Ch00

If you are enrolled or on the wait list —sign the roll sheet!

If you are trying to add the class, add your name!

Chem 30A — Lab Intro

Intro to General, Bio, & Organic Chemistry.

Lab Check-in & Setup.

section 02 CRN 42690

Choose where you want to sit. You will be keeping that seat through the quarter, so give it some thought.





Getting started...

- Sign-in Sheet
- Pickup:
 - De Anza Safety Contract
 - ► Equipment Loan Agreement
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 - You'll keep that seat for the semester.
- Experiments & Reports
- Homework
- Safety (there will be a quiz on this!)
 - ▶ Tour of the lab room/safety equipment.
 - Where do we go if there is a fire?
 - Video of general safety practices.
 - Discuss Required Lab Materials
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 - Locker Assignments: receive orange slips
 - ▶ This has your locker assignment and combo.
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- ▶ Tell me how you want to be called: update FName on orange slip.
 - example: do you prefer "Thomas" "Tommy" "Tom"...
- Write in bench number.
- Collect Equipment from your locker:
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 - Write down your locker # and combo!
- Inventory Equipment
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 - Fill out blanks on loan agreement.
 - ▶ Take everything out of the basket.
 - Line it up
 - make sure it's all there and unbroken.
 - ask instructor if it's not.
 - Ask instructor to confirm it's all there.
 - Sign loan agreement.
 - Put everything back in your drawer and lock it.
 - Reminder: be sure you have locker # and combo!
- Return to instructor

- signed safety contract
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- ▶ signed loan agreement
 - Make sure you get yellow slip when you do!



Lab Section

- Chem 30A is a single class that meets for both a lab and lecture section.
- We meet for lab activities at 11:30 am Wed.
- ▶ We meet for lecture & discussion 8:30 am M/W.
- The lab is our gym. In lab we work through the concepts introduced in lecture. The goal is to exercise our understanding of the theories and tools introduced and also to get some hands on time with real chemistry experiments, apparatus, and techniques.
- Bring a printout of the lab report cover sheet with you to each lab section.
- Each lab class will conduct a different experiment.
 - Occasionally we will also use the time for a review session.
 - It's also a great place to ask for help with homework problems that you get stuck on or general questions.
- Attendance is mandatory, there are no make up labs and you must sign in each day.
 - If you skip lab, you'll be missing out on a lot of class points and you may be dropped.
 - If you don't sign in, you didn't attend the class.

http://chem.ws/30a



CHEM 30A Intro General, Organic & Biochemistry I

De Anza College, Fall 2015



Instructor: Prof. Nick DeMello, Ph.D. (email: nick@chemlectures.com)

Syllabus: <u>Class Syllabus (pdf)</u> Schedule: <u>Course Schedule (pdf)</u>

Prerequisite: Mathematics 114 or equivalent. Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.

Description: 5 units. This is a two-part class to be taken in sequence by students entering allied health fields. The focus of the first part of this class is an introduction to general chemistry. This course begins with a discussion of various measurement tools. This will be followed with a discussion of energy and matter which will be followed by a discussion of the discovery of an atom. The next set of topics will cover an introduction to elements, compounds, and types of bonding in compounds followed by various types of chemical reactions and stoichiometric calculations based on chemical equations. Properties of gases and solutions will be discussed. The course concludes with a discussion of acid-base chemistry and nuclear chemistry.

Topics & Objectives (links) (what we're trying to learn)

[Ch 1] Scientific Method
[Ch 2] Measurement
[Ch 3] Matter & Energy
[Ch 4] Atoms & Elements
[Ch 6] Compounds
[Ch 7] Reactions
[Ch 8] Gases
[Ch 9] Solutions
[Ch 10] Acids & Bases
[Ch 5] Nuclear Chemistry

Lecture Slides (pdf)

About 30A & Ch01a: Science
Ch02a: Measurement
Ch03a: Matter
Ch03b: Heat
Ch04b: Hours of the Atom
Ch06a: Molecular Formula
Ch06b: Nomenclature
Ch07a: Molar Mass
Ch07b: Stoichiometry
Ch08a: Gas Laws

Lab Experiments (pdf)

Download from Website

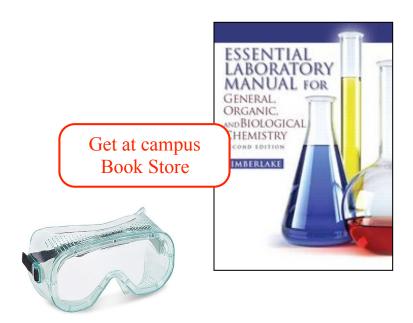


Lab Safety Agreement Cover Page for Reports Study Air

Student Successistering for Or Metal Ions (w Oxy-1 Molar Subway

Experiments

- Experiments are hands on explorations of the theories and laws we discuss in lecture.
- Each experiment has a description posted in web access.
 - You need to read it, print it, and bring it to lab for each experiment.
- ► The first thing we'll do when we get to lab is have a pre-lab quiz.
 - ▶ There will be a few questions about the concepts and procedures of that days lab or topics discussed in lecture.
 - ▶ If you're late, you will miss the opportunity for the points.
- Before we begin, we will briefly discuss the experiment and post lab calculations.
- The rest of the lab period is yours to complete the experiment and collect your data (observations and measurements).
 - Lab Goggles must be worn at all times on experiment days! (even when you're just recording data.
 - Get them online or at campus Book store.
 - ▶ Be sure them "chemically resistant" not just impact resistant!
 - No shorts, loose clothes, loose long hair, or contact lenses allowed.
 - ▶ Bring a *cheap* calculator. (You think spilling coffee on your laptop was a tragedy? Try sulfuric acid.)
- ▶ I'll be floating around to answer questions, offer unsolicited advice and put out fires. (yes, there will be fires.)





Reports

- You need to submit a report for each experiment.
- Your report has four <u>separate</u> sections and a cover page:
 - Cover Page
 - Pre-Lab
 - ▶ Data
 - Show me your data (observations and measurements)
 - Calculations
 - Show me your calculations (most experiments after the first two will require calculations to turn data into conclusions)
 - Conclusions
 - List your conclusions. Most labs have a goal, something you're trying to determine. This is where you tell me what you found.
 - Ouestions
 - ▶ There will usually be questions at the end of the experiment, to help you focus on the important lessons in the experiment.
- Staple each section, plus a cover page together.
- Do not include the experiment description.
- Lab reports are due at the start of the lab period after you complete the lab.
- Everyone needs to submit their own report, so be sure to collect your own data!
- ▶ Each report plus pre-lab is worth 10 pts.
 - You cannot turn in a report if you didn't do the experiment.
- There are no makeup labs.

Experiment #	Name:Student ID:Section ID:			
Chemistry 210 Cañada College				
Experiment Title:				
Unk#:(write N/A if no unknown for this experiment)	Locker ID:			
For use by instructor:				

- → COVER PAGE (this page)
- DATA
- Important things you saw or recorded. Observations both qualitative and quantitative (measurements). Data should be clearly labeled and formatted as a table whenever appropriate. Provide proper significant figures and appropriate units. Do not include calculations in this section.
- → CALCULATIONS
 - → For almost every lab the data you recorded is just the start. As one example, you'll often have to find the weight of a substance by subtracting the weight of a beaker from your observation. Calculations will get more complicated as the semester progresses. This is where you show your work. Clear calculations may allow your instructor to provide you with partial credit for incorrect conclusions. Results without necessary supporting calculations may receive no credit.
- → CONCLUSIONS
 - Consider the goals of the lab. What were you trying to determine? Concisely and clearly present your "final answer" and any other conclusions related to the lab.
 - ➡ If other factors effected your final answer, include those comments and suggest how they may have effected your results.
- QUESTIONS
 - Attach and answer any post lab questions with answers

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 - Locker Assignments: receive orange slips
 - ▶ This has your locker assignment and combo.
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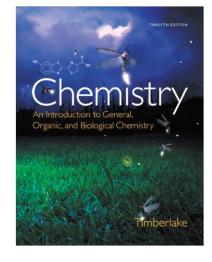
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 - example: do you prefer "Thomas" "Tommy" "Tom"...
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- Collect Equipment from your locker:
 - Is locker combination correct?
 - Write down your locker # and combo!
- Inventory Equipment
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 - Fill out blanks on loan agreement.
 - ▶ Take everything out of the basket.
 - Line it up
 - make sure it's all there and unbroken.
 - ask instructor if it's not.
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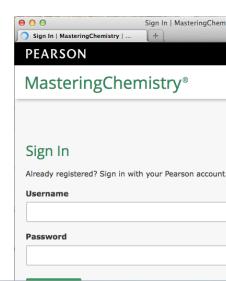
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Homework

- Homework is online, using <u>MasteringChemistry.com</u>
- You get graded as you complete each question.
- ▶ There's about 10 assignments spread over the course.
- ▶ They average about 15-20 questions.
 - Try and do a couple questions each night.
 - ▶ They usually have multiple parts.
 - Starting a question doesn't mean you have to finish it right away.
 - ▶ If you get stuck, don't guess ask me, your friends, folks at the student success center...
 - Homework is designed to promote discussion, the discussion is often more valuable that getting the right answer.
 - ▶ Each question is worth a few pts, wrong guesses cost a fraction of a point.
- ▶ Each assignment...
 - ▶ Becomes available about when we start discussing it in lecture.
 - It closes later that week after we finish the lecture on that content.
 - is worth up to about 20 pts.
- ▶ Late homework is worth about 2/3 the value, but it's still worth points.
 - If you miss the close date, do it anyway.
 - ▶ Tell me you did it and I can manually move over the partial credit.

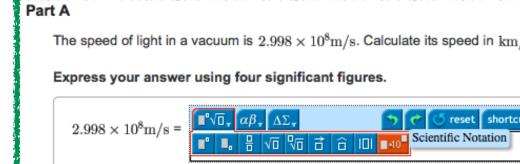




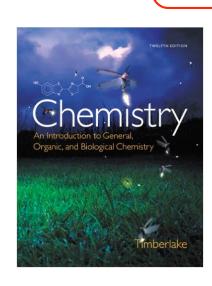


Homework

- ▶ To get into MasteringChemistry you need a license and class code.
- ▶ If you have an account from a previous semester (even in another subject) you can use the same account.
- If you haven't bought your text book yet, get the bundle. Text book + mastering chemistry license from the book store is the best deal.
- If you already have your text book (or got it used), but the license right on the mastering chemistry site (that's the best deal for license only).
- ▶ The class code for this class is CHEM30SPR2016
 - Download the "how to register for mastering chemistry" pdf from web access for this code and to see a step by step walkthrough of how to setup your account.
- ▶ The first assignment is live now.
 - ▶ It's a walkthrough of how to use mastering chemistry (easy points).
- A word about data entry.
 - In chemistry we use a lot of special notations.
 - ► There's a template bar which you can use to easily access sub scripts, super scripts, scientific notation, and more.
 - ▶ Also, you can use ^ as shorthand for super script.
 - ▶ And you can use _ as shorthand for subscript.
- Tips to win!
 - Work the problems through in your spiral notebook, it's better practice for the exams and you have notes to review for the exam.
 - ▶ Then just enter the answer in the online form.
 - ▶ Don't guess! You loose points for wrong guesses. If you get stuck, step away from the problem. Come ask me for help, ask your study group, or use the online class forum.



My Answers Give Up



Submit

Introduction to MasteringChemistry

Introduction to MasteringChemistry

Introduction to MasteringChemistry

Due: 11:59pm on Sunday, January 19, 2014

To understand how points are awarded, read the Grading Policy for

A Message from Your Instructor:

The purpose of the following exercises is to familiarize you with the knowledge of any specific subject material. Therefore, you will not be a Question 1 is for 0.50 point(s) (full credit)

Incomplete

Question 2 is for 0.50 point(s) (full credit)

Incomplete

Question 3 is for 1 point(s) (full credit)

Question 4 is for 1 point(s) (full credit)

Incomplete

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 - Line it up
 - make sure it's all there and unbroken.
 - ask instructor if it's not.
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Lab Safety

- ▶ This is the most dangerous room at Cañada.
- Chemistry is about exploring how we can change matter. Chemicals are only interesting to us, if they change matter.
- You're matter.
- Pretty much anything that's interesting to a chemist will be either:
 - Poisonous.
 - Explosive,
 - Corrosive,
 - Flammable,
 - Carcinogenic,
 - ...all the above,
 - or worse.

- ▶ Safety is job #1.
- I'm going to show you where we keep the good stuff:
 - Experimental Equipment
 - Stock Room
 - ▶ Hoods, Balances, & Oven
 - Waste Containers
 - Unknowns, Chemicals and Experiment Specific Equip
- And the Emergency Equipment
 - ▶ First Aid Kit
 - ▶ Shower & eye wash
- ▶ In case of fire: get out & meet at the parking lot
 - You must meet!

Safety Video & Quiz

- ▶ There are a lot of federal, state, and college safety rules.
 - ► Example: <u>always</u> use safety glasses in this room! (unless specifically instructed otherwise)
- To run through the rules efficiently we have a safety video.
 - ▶ It's corny.
 - ▶ Pay attention anyway.
- There is a safety quiz afterwards (this is the easiest points of the course, pay attention!)



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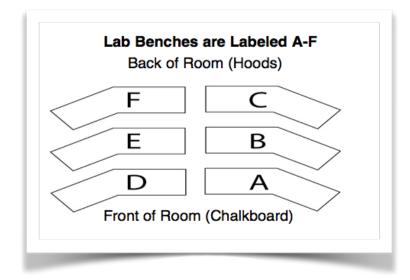
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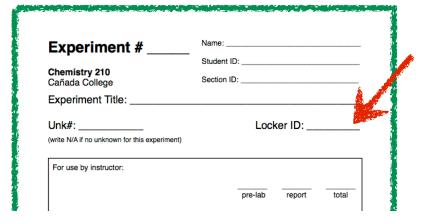
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Lab ID

- Sit where you like today, but that will be your spot for the semester.
- The person next to you will be your lab partner.
 - Trade, shuffle, move around now if you want to.
- Most experiments are done in pairs or a group of four.
- Find a free locker next to your spot.
 - ▶ That's your locker. Write down the number.
- Find the letter for your bench (see diagram).
 - Write down the bench letter.
- Your lab ID is your bench number, then locker number:
 - eg. G-72, C-24, A-01 etc.
 - ▶ Put your lab ID on all lab reports.
- Now we need to check our the equipment in your locker.

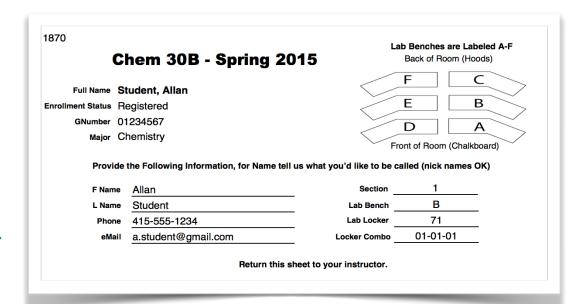






Checking Out Lab Drawers

- Before you leave today complete the ...
 - Stock room contract:
 - Compare the contents of your lab drawer to the check list on your stockroom contract.
 - Let me know if anything is missing.
 - Sign the contract
 - I'll come around and collect that contract.
 - Department safety contract.
 - Sign and give to me with your stock room contract.
 - Lab check in slip:
 - Get it from me and correct any the information on it if there are errors.
 - Ask me for a blank one if you're adding the class.
 - ▶ Fill in any blanks
 - Most important: your locker #, bench letter, and locker combo!
 - Give me the slip with your stock room contract.



Lab Check In Slip



Equipment

DE ANZA COLLEGE CHEMISTRY LABORATORY

EQUIPMENT LIST

	ITEMS		ITEMS
2	Beaker, 30 mL	1	Holder, test tube
2	Beaker,50 mL	2	Microburet
2	Beaker, 250 mL	2	Pipets(droppers)
1	Beaker, 600 mL	1	Stirring rod
1	Brush, test tube medium	1	Ruler, plastic
1	Graduated Cylinder,10 mL	1	Spatula
1	Graduated Cylinder,100mL	1	Sponge
1	Dish, Evaporating, #OOA	6	Test Tube, 13x 100mm, small
1	Flask, Erlenmeyer 50 mL	6	Test Tube, 18x 150mm, large
2	Flask, Erlenmeyer 125 mL	1	Watch Glass, 4 inch dia.
1	Funnel, plastic, 75mm		



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Questions?

