General Chemistry I for Science Majors_3 Credit Hours

Instructor: Dr. Liu (stephanie.liu@unt.edu)
Please email me through Canvas.

<table>
<thead>
<tr>
<th>Session</th>
<th>Room</th>
<th>Days</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>LIFE A117</td>
<td>T/R</td>
<td>12:30 - 1:20 PM</td>
</tr>
<tr>
<td>Recitation</td>
<td>LIFE A117</td>
<td>R</td>
<td>3:30 PM - 4:20 PM</td>
</tr>
<tr>
<td>Office Hour</td>
<td>CHEM 272</td>
<td>T</td>
<td>10 - 11 AM</td>
</tr>
<tr>
<td>Office Hour</td>
<td>CHEM 272</td>
<td>F</td>
<td>2 - 4 PM</td>
</tr>
</tbody>
</table>

Super TA: Lama Abu-Amara (LamaAbu-Amara@my.unt.edu)
Office Hours: T/R 11:00 am – 12:00 pm at CHEM 115 (TAs Office)

I implement active learning strategies in this course. Self-study, group study, and adaptive homework constitute 25% of your overall grade. Exams consist 75% your overall grade.

Prerequisite: MATH 1100 or equivalent. Corequisite: CHEM 1430

Course Description: This course is the first of a two-course sequence. The goal is to provide students with a working knowledge of the basic concepts in general chemistry. The course focuses on the following: the structure of atoms, the nature of bonding, the composition and properties of compounds, chemical reactions, thermochemistry; the mole concept and its applications, and the properties of solids, liquids and gases. Basic problem solving skills and critical thinking are emphasized.

Course Outcomes
1. Understand the relationships between atomic structure and trends in chemical properties across the periodic table.
2. Understand the basic relationships between electronic structure of atoms and the formation of chemical bonds between atoms in molecules.
3. Understand how chemical bonds in molecules determine chemical behavior in such important areas as energy, the environment, and biology.
5. Understand and apply fundamental concepts in thermodynamics (ie: enthalpy) to predict certain aspects of chemical behavior.

Necessary Materials
2. Access to McGraw-Hill Connect and ALEKS
3. iClicker Reef app on your smartphone
4. A scientific calculator
5. Canvas is your single log-on to access iClicker, Smartbook and ALEKS, to check your grade on every assignment/exam, to download group worksheets, or to write me an email at any time.

- Canvas technical assistance: UIT Help Desk http://www.unt.edu/helpdesk/index.htm
  Email: helpdesk@unt.edu    Phone: 940.565-2324
**Grading Policies**

<table>
<thead>
<tr>
<th>Types of Assignments</th>
<th>Points per Item</th>
<th>Number of Assignments</th>
<th>Total points</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Lecture Exam</td>
<td>100</td>
<td>4</td>
<td>400</td>
<td>40 %</td>
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<tr>
<td>Final Exam (cumulative)</td>
<td>350</td>
<td>1</td>
<td>350</td>
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<tr>
<td>Smartbook Reading Assignments</td>
<td>3</td>
<td>24-3=21 (drop lowest three)</td>
<td>63</td>
<td>6.3 %</td>
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<tr>
<td>Group worksheets during recitations</td>
<td>7</td>
<td>14-2=12 (drop lowest two)</td>
<td>84</td>
<td>8.4 %</td>
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<tr>
<td>ALEKS Weekly Homework</td>
<td>7</td>
<td>14-1=13 (drop lowest one)</td>
<td>91</td>
<td>10.3 %</td>
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<tr>
<td>ALEKS Pie Progress</td>
<td>12</td>
<td>1</td>
<td>12</td>
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<tr>
<td>Course Total Points</td>
<td></td>
<td></td>
<td>1000</td>
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</table>

**Total Points /Grading Scale**

<table>
<thead>
<tr>
<th>Points Range</th>
<th>Grade</th>
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<tr>
<td>900 - 1000</td>
<td>A</td>
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<tr>
<td>800 - 899</td>
<td>B</td>
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<tr>
<td>700 - 799</td>
<td>C</td>
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<tr>
<td>600 - 699</td>
<td>D</td>
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<tr>
<td>&lt; 600</td>
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<table>
<thead>
<tr>
<th>Exams</th>
<th>Scope</th>
<th>Date and Time</th>
<th>Location</th>
<th>Number of Questions</th>
<th>Time Allowed</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>Ch 1-3</td>
<td>02/04/2020 12:30-1:05 pm or 1:15-1:50 pm</td>
<td>SAGE C330</td>
<td>20</td>
<td>35 min</td>
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<tr>
<td>Exam 2</td>
<td>Ch 4-6</td>
<td>03/03/2020 12:30-1:05 pm or 1:15-1:50 pm</td>
<td>SAGE C330</td>
<td>20</td>
<td>35 min</td>
</tr>
<tr>
<td>Exam 3</td>
<td>Ch 7, 8</td>
<td>03/31/2020 12:30-1:15 pm or 1:25-2:10 pm</td>
<td>SAGE C330</td>
<td>20</td>
<td>45 min</td>
</tr>
<tr>
<td>Exam 4</td>
<td>Ch 9-12</td>
<td>04/30/2020 3:30-4:15 pm, or 4:25-5:10 pm,</td>
<td>SAGE C330</td>
<td>20</td>
<td>45 min</td>
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<tr>
<td>Final</td>
<td>Ch 1-12</td>
<td>05/07/2020 10:30 am - 12:20 pm</td>
<td>LIFE A117</td>
<td>70</td>
<td>110 min</td>
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COURSE POLICIES

Purchasing the bundle of e-book of the text, SmartBook and ALEKS is required. SmartBook and ALEKS assignments constitute 17% of your overall grade.

Exams Lecture exams are given online through Canvas. Students are to take lecture exams at the Sage Hall computer-based testing center (Room C330). I provide two time slots for each lecture exam. Everyone should sign up for a time slot for each lecture exam on your Canvas course calendar. Final Exam is cumulative and paper-based. A standard test from American Chemical Society (ACS) will be adopted, as practiced throughout all sections for general chemistry. Refer to Table 2 on page 2 for more information on Exams.

No Make-up exams will be given. Accommodations will be made ONLY for University-approved absence, see professor for options (must bring documentation from Dean of Students).

Pre-lecture Assignments: To make the most out of each class meeting, I believe you should come to class as prepared as possible. A SmartBook® reading assignment including a few questions is due an hour before each class meeting. I believe the precious time in class should be spent on revealing deeper connections between concepts and demonstrating problem-solving, rather than going over basic concepts that you can read by yourselves. Everyone drops the lowest three SmartBook assignments.

Group work during recitations: Everyone should come to each recitation with a printed copy of the assigned worksheet and work in pre-assigned groups. At the end of each recitation, I will use the iClicker REEF app to collect answers from each group, and I will have everyone in the same group receive the same score. You will get the key to each worksheet immediately after I finish collecting answers. Everyone drops the lowest two worksheets. I enforce group study because I believe everyone benefits from a collaborative learning community to draw upon each other’s strength. One does not learn until one teaches. Please share knowledge, inspirations, questions and concerns with your group! At the end of the semester, everyone will be evaluated on your contribution to the teamwork by each team member and receive extra credit accordingly. The peer evaluation rubric is included in this syllabus. If you ever need a recommendation letter from me, your teamwork evaluation will be an important aspect from which I know you and based on which I could add to the letter I write for you.

Post-lecture Assignments: After self-study through SmartBook® reading, listening to lectures, and group-study on worksheets, now it’s time for you to build solid skills through practice! You have ALEKS, a virtual tutor, to assist you as you practice solving problems on the topics that are covered in a week. The weekly ALEKS assignment is not only homework, but a resource and an assistant that help you practice. I often hear from students that they feel they understand the material, but they are surprised to see their exam scores. Most of the time, it’s due to lack of practice. To feel I understand is a different stage than to be able to solve problems. Even careless errors you make on exams is mostly due to lack of practice. An expert is someone who has made all possible mistakes and learned from them. Everyone drops the lowest ALEKS assignment. On 5/06/2020 at 11:59 PM, your overall progress made on ALEKS out of the 89 topics will be assessed for up to 12 points.
UNT POLICIES

**Academic Dishonesty:** It is your responsibility to understand what constitutes academic dishonesty in accordance with the University’s Academic Honor Code. Academic dishonesty includes:

- Plagiarism
- During an exam, talking to or looking at another person's exam, and/or using unauthorized materials such as text books, notes, cell phones, etc.
- Having another person complete and submit work in your name.
- Lying to an instructor to improve your grade.
- Altering a graded work after it has been returned and then submitting the work for regarding.

A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

**Accommodations:** 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://www.unt.edu/oda](http://www.unt.edu/oda). You may also contact them by phone at 940.565.4323.

**Emergency Notification & Procedures**
UNT uses a system called Eagle Alert to quickly notify students 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). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

**Student Evaluation Administration Dates**
Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" ([no-reply@iasystem.org](mailto:no-reply@iasystem.org)) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website at [http://spot.unt.edu/](http://spot.unt.edu/) or email [spot@unt.edu](mailto:spot@unt.edu).
### Course Schedule (Subject to Change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Sun.</th>
<th>Tue.</th>
<th>Thur.</th>
<th>Thur. Recitation</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>By 11:59 pm, you should have read through the syllabus by yourself</td>
<td>Syllabus, sign up for online exams, iClicker Smartbook ALEKS (and initial knowledge check)</td>
<td>Ch 1.2-1.4 SmartBook #1 Due</td>
<td>Group Formation Worksheet 1 due</td>
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<tr>
<td>2</td>
<td>ALEKS 1 Due</td>
<td>Ch 2.1-2.7 SmartBook #2 Due</td>
<td>Ch 3.1-3.6 SmartBook #3 Due</td>
<td>Worksheet 2 due</td>
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<tr>
<td>3</td>
<td>ALEKS 2 Due</td>
<td>Ch 3.7, 3.8 SmartBook #4 Due</td>
<td>Ch 3.9-3.10 SmartBook #5 Due</td>
<td>Worksheet 3 due</td>
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<tr>
<td>4</td>
<td>ALEKS 3 Due</td>
<td>Exam 1 (Ch 1-3)</td>
<td>Ch 4.2-4.6 SmartBook #6 Due</td>
<td>Worksheet 4 due</td>
</tr>
<tr>
<td>5</td>
<td>ALEKS 4 Due</td>
<td>Ch 5.1-5.4 SmartBook #7 Due</td>
<td>Ch 5.5-5.7 SmartBook #8 Due</td>
<td>Worksheet 5 due</td>
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<tr>
<td>6</td>
<td>ALEKS 5 Due</td>
<td>Ch 5.8-5.10 SmartBook #9 Due</td>
<td>Ch 6.1-6.3 SmartBook #10 Due</td>
<td>Worksheet 6 due</td>
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<tr>
<td>7</td>
<td>ALEKS 6 Due</td>
<td>Ch 6.4-6.5 SmartBook #11 Due</td>
<td>Ch 6.6 SmartBook #12 Due</td>
<td>Worksheet 7 due</td>
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<tr>
<td>8</td>
<td>ALEKS 7 Due</td>
<td>Exam 2 (Ch 4-6)</td>
<td>Ch 7.1-7.2 SmartBook #13 Due</td>
<td>Worksheet 8 due</td>
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<td>9</td>
<td>ALEKS 8 Due</td>
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<tr>
<td>10</td>
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<td>Ch 7.3 SmartBook #14 Due</td>
<td>Ch 7.4-7.6 SmartBook #15 Due</td>
<td>Worksheet 9 due</td>
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<td>11</td>
<td>ALEKS 9 Due</td>
<td>Ch 8.1, 8.3 SmartBook #16 Due</td>
<td>Ch 8.4 SmartBook #17 Due</td>
<td>Worksheet 10 due</td>
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<td>12</td>
<td>ALEKS 10 Due</td>
<td>Exam 3 (Ch 7 &amp; 8)</td>
<td>Ch 9.1-9.3 SmartBook #18 Due</td>
<td>Worksheet 11 due</td>
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<td>13</td>
<td>ALEKS 11 Due</td>
<td>Ch 9.4-9.6 SmartBook #19 Due</td>
<td>Ch 10.1-10.4 SmartBook #20 Due</td>
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<td>14</td>
<td>ALEKS 12 Due</td>
<td>Ch 10.5-10.7 SmartBook #21 Due</td>
<td>Ch 11.1-11.3 SmartBook #22 Due</td>
<td>Worksheet 13 due</td>
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<td>15</td>
<td>ALEKS 13 Due</td>
<td>Ch 11.4, 11.5, 11.7 SmartBook #23 Due</td>
<td>Ch 12.1, 12.2 SmartBook #24 Due</td>
<td>Worksheet 14 due</td>
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<td>16</td>
<td>ALEKS 14 Due</td>
<td>Final Review (Ch 1-12)</td>
<td>Final Review (Ch 1-12)</td>
<td>Exam 4 (Ch 8-10)</td>
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<tr>
<td>17</td>
<td></td>
<td></td>
<td>Final Exam on 5/07, 10:30 AM – 12:30 PM in LIFE A117</td>
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</tbody>
</table>
Orientatioin to SmartBook®

Grading
In each SmartBook reading assignment, I have selected a few topics on which you will be asked questions when you enter the “Practice” mode. You only need to answer one question correct to finish a topic. If your answer is wrong, you will continue to get questions on that topic until you answer one question correct. At the deadline for each assignment, you receive a score according to the percentage of topics you have finished, up to 3 points per SmartBook assignment.

Registration
Login to Canvas and go to Chem1410.002 course. On the navigation panel on the left, click on “McGraw-Hill Connect” to create an account to access Smartbook and the e-book of the text. On the first class, I will show you how to use the temporary access provided by McGraw-Hill to gain immediate access to SmartBook. The first SmartBook assignment is due an hour before the second class. You do NOT want wait till the second week to start on SmartBook.

Smartbook Tutorial: https://www.mheducation.com/highered/support/connect/course-prep.smartbook.html
Please watch the following three videos at the link above.
- SmartBook 1.0 Read Video (4:10)
- SmartBook 1.0 Practice Video (3:41)
- SmartBook 1.0 Recharge Video (2:25)

Orientatioin to ALEKS®

Grading
I have selected 89 topics for the entire semester in ALEKS. After taking the initial knowledge check, ALEKS will know how many out of the 89 topics you yet need to learn. The 89 topics are distributed in 14 weekly assignments/objective. Suppose there are 7 topics in week 1 assignment/objective, and your initial knowledge check shows you have learned 2 out of the 7 topics before, then you will get questions on the remaining 5 topics in an order determined by ALEKS. To finish one ALEKS topic, you need to answer at least three questions correctly in a row. The more wrong answers you give, the more questions you receive before you can finish one topic. If you miss five questions consecutively, ALEKS will advise you to work on a different topic first. At the deadline of each assignment, you receive a score according to the percentage of topics you have finished, up to 7 points per ALEKS assignment.

Registration
Login to Canvas and go to Chem1410.002 course. On the navigation panel on the left, click on “ALEKS chemistry” to create an account using this temporary access code: 02F1C-1070B-24C3A-5C75A. You will begin your initial knowledge check during class in the first class meeting. The first ALEKS assignment/objective is due on the first day of the second week. You do NOT want to wait till the second week to start on ALEKS.

ALEKS Tutorial: https://www.aleks.com/highered/students
Please watch the following three videos at the link above.
- How the ALEKS A.I. Works Video (3:50)
- An Introduction to ALEKS Video (6:45)
- All about the Open Pie Mode Video (2:24)
Learning Support (the following items are not ordered based on importance or effectiveness):

- In SmartBook, if you don’t know how to answer a question, click on the “read about this” icon on the right hand side.
- In ALEKS, if you are not sure how to approach a problem, click on the “Explanation” tab on the top left.
- Go to Instructor or Super TA office hours.
- Go to SI sessions.
- Sign up for PLTL sessions.

1. What is PLTL

PLTL stands for “Peer-Led Team Learning”, and is based on teamwork led by a PLTL leader who is an undergraduate student that has successfully completed CHEM 1410/1420. The PLTL program is not tutoring. It is not a leader standing in front of students “re-teaching” the material. It is not Supplemental Instruction (SI), although there are some similarities. PLTL leaders are trained to be facilitators, not lecturers or teaching assistants. They don’t provide answers to their students; instead they guide them towards answers and set a tone for group discussion and learning. Students do most of the explanation and reasoning to the rest of the group. Individual points of view are respected, criticism is constructive, and all members have equal opportunity to participate.

2. How does it work?

There are four PLTL leaders for Chem 1410.002. They will hold at least four study sessions outside of class during the week. Pick one that fits your schedule and go meet with your PLTL leader and other students who have signed up for that session every week for 90 minutes to work on a problem-solving packet provided by the instructor. PLTL sessions meet once a week for 90 minutes. There is no cost to enroll. You can sign up for a PLTL session any time during the semester on Canvas. Each session is capped at 8 students.

3. Why should you consider signing for PLTL?

- Most students obtain a better understanding of the material.
- Students who consistently attend and participate in PLTL usually receive better grades (i.e. students that routinely attended PLTL sessions in Fall 2018 scored almost 20 points higher on the final exam - a 10% increase!)
- Students tend to develop better communication and critical thinking skills. They also tend to be better problem solvers - skill sets frequently sought by employers!
- It’s interactive fun! It helps you to build your support network for your classes - after all, the only student who understands what it’s like to be in a chemistry class is one who is there or has been there!

4. PLTL is not for you if...

- You cannot make the 90-minute time commitment every week for the entire semester.
- You are not willing to participate actively in a group setting.
- You do not make the effort to come prepared to the PLTL sessions. Just like SI, PLTL is not the time to expect the material to be retaught to you.
<table>
<thead>
<tr>
<th>Contribution</th>
<th>Preparatoin</th>
<th>Collaboration</th>
<th>Feedback constructively</th>
<th>Teamwork</th>
</tr>
</thead>
</table>
| **Beginning** (1) | sometimes prepared to work | always supports the team | acceptability, acceptance | team members.
| **Developing (2)** | frequently prepared to work | frequently fosters collaboration in terms of: flexibility, objectivity, acceptance | acceptance | provide assistance.
| **Proficient (3)** | always prepared to work | always supports the team | acceptability, acceptance | ability to accomplish the task and the team's attitude about the importance of expressing confidence.
| **Advanced (4)** | always prepared to work | always supports the team | acceptability, acceptance | mutual team members.

**Criteria:**
- meeting all the listed criteria
- meeting most of the listed criteria
- meeting some of the listed criteria
- meeting less than half of the listed criteria