Contacting Your Instructor

Instructors typically respond to emails from students within 24 hours. However, over the weekend and holiday periods responses may be delayed. Find out more about contacting your instructor.

Instructor Contact Information

Name: Dr. Claire Bambrough
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Office Phone: 972 860 4214
Office Location: X3040C
Virtual Office Hours: Mon, Wed 12:00 – 1:30 pm, Tues, Thurs, 11:00 am – 12:00 pm.
Virtual Office Hour Link: https://meetingsamer19.webex.com/meet/pr622247083
Division Office and Phone: K224, 972 860 4750, Virtual Division Office

Course Information

Course Title: General Chemistry I
Course Number: CHEM 1412
Section Number: 21002
Semester/Year: Fall 2020 (2nd 8-week flexterm)
Credit Hours: 4
Class Meeting Time/Location: Online Lecture; Lab Tuesday OR Thursday 1:00 – 3:50 PM, X3032
Certification Date: 10/24/20
Last Day to Withdraw: 11/25/20

Course Prerequisites

Required: CHEM 1409 or CHEM 1411 with a minimum grade of "C."
Course Description

This is a Texas Common Course Number. This is a Dallas College Core Curriculum course.
This lecture and lab course should combine all of the elements of CHEM 1312 General
Chemistry II Lecture which include chemical equilibrium; phase diagrams and spectrometry;
acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an
introduction to organic chemistry and descriptive inorganic chemistry. And 1112 General
Chemistry II Lab, including the learning outcomes listed for both courses which include basic
laboratory experiments will reinforce theoretical principles of general chemistry, introduction
of the scientific method, experimental design, chemical instrumentation, data collection and
analysis, and preparation of laboratory reports. (3 Lec., 3 Lab.)

Coordinating Board Academic Approval Number 4005015803

Student Learning Outcomes

Upon successful completion of this course, students will:
1. State the characteristics of liquids and solids, including phase diagrams and spectrometry.
2. Articulate the importance of intermolecular interactions and predict trends in physical
   properties.
3. Identify the characteristics of acids, bases, and salts, and solve problems based on their
   quantitative relationships.
4. Identify and balance oxidation-reduction equations, and solve redox titration problems.
5. Determine the rate of a reaction and its dependence on concentration, time, and
   temperature.
6. Apply the principles of equilibrium to aqueous systems using Le Chatelier’s Principle to
   predict the effects of concentration, pressure, and temperature changes on equilibrium
   mixtures.
7. Analyze and perform calculations with the thermodynamic functions, enthalpy, entropy,
   and free energy.
8. Discuss the construction and operation of galvanic and electrolytic electrochemical cells,
   and determine standard and non-standard cell potentials.
10. Describe basic principles of organic chemistry and descriptive inorganic chemistry.

Upon successful completion of the laboratory portion of the course, students will:
1. Use basic apparatus and apply experimental methodologies used in the chemistry
   laboratory.
2. Demonstrate safe and proper handling of laboratory equipment and chemicals.
3. Conduct basic laboratory experiments with proper laboratory techniques.
4. Make careful and accurate experimental observations.
5. Relate physical observations and measurements to theoretical principles.
6. Interpret laboratory results and experimental data, and reach logical conclusions.
7. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.
8. Design fundamental experiments involving principles of chemistry and chemical instrumentation.
9. Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry.

Texas Core Objectives

The College defines essential knowledge and skills that students need to develop during their college experience. These general education competencies parallel the Texas Core Objectives for Student Learning. In this course, the activities you engage in will give you the opportunity to practice two or more of the following core competencies:

**Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

**Communication Skills** - to include effective development, interpretation, and expression of ideas through written, oral, and visual communication

**Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

**Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

**Personal Responsibility** - to include the ability to connect choices, actions, and consequences to ethical decision-making

**Social Responsibility** - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

Required Course Materials

If your Dallas College course requires learning materials they will be provided as part of the IncludED program (dccd.edu/included) or as free materials you can access in your online course shell.

If you opt out of the IncludED program, you are responsible for obtaining all your required learning materials by the first day of the class. For more details, see Institutional Policies.

Required Materials (provided as part of IncludED program):

Additional Required Materials (not part of IncludED):
The following supplies are also required, but are not part of the IncludED program:
1. General Chemistry II Laboratory Manual: Download experiments from the 1412 Community site on eCampus
2. Student Lab Notebook, Hayden-McNeil
3. Scientific Calculator: Non-programmable, Non-graphing (TI 30X IIS recommended). Programmable calculators containing alpha keys & graphing calculators will not be allowed on tests. Cell phone calculators will not be allowed on tests.
4. All-enclosed safety goggles

Graded Work
The tables below provide a summary of the graded work in this course and an explanation of how your final course grade will be calculated.

**Lecture: 80% of final grade; Lab: 20% of final grade**
The lecture portion of the course is comprised of quizzes, a significant figures assignment, four tests and a comprehensive final exam

Summary of Graded Work

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Points</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys</td>
<td>1 @ 5 points each</td>
<td>10</td>
</tr>
<tr>
<td>Quizzes</td>
<td>9 @ 10 points each</td>
<td>90</td>
</tr>
<tr>
<td>Tests</td>
<td>4 @ 100 points each</td>
<td>400</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>100 points</td>
<td>100</td>
</tr>
<tr>
<td>Labs + Sig Figs Review</td>
<td>1 @ 20 points and 13 @ 10 points</td>
<td>150</td>
</tr>
<tr>
<td><strong>Total Points</strong></td>
<td></td>
<td><strong>750</strong></td>
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</table>

Final Grade

<table>
<thead>
<tr>
<th>Percentages</th>
<th>Minimum Points Required/750</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;89.5</td>
<td>671</td>
<td>A</td>
</tr>
<tr>
<td>79.5 – 89.4</td>
<td>596</td>
<td>B</td>
</tr>
<tr>
<td>69.5 – 79.4</td>
<td>521</td>
<td>C</td>
</tr>
<tr>
<td>59.5 – 69.4</td>
<td>446</td>
<td>D</td>
</tr>
<tr>
<td>&lt;59.5</td>
<td>&lt;446</td>
<td>F</td>
</tr>
</tbody>
</table>
Description of Graded Work

Quizzes: Every chapter has a quiz associated with it. Quizzes are electronic and are taken on eCampus. Each quiz is located in the corresponding chapter folder under the Course Content button.

- Each quiz is worth 10 points and is made up of 10 questions (Multiple Choice and/or True False).
- There are nine quizzes which equates to 90 points, or 12% of your final grade. Failure to complete the quizzes will have a significant negative impact on your overall course grade, lowering it by as much as 2 letter grades.
- Quizzes are "open book" but please work alone.
- Do NOT launch a quiz until you are ready to take it. Once you have launched it, you must complete it.
- There is a two hour time limit on every quiz.
- Do not close your browser or hit the "back" button while taking the quiz; it will lock you out.
- Make sure you hit submit at the end of the quiz, and check that a grade was entered for the quiz under "My Grades" (you can find this under "Tools").
- If you encounter technical problems while taking the quiz (e.g. your internet crashes) I will need to reset the quiz for you. Please e-mail me at CBambrough@dcccd.edu and ask me to reset the quiz.
- Refer to the course calendar on eCampus for due dates.

Surveys: Two surveys, worth five points each, are given during the first and last week of the semester. The surveys ask for honest feedback, and are anonymous. The surveys are located on eCampus, in the Chapter 11, and Final Review folders of the Course Content area. Survey due dates are given in the eCampus Course Calendar.

Online Tests and Final Exam: Tests will be given via eCampus, and will be located in the Test folders, in the Course Content area. Tests will be true/false and multiple choice. You may use scratch paper to work out calculations etc, and refer to your notes, but you may not refer to the internet during the test.

Extra Credit: There are opportunities for extra credit for this course.

- Each online chapter folder (except Chapter 11) contains a short “mini quiz” on material we have covered in the previous chapter. Each mini quiz is worth two points of extra credit.

Labs: Labs are an important part of the chemistry experience; they help you connect theory discussed in lecture with real-world observations. Participation in laboratory activities is
mandatory. The lab portion of the course is accessed through an eCampus Community called **BHC-CHEM-1412-LAB**. You can access the lab community by clicking on the Community tab located at the top of the eCampus screen. Once in the Lab Community, click on the FA2020 Labs menu button.

Some laboratory activities will take place in the chemistry laboratory. These experiments require significant pre-lab preparation as described below, and they will also require a full lab report as part of the assignment. Complete instructions for writing a lab report can be found in your course shell as well as in the laboratory community.

Other laboratory activities are “dry labs:” worksheets that allow you to practice manipulating ideas or data connected to laboratory work. These may be downloaded from the laboratory community, and they will be submitted digitally through the community.

**Chemistry Laboratory Policies and Information**

**Pre-lab Activity**

Brookhaven chemistry experiments require a pre-lab activity. The purpose of the pre-lab is to ensure that you understand the experiment and all related safety procedures.

All of your written materials for your experiments- pre-lab materials, material from the lab itself, and post-lab materials should be hand-written in your laboratory notebook. Graphs are the exception to this- some experiments will include computer generated graphs that should be printed out and included with your final report.

Be sure you know how to do all the calculations required in the experiment prior to coming to lab. If you can’t do the calculations, then seek help **before** lab.

**If you have not completed the pre-lab correctly, and in full, you will not be permitted to attend lab.**

**The Experiment**

There will be a short safety and technique discussion and demonstration at the beginning of each lab period. If you come to lab late, you will not be admitted to the lab class. Observations, data collection, and some results will be completed in lab.

You are expected to wear appropriate clothing and protective eyewear (fully-enclosed goggles) at all times. No flip-flops or open-toed shoes are permitted in the chemistry laboratory.
Post Lab
At the end of lab you will write your lab report. You may discuss your results with other students but your report is an individual effort. Be careful not to plagiarize. Lab reports are due at the end of the lab period on the completion of the experiment. Late reports will not be accepted. The quality of calculations and reasoning will have as much impact on your grade as your experimental results.

Lab Grade Policy
**IMPORTANT:** Since you will receive a single transcripted grade for both lecture and lab, you must earn an overall grade of 70% for the lab portion of this course, in order to pass the class. Failure to complete and submit any lab, will result in a grade of zero for that lab, and could jeopardize your chances of passing the lecture portion of the class.

eCampus Information
This class uses [eCampus](http://ecampus.dcccd.edu/). Login to eCampus using your DCCCD account e.g.: e9876543@student.dcccd.edu. If you have trouble logging in, please contact Technical Support on the web or by phone at 1-866-374-7169 or 972-669-6402.

Once you have logged in to eCampus, please make sure that your email address is correct in the system. If I cannot contact you via email, you will miss important information. To check that your email is correct, click on the “My DCCCD” tab at the top of the eCampus screen, then click on “Personal Information” under “Tools” at the left-hand-side of the screen then “Edit Personal Information”.

Once you have logged in and verified your email address, access the CHEM 1412 course by clicking on the “Courses” tab at the top of the screen and then selecting 2020FA-CHEM-1412-21002. Spend some time familiarizing yourself with eCampus by clicking on the buttons to the left of the course screen. Lecture material and tests can be found under the "Course Content" button.

Institutional Policies
Institutional Policies include information about tutoring, Disabilities Services, class drop and repeat options, Title IX, and more.

Course Schedule
Detailed lecture and lab schedules can be found in the eCampus course calendar (https://dccc.blackboard.com/webapps/calendar/viewPersonal). Refer to the eCampus lecture
and lab calendars regularly to check due dates for assignments, tests and labs etc. Any changes made to the lecture or lab schedules will be reflected in the eCampus calendar.

Weekly to do list:

- Read the chapter in the textbook
- Watch the videos
- Read the Powerpoint and complete all of the examples and skill-builders
- Refer to handouts for the salient points in the chapter (useful when reviewing for the test)
- Complete the worksheets and check your answers against the keys
- Complete the end of chapter questions in the textbook
- Complete and submit the eCampus chapter quiz (this is where you earn points)
- Refer to the course calendar on eCampus for due dates.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Readings &amp; Assignments</th>
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<tbody>
<tr>
<td>Liquids, Solids and Phase Changes</td>
<td>Chapter 11</td>
</tr>
<tr>
<td>Solutions and Their Properties</td>
<td>Chapter 12</td>
</tr>
<tr>
<td>Test #1</td>
<td>Chapters 11 – 12</td>
</tr>
<tr>
<td>Chemical Kinetics</td>
<td>Chapter 13</td>
</tr>
<tr>
<td>Chemical Equilibrium</td>
<td>Chapter 14</td>
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<tr>
<td>Test #2</td>
<td>Chapters 13 – 14</td>
</tr>
<tr>
<td>Aqueous Equilibria: Acids and Bases</td>
<td>Chapter 15</td>
</tr>
<tr>
<td>Applications of Aqueous Equilibria</td>
<td>Chapter 16</td>
</tr>
<tr>
<td>Test #3</td>
<td>Chapters 15 – 16</td>
</tr>
<tr>
<td>Thermodynamics: Entropy, Free Energy, and Equilibrium</td>
<td>Chapter 17</td>
</tr>
<tr>
<td>Electrochemistry</td>
<td>Chapter 18</td>
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<tr>
<td>Test #4</td>
<td>Chapters 17 – 18</td>
</tr>
<tr>
<td>Nuclear Chemistry</td>
<td>Chapter 19</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>Chapters 11 – 19</td>
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</tbody>
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The guidelines and class schedule in this syllabus may be changed, deleted, or amended at any time verbally in class.