CHEM 1510L

Allied Health Chemistry Laboratory

Spring Semester 2022

# Contact Information:

**Lab Coordinator:** Dr. Russ Moser

**Office:** Ward Beecher Hall

**Phone:** (330)941-7100

**e-mail:** [rmoser@ysu.edu](mailto:rmoser@ysu.edu)

# Office Hours: Office hours/meetings are offered in three ways.

# You can e-mail me topics that you would want a short answer. I will respond within a 24-hour period or

* Request a face-to-face meeting. A face-to-facemeeting can be initiated by an e-mail with a list of times you are available. If possible, I will select one of your suggested times. If your times are not possible, I will list more times. Together, we will find a mutually convenient time. We will meet in a room in Ward Beecher Hall. Face masks will be required, or

# Request an online Webex meeting for longer discussions. A personal online meeting can be initiated by an e-mail with a list of times you are available. If possible, I will select one of your suggested times. If your times are not possible, I will list more times. Together, we will find a mutually convenient time. I would encourage a webex meeting.

# Course Objectives:

The objectives of Chemistry 1510L are as follows:

* Introduce the students to the basic principles used in experimental chemistry
* Learn the basic manipulation of equipment, handling chemical reagents and solutions
* Learn how to analyze experimental data
* Reinforce concepts taught in Chemistry 1510

# Required Supplies:

Internet access: computer with mic and video and WebEx installed. For help with the WebEx installation and usage, call the YSU help Desk.

Protective Equipment: Goggles and Lab coat.

Laboratory Manual: *CHEM 1510L: Chemistry for the Allied Health Sciences Lab*; Pearson.

Calculator: Your calculator should be able to perform simple arithmetic: addition, subtraction, multiplication, and division. In addition, it must have the logarithmic function as well as be able to express numbers in scientific notation.

# Grading:

You will conduct these experiments in groups of two. You are expected to write-up and hand in your own report. Most reports contain a pre-laboratory exercise. The pre-laboratory exercise **must** be completed and turned in **before** you will be allowed to begin the experiment. Your grade will be based onthe clarity and accuracy of laboratory reports, possible daily lab quizzes and four quarterly quizzes. You are expected to complete all laboratory reports and turn them in on time.

Your laboratory grade will be folded into the overall grade for Chemistry 1510. At the end of the semester, each laboratory instructor will normalize all their sections together for an average of 85%.

# Normalization:

Each year there are multiple sections of 1510L that are taught by several different laboratory instructors. A laboratory instructor may have up to three sections. Although every effort is made to make the grading consistent though all sections and all instructors, there will be variations between instructors. To assure that all students are treated equally, normalization is used. First we want to be generous to our students, we agree to make 85% the average grade in all laboratory sections. Second, each laboratory instructor will combine all their sections together and then normalize to 85%.

# Table 1

| **Examples of Normalization** |
| --- |
| 1. Instructor 1 has one section and after all grades have been received, the average for this section is 80%. For each student in this section, 5 points will be added to each student grade (i.e. Student 1 earned a grade of 75, the final grade will be 80). |
| 1. Instructor 2 has three sections and after all grades have been received, the average for all sections is 90%. For each student in these sections, 5 points will be subtracted from their grade (i.e. Student 1 earned a grade of 75, the final grade will be 70). |

# Fees:

The materials fees collected for this laboratory course are used to partially defray the cost of replacing expendable materials and obsolete equipment, repairing equipment, and obtaining new equipment appropriate for student use in state of the art instruction in the laboratory science of chemistry.

# Risk:

The potential of risk is present in some lecture demonstrations and laboratory experiment. Accidents have been rare, but have happened. Faculty and staff members exercise great care to minimize and, where possible, eliminate all potential hazards. Additionally, minimization of risk requires that students come well prepared for each assigned exercise and are attentive in class. **Lab coats and safety glasses must be worn at all times.** Food, drinks, or chewing gum are NOT allowed inside the lab.requires that students come well prepared for each assigned exercise and are attentive in class. **Lab coats and safety glasses must be worn at all times.** Food, drinks, or chewing gum are NOT allowed inside the lab.

# Class Attendance, Participation, and Preparation:

Class attendance is required. The laboratory is an essential part of the course, therefore, if you have **three or more unexcused absences you will receive a failing grade in the laboratory and consequently you will fail CHEM 1510.** Unavoidable, extenuating circumstances (such as severe illness and emergencies) and pre-arranged absences for YSU activities are the only circumstances that will be considered as an excused absence and the student will be given make-up assignments on a case-by-case basis as determined by the instructor. The maximum grade you will be able to attain on the makeup assignment will be 90%. You must notify the instructor (by email, phone, or note) as soon as possible and provide the documentation to verify your absence.

All students attending the lab are required to wear LAB COATS, SAFETY GOGGLES, LONG PANTS (NO shorts, capris or cropped pants), and CLOSED-TOE SHOES! You will not be allowed in the lab without appropriate attire! Your instructor will deduct 2 points on each laboratory report that you are caught not wearing your goggles.

You need to come to lab prepared to perform the experiment of the day. You should have already read the introductions, determined how the experiment is related to the lecture text book, and finished the prelab questions. These experiments are chosen to reinforce the lecture material. Doing and understanding these experiments, will help you perform better on lecture exam.

# Make-up Policy

You are expected to attend every lab. If you miss a lab please refer to the make-up policy in the lab manual on page iv.

# Tutoring

There are two sources of free tutoring available.

1. Graduate students are available throughout the day, 5 days per week in Ward Beecher Hall room 5039. There is a posted schedule on the door. Just walk in during the posted hours and ask your questions. They will answer your questions immediately.
2. *The Resch Academic Success Center* is a resource on campus established to help students successfully complete their university experience. Please phone (330) 941-3538 or visit the Center for assistance in tutoring or for individualized assistance with social and academic success. The main Center is in Kilcawley West below the bookstore. They will set up the appointments.

[University policies](https://ysu.edu/institute-teaching-and-learning/university-policies) can be found online and provide you guidance on your rights as a student in this course. The links below take you directly to a specific policy. Should you have any questions about a policy, please do not hesitate to contact me using the information at the top of the syllabus.

[*https://ysu.edu/institute-teaching-and-learning/syllabus-university-policies*](https://ysu.edu/institute-teaching-and-learning/syllabus-university-policies)

* **Classroom Safety and Health Protocols**
* **General Classroom Guidelines**
* **Instructor Safety Procedures**
* **Student Safety Procedures**
* **Statement of Non-Discrimination from the University**
* **Academic Integrity/Honesty**
* **Student Accessibility**
* **Incomplete Grade Policy**

# Disability Statement:

Youngstown State University is committed to providing reasonable accommodations for all persons with disabilities. In accordance with University procedures, if you have a documented disability and require accommodations to obtain equal access in this course; please contact me privately to discuss your specific needs. You must be registered with the Office of Disability Services, located at Kilcawley Center, room 2082, and provide a letter to coordinate reasonable accommodations. You can reach CSP Disability Services at (330)941-1372.

# University Nondiscrimination Statement:

Youngstown State University does not discriminate on the basis of race, color, national origin, sex, sexual orientation, gender identity and/or expression, disability, age, religion or veteran/ military status in its programs or activities. Please visit www.ysu.edu/ada-accessibility for contact information for persons designated to handle questions about this policy.

# Student One Stop:

The Student One Stop is an enrollment resource on campus established to help students access and manage their academic record and student accounts. Please visit the Student One Stop or call (330)941-6000 for assistance with financial aid, records, registration, and tuition charges/ billing. The Student One Stop is located on the second floor of Meshel Hall.

**Tentative Schedule**

| **Week** | **Experiment** | **Page** |
| --- | --- | --- |
| 1/10 – 1/15 | Introduction to the course, Check –in and Safety |  |
| **1/17** | **Martin Luther King Jr Day, No Classes** |  |
| 1/18 – 1/22 | **Expt. 1:** Conversion Factors and Problem Solving | 1 |
| 1/23 – 1/29 | **Expt. 2:** Density and Specific Gravity | 13 |
| 1/30 – 2/5 | **Expt. 3:** Testing for Cations and Anions | 23 |
| 2/6 – 2/12 | **Quiz 1 Expt 1,2,3**  **Expt. 4:** Compounds and Their Bonds | 33 |
| 2/13 – 2/19 | **Expt. 5:** Solutions, Electrolytes, and Concentrations | 47 |
| 2/20 – 2/26 | **Expt. 6:** Acids, Bases, pH, and Buffers | 59 |
| 2/27 – 3/5 | **Expt. 7:** Organic Compounds: Alkanes  **Expt. 8:** Reactions of Unsaturated Hydrocarbons | 69  85 |
| **3/6 – 3/12** | **Spring Break, No Classes** |  |
| 3/13 – 3/19 | **Quiz 2 Expt 4,5,6,7**  **Expt. 9:** Alcohols and Phenols | 91 |
| 3/20 – 3/26 | **Expt. 10:** Test for Carbohydrates | 99 |
| 3/27 – 4/2 | **Quiz 3 Expt 8,9,10**  **Expt. 11:** Carboxylic Acids and Esters | 109 |
| 4/3 – 4/9 | **Expt. 12:** Amines and Amides | 119 |
| 4/10 – 4/16 | **Expt. 13:** Saponification of Soaps | 129 |
| 4/17 – 4/23 | Enzyme Catalysis: Potato Catalase | 137 |
| 4/24 – 4/30 | **Quiz 4 Expt 11,12,13, catalyase**  Fermentation of Sugars by Yeast  Check Out | 149 |

Last day for withdrawing with a grade of “W” - Wednesday, March 23