**REINHARDT UNIVERSITY**

**CHE 131 010 –CHEMISTRY for health sciences LAB, spring ‘24**

**Professor:** Dr. Fred A. Fortunato **Lectures:** 9:30-10:45 am, T/R (Dobbs 101)

**Office:** Dobbs 126 **Study Sessions:** by appointment

**E-mail:**  [faf@reinhardt.edu](mailto:faf@reinhardt.edu) **Lab:** 12:30-3:15 pm, W (Dobbs 101)

**Phone:** 770-720-5594

**Office Hours:** As posted

**Overview:**

This syllabus is an extension of the CHE 130 Chemistry for Health Sciences lecture syllabus. It provides specific information related to the laboratory portion of the course. Additional course information can be found in the full CHE 130 syllabus.

**Required Lab Materials:**

* Labster lab simulation software. Access will be provided by the professor and paid for using the students’ course fees. Students will need to register (professor will provide instructions).
* A scientific calculator that does not store text information (for quizzes and exams). Some examples are TI-30XIIS, TI-30Xa, CasioFx-300ESPLS2, Mr. Pen-scientific calculator. These can be purchased at Walmart, Target, or Amazon. If you are not sure whether your calculator is acceptable, please see the professor. Note, high-end graphing calculators like the TI-84 or equivalent are not acceptable, neither are “smart” phones or watches.
* Your operable Reinhardt University e-mail account. This must be working and checked frequently. Your account is not operable if your mailbox is full!
* Students are expected to have adequate computing capabilities and web (internet) access.

**Course Description:**

The chemistry laboratory is to be taken along with CHE 130, Chemistry for Health Sciences lecture, and provides students the experience in conducting experiments that allows them to make scientific observations, measurements, and conclusions. Good laboratory techniques along with lab safety are stressed. *Corequisite: CHE 130.*

**Course Objectives:**

Students in CHE 131 should:

1. Learn safe laboratory procedures.
2. Use appropriate laboratory techniques to make observations supporting chemical laws and theories.
3. Practice understanding chemistry experiments by reading the lab manual.
4. Practice working with others to accomplish a common objective.
5. Appreciate the difficulty of getting reliable data.

**Lab Instructors:**

The professor and perhaps a student lab instructor will be conducting this course. The student lab instructor should always be treated respectfully as your authority within this lab setting. Lab students who fail to follow the directions of the lab instructor will be given grade penalties.

**Lab Requirements and Procedures:**

* Read this syllabus and keep it handy for easy reference. You’re expected to know what it contains.
* Chemistry lab this semester will use the Labster lab simulation package. This is a virtual environment and will be introduced in each lab and to be completed by the students on their own by the specified due date. The Labster package will simulate a laboratory and you will have experimental procedures specified.
* There may be worksheets given out at times along with supplementary lectures during some lab sessions.
* You must have your own access to the Labster lab simulation package. The access will be provided by your professor along with a representative lab outline for your reference. Further lab instructions will also be given as needed.
* Students should carefully and completely read the lab experiment before attending that lab period. Each experiment will be released the Friday before the week the experiment is assigned. Students will have up to one week to complete the experiment and turn in the report. The professor and lab instructors will be available during lab time for consultation. So, it is imperative that you attend the lab classes even if you expect to complete the experiment on your own.
* **All students are to follow the directions given by the lab instructors.**
* Safe lab practices are crucial. The Labster software will help you here. Inappropriate behavior may result in dismissal from the lab with a zero grade for that day.
* You must bring to each lab paper, pencil, pen (optional), a calculator, and a spiral notebook for note taking. If you have a laptop computer that would be helpful for you to conduct the experiment during the lab session. Mobile phone/watch calculators are **not** acceptable.
* The use of mobile phones, PDAs, picture phones, Google glass, wearable computers, other imaging/gaming devices, or other e-mail/ text messaging devices is **not** permitted in the lab.
* E-mail is the principal means of communication between faculty, staff, administration, and students. Types of communication may include assignments, registration materials, announcements, etc. It is the responsibility of each student to check his/her Reinhardt University e-mail account regularly (daily is recommended), and the student will be held accountable for all official communication of administrative policies, faculty or lab instructor instructions, and campus information sent via the Reinhardt University e-mail system. Also, check Canvas for announcements.
* Unless otherwise directed by the lab instructors, lab reports are due at the beginning of the next lab.
* If class or school is cancelled, any lab reports due for the cancelled class are still required by the due date. The lab schedule will be modified appropriately, with the changes communicated in class (or via e-mail.)

**Attendance:**

Regular, punctual attendance is essential for doing well in chemistry lab. All non-excused absences will result in a zero (0) for that day, even if it is the day of a lab quiz. If you are going to miss class, are ill, or an emergency arises, please notify the professor **prior** to the class. Excused absences, those approved by the professor, will qualify the student to make up the lab later, if feasible. Other notes regarding attendance are as follows:

1. Arriving late (after the instructors have started their introductory lecture) may result in a loss of 1 point for that lab.
2. Leaving early (without permission from the lab instructor) may result in a loss of 1 point for that lab.
3. Being absent does not relieve the student of the responsibility of any due assignments.
4. All absences from class (including school-sponsored activities, ministry trips, etc.) are recorded and counted as absences. They may be excused, but still count as absences. Additional make-up labs may be scheduled as lab instructors’ schedules permit.
5. **The last day to withdraw from this course with a “W” is March 12. If you withdraw from CHE 130, the lecture portion, you must also withdraw from the lab.**

**Health Considerations:**

Please follow safe practices regarding distancing and wear appropriate face covering, as delineated by the university or the professor, to protect the health of yourself and others.

**Service/Comfort Animals:**

For the safety of the service/comfort animal and the students, the animals are not permitted into the actual Chemistry laboratory (Dobbs 128) at any time. In the lab, the animals may inadvertently contact chemicals (such as from the floor due to spills) that could pose a harm to the animal. In addition, the presence of an animal in the lab also poses a safety risk to the other students in that the animal could create a tripping hazard or block access to various parts of the lab. Lab sessions held in a classroom setting (e.g., Dobbs 101) will be treated as lecture rooms from the standpoint of service/comfort animals (see the CHE 130 course syllabus for further details).

**Lab Attire:**

Since we will be meeting in Dobbs 101, lab attire is the same as what is acceptable for a lecture class. If we were meeting in the actual Chemistry lab (Dobbs 128) different restrictions apply. In those cases, each student should wear to lab closed shoes which also cover the top of the foot, socks which cover the ankle, and pants which meet the top of the shoe. The following attire should **NOT** be worn: sandals, flip-flops, flats, shorts, tanks, skirts, dresses, or Capri pants. Those students with long hair must have their hair completely pulled back so as not to get tangled with experiments or possibly burned. Do not wear shirts or sweaters with baggy sleeves which could get in the way of lab work. Contact lenses are **forbidden** while working in the lab. Approved lab safety eyewear will be provided. These requirements do not apply for students attending the professor’s office hours which will be conducted in Dobbs 126.

**Evaluation Procedures:**

This course is scheduled to meet fourteen (14) times during the semester. Students are required to attend each scheduled session, unless otherwise approved by the professor. Points for each lab activity are delineated on the proposed lab schedule. Lab grading of experiments will be based on the questions presented by Labster throughout the experiment. Grades for each experiment will be adjusted to the total indicated for each experiment and posted in the Canvas gradebook. Lab worksheets have various point values and due dates delineated on the schedule. The total lab score for the semester is 165 points. The lab points, which constitute ≈ 24% of the total CHE 130 grade, will be added to your lecture scores to compute the final course average.

Points for each lab activity are delineated on the lab schedule. Additional notes regarding grading of the lab reports are as follows:

* Lab reports or assignments not completed on time, without prior approval from the professor, will lose 1 point for the first day (24 hours) late, an additional 2 points each of the next three days (24 -96 additional hours) late. If an assignment is more than 4 days (96 hours) past due, it will not be graded and a score of zero will be awarded for the assignment. This does not apply to Labster exercises.
* Note, once a Labster simulation closes, points for the incomplete (or missing) assignment will be prorated based on the number of questions actually answered.

**Proposed Schedule:**

Below is a preliminary schedule for this course.

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| Date | **Lab Activity** |
| Jan 10 | Introduction, Lab Safety Sheet (10 points)  Math Review, & Dimensional Analysis |
| 17 | Demo Simulation (no points)  Exp #1: Purification and Separation of a Mixture (10 points) **[due: noon, 1/24]** |
| 24 | **Guest Speaker – Dr. K. Zelinsky**  Exp #2: Ionic and Covalent Bonds (10 points) **[due: noon, 1/31]** |
| 31 | Exp #3 (2 parts): (1) Introduction to Radioactive Decay (12.5 pts),  (2) Nuclear Chemistry (7.5 points) **[due: noon, 2/7]** |
| Feb 7 | Lab Worksheet #1 [Chs 1-5] (10 points) |
| **14** | **Exam #1 [Chs 1-5] – 50 points** |
| 21 | Review Exam #1  Exp #4 (2 parts): (1) Stoichiometric Calculations-Avogadro’s No. (4 pts), (2) Experimental Design (16 points) **[due: noon, 2/28]** |
| 28 | Exp #5 (2 parts): (1) Solution Preparation (5.22 pts) (2) Acids and Bases in Everyday Substances (14.78 points) **[due: noon, 3/13]** |
| **Mar 6** | **No Lab – Fall Break** |
| 13 | Worksheet #2 [Chs 6-10] (10 points) |
| **20** | **Exam #2 [Chs 6-10] – 50 points** |
| 27 | Exp #6 (2 parts): (1) Organic Chemistry Introduction (12.38 pts), (2) Functional Groups and Basic Chemical Tests (7.62 points)  **[due: noon, 4/3]** |
| **Apr 3** | **Exam #3 [Chs 11, 12, & 14] – 25 points**  **(open book, counts toward exam points)** |
| 10 | Exp #7 (2 parts): (1) Introduction to Food Macromolecules (12 pts),  (2) Protein Denaturation (8 points) **[due: noon, 4/17]** |
| 17 | Lab Worksheet #3 [Chs 13, 15, & 16] (10 points)  Exp #8: Osmosis & Diffusion (5 points) **[due: noon, 4/23]** |
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Revised: January 9, 2024

Lab assignments will be taken from the Labster virtual lab package for this course. Points for each are as indicated. Each lab will consist of review questions (adjusted to the point value for the experiment, either fill-in or multiple choice). Each of the assignments will be due on the date indicated. **Total lab score is 165 points.**

Note: This schedule may be revised during the semester, as needed.