. <u>Calorimetry</u>- Determining the heat evolved during a neutralization reaction. Performing an indirect determination for the heat released in the formation of Magnesium Oxide. Performing foundational thermal chemistry calculations</li> </ol> <p><b>*Note:</b> Notebook write-up is required</p>
Aug. 29	1	<ol style="list-style-type: none"> <li>1. Quiz on Calorimetry Expt.</li> <li>2. Calorimetry Lab report due</li> <li>3. <u>Balancing Redox Equations</u>- A "dry lab"/nonexperimental worksheet on determining oxidation numbers, reducing and oxidizing agents, and balancing redox reactions</li> </ol>
Aug. 31 - Sept. 4	2	<ol style="list-style-type: none"> <li>1. Quiz on Balancing Redox Equations</li> <li>2. <u>Oxidation - Reduction Experiment</u>- Qualitative analysis, making observations, distinguishing the stronger oxidizing and reducing agents in spontaneous and nonspontaneous Redox reactions</li> </ol>
Sept. 7-12	2	<ol style="list-style-type: none"> <li>1. Quiz on Oxidation-Reduction Experiment</li> <li>2. Oxidation-Reduction Experiment lab report due</li> <li>3. <u>Cation Group Separations Experiment</u>- Qualitative Analysis in which the cation content in a mixture is determined</li> </ol>
Sept. 14-21	3	<ol style="list-style-type: none"> <li>1. Quiz on Cation Group Separations</li> <li>2. Cation Group Separations lab report due</li> <li>3. <u>Cation Group III Part A Preliminary Tests</u> - Observing precipitating , formation of complex ions, and oxidation reactions of Cation Group III ions</li> </ol>
Sept. 26 - Oct. 12	4	<ol style="list-style-type: none"> <li>1. Quiz on Cation Group III Part A Preliminary Tests</li> <li>2. Cation Group III Part A Preliminary Tests lab report due</li> <li>3. <u>Cation Group III Part B: Known and Unknown Analysis</u>-_A complex Qualitative Analysis involving the separation and identification of Cation Group III ions in an unknown mixture.</li> </ol>

Oct. 17 - Oct. 19‡	2	<ol style="list-style-type: none"> <li>1. Quiz on Cation Group III Part B: Known and Unknown Analysis</li> <li>2. Cation Group III Part B: Known and Unknown Analysis lab report due</li> <li>3. <u>Part A: Preparation of an Iron Coordination Compound</u>- A two-part experiment, in which, the iron coordination compound, <math>K_3Fe(C_2O_4)_3 \cdot 3H_2O</math> is synthesized in a multistep synthesis.</li> </ol>
Oct. 24 - 31‡	3	<ol style="list-style-type: none"> <li>1. Quiz on Part A: Preparation of an Iron Coordination compound</li> <li>2. Part A: Preparation of an Iron Coordination compound lab report due</li> <li>3. <u>Part B - Analysis of Iron Coordination Compound</u>- the iron coordination compound, <math>K_3Fe(C_2O_4)_3 \cdot 3H_2O</math> produced in a multistep synthesis in Part A will be analyzed for the iron and oxalate content and it's purity will be assessed.</li> </ol>
Nov. 3 - 9	3	<ol style="list-style-type: none"> <li>1. Quiz on Part B: Analysis of an Iron Coordination compound</li> <li>2. Part B: Analysis of an Iron Coordination compound lab report due</li> <li>3. <u>Spectrophotometric Determination of an Equilibrium Constant</u>- The equilibrium constant, <math>K_f</math>, will be determined for the <math>FeSCN^{2+}</math> equilibrium using a spectrophotometric technique.</li> </ol>
Nov. 14 - 21	3	<ol style="list-style-type: none"> <li>1. Quiz on Spectrophotometric Determination of an Equilibrium Constant</li> <li>2. Spectrophotometric Determination of an Equilibrium Constant lab report due</li> <li>3. <u>Temperature and Concentration Effects on Reaction Rates</u>- The effects of temperature and concentration on the rate of a reaction will be determined. Rate orders, a rate constant, and energy of activation for the reaction will be determined experimentally</li> </ol>
Nov. 28 - 30	2	<ol style="list-style-type: none"> <li>1. Quiz on Temperature and Concentration Effects on Reaction Rates</li> <li>2. Temperature and Concentration Effects on Reaction Rates lab report due</li> <li>3. <u>Visualizing Organic Reactions with Models</u>- Utilize molecular model kits to demonstrate the 3 dimensional aspects of organic isomers, stereochemistry, reactions, and nomenclature</li> </ol>
Dec. 5 - 7	2	<ol style="list-style-type: none"> <li>1. Quiz on Visualizing Organic Reactions with Models</li> <li>2. Visualizing Organic Reactions with Models lab report due</li> <li>3. Locker Clean-up and check-in</li> </ol>

‡ Tentative experiment dates due to lecture schedule

\*All work must be turned in by the Thursday of the last week of instruction. Late work after Thursday will not be accepted

\*\*Failure to check out of your locker by the end of the semester may result in your records being placed on administrative hold

# Chemistry 112

## Laboratory Instruction

1. All experiments must be carried out in the assigned laboratory time. You are expected to organize your time and work accurately and efficiently. Labs missed due to illness or other special circumstances may be made up by special arrangement with the instructor.
2. Laboratory Note Books:
  - a. Lab Books must contain a table of contents
  - b. Each experiment must be titled with a brief discussion about the technique used in the analysis.
  - c. You must also include: (1) All data, (2) Observations, (3) Equations, and (5) Calculations (6) Graphs, to be included with the calculations and (7) Summaries. Graphs and Summaries must be "cut-down" to size and completely taped down into the appropriate lab page.
  - d. At the end of each lab day you must have your data sheet initial by your instructor. Failure to do this will result in no credit for your experiment.

SEE Lab Book Handout.

3. Late Reports: Experiments must be turned in by the beginning of the lecture on the scheduled due date. A penalty of 2 points per working day (Mon-Fri.) will be subtracted for each day an experiment is late.
4. A grade of 30% will be the lowest grade given for faithfully performed, completed, and reported experiments (unless additional points are deducted for reasons other than accuracy).
5. A grade of zero will be given for any experiment which is not completed.
6. Recalculations: Only one recalculation will be permitted on an experiment and then only if an obvious mathematical error exists. Five points will be deducted for each recalculation occurring. The grade for the recalculated experiment will stand, whether higher or lower than the first grade.
7. There is to be no smoking or eating in the laboratory. Safety goggles must be worn at all times.

# Laboratory Note Book

## A. PURPOSE

An original laboratory Record Book is used as an accurate, chronological, and permanent record of work done in the lab.

## B. NOTEBOOK

The notebook must be a BOUND Record Book (with a tear-off page to be handed in). A loose-leaf notebook is not acceptable.

## C. CONTENTS

Include in your Lab Book the following:

1. A table of contents.
2. Page numbers are to be located at the upper outer corner of the page.
3. Each experiment should have six parts (in an outline format):
  - a. Title
  - b. Purpose
  - c. Applicable equations
  - d. Materials table
  - e. Procedure
  - f. Data (Including observations)
  - g. Unknown number (if applicable)
  - h. Graphs, if applicable (each completely taped to its own page)
  - i. Calculations (if applicable)
  - j. Summary

## D. RULES

1. Record ALL WORK directly in the lab book at the time the work is performed. **DO NOT** write on other paper for later transfer to the lab notebook. Doing so will result in no credit for the work performed.
2. Record your entries in blue or black ink. Pencil is unacceptable. If a mistake is made, it should never be erased or obliterated. Instead, cross it out with a single horizontal line. Also, numbers should never be written over.
3. Entries should be well labeled. A series of Mn calculations should be labeled "Calculation of % Mn", for example.
4. Graphs, charts, photographs, and /or charts must be attached when applicable.
5. Each notebook page should be dated and signed by your instructor at the end of **each day**. Failure to do so will result in no credit for your work.
6. Summaries must be turned into Turnitin.com before submitting your lab report for grading. Failure to do so means that you will not receive points for your summary.
7. **DO NOT** remove permanent pages from the lab book (only the "tear out" pages to be handed in). Draw a diagonal line through any page that will not be used or partially unused.