

# **CHEM 1440.651 - Spring 2021**

**Instructor: Sammer Tekarli**

**Teaching Assistant: Nathaniel Peterson**

## **Course Overview**

### **Course Description**

This online course laboratory sequence is design to correlate with the CHEM 1420 General Chemistry lecture course. Most often laboratory experiments perform in this course has direct relationship with the lectures. However, there will be instances that laboratory experiments will be ahead or behind the lectures. It is your responsibility to read and prepare for the laboratory experiments despite of having help from the lecture. All required materials are available in Canvas to give you complete understand about the experiments before you come to the laboratory. Please read and understand all the content in the syllabus. If you find anything hard to understand or not clear please reach out to me. It is your responsibility to know all the information provided in the syllabus.

### **Communication**

- TA: Nathan Peterson
- Email: nathaniel.peterson@unt.edu
- Lecture Professor: Dr. Sammer Tekarli
- Email: sammer.tekarli@unt.edu
- While I want to make myself as available as possible to each of you, I do have to place some limitations on when I can be contacted. I would prefer that most general questions go through the Q & A forum in the Discussion Board area. If you have a general question about the course or assignments, please post it there. Either your TA, one of your classmates, or I will answer it there. This way we can all benefit from questions asked, and they can be answered in a venue that the whole class can see. You may also want to find someone in class to be a "buddy" with. This will give you at least one other person who you can email with questions.
- If you have a private question, please contact me via email only and I will respond within 24 hours on weekdays (usually sooner). Please do not expect a response over the weekend. DO NOT use Canvas Inbox to contact me directly. I do not receive those notifications regularly and your message will get lost. Email me directly for a quick response.
- When emailing your Instructor or TA, you MUST include your Full Name, Course Number, and Section Number in order to receive a response. There are 54 sections all with over 20 students each. If you do not give me that information, I do not have the time to find you in all of those sections, so I will not look.

- My primary means of communication with the entire class will be through the Announcements feature of Canvas. Your TA will also be utilizing this feature for mass communications throughout the semester.

## **Prerequisites**

- C or better in CHEM 1430.

## **Corequisite**

- CHEM 1420 or CHEM 1422 or CHEM 1423. Required Texts

## **Required Texts**

- There is no required textbook for the course. All material will be presented on Canvas.

## **Course Structure**

This course takes place mostly online. Your instruction will primarily be performed here on Canvas. All assignments will be submitted for grading on Canvas. In-person experiments will be expected to be completed on the day and time assigned to you. Your TA may provide additional instruction in the laboratory room as needed in order to successfully complete that week's experiment

Generally, laboratory section can have maximum 24 students. However, due to the social distancing protocol, one lab class can only contain 11 students. Therefore, within the first week of classes, your lab section will be randomly split into half to form Group 1 and Group 2. Your group assignment will be determining what experiment or simulation you are working on each week. Both Groups will complete the same assignments every two weeks, you just will be on different schedules. For example, one week, Group 1 might be performing an in-person experiment while Group 2 is performing a simulation. The following week, Group 1 will perform the simulation while Group 2 completes the in-person experiment. Before each assignment Module, there will be a weekly Overview module on Canvas that will explain what each Group is expected to complete that week. These Overview modules will unlock the Friday before each week.

All in-person experiments will need to be completed on the day and time you have been assigned for your Group. Because of the large number of students enrolled in CHEM 1440, we cannot guarantee a time for you for you to come in and make up the missed experiment. If you need to make up an experiment, please email the Instructor (not your TA!!) and he will get you an appropriate make-up assignment. Prelab quizzes will need to be completed before 11:59 pm the night before your scheduled in-person experiment. It is recommended that these be completed before you come to the laboratory. The Data Submission and Postlab question(s) or quizzes for each in-person experiment will be due one week after you complete the experiment.

Simulations will be open at 12:00 am until 11:59 pm the day of your scheduled lab class. If you do not complete the simulation before it closes, you will not receive a grade for that assignment.

## Course Objectives

Upon successful completion of this course, learners will be able to (*numbered in order of presentation*):

1. Describe the principles of thermodynamics and its application
2. Predict the directionality of reversible reactions according to Le-Chatelier
3. Describe the principles of spectroscopy and its applications
4. Relate knowledge of Acid and bases that acids and bases can be found everywhere
5. Interpret the acid base neutralization reaction
6. Apply acid base neutralization knowledge into titration
7. Describe the logarithmic nature of the pH scale
8. Calculate the pH of a strong acid or base
9. Interpret the concept of pKa and Ksp
10. Describe the principle of oxidation and reduction reactions
11. Describe the basic principle of Organic chemistry

## Course Activities & Assignments

### Labster Simulations (500 points)

Labster Simulations will be worth 100 points each. Each simulation will consist of questions that must be answered correctly in order to continue through the simulation. Each time you get a question wrong in Labster, points will be deducted from your overall score. You will be allowed to complete the simulation as many times as needed to boost your score, but be warned that in order to boost your score you must complete the entire simulation again. It is recommended to try and get as best of a score as possible the first time that you complete the simulation. All background materials for the simulation are provided within the simulation.

- There are five Labster simulations for a total of 500 points at the end of the semester.

### In person laboratory Experiments (Total - 500 points)

There will be five experiments that need to be completed in person in your assigned laboratory room on your assigned week. Grading for each experiment will consist of four sections for a total of 100 points per experiment.

- Prelab Quiz (to be completed after reading the Introduction and watching all videos on Canvas): 15 points each
- Data Submission: 60 points each
- Postlab Questions (will unlock on Canvas after you have submitted your Data): 25 points each

## **Grading**

Grading is based on the total points earned throughout the semester. The percentages listed on Canvas will always be an incorrect representation of your grade in the course. 11 experiments were allocated in this course. However, for your final grade calculation only 10 experiments points will be included. Lowest grade will be dropped.

- A: 984 - 1135 points
- B: 874 - 983 points
- C: 764 - 873 points
- D: 654 - 763 points
- F: 0 - 653 points

## **Course Policies**

### **Late Work**

I will not accept late work in this course. All work turned in after the deadline will receive a grade of zero unless the student has a university-excused absence ([Links to an external site.](#))and provides documentation with 48 hours of the missed deadline.

### **Grade Disputes**

You are required to wait 24 hours before contacting me to dispute a grade. Within that time, I expect that you will review the assignment details and reflect on the quality of the work you turned in. If you would still like to meet, email me to set up a meeting (I cannot discuss grades over email). You should come to our scheduled meeting with specific examples that demonstrate that you earned a higher grade than you received. If you miss your scheduled meeting, you forfeit your right to a grade dispute. If you do not contact me to schedule a meeting within seven days of receiving your grade, you also forfeit your right to a grade dispute.

### **Extra Credit**

There will be one opportunity for extra credit in this course. At the end of the semester an assignment will open where you can submit a screenshot of your SPOT evaluation submission confirmation. SPOT evaluations are the primary way that we determine TA job duties and evaluate student's needs in this course. Please be critical, but respectful in your evaluation of your TA and the course. I take these evaluations seriously and many suggestions for improvement by former students have been implemented in subsequent semesters.

### **Course Safety Statement (for Laboratory Courses)**

Students in the laboratory are urged to use proper safety procedures and guidelines. While working in laboratory sessions, students are expected and required to identify and use proper safety guidelines in all activities requiring lifting, climbing, walking on slippery surfaces, using

equipment and tools, handling chemical solutions and hot and cold products. Students should be aware that the University of North Texas is not liable for injuries incurred while students are participating in class activities. All students are encouraged to secure adequate insurance coverage in the event of accidental injury. Students who do not have insurance coverage should consider obtaining Student Health Insurance for this insurance program. Brochures for this insurance are available in the UNT Student Health and Wellness Center on campus. Students who are injured during class activities may seek medical attention at the Student Health and Wellness Center at rates that are reduced compared to other medical facilities. If you have an insurance plan other than Student Health Insurance at UNT, please be sure that your plan covers treatment at this facility. If you choose not to go to the UNT Student Health and Wellness Center, you may be transported to an emergency room at a local hospital. You are responsible for expenses incurred there.

## **Academic Dishonesty**

Students caught cheating or plagiarizing will receive a 0 for that particular assignment or quiz. Additionally, the incident will be reported to the Office of Academic Integrity, who may impose further penalty. According to the UNT catalog, the term "cheating" includes, but is not limited to: a. use of any unauthorized assistance in taking quizzes, tests, or examinations; b. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; c. the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the university; d. dual submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor(s); or e. any other act designed to give a student an unfair advantage. The term "plagiarism" includes, but is not limited to: a. the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment; and b. the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. This also includes copying other students' data in lab, unless given express written permission to do so by the Instructor, turning in a data sheet for an experiment that you were not physically present for, or copying other students' words or work.

## **ADA Accommodation**

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the

privacy of the student. For additional information, refer to the Office of Disability Access website at <http://www.unt.edu/oda> (Links to an external site.). You may also contact ODA by phone at (940) 565-4323.

## **Experiments**

Exp 1 - Thermodynamics of urea dissolving (10) - (on campus)

Exp 2 - Equilibrium (Simulation) - (at home)

Exp 3 - Introduction to Spectroscopy; Beer's Law (19) - (on campus)

Exp 4 - Acids and Bases (Principles): Avoid falling in a lake of acid! (Simulation) - (at home)

Exp 5 - Introduction To pH – Titration Of Acetic Acid In Vinegar And Phosphoric Acid In Coca-Cola and Vinegar (15 and 16) - (on campus)

Exp 6 - Advanced Acids and Bases (Simulation) - (at home)

Exp 7 - Molar Solubility And Determination Of Solubility Product (22) - (on campus)

Exp 8 - Titration: Neutralize an acid lake contamination (Simulation) - (at home)

Exp 9- Redox Titration – Standardization Of Potassium Permanganate Solution (23) - (on campus)

Exp 10 - Organic Chemistry Introduction: Learn about organic compounds (Simulation) - (at home)

Exp 11- Redox Reactions: Discover how batteries work (Simulation) - (at home)