

Tarleton State University  
Department of Chemistry, Geosciences, and Physics  
Course Syllabus  
June 25 – August 6, 2021

**Course:**

CHEM 1412    General Chemistry II    MTWR 10:00-11:30 AM, SCIENCE 105  
Hybrid/Blended Format

**Instructor:**

**Dr. Linda Schultz**    [schultz@tarleton.edu](mailto:schultz@tarleton.edu)

Phone: (254)968-9146 (office), (325)642-0490 (cell), or (325)643-1384 (home)

Office: Room 407, SCIEN - Office Hours: by appointment. Note – only the cell phone has voicemail, but it is a flip phone that does not do text, so the most reliable communication is online, although it may be slower.

**Course Prerequisites:**

CHEM 1411. General Chemistry I

The student should also have successfully completed MATH 0304 or higher.

**Course Description:**

Topics to be covered include a study of the chemical and physical properties of selected families of elements, an introduction to energy changes in chemical reactions, chemical equilibria, electrochemistry, rates of chemical reactions, nuclear chemistry, acids and bases, organic and biological chemistry, and coordination chemistry.

This course is suggested for science majors and pre-professional students and is a prerequisite for CHEM 2423 Organic Chemistry.

The course consists of three (3) lecture hours per week and three (3) laboratory hours per week for 4 hours of college credit.

**Course Format:**

This is a **Blended HyFlex** course, so material in both lecture and labs will be in F2F (face to Face) and Zoom (online) delivery mode **at the scheduled class time**. Zoom recordings will be available only upon request. **Canvas** will be the platform for delivering class announcements, lecture materials, and submitting assignments such as homework and lab reports. **All quizzes and exams will be given online. Quizzes will be due before 10:00 AM the day of the next class period. Exams will be taken during the scheduled class period.** Lecture material will be available online **in Canvas** prior to F2F class meetings and will be used for reviewing/discussing the material. **All assignments will be submitted and graded through Canvas. Therefore, they must be in an acceptable format, such as MS Word or pdf. If they are not in an acceptable format, they will not be accepted.**

**Required Texts and Materials:**

**Chemistry OpenStax 2<sup>nd</sup> ed.** This is a free online textbook that is made available by Rice University. You may wish to download a copy to save on your computer. Follow the link and click on 'get this book'. It can also be purchased or rented through the Campus Bookstore. We will cover most of the material in Chapters 11-21. If you are continuing this course from the Brown and LeMay textbook, Chemistry: The Central Science, it is a wonderful supplemental resource. If you have another textbook that you feel more comfortable with, feel free to use it.

An **online homework program, Knewton Coursework**, is a required purchase for this course. If you have previously purchased it, you should still have access. If not, log into the first assignment on our Canvas page, and you will be prompted to purchase it. Do not go directly to the Knewton site. If you have a voucher, contact the TSU Bookstore. Our coursework can only be accessed through our Canvas page. A trial purchase is available to help you get started ASAP.

**You will need to have access to a computer for online exams and quizzes. Tablets or cell phones are not always adequate for some assignments.**

**General Chemistry II, CHEM 1412 - Laboratory Manual**, Department of Chemistry, Geosciences, and Physics, Tarleton State University will also be available online through LabFlow.com. **This is also a required purchase but is only valid for one semester. You must purchase the lab manual to have access to the online assignments, quizzes and tests for your lab section.** You will need to purchase it before the first scheduled lab class.

Labs will be held every Tuesday and Thursday, at 1:00 PM, beginning June 29, and will be recorded on Zoom. Online assignments will open on Friday, June 25<sup>th</sup>, and check-in will be on Tuesday, June 29. **Attendance – either F2F (recommended) or online via Zoom - is mandatory at your scheduled lab time each week.** Completed report sheets will be due at noon on the following Wednesdays and Fridays and will be uploaded into Canvas. The lab will require several hours a week to watch the videos, take quizzes and turn in your lab report sheets. Please watch your lab Canvas page for announcements and due dates of the lab assignments. Late work will be heavily penalized. Do not wait until the last minute to start them.

**Calculator** - scientific type, nonprogrammable, non-graphing. **NO CELL PHONE USE.**

**Protective eyewear for laboratory** – must be goggles; can be purchased at Stockroom.  
**You are required to wear a face covering at all times, both in the classroom and lab.**

### **Attendance Policy:**

Good attendance is essential to successful mastery of course material. Face-to-face (F2F) attendance will be monitored daily by the assignment of seats and occupancy check due to COVID issues. Online attendance is monitored through Zoom. Please notify the instructor of excused absences as described in the University Catalog and in the TSU Student Handbook in advance if possible. This can be done via email.

Completion of all of the required topics for this course requires that we cover about two chapters per week, or approximately a half chapter each class day. The daily material will be available each class day at 10:00 AM, in the form of a pdf in the Modules Section on Canvas.

There will usually be a daily quiz over the material covered. This will be in the form of a **Word** document for you to download, answer, and upload back into Canvas. **The only acceptable format will be Word or pdf.** The Quiz will be open until 10:00 AM the next lab period, but from the time you open it, you will only have 20 minutes to complete it. Each quiz is worth 10 points, and quiz submission will also be used as a measure of attendance.

Grades will not be lowered due to poor attendance. However, good attendance may be considered as a bonus point for borderline grades at the end of the semester.

### **University Policy:**

The student is expected to be familiar with student responsibilities as outlined in the current University Catalog and TSU Student Handbook. Tarleton State University expects students to maintain high standards of personal and scholarly conduct. Students guilty of academic dishonesty are subject to disciplinary action. Academic dishonesty includes, but is not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials. **Academic dishonesty on daily work, quizzes or exams will result in a zero on that assignment. This includes F2F and online assignments.** The faculty member will be responsible for initiating action for each case of academic dishonesty that occurs in this class.

If you are a student with a disability seeking accommodations for this course, please contact the Center for Access and Academic Testing, at 254.968.9400 or [caat@tarleton.edu](mailto:caat@tarleton.edu). The office is Math 201. More information is at [www.tarleton.edu/CAAT/](http://www.tarleton.edu/CAAT/) or the University Catalog.

### **Grading Policy:**

Please refer to the current University Catalog for additional information regarding grades and course withdrawal policies. For this course, your grade will be determined as follows:

|  |     |
|--|-----|
| Lecture Grade:   | 50% |
| 4 exams (online during class period)                             | 80% |
| 10 quizzes   | 10% |
| Online homework  | 10% |
| <br>   |     |
| *Final Exam  | 25% |
| Departmental exam (multiple choice - online during class period) |     |
| <br>   |     |
| Laboratory Grade   | 25% |

Make-up exams will be by permission of the instructor. Please contact the instructor immediately after the missed exam to make arrangements. **There is no make-up for quizzes.** Only the highest 10 quiz grades are used, so extra quiz grades will be dropped.

The final grade will be assigned as follows, although the instructor reserves the right to lower the limits slightly at her discretion considering factors such as student attendance.

However, **the student must earn a passing grade in both lab and lecture to pass the course.**

A = 90% or above

B = 80% - 89%

C = 70% - 79%

D = 60% - 69%

F = below 60%

### **Course Objectives:**

Upon completion of this course, the student will be able to demonstrate a satisfactory understanding of:

1. What solutions are and how colligative properties are influenced by concentration.
2. How the rates of chemical reactions are measured, influenced by concentration and other factors and how mechanisms are used to describe reaction processes and how they may be postulated.
3. Basic principles of chemical equilibrium and be able to write equilibrium constant expressions for chemical reactions.
4. The chemical natures of acids and bases and be able to calculate pH of solutions of strong and weak acids and bases, salts, and buffer solutions.
5. Factors affecting solubility equilibria and be able to calculate solubilities.
6. The thermodynamic functions affecting the spontaneity of chemical reactions.
7. Electron exchange in chemical reactions, the basic principles of electrochemistry, and be able to balance oxidation / reduction equations.
8. Chemical factors influencing the environment.
9. The properties of metals and nonmetals and coordination chemistry.
10. Basic principles involving nuclear reactions and radioactivity.
11. Basic organic and biological chemistry.

### **Sources of Assistance:**

1. **The textbook. It is free! Read it and work the Knewton online homework problems** for each chapter on the course schedule
2. **Your instructor.** If you are having difficulty working the problems, call or come email me. I may be elusive, but I **can** be found.
3. Other Chemistry texts. Check the library for one you can read more easily.
4. **Old exams.** I will scan one to you before each exam. These are for practice only and are **not** intended to represent the actual exam, since these are always written new for each semester.
5. **Printed notes.** These are available online on my homepage and can be printed out. These will assist you in following material, but are not a substitute for attending class!

**Course Schedule: Note: The course schedule is tentative. The instructor reserves the right to change this syllabus at any time. Any changes will be announced in class in advance.**

### **Core Values**

### **Academic Integrity Statement**

Tarleton State University's core values are integrity, leadership, tradition, civility, excellence, and service. Central to these values is integrity, which is maintaining a high standard of personal and scholarly conduct. Academic integrity represents the choice to uphold ethical responsibility for one's learning within the academic community, regardless of audience or situation.

### **Academic Civility Statement**

Students are expected to interact with instructors and peers in a respectful manner that enhances the learning environment. Instructors may require a student who deviates from this expectation to leave the face-to-face (or virtual) classroom learning environment for that particular class session (and potentially subsequent class sessions) for a specific amount of time. In addition, the instructor might consider the university disciplinary process (for Academic Affairs/Student Life) for egregious or continued disruptive behavior.

### **Academic Excellence Statement**

Tarleton holds high expectations for students to assume responsibility for their own individual learning. Students are also expected to achieve academic excellence by:

- honoring Tarleton's Core Values of integrity, leadership, tradition, civility, excellence and service.
- upholding high standards of habit and behavior.
- maintaining excellence through class attendance and punctuality.
- preparing for active participation in all learning experiences.
- putting forth their best individual effort.
- continually improving as independent learners.
- engaging in extracurricular opportunities that encourage personal and academic growth, reflecting critically upon feedback and applying these lessons to meet future challenges.

### **Academic Affairs Service Statement**

Tarleton faculty, staff, and students are expected to model responsible citizenship through service activities that promote personal and academic growth while enhancing the university, local, regional, national, and global communities. These activities will foster a culture of academic/public engagement that contributes to the achievement of the university's mission and core values.

### **Academic Honesty Statement**

Tarleton State University expects its students to maintain high standards of personal and scholarly conduct. Students guilty of academic dishonesty are subject to disciplinary action. Academic dishonesty includes, but is not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials. The faculty member is responsible for initiating action for each case of academic dishonesty that occurs in his or her class.

**All Lecture Exams and Quizzes will require the submission of some work/calculations. Credit will not be awarded for an online quiz or exam if no work/calculations is/are shown where**

required. All quizzes are open notes (not computer) and will require that work be shown. Notes are not allowed on exams. All exams are taken online during the scheduled class period and will be closely monitored via Proctorio.

\*The final exam is a comprehensive departmental assessment that will be given on **Monday, August 2, 2021 at 10:00 AM**. Please plan accordingly. It will be a two-hour multiple choice exam with 50 questions and will be given online. Proctorio will be required for the Final Exam.