SAM HOUSTON STATE UNIVERSITY
DEPARTMENT OF CHEMISTRY
General Chemistry II Laboratory

CHEMISTRY 1412.11-20 – Course Syllabus – Spring 2018

INSTRUCTOR INFORMATION

Dr. Adrian Villalta-Cerdas
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Office: CFS 114
Office hours: M F 1:30 – 3:30 pm, W 2-3 pm; stop by or other times by appointment.
Office phone: 294 – 2556

MEETING TIME

All labs meet in CFS 213 (Chemistry and Forensic Science Building)

Section 11	Monday	12:00 - 2:50 pm
Section 12	Wednesday	12:00 - 2:50 pm
Section 13	Friday	12:00 - 2:50 pm
Section 14	Tuesday	12:30 - 3:20 pm
Section 15	Thursday	12:30 - 3:20 pm
Section 16	Monday	3:00 - 5:50 pm
Section 17	Wednesday	3:00 - 5:50 pm
Section 18	Friday	3:00 - 5:50 pm
Section 19	Tuesday	3:30 - 6:20 pm
Section 20	Thursday	3:30 - 6:20 pm

TEXTBOOK AND MATERIALS

1) **Text**: Chemistry 1412, General Chemistry Laboratory Manual by the Faculty and Student in the Department of Chemistry
2) **Calculator**: recommended model TI 30Xa series. These are the same ones required in your CHEM1411 and CHEM1412.
3) **Goggles**: Each student must purchase approved goggles for eye protection.
4) Valid email address and access to Blackboard.

COURSE DESCRIPTION

Overview

Descriptive chemistry, equilibria, kinetics, thermodynamics, electrochemistry, and oxidation-reduction reactions are presented. Prerequisite: Minimum grade of C in CHEM 1411. The course is offered during Fall, Spring, and Summer II semesters. Concurrent participation in CHEM 1412 lecture and laboratory is required.

Course Objectives

Chemistry 1412 Lab is the companion section to **Chemistry 1412 Lecture**, so the same topics and requirements are assumed. Chemistry 1412 is a continuation of Chemistry 1411 thus the material covered in that course, to include formula and equation stoichiometry, periodic properties of the elements and chemical reactivity, and solution and gas phase chemistries, constitute required material in this course. The student will build on the successful completion if Chemistry 1411 by mastering the principles and concepts associated with descriptive chemistry, equilibria, kinetics, thermodynamics, electrochemistry, and oxidation-reduction reactions. The student will continue to develop his/her skills related to solving abstract problems in chemistry and applying chemical principles to enhance the understanding of the world around us.

Course Guidelines

1. Proper Classroom Demeanor/Rules of Conduct

Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Please turn off or mute your cellular phone and/or pager before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking among each other at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction.

One behavioral requirement that is often overlooked by students is the expectation that they will perform in a professionally responsible manner at all times. A specific example of this is noting that you are responsible for the cleanliness and neatness of your work area. If a student fails to return his or her equipment to the drawer, or if he/she leaves trash and/or spilled chemicals and debris in the assigned individual workspace or around the collective workspace like the balances, then the TA is instructed to reduce that students' weekly laboratory grade by 50% or 100%. This is not only a professional issue but it is a safety issue.

Inappropriate behavior in the classroom that diminishes the quality of the educational experience for the class as a whole shall result in, minimally a directive to leave class or being reported to the Dean of Students for disciplinary action in accordance with university policy. If a student is dismissed during any time in the lab period then that class period will be counted as an absence and the weekly grade recorded as a zero.

2. Attendance

The Faculty Handbook provides that regular and punctual class attendance is expected of each student at Sam Houston State University and that it is expected that each faculty member will keep a record of student attendance. Each instructor is obligated to clarify policy regarding absences in writing at the beginning of the semester and summer session.

- Excessive absences, tardiness, or leaving early will adversely affect the student's grade.
- It is the student's responsibility to sit in the assigned seat if assigned seats have been given.
- It is the student's responsibility to register only his or her attendance. Failure to do so constitutes academic dishonestly and the period counting as an absence for all involved.
- Students need to justify with the CHEM1412 lab coordinator any absence to the laboratory session. Failure to do so will result in no credit for the missed lab experiment.
- **Missing exam:** If you miss the final exam it is your responsibility to notify the CHEM1412 lab coordinator, Dr. Villalta-Cerdas (axv067@shsu.edu).
- In the case of a justified laboratory absence, the lab activity for the day will be excluded from the student final grade calculation, as a mean to accommodate the university make-up policy. All absences will be reported by the TAs to the CHEM1412 lab coordinator, all students that miss a lab are encouraged to justify the absence with the CHEM1412 lab coordinator.

3. Assignments

3.1. Pre-Labs and Post-Labs

Each experiment will have a pre-laboratory and post-laboratory assignment (all online). These assignments will be completed via the CHEM1412 Lab Blackboard course. No printed versions of the assignments will be accepted. The due dates for each assignment are posted on Blackboard.

3.2. Laboratory Work

The laboratory performance grades are determined by your section's teaching assistant (TA) and CHEM1412 lab coordinator (Dr. Villalta-Cerdas, axv067@shsu.edu). The TA will grade each week's activities including in-class performance, cleanliness of lab space and handling of lab equipment. Your teaching assistant is strongly encouraged to provide meaningful feedback to you, the students. This means that the TA should have a weekly grade distribution that is over at least three letter grades. Make certain that your TA gives you meaningful laboratory grades.

3.3. Laboratory Summary Reports and Data Sheets

Summary reports will be completed during semester. The summaries will focus on the discussion of results from the laboratory work and the main conclusions (2-3 sentences) of the lab experiments. Two laboratory summary reports will be completed during the semester, each covering three lab experiments. The document has a maximum of three pages. Students need to include the in-class datasheets of the experiments being discussed in the summary report. Students are encouraged to seek help and feedback from the TAs and lab coordinator regarding the content and mechanics of the lab summary reports.

3.4. Peer Evaluations

In this course you will be working with peers to complete the experiments in pairs or groups of three. Each student is graded individually by the teaching assistant for most lab work, but and at two points in the semester each student will also be graded by their peers. The teaching assistants will provide the peer evaluation forms. Copies of the forms will be available on Blackboard, so make sure to be acquainted with the rubric.

3.5. Laboratory Program Assessments

As part of the continuing development and improvement of the laboratory program for CHEM1412, students will complete Laboratory Program Assessments. These assessments will consist of in-lab activities and questioners. These activities will take 10-15 min and will be done at the beginning of the lab session. Credit is assigned based on completeness of the assessments. There are no make-ups for these assessments.

3.6. Final Lab Exam

Evaluation will be composed of several types of exercises covering all laboratory experiments completed during the semester. The exam questions will be similar to all assignments completed online and during the lab periods: chemistry problems relating to comprehensive laboratory situations and conceptual material illustrative of second semester chemistry.

4. Grading

At the end of the semester the composite laboratory grades will be provided to the supervising faculty member who has the authority and responsibility to assign course grades. ***The laboratory course grade becomes 20% of the Lecture-Lab CHEM1412 Final Course Grade.*** Your TA does not determine the CHEM1412 course grade, he/she only provides a distribution of points such that the professor in charge of all the laboratory sections will generate your course grade.

You MUST have a C or better in your laboratory course grade to receive a C or better in your lecture/laboratory course, CHEM1412.

Percentages are distributed as shown below. Letter grades are calculated from percentages according to the cutoff values shown below. **There is no extra credit in this course.**

Letter Grade	Final Average
A	90 – 100%
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	< 60%

A weighted percentage will be used to determine the overall course grade.

Pre-Labs	15%
Post-Labs	22%
Lab Work	5%
Lab Summary Reports and Data Sheets	30%
Peer Evaluations	5%
Laboratory Program Assessments	3%
Final Exam (comprehensive)	20%
Total:	100%

5. Academic Honesty

The Faculty Handbook states that the University expects all students to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonest in any phase of academic work will be subject to disciplinary action. Furthermore, the University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

If the faculty member or his official representative concludes that submitted academic work was totally or partially derived by dishonest means then that material will receive a zero grade and resubmission will be disallowed. At the time of the academically dishonest behavior, at the instructor's or his representative's discretion. The behavior shall be designated disruptive and the student will be asked to leave the class.

CLASS POLICIES AND UNIVERSITY POLICIES

Students with Disabilities Policy:

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:
http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf

Religious Holidays:

University policy states that a student who is absent from class for the observance of a religious holy day to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. The student, not later than the 15th calendar day after the first day of the semester, or the 7th calendar day after the first day of a summer session, must notify the instructor of each scheduled class that he/she would be absent for a religious holy day.

Visitors in the Classroom

Unannounced visitors to class must present a current, official SHSU identification card to be Permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student in this class, [visitation] is at the instructor's discretion, thus the visitor will NOT be allowed to remain in the classroom.

Laboratory safety

Your safety in this lab is our highest priority. As you learn through your experiences think "safety first!"

C**hemical waste**

- You must think safety, safety, safety!! If you have any questions about safe procedures and same handling of materials **Ask!**
- This includes safe disposal of the chemicals used in each lab period. Do not toss stuff down the sink or into a trash can!!!
- For each lab period your TA will provide properly labeled waste containers for your section. He/she will provide instructions at the beginning or the period for dispensing with wastes particular to that experiment.
- You must follow the instructions of the laboratory TA such as experimental procedure or waste disposal, and failure to comply or cooperate with your instructor can result in expulsion from that lab thus forfeiture of the points for that day.

Breakage fees

- You must check in and check out of this laboratory section. **Failure to check out of your drawer will result in a $25.00 charge in addition to any breakage that has accrued.** Both lab partners must participate in this process.
- You are responsible for being prepared for the lab which includes having read the exercise, and bring the necessary supporting material.
- Drawers left unlocked will be locked and a $5.00 locking fee assessed. Lost keys will resulted in charges invoiced to the department from the university locksmith ($25.00-$50.00). Major pieces of the equipment and glassware that you signed for during check-in are yours for the semester and your responsibility. "Stuff" that is not there at check-in is assumed to be lost or broken. You will be charged the replacement cost. Charges over $25.00 are reported to the university and you will be required to pay this fee before enrollment the next semester or prior to release of any transcripts.

Course Schedule *(tentative)*

Chemistry 1412.11-20 Spring 2018

TEXT:

Laboratory Manual for Chemistry 1412 by the Department of Chemistry
Textbook: The Central Science by Brown, Lemay, et. al., 12th or 13th Ed.

Laboratories begin on the week of February 5, 2018 and the labs end in time to begin studies for the lecture component after ten weeks of three-hour per week.

Go to your registered section only. All sections meet in CFS 213 lab room.

Week: Start Activity	Laboratory Experiment Title
LW1: February 5	Check-in, Safety & Policies. Pre-Lab activity.
LW2: February 12	Colorimetry: Reactions of Iron(III) with Aspirin and Use of a Spectronic 20 (Exp. 2)
LW3: February 19	Standardization of a Base and Titration of an Unknown (Exp. 1)
LW4: February 26	Reduction-Oxidation Titration (Exp. 9)
LW5: March 5	Le Châtelier's Principle: Equilibrium Shifts (Exp. 3)
LW6: March 12	**Spring Break (No Laboratories)**
LW7: March 19	Autoionization of Water and K_w: The Balance of H_3O^+ and OH^- (Exp. 5)
LW8: March 26	**Good Friday - Holiday (No Laboratories)**
LW9: April 2	Ionization of Weak Acids and Bases: Measurement of K_a and K_b (Exp. 6)
LW10: April 9	Spectrometric Determination of K_{sp} for Copper(II) Tartrate (Exp. 7)
LW11: April 16	Nernst Relationship for the Daniell Cell (Exp. 10)
LW12: April 23	**Final Exam and Check-out**

Note 1: The specific time/day/date for each laboratory period, lab experiment and exam is determined by your specific section. **"Switching" or "swapping" sections can only occur through the formal add/drop process. You may not attend a section at a time for which you are not enrolled.** Failure to attend your assigned section will result in an F grade in the lecture/laboratory course CHEM1412.

Note 2: **Your performance in laboratory is exceedingly important with respect to success in the full lecture/laboratory course.** Recall that a C grade or better is required in the laboratory portion of the course in order to receive a C grade or better in the CHEM1412 course.

Sam Houston State University

CHEM1412 Lab – Spring 2018

Schedule of Assignments *(tentative)*

Assignment	Type	Due date
Pre-lab Exp 2: Colorimetry	In-class	Week of February 5
Pre-lab Exp 1: Acid-base titration	Online	Feb 18th
Post-Lab Exp 2: Colorimetry	Online	Feb 23rd
Pre-lab Exp 9: Reduction-Oxidation Titration	Online	Feb 25th
Post-Lab Exp 1: Acid-base titration	Online	March 2nd
Pre-lab Exp 3: Le Châtelier's Principle	Online	March 4th
Post-Lab Exp 9: Reduction-Oxidation Titration	Online	March 9th
Pre-lab Exp 5: Autoionization of Water and Kw	Online	March 18th
Lab Summary Report #1 - Content: Experiments 1, 2, and 9	In-class	Week of March 19th
Post-lab Exp 3: Le Châtelier's Principle	Online	March 23rd
Pre-lab Exp 6: Ionization of Weak Acids and Bases	Online	April 1st
Post-lab Exp 5: Autoionization of Water and Kw	Online	April 6th
Pre-lab Exp 7: Ksp for Copper(II) Tartrate	Online	April 8th
Post-lab Exp 6: Ionization of Weak Acids and Bases	Online	April 13th
Pre-lab Exp 10: Nernst Relationship	Online	April 15th
Lab Summary Report #2 - Content: Experiments 3, 5, 6	In-class	Week of April 16th
Post-lab Exp 7: Ksp for Copper(II) Tartrate	Online	April 20th
Final Exam - Content: all lab experiments	In-class	Week of April 23rd
Post-lab Exp 10: Nernst Relationship	Online	April 27th