CHEMISTRY 1980 – Problem Solving in Chemistry
Fall 2021

COURSE INFORMATION
CHEM 1980.001
Lecture: MWF, 10:00am – 10:50am, SAGE 230

INSTRUCTOR INFORMATION
Dr. Rebecca Weber
E-mail: rebecca.weber@unt.edu
Phone: 940-369-8433
Office: CHEM 261
Office Hours: MWF, 12:00p – 1:00p
If you need to meet with me outside of normal office hours, please make an appointment.

TA Information
Spenser Washburn
E-mail: spenserwashburn@my.unt.edu
Office: 
Drop-in Hours:

REQUIRED TEXT
There is no required text for this course. Material will be uploaded to Canvas for students to use.

MATERIALS NEEDED
Every day, you should bring to class:

• Something to write with (preferably a pencil with a good eraser)
• Something to write on (set up a notebook for this class!)
• An electronic device that can connect to the Internet (preferably a tablet or laptop, but smartphone will suffice)
• A scientific calculator

COURSE DESCRIPTION
This course is intended to serve as a support course for CHEM 1410 (General Chemistry I). General Chemistry can be a difficult class for students, especially those that do not have a strong science and
math background for whatever reason. The goal of this class is to provide extra support beyond the General Chemistry classroom.

Topics covered will be applied math skills, problem solving strategies, study skills and test preparation, as well as other topics that are intended to help students be successful in General Chemistry, as well as other STEM courses.

The math skills needed for success in General Chemistry will be covered (but prior knowledge of these topics is assumed): basic arithmetic skills, with and without a calculator; scientific notation; solving linear equations for an unknown variable; relationships between variables in equations; graphing; logarithms and exponentials; exponents; and others.

Problem solving and critical thinking skills will be discussed and utilized as they apply to chemistry problems. Discussions will center around the topics that are covered in CHEM 1410 – for example, when discussing the Rydberg equation in CHEM 1410, discussions in CHEM 1980 will cover how to use the Rydberg equation, how to solve for an unknown variable, how to approach problems that require the Rydberg equation, and how to interpret your answer.

**Topics Covered** – Note that this is generalized, and may be subject to change based on the needs of the class.

<table>
<thead>
<tr>
<th>Week of</th>
<th>Topic in 1410 - AF</th>
<th>Topics in class</th>
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<tbody>
<tr>
<td>1</td>
<td>8/23 States of matter, SI Units, Sig Figs</td>
<td>How to take notes; conversions, solving for an unknown variable, sanity checks, estimating answers; multiplying by unit</td>
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<tr>
<td>2</td>
<td>8/30 Nuclear model, Avg atomic mass, mass-mole conversions</td>
<td>How and when to study; summation notation, sanity checks, estimating answers</td>
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<tr>
<td>3</td>
<td>9/6 Quantum (waves, energy)</td>
<td>Preparing for exams – how to study; Substituting variables, solving for an unknown, sanity checks; multiplying by unity</td>
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<td>4</td>
<td>9/13 Elec config, orbitals</td>
<td>Reviewing performance on exams; assigning QN</td>
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<tr>
<td>5</td>
<td>9/20 Naming, EF (ident)</td>
<td>Practice naming</td>
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<td>6</td>
<td>9/27 Mass %, EF, MM conv; Lewis</td>
<td>Percentages, ratios, drawing Lewis structures</td>
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<tr>
<td>7</td>
<td>10/4 VSEPR, polarity, IMF, VB theory</td>
<td>Preparing for exams; Lewis to VSEPR</td>
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<tr>
<td>8</td>
<td>10/11 Rxn stoich; LR, %yld</td>
<td>Reviewing performance on exams; multiplying by unity, amounts by diagram</td>
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<tr>
<td>9</td>
<td>10/18 Solubility, precip</td>
<td>Substances in solution, stoichiometry</td>
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<tr>
<td>10</td>
<td>10/25 Acid/base, redox, sol’n stoich</td>
<td>Preparing for exams; redox, solutions in diagrams, stoichiometry</td>
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<tr>
<td>11</td>
<td>11/1 U, q, w, H, calorimtery</td>
<td>Reviewing performance on exams; intensive and extensive properties, state functions, signs</td>
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<tr>
<td>12</td>
<td>11/8 Hess, BDE, prop of gases</td>
<td>Hess’s law, conversions</td>
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<td>Date</td>
<td>Topic</td>
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<tr>
<td>13</td>
<td>11/15</td>
<td>Gas laws</td>
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<tr>
<td>14</td>
<td>11/22</td>
<td>Prop of liquids</td>
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<tr>
<td>15</td>
<td>11/29</td>
<td>Phase changes, heating curves</td>
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<tr>
<td>16</td>
<td>Finals</td>
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**September 6, 2021** – Labor Day, University closed  
**November 25-26, 2021** – Thanksgiving break, University closed  
**December 3, 2021** – Last day of class  
Check [http://calendar.unt.edu/event-calendar/Academics](http://calendar.unt.edu/event-calendar/Academics) for other important dates!

**HOMEWORK AND OTHER ASSIGNMENTS**

Homework may be assigned in class. Students should keep an eye on Canvas for assignments to be posted that require work outside of normal class time.

It is best to bring problems with course material to the recitation hour, drop-in hours, or to the Chemistry Resource Center (CRC), a tutoring center available for students in chemistry. Check out the website for Zoom availability - [https://chemistry.unt.edu/undergraduate-program/instructional-resources](https://chemistry.unt.edu/undergraduate-program/instructional-resources). If help is needed, make sure that you bring the problem in question, all materials such as lecture notes and what you have attempted already.

**GRADING**

This course is assessed on a pass/no pass basis, however grades will be collected throughout the semester based on attendance, participation, and completeness of work. The intention is that you work hard during class at any assignment or activity you are given. You are taking this class to help you be successful in General Chemistry, which requires work on your part. If you complete 80% of the assignments, you will pass. Less than 79% will result in a “no pass” grade.

I reserve the right to change or modify the syllabus at any time. If changes are made, students will be notified during scheduled class times and the revised syllabus will be made available on Canvas.

**ATTENDANCE AND CLASSROOM BEHAVIOR**

Attendance is required at every lecture. Lectures will begin and end as noted at the beginning of the syllabus, so if you are late to class or anticipate having to leave early, please sit as close to the door as possible to minimize the disruption to the rest of the class.

In order to facilitate possible contact tracing that may be needed, you will choose a seat that will be yours throughout the semester. We will have plenty of room to spread out.

Disruptive behavior such as talking, giggling, snoring, talking on a cell phone, playing on the Internet or texting, etc, will not be tolerated. Cell phones need to be muted during class. A student engaged in disruptive behavior can be asked to leave class immediately and can be suspended from class for a period of up to a week for the first offense, and longer if the behavior persists.
OTHER NOTES
By university regulations, a grade of “I” (Incomplete) cannot be given as a substitute for a failing grade in a course. It is up to you to be aware of class withdrawal deadlines if you should choose to drop this course, as I will not do it for you.

Regarding dissemination of information, I exclusively use Canvas to email the entire class with reminders of deadlines, changes to classroom policies, etc. In addition, I post the lecture notes and grades on Canvas. Please make it a habit to check Canvas at least twice a week.

I will not respond to email received from non-UNT email address, especially concerning grade information. With a personal email address, I cannot be certain that it is you on the other end. As such, please use your official UNT email address to email me. But I welcome emails at any time!
ACADEMIC DISHONESTY Students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam. Additionally, the incident will be reported to the Dean of Students, 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.

ACCEPTABLE STUDENT BEHAVIOR Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at http://deanofstudents.unt.edu.

ADA STATEMENT The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of 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 accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the Office of Disability Accommodation website at http://disability.unt.edu. You may also contact them by phone at (940) 565-4323.

EMERGENCY NOTIFICATION & PROCEDURES UNT uses a system called Eagle Alert to quickly notify you with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). The system sends voice messages (and text messages upon permission) to the phones of all active faculty staff, and students. Please make certain to update your phone numbers at http://www.my.unt.edu. Some helpful emergency preparedness actions include: 1) know the evacuation routes and severe weather shelter areas in the buildings where your classes are held, 2) determine how you will contact family and friends if phones are temporarily unavailable, and 3) identify where you will go if you need to evacuate the Denton area suddenly. In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

RETENTION OF STUDENT RECORDS Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. You have a right to view your individual record; however, information about your records will not be divulged to other individuals without the proper written consent. You are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the university’s policy in accordance with those mandates at the following link: http://essc.unt.edu/registrar/ferpa.html.

STUDENT EVALUATION OF TEACHING (SPOT) Student feedback is important and an essential part of participation in this course. The Student Perception of Teaching (SPOT) is a requirement for all organized classes at UNT. This short survey will be made available at the end of the semester to provide you with an opportunity to evaluate how this course is taught.

SUCCEED AT UNT UNT endeavors to offer you a high-quality education and to provide a supportive environment to help you learn and grown. And, as a faculty member, I am committed to helping you be successful as a student. Here’s how to succeed at UNT: Show up. Find Support. Get advised. Be prepared. Get involved. Stay focused. To learn more about campus resources and information on how you can achieve success, go to http://success.unt.edu/