

# Chemistry 11 S2363: Chemistry Laboratory for the Liberal Arts S-20. 3/17 start

Perequisite: None      Number of Units: 1      Total Hours of Laboratory: 54  
Advisory: NOTE: CHEM 10 taken with CHEM 11 meets GE requirements in science.

COURSE INSTRUCTOR: Cliff Gottlieb: e-mail [cgottlieb@shastacollege.edu](mailto:cgottlieb@shastacollege.edu) web page <http://www.cliffschemsitry.com>

Office Hours: Online

## Catalog Course Description

Laboratory experiments and demonstrations, almost entirely non-mathematical, covering the basic concepts of the lecture course. The laboratory is designed to help students learn how to use various chemicals around us, safely and effectively. This course may include field trips. It is highly recommended that students take this laboratory course concurrently with the CHEM 10 lecture course. This course will satisfy the general education requirement for a laboratory science if taken with the lecture course. There are no field trips with this class during summer session. You will be required to submit signed release of liability forms.

**The online nature of this course offers students the flexibility in study times to meet individual needs. However, a successful student in an online situation must be motivated, organized, and a self-starter. Plan to spend at around 8 hours per week on this course. This compressed session is fast paced since it is short. You also must expect to spend the same amount of time on this course to what you would have spent on the face to face version of this course. This schedule compresses 17 weeks into 7 weeks, so the amount of time per day is much higher in this course than in a longer semester. I will do everything I can to help you succeed in this course!! You just have to ask!! No Freaking Out!!**

Basic Materials for the Class: Please see the materials list. Almost all are common everyday items, many of which you already have. Almost all can be purchased locally although some may have to be ordered online such as on Amazon or Walmart. **DO NOT WAIT UNTIL THE LAST MINUTE TO GET THESE MATERIALS!** The total cost if you have to purchase all materials is less than \$100. But there is no text book required so the total cost is about a wash.

Other Materials: You need to pick up a small package of necessary material at Shasta College. When you are enrolled, you will be e-mailed more information on where and when to pick it up. If you cannot, you will need to submit your current mailing address so we can send it to you. **WHEN YOU GET THIS, BE SURE TO CHECK THE CONTENTS AGAINST THE LIST OF CONTENTS TO MAKE SURE YOU HAVE EVERYTHING!!!!**

STUDENT LEARNING OUTCOME: Students will be able to find, interpret, analyze and apply information and data to solve problems and answer questions in chemistry.

## Methods of Evaluation/Grading Scale

You will be required to submit a lab report and/or quiz for each lab activity. The lab reports consist of the lab report pages which include your data for the experiment and pictures of you with the experimental material and showing your data. These reports must be in PDF format and submitted using the course online delivery program, Canvas. The final course grade is based on your class percentage. For the class: A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; F <60%.

## Classroom Management/Instructor Policies

There will be at least 2 week window for each lab activity to be completed. Late lab submissions will not be accepted unless an unusual or emergency situation occurs for which you can provide documentation. Waiting to the last minute to complete an activity and running into problems is not an emergency. Work ahead!! I encourage you to work in teams of 2, but no more than 2 per team. Each person of the team must submit her/his own lab report on Canvas. You are responsible for knowing and following the safety rules from the safety handouts acting in a safe manner at all times. **VIOLATION OF SAFETY RULES WILL LEAD TO EXPULSION FROM THE CLASS.** If you are not sure, **ASK.** You will take a lab safety quiz. You must get 100% on it to continue in the class. You will be required to submit signed release of liability forms.

ACADEMIC HONESTY: **DON'T CHEAT!** Cheating in this class would be submitted false or fabricated data. Cheating is also using data from another person's activity except when you are part of a two person team. You may then submit the same data as part of the team. The penalty for the first offense is a 100 point deduction from your grade. If you have concerns regarding academic honesty, or any aspect of cheating, please see me.

TECHNICAL PROBLEMS: If you have technical problems, **NO FREAKING OUT.** Freaking out is not allowed. ☺☺. You just need to communicate with me immediately or as soon as possible. To communicate with me use Canvas's mail. If that is not working, send me an e-mail at [cgottlieb@shastacollege.edu](mailto:cgottlieb@shastacollege.edu) and put Chem 11 as the subject.

**OTHER RESOURCES: Science Learning Center. It has tutors and other resources available. Information on page 3.**

**Academic accommodations imposed by a disability:** Academic adjustments due to a disability or serious medical condition: Students should contact the office of Partners in Access to College Education (PACE) for authorization of academic adjustments (accommodations) for this course. The office is located in room 2006 (242-7790). Students will need to provide documentation that verifies the condition and the type of limitations that may result. The staff in PACE have been designated with the authority to 1) evaluate that documentation, 2) determine which academic adjustments are appropriate to this course, and 3) facilitate the provision of approved academic adjustments. Students will submit notices directly to the course instructor regarding specific academic adjustments that are authorized for this class.

**Full Non-Discrimination Statement**

The Shasta-Tehama Trinity Joint Community College District (“Shasta College”) does not discriminate against any person on the basis of race, color, national origin, sex, religious preference, age, disability (physical and mental), pregnancy (including pregnancy, childbirth, and medical conditions related to pregnancy or childbirth), gender identity, sexual orientation, genetics, military or veteran status or any other characteristic protected by applicable law in admission and access to, or treatment in employment, educational programs or activities at any of its campuses. Shasta College also prohibits harassment on any of these bases, including sexual harassment, as well as sexual assault, domestic violence, dating violence, and stalking.

Gregory Smith, Associate Vice President of Human Resources, (530) 242-7649, [gsmith@shastacollege.edu](mailto:gsmith@shastacollege.edu)

Sandra Hamilton Slane, Associate Dean of Students, (530) 242-7799, [sslane@shastacollege.edu](mailto:sslane@shastacollege.edu)

**TENTATIVE COURSE SCHEDULE: REMEMBER: NO FREAKING OUT!!**

Week	Start Labs	Lab reports due	Week	Start labs	Lab reports due
3/17 - 21	➤ Gather materials. Crystals ➤ Water in a hydrate labs. ➤ Prep for redox & catalyst labs	Complete safety & syllabus quizzes	4/19 – 25	➤ Polymer ➤ Fermentation labs	➤ Chromatography ➤ Catalysts labs
3/22 - 28	➤ Reaction of sodium bicarbonate ➤ Solubility-electrolyte labs	➤ Water in hydrate lab	4/26 – 5/2	➤ Thermochemistry ➤ Unknowns lab	➤ Crystals, ➤ Polymer ➤ Fermentation labs
3/29 - 4/18	➤ Acids, Bases, Buffers, ➤ Redox labs ➤ optional Fe in cereal	➤ Reaction of sodium bicarbonate ➤ Solubility-electrolyte	5/3 - 9		➤ Thermochemistry ➤ Unknowns lab ➤ Optional Fe in cereal
3/29 – 4/18	➤ Chromatography ➤ Catalysts labs	➤ Acids, Bases, Buffers ➤ Redox	5/10	Feedback assignment	

Course Objectives: Upon successful completion of the course the student will be able to:

1. Explore chemistry on a hands-on basis with knowledge of safety procedures and following written lab procedures.
2. Understand and use information on Material Safety Data Sheets and in the Merck Index and other data on toxicity such as LD50
3. Know the names and use a variety of glassware and laboratory equipment such as Bunsen burners, electronic balances, distillation apparatuses, pH meters, microscopes, Celsius thermometers, and spectrophotometers safely and effectively implement a simple experiment using parts of the scientific method.
4. Measure mass and volume using the metric system.
5. Observe and distinguish between chemical changes and physical changes using lab equipment and observation skills
6. Prepare solutions.
7. Perform inorganic synthesis experiments.
8. Use various solvents observe the principle of like dissolves like
9. Perform experiments involving colors and spectroscopy
10. Perform a series of chemical reactions including acid-base, redox, and precipitation reactions
11. Measure the pH of solutions.
12. Perform isolation or separation experiments such as chromatography, distillation and chemical separations
13. Perform organic synthesis experiments
14. Perform combustion reactions and explore temperature changes and the changes in enthalpy
15. Explore the properties of everyday materials, including but not limited to soaps, detergents, cosmetics, and fabric dyes, in the laboratory.
16. Synthesize polymers.
17. Identify unknowns from observed chemical reactions

The Science Learning Center offers a comfortable study environment and a variety of resources to assist students in any of the Science classes. There are computer programs that cover specific topics, old tests, Text books for most courses and the Solution Manuals that go with them. Microscopes and slides are available for reviewing some labs and FREE TUTORING.

**FREE TUTORING** is done by students who have successfully completed the course; often with the same instructor. Tutors must have a “B” or better in the courses they tutor. They can help you initiate good study habits and organizational skills to maximize your study time. They can also help to clarify any confusing concepts. When there is interest, we run study groups that are led by tutors.

### **OTHER RESOURCES AVAILABLE**

- **Copy Machine** A copy machine is available in the computer area for .10 per copy.
- **Office Supplies** For your use, we have a paper cutter, stapler, scissors, tape and colored pencils .
- **Calculators** We have both basic scientific and graphing calculators. They can be checked out for use in the center and for test-taking. We hold your driver’s license.
- **Computers** We have four internet connected computers with Microsoft Office suite installed. Printing is available off the computer for \$0.10 a page. We also have 2 Laptops to use in the center.

**STUDYING IN THE SLC:** There is room available for students to study alone or in groups. We have one small room where students can isolate to minimize distractions. You are allowed to eat in the SLC.

The **SCIENCE LEARNING CENTER** is a friendly, helpful, encouraging environment, which could become your home away from home. Come in and check it out.

**OPEN: Check Website for Summer Schedule.**

### **ADDING A CLASS**

Students may add a full-term class through the fourth week of the term.\* After the first two class meetings, approval of the instructor is required to add the class, which includes both the signature of the instructor and the first date of attendance. **IT IS THE STUDENT'S RESPONSIBILITY** to pick up the form from the Admissions and Records Office and take it to the instructor for approval. The student must then return the form to the Admissions and Records Office or Extended Education Center for processing before the add is finalized.

### **DROPPING A CLASS WITHOUT RECORD**

Students may drop a class, and have no notation appear on their transcripts, through the fourth week\* or 30% of the term for classes less than a semester in length. **IT IS THE STUDENT'S RESPONSIBILITY TO DROP CLASS (ES).** The necessary forms are available from Admissions and Records, Extended Education Centers, or by mail. If a student intends to drop a class and stops attending but fails to file the necessary forms, a failing letter grade may be assigned by the instructor.

### **WITHDRAWING FROM A CLASS WITH A "W" GRADE**

Students may withdraw from a class after the official "drop" date and up through the fourteenth week or 75% of the term for classes less than a semester in length. The notation "W's" will appear on the student's transcript and will not be used in calculations of grade point average. Excessive "W" shall, however, be used as factors in probation and dismissal procedures. **IT IS THE STUDENT'S RESPONSIBILITY TO OBTAIN FORMS AND SUBMIT THE NECESSARY PAPERWORK TO WITHDRAW FROM A CLASS.** Forms are available from Admissions and Records, Extended Education Centers, or by mail. Students who have not dropped or withdrawn from a class before the end of the fourteenth week or 75% of the term will be assigned a course grade.

### **ATTENDANCE**

Students are expected to attend all class meetings. A student who fails to attend the first meeting of a course without notifying the instructor may be dropped from the class. In addition, an instructor may drop a student during the first 30% of the term for excessive absences. Nevertheless, **IT IS ALWAYS THE STUDENT'S RESPONSIBILITY TO OFFICIALLY DROP OR WITHDRAW** from the class. Students who fail to file the necessary forms, even though they stop attending class