Course Syllabus
General Chemistry 1411
Summer I 2012

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Course Syllabus
General Chemistry 1411
Summer I 2012

Math, Natural Science & Sports Sciences Learning Center
Division Office: P-330
Phone: 972-273-3500
Hours: Monday –Thursday 8 a.m. - 7:00 p.m.
Friday 8 a.m. - 4:30 p.m.

This course syllabus is intended as a set of guidelines for General Chemistry 1411. Both North Lake College and your instructor reserve the right to make modifications in content, schedule, and requirements as necessary to promote the best education possible within prevailing conditions affecting this course.

Instructor Information

Instructor: Patricia Thompson
Email: pthompson@dcccd.edu
Office Phone: 972-273-3236 (best to email me)
Office: C356 (Main Campus)
Office hrs: Available by email

Course Information

Course title: General Chemistry 1411 sections 7426, 7428, 9000 or 9001
Credit hours: 4 credit hours
Class meeting time: Lecture online MTWRFSU, Lab at home MTWRFSU
Course description: This course is for science and science-related majors. This online course has the same rigor as our on campus course. Fundamental concepts of chemistry are presented including measurement and the metric system, the history of chemistry, the mole concept, chemical reactions and stoichiometry, energy and chemical reactions, states and properties of matter, the periodic table, chemical bonding, atomic and molecular structure, gas laws, and concentrations of solutions

Course prerequisites: MATH 1314 or equivalent (DMAT 0093 or DMAT 0099 may be accepted) AND Developmental Reading 0093 or English as a Second Language (ESOL) 0044 or have met the Texas Success Initiative (TSI) Reading standard. High school chemistry is strongly recommended.

This course has met the Quality Matters review standards.

The Quality Matters (QM) Program is a nationally recognized, faculty-centered, peer review process designed to certify the quality of online courses and online components.
Colleges and universities across the country use the tools in developing, maintaining and reviewing their online courses and in training their faculty. Review criteria are linked to external standards; criteria and process are supported through instructional design principles; and the process is vetted by faculty experts. The goals of the program are to increase student retention, learning and satisfaction in online courses by implementing better course design. Quality Matters is has been adopted by hundreds of higher education institutions across forty states and Canada.

Click the link [Quality Matters](#) to go to the Quality Matters website for more information.

### Required or Recommended Textbooks and Materials

If you are working with limited funds, it would be best to purchase the lab kit and access code first. You can buy a cheaper ebook or previous edition of the textbook or even come to NLC campus to read the textbook we have on reserve at the library or Science Tutor center.

- **Lab:** We will use the Chemistry LabPaq CK-1 (LP-0123-CK-01) from Hands-On Labs, Inc. Click on the link to go to the web site [Hands-On Labs](#) to order the kit. Then click on the "Order Here" button and you will be prompted for the login and password to access the kits. Your login is C000258 and your password is labpq.
- **Mastering Chemistry Access Code** (Can be purchased separately at the NLC bookstore or online at [www.masteringchemistry.com](http://www.masteringchemistry.com) New books come with the code)
- **Scientific calculator**

### Course Objectives

The course objective is to demonstrate a general knowledge of the basic concepts in chemistry, and to prepare the student for General Chemistry II.

### Specific Course Learning Outcomes

1. Perform calculations related to topics included in Chemistry 1411.
   a. Be able to express, interpret, and utilize relationships between variables
   b. Solve problems using complete, thorough setups with metric and SI units, significant figures, and dimensional analysis.
   c. Utilize data, including graphs, and interpret results
2. Describe the fundamental particles of matter and their history; relate basic laws and theories to their behavior, utilize a systematic method of naming compounds and polyatomic ions.
3. Classify, write and balance different types of chemical equations, and perform stoichiometric calculations including calculations with empirical formulas, molecular formulas, limiting reactants, percent yield and molarity.
4. Define energy and enthalpy, determine methods of measurement of enthalpy, and perform related calculations. Recognize the environmental issues related to energy.
5. Recognize the correlation between electronic structure and the organization of the periodic table. Be able to predict properties and account for periodic trends.
6. Determine the relationship between pressure, volume, moles, and temperature of gases and perform related calculations. Describe the characteristics and behavior of gases.
7. Investigate the quantum mechanical model of the atom recognizing the historical contributions, write and interpret quantum numbers for the electrons in an atom. Write electronic configurations and show the correlation to chemical properties.
8. Differentiate between ionic and molecular compounds, and write Lewis structures.
9. Utilize the VSEPR theory to predict the shapes and polarities of molecules.
10. Describe molecular orbitals using hybridization, distinguish between σ and π bonds, and account for properties using the molecular orbital theory.

**Course Outline (Calendar)**

Please see Appendix A attached to this syllabus as the last page for a complete Course Outline (Calendar). Pay careful attention to the weekly due dates on the Course Outline (Calendar).

**Means of Assessment of Course Learning Outcomes**

The Course Learning Outcomes are addressed in more detail for each chapter in the Learning Objectives. These outcomes (objectives) will be assessed using methods of testing through departmental exams, topics, Mastering Chemistry homework assignments, and written lab reports.

You are to begin your study by first completing a topic section under the “Chapter Contents” button, and then review the corresponding section in the textbook. Finally do the corresponding homework assignments and experiments.

**Evaluation Procedures**

**Lab Grades**

This course uses a “wet” lab experience with the use of a lab kit at home. Experiments conducted in campus laboratories are recognized as wet lab experiences. Through the use of the lab kits, real experiments with actual chemicals are used. Virtual or simulated labs are not an acceptable substitute for a wet lab experience according to the American Chemical Society (ACS Public Policy Statement).

Lab Grades come from the completed experiments. You CANNOT pass the course with a failing lab grade. You will need to purchase the Chemistry LabPaq: CK-1 from Hands-On Labs, Inc. Click on the link to go to the web site Hands-On Labs to order the kit. The lab kit will contain the lab manual with the experiments on the CD.
We will use the lab report forms that are located in eCampus under the folder for each experiment under the “Labs” button. We will NOT use the ones in the lab manual (on the CD from the kit). The ecampus forms will include a place for the conclusion. Be sure to read the information in the folder on “How to Write a Conclusion” under the “Labs” button. You may also use the Writing Center to help you with grammatical errors, punctuation, etc in writing your conclusion. See the Institutional Policies below.

After you have completed the report form, you will upload it into ecampus. Go to the “Labs” button and follow the instructions in the document, “How to Upload Your Report”.

The lab reports are to be uploaded into eCampus by 11:30 pm on the specified due dates. You must use a browser that eCampus supports or you will not be able to upload the lab report (See under the Topics section below for browser info)

Late labs will be accepted but they will drop by ten points for each day the reports are late.

Copying or using any part of someone else’s lab report instead of doing your own is considered to be ACADEMIC DISHONESTY (See Institutional Policies section) and may result in a zero on that lab experiment. You must DO YOUR OWN WORK.

Also in the folder for each experiment are some helpful suggestions which you should read after you read the procedures on the CD but before you do the experiment. Do not wait until the last minute to do the experiments.

See the lab schedule and further instructions under the "Labs" button.

Topics
All Topics are copyrighted material and should not be altered or distributed. The topics help you in preparation for the tests as well as understand the homework

The Topics are located under the “Chapter Contents” button in eCampus. Select the chapter you are studying and you will find the Learning Objectives, Topics, and a link to Mastering Chemistry. You may work the Topics as many times as you would like. Study the topic first then read the textbook. Be sure your pop up blocker is turned off in order to see the activities. Try to answer all questions including the blue text poppers before looking to see the answers.

The recommended browsers for use with eCampus depend on your operating system. It is recommended that you use a Windows computer. For more information about which browser is compatible with ecampus depending on your operating system see the link on the log in page for eCampus http://ecampus.dcccd.edu/. It is the first bullet at the bottom of the box. For the topics, you can use Firefox, Internet Explorer or Safari. Chrome will NOT work with the topics.
You may need to switch between the browsers if you are having trouble opening topics or uploading lab reports. If you have trouble viewing the videos try switching browsers or using a different media player.

**Be sure that your Java version is the correct one.** The link on the log in page for eCampus also indicates which Java version is the current one for supporting eCampus. Be sure you have the correct Flash Player as well.

Go to the “Helpful Websites” button in our ecampus class and find the “Technical Support and Software Downloads” link to find the free downloads if you need them. Once you have downloaded the correct versions, remember to **turn off the automatic updates**. You also need to be sure that your java script has been enabled.

**You can find out which browser you have as well as which java or flash player you are using. There is a button you click that will give you this information.** Take the Browser test to also see if your web browser is properly configured to use Blackboard. It is a button you click to automatically test your Browser as well as other useful components such as java, flash player, etc. Follow the steps below to find the button.

- Click on the "My DCCCD" tab in eCampus. It is at the top of the page. This same page is also the default page once you have accessed eCampus and before you have selected any courses.
- Scroll down the page
- On the left hand side you will see a box called "Browser Test"
- Click on the button and you will receive feedback on your browser as well as other needed items.

**If the eCampus connection is very slow, you get error messages, or your buttons disappear** the server you are on may have too much traffic on it. In the top right hand corner of eCampus in the dark blue area is a white letter. This indicates the server. Log out and switch browsers to get a different server. Also if you are using the Firefox browser you can go to **Tools** in the browser, click on **Clear Private Data**. Make sure all boxes are checked (except for Saved Passwords if you want to keep them) and click on **Clear Private Data Now**. Log out and lot back in. You should be on a different server. You can also restart your computer which should enable you to hit a different server once you open your browser.

**You are required to read all assigned chapters as you finish each topic.** Be sure to work on the **Topics under the Chapter Contents button before attempting to read the textbook.** Also look through the **Sample Exercises in the textbook** as they contain helpful explanations.

**Homework**

Homework problems are assigned and graded. You will be using **Mastering Chemistry**, an online tutorial and homework program. Your homework problems count toward your course grade (see Grading Scale) as well as help you prepare for the exams. You can go directly to the Mastering Chemistry web site without going through eCampus by going to [www.masteringchemistry.com](http://www.masteringchemistry.com)

Many of the problems in Mastering Chemistry **come from the textbook** (your numbers may be different) and the odd numbered problems have answers. You can check the answers in the back of the book to help you figure out the problems. Do not attempt the homework until you have studied the topics and textbook. Also be sure to read the messages from your instructor included in some of the assignments.
Students are strongly encouraged to complete the assignments in preparation for the tests. Late homework will worth 50% of the total points so be sure to do the homework on time. Be sure to check the due dates frequently. The Mastering Chemistry assignments will stay available until the time of the final.

Homework due dates will be shown in Mastering Chemistry and in ecampus. All the homework assignments are due at 11:30 pm on the date indicated. Do the homework a little at a time through the week rather than all at once on the weekend.

Also included in the Mastering Chemistry assignments are practice problems to help you understand the material. The practice problems are optional. Be sure to do Assignment 1, Intro to Mastering Chemistry, as this will help you understand how to input your answers (even though this first Assignment is not counted for a grade) There is also a study area in mastering chemistry that provides additional practice problems. Note that if you click on “Show Answer” you will receive a grade of zero for that problem so try to solve it before doing that.

Go to the Mastering Chemistry Folder (scroll down) under the “Course Information” button for the registration information and the link. Follow the instructions posted there. You will also find listed there the Course ID that is needed to join our class in Mastering Chemistry.

Once you have completed the homework and the due date has passed, you can still review or rework them in preparation for the exams. Often the problem will provide different numbers when you choose to rework them.

Your homework grades are posted on the Mastering Chemistry website. Your final homework average for the course will be posted in eCampus.

Note: If you are having trouble getting mastering chemistry to accept your multiple choice answer or show the problem, then switch browsers or go back to a previous version of your current browser. The problem can also be that you need to update your flash player or enable your JavaScript. Go to the mastering chemistry website for details and downloads. On the log in page scroll over the Support tab in the upper right hand corner and click on Support for Students. There you will find the info along with other questions.

Exams

Students who live close to the Dallas County Area must take the exam at a DCCCD college or in a supervised testing situation at a testing site mutually agreed upon. No proctored test will be sent to a location in Dallas County other than a DCCCD campus test center unless accommodation is being made through Disability Services.
Students must notify the instructor as to which college (Brookhaven, Cedar Valley, Eastfield, El Centro, Mountain View, North Lake, or Richland) is best for testing by emailing the instructor by the first day of the start of the course. This allows the exams to be set up in time at the appropriate testing location. (So go ahead and do it now) If the student does not specify which testing center is preferred, then it will be assumed that the tests will be taken at the North Lake College main campus testing center. Be sure to call and verify testing center hours as they are often different during the summer or around the holidays.

**Testing Policy for Mathematics & Science Division at North Lake College:** Students taking tests in math and science will NOT be allowed to leave the testing center or the classroom during a test and return to complete the test. **If you leave, you are through testing.** If you need special accommodations you must submit a request to the Disability Services Office in person (A430) or by phone at 972-273-3165. Visit [North Lake College Disability Services](https://www.nlc.edu/disabilityservices) for more information.

Students who do not live close to the Dallas County area may arrange for a proctor using the proctor nomination form found in the [Dallas Telecollege Online](https://www.dallascollege.edu/telecollege) (click on the link to go to the web site). **You must fill out the proctor form by the first day of the start of the course.** You also need to provide the proctor contact information to the instructor.

The 6 exams will be multiple choice and will be taken on the computer, however, they still need to be taken in the testing center or in a proctored testing environment to ensure the credibility of the course. Each exam will be taken on the stated dates. You will log on to eCampus and click on the “Exams” button and select the exam. You may take the exam once the testing center has put in the password. Exam scores will appear on eCampus immediately upon completion of the exam.

Be sure to check the hours of your testing center particularly if there are changes due to holiday hours, and arrive in plenty of time to take the exam. **Do not wait until the last minute as you may not get in due to large numbers of students taking exams and there are no extensions of the deadlines due to over crowding or schedule conflicts.**

The testing center (or proctor) will provide a copy of the periodic table and scratch paper. You must turn in these when you are finished with the exam. There will also be some formulas and additional info provided on each exam. Refer to the document under the Exams button to see what will be provided so you will know what formulas or information you do need to know that aren’t provided.

You will need to bring a pen or pencil and your scientific calculator to the testing center along with your picture ID. You do not need a programmable calculator. The calculator cannot be more advanced that the TI 83/84 plus. You may use your own programmable calculator if you agree to have the memory and information cleared before and after the exam. Some testing centers will provide a calculator. For more information click the link to the [DCCCD Testing Centers](https://www.dcccd.edu/testing).

**Exams must be taken by the scheduled deadline!** Any student who misses a test deadline with an excused absence can only earn a maximum of 70% of the total points! You can take the exam anytime during the hours the testing center is open on the specified dates. Exams will be cumulative; however, they will focus on more recent material. You may take any exam as early as you wish, just not past the deadline. The exams come quickly so be sure to
pace yourself accordingly. Note that that Exam 5 and the Optional Final are close together. MAKE-UPS: For a missed exam with an excused absence during the testing dates, a make-up exam must be taken as soon as possible at the discretion of the instructor. It is the Math/Science division policy at North Lake College that you will not be allowed under any circumstances to take more than 2 tests during the last week of the semester. Excused absences will only be offered for one of the following reasons: illness, death in family, official University business, or documented emergency.

As you study, be sure to refer to the Learning Objectives for each chapter. These Learning Objectives will help you prepare for the exams and are located with each chapter under the "Chapter Contents" button. And don’t forget to do the homework.

**Grading Scale**
The grades will be based on the following distribution

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five Exams*</td>
<td>55%</td>
</tr>
<tr>
<td>Homework</td>
<td>15%</td>
</tr>
<tr>
<td>Lab</td>
<td>30%</td>
</tr>
</tbody>
</table>

A = 90-100  B = 80-89  C = 70-79  D = 60-69  F = 0-59  (Do not beg for grades)

* You may take an optional comprehensive Final Exam to replace your lowest grade in Exams 1 through 5. **The final will not hurt** if your score is below your lowest exam.

Please do not beg for grades; you earn them.

To calculate your grade at any time you may wish to use the following formula.

Grade = (Exam Avg x 0.55) + (Hmwk Avg x 0.15) + (Lab Avg x 0.30)

This formula is the same one that I use. During the last week of classes as well as during finals week, please do not ask me what your grade will be or if you need to take the optional lecture final. I will not be able to answer your questions about your grade at that time. You may use the formula to know your grade in the course at any time as well as determine if you need to take the optional final. Taking the optional final is your decision.

**Discipline/ Course/ Department/Policies**

**Discussion Board**
Discussion Board is where you can post any questions you may have concerning the material, labs, or homework. Give the location of your problem such as in Chapter 1, topic of density. All students can benefit from the question as well as the answer. You are encouraged to communicate with the other students about the course material. If you have a question, check the discussion board as it may have already been answered there.

There is also an area called the Blazer Café that you can use to discuss other issues besides our course.
Email

Email is the best way to communicate with the instructor. **You must include course and section number in the subject line.** For example: Chem 1411-7426. Do not forget to include your name in the email. Be specific as to the nature of the problem. Give the exact location problem such as the topic name and which chapter or the Mastering Chemistry Assignment number AND the problem number.

Please see that your correct email address is on eCampus. Please be sure your email is not over quota, and you cannot receive my reply. Also be sure my emails are not blocked by your filter. I will answer emails as quickly as possible, but please allow a 24 hour turn around time. I will not answer emails on Sunday.

Announcements

Be sure to check the announcements daily for any new information that may have been posted. This should not be a problem as you are logging on daily to study chemistry.

Websites

There are useful websites located under the “Helpful Websites” button. There are chemistry sites to help you with your studies, technical support site, and links to provide student services such as the Dallas TeleCollege.

Tutoring

Students are encouraged to go to the Science Learning Center at the main campus of North Lake College. The Science Learning Center (P333) provides free tutorial services for students taking this course. The center features tutors, software, videos, CDROM’s, internet, models, places to study quietly, places for group work, and other materials to assist in science classes. The subject specific schedule of tutors is updated every semester and is located at the front of the center, just ask a tutor. For more information call 972-273-3273 or go to North Lake College Tutorial Services. The Science Learning Center also has computers that you can use to work on your homework.

You can also check the various campuses for tutoring services at DCCCD Tutoring Services

Institutional Policies

**ACADEMIC DISHONESTY**

The Student Code of Conduct prohibits academic dishonesty and prescribes penalties for violations. According to this code, which is printed in the college catalog, "academic
dishonesty”, includes (but is not limited to) cheating, fabrication, facilitating academic dishonesty, plagiarism, and collusion”.

Academic dishonesty may result in the following sanctions, including, but not limited to:
1. A grade of zero or a lowered grade on the assignment or course.
2. A reprimand.
3. Suspension from the college.

**NOTIFICATION OF ABSENCE DUE TO RELIGIOUS HOLY DAY(S)**
Students who will be absent from class for the observance of a religious holiday must notify the instructor in advance. Please refer to the Student Obligations section of the college catalog for more explanation. You are required to complete any assignments or take any examinations missed as a result of the absence within the time frame specified by your instructor.

**REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT**
North Lake College provides academic accommodations to students with disabilities, as defined under ADA law. It is the student's choice and responsibility to initiate any request for accommodations. If you are a student with a disability who requires such ADA accommodations, please contact North Lake College's Disability Services Office in person (A430) or by phone at 972-273-3165. You can also visit the site [North Lake College Disability Services](website).

This course is delivered through ecampus and the link to the disability information for ecampus is [Blackboard Accessibility](website).

We also make use of the Softchalk program with our Chapter Topics and the link to the disability information for our topics is [SoftChalk Accessibility Standards](website).

**DROP POLICY**
If you are unable to complete this course, you must officially withdraw by the date stated on the academic calendar. Withdrawing is a formal procedure which you must initiate; your instructor cannot do it for you. If you are dropping a class(es), go to the Admissions Office (A405) and complete a drop or withdrawal form. It is strongly encouraged that a student speaks with the instructor before withdrawing. If a student stops attending class and does not officially withdraw, that student will receive a performance grade based on work completed and missed.

All Dallas County Community Colleges charge a higher tuition rate to students registering the third time for a course. This rule applies to the majority of credit and Continuing Education / Workforce Training courses. Developmental Studies and some other courses are not charged a higher tuition rate. Third attempts include courses taken at any DCCCD college since the fall 2002 semester. For further information, go online to [Third Attempt at DCCCD](website).

**FINANCIAL AID STATEMENT**
Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate are also subject to this policy.

To apply for financial aid in the DCCCD, students must complete FAFSA (Free Application for Federal Student Aid) on the web at [FAFSA](website).
COUNSELING SERVICES
Counseling services for personal issues are provided to all students currently enrolled at North Lake College. These services are provided by licensed professionals who are bound by confidentiality (within ethical parameters) at no charge. With the assistance of a counselor, students are able to identify, understand, resolve issues and develop appropriate skills. To make an appointment call 972-273-3333 or visit A 430.

STOP BEFORE YOU DROP
For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions.

Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. Go to eConnect Facts About Dropping Classes for more information.

THE ACADEMIC SKILLS CENTER (ACS)
The ASC is designed to provide assistance to students in the following areas:
• Labs for students enrolled in foreign language, Developmental Reading, and ESOL courses. One-on-one tutoring is available.
• The Writing Center can help students clarify writing tasks, understand instructors’ requirements, develop and organize papers, explore revision options, detect grammar and punctuation errors, and properly use and document sources. Rather than merely editing or "fixing" papers, tutors focus on helping students develop and improve their writing skills.
• The Online Writing Lab (OWL) allows students to submit papers to our writing tutors electronically and get feedback within 24-72 hours. The OWL can be accessed through eCampus. After logging on to eCampus, click on the Community Tab at the top. Type “Owl” in the search field and click “Go.” Next, click on the double drop-down arrows next to “NLC-OWL2,” and then click on “Enroll.” Once enrolled, students can receive services from the OWL.

For more information or to schedule a tutoring appointment, come by A-332 or call 972-273-3089.

Exemplary Educational Objectives
The objective of the study of a natural sciences component of the core curriculum is to enable the student to understand, construct and evaluate relationships in the natural sciences and to enable the student to understand the bases for building and testing theories. This course satisfies all of the Exemplary Educational Objectives. The exemplary educational objectives are:

1. To understand and apply appropriate methods and modern technology to the study of natural sciences. Experiments will be conducted using the correct methods and procedures. Many types of calculations will be performed utilizing the appropriate methods such as dimensional analysis in stoichiometric problems. A web based program, MasteringChemistry, will be used to assist the learning process.
2. To recognize scientific and quantitative methods and the differences between these approaches and the other methods of inquiry and to communicate findings, analyses, and
interpretation both orally and in writing. Quantitative data will be collected and processed. Results will be interpreted by discussion in lab and formalized in written reports. The student will realize that collection of data and application of the scientific method is superior to other methods of investigation like logic alone or anecdotal evidence.

3. To identify and recognize the differences between competing scientific theories. For example, various interpretations of atomic theory are used, depending on the information needed: the quantum mechanical model for determining quantum numbers and arrangement of electrons in atoms, the valence bond theory for determining shapes of molecules, and the molecular orbital theory for a closer examination of electron location.

4. To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies. Chemistry plays a vital role in the world around us in many areas such as energy consumption and production, global warming and even genetic cloning. Chemistry is fundamental in these areas and many others like pollution control and nuclear power. As policies and solutions are proposed to solve these problems, an informed chemist can have a powerful influence on these issues and help guide choices.

5. To demonstrate knowledge of the interdependence of science and technology and their influence on and contribution to, modern culture. As chemical concepts are learned, their application to the world around us will be more keenly felt. Chemistry is utilized in our modern culture from applications in the medical field to the research that yields new technology (applied science) to the foods we eat. For example the study of semiconductors led to the development of smaller, faster, cheaper computers and lasers which has made advances in many areas of chemistry possible, from new medicines to special alloys. Our modern culture depends on medicinal chemicals to cure and ease discomforts, and alloys to allow the level of travel that our society demands. Many advances in chemical science can be applied to generate new applications, techniques and products.

Core Curriculum Intellectual Competencies

As part of the core, this course contributes to the development of 6 basic intellectual competencies—reading, writing, speaking, listening, critical thinking, and computer literacy. These Core Curriculum Intellectual Competencies are essential to the learning process in any discipline and are defined by the Texas Higher Education Coordinating Board. This course reinforces 3 of the 6 Core Curriculum Intellectual Competencies defined by the Texas Higher Education Coordinating Board. The CCI’s identified by the DCCCD which are reinforced are as follows:

1. READING: Reading at the college level means the ability to analyze and interpret a variety of printed materials – books, articles, and documents. A core curriculum should offer students the opportunity to master both general methods of analyzing printed materials and specific methods for analyzing the subject matter of individual disciplines.

4. LISTENING: Listening at the college level means the ability to analyze and interpret various forms of spoken communication.

5. CRITICAL THINKING: Critical thinking embraces methods of applying both qualitative and quantitative skills analytically and creatively to subject matter in order to evaluate arguments and to construct alternative strategies. Problem solving is one of the applications of critical thinking, used to address an identified task.

General Educational Outcomes

Gen Ed Outcome I: Communication Skills

1. Writing: Process and produce effective written communication adapted to audience, purpose, and time constraints.

2. Speaking: Produce effective oral communication adapted to audience, purpose, and time constraints.
3. Listening: Comprehend, and analyze oral information.

Gen Ed Outcome II: Critical Thinking Skills
1. Accurately summarize and evaluate information for elements such as facts, opinions, inferences, presumptions, bias, viewpoints, and arguments presented orally or in writing.
2. Solve problems by constructing, testing, and defending well-reasoned conclusions by applying relevant criteria.

Gen Ed Outcome III: Information Literacy and Technological Competency
1. Effectively access, evaluate, synthesize and communicate information using a variety of sources, including print and electronic.
2. Select and use appropriate technology.

Gen Ed Outcome IV: Ethical and Civic Values
1. Display integrity, honesty, and fairness.
2. Use ethical reasoning to analyze moral issues and articulate the consequences of various actions.

Gen Ed Outcome V: Cultural Diversity and Global Awareness.
1. Demonstrate understanding of cultural diversity and such influences as history, politics, humanities, technology and science on global societies.
2. Recognize assumptions and biases that shape our perceptions.

Gen Ed Outcome VI: Workforce and Interpersonal Skills
1. Collaborate effectively and reliably as part of a team.
2. Apply efficient time and task management.

Learning Activities, Outcomes, and Assessment

The following table provides examples on how the Course Outcomes, Educational Exemplary Objectives, and Core Curriculum Intellectual Competencies are incorporated into the course.

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Learning Outcomes</th>
<th>Assessment</th>
<th>EEO’s and CCIC’s</th>
<th>Gen Ed SLO’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Learning Activity: Students will read the postulates of Dalton’s atomic theory in the textbook and in the topics and apply the concepts in a reaction in the topics.</td>
<td>a. Students will identify the key postulates in a Dalton’s atomic theory at 70% proficiency on exam.</td>
<td>Question on the departmental exam.</td>
<td>EEO 1,2, CCIC 1, 4, and 5, Gen Ed SLO’s 2.1</td>
<td></td>
</tr>
<tr>
<td>2. Learning Activity: Students will practice and work on example bomb calorimetry problems in the topics and homework.</td>
<td>a. Students will calculate the heat evolved in a reaction in a bomb calorimeter with 70% proficiency on exam.</td>
<td>Students will be successful when they have arrived at the correct answer in the topics and homework. The assessment will be the departmental exam question.</td>
<td>EEO 1, CCIC 1 and 5, Gen Ed SLO’s 2.2</td>
<td></td>
</tr>
<tr>
<td>3. Learning Activity: The student will practice in the topics and homework putting substances together to determine if a precipitate has formed.</td>
<td>a. Students will predict the outcome of a precipitation reaction in aqueous solution at 70% proficiency on exam.</td>
<td>Question on the departmental exam.</td>
<td>EEO 1 and 2, CCIC 1, 4, and 5, Gen Ed SLO’s 2.1, 2.2</td>
<td></td>
</tr>
</tbody>
</table>
### APPENDIX A  CHEM 1411 SUMMER I COURSE OUTLINE

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun 3</td>
<td>Jun 4</td>
<td>Jun 5</td>
<td>Jun 6</td>
<td>Jun 7</td>
<td>Jun 8</td>
<td>Jun 9</td>
</tr>
<tr>
<td>● Working on Chap 1 and 2 this week</td>
<td></td>
<td></td>
<td>● Class Begins</td>
<td>● Working on HW</td>
<td>● Safety Form from Lab Manual CD</td>
<td>● HW Assign 1-6</td>
</tr>
<tr>
<td>Jun 10</td>
<td>Jun 11</td>
<td>Jun 12</td>
<td>Jun 13</td>
<td>Jun 14</td>
<td>Jun 15</td>
<td>Jun 16</td>
</tr>
<tr>
<td>● Working on Chap 2, 3, and 4 this week</td>
<td>● Exp 2</td>
<td></td>
<td>● HW Assign 7-9</td>
<td>● Exp 1</td>
<td>● HW Assign 10-13</td>
<td>● Exp 5</td>
</tr>
<tr>
<td>Jun 17</td>
<td>Jun 18</td>
<td>Jun 19</td>
<td>Jun 20</td>
<td>Jun 21</td>
<td>Jun 22</td>
<td>Jun 23</td>
</tr>
<tr>
<td>● Working on Chap 4, 10, and 5 this week</td>
<td>● Exp 9 is drying</td>
<td>● HW Assign 18-21</td>
<td>● Exp 8</td>
<td>● Exp 9 also due</td>
<td>● HW Assign 22-24</td>
<td>● Exp 4</td>
</tr>
<tr>
<td>● Working on Chap 6, 7, and 8 this week</td>
<td>● Exp 10</td>
<td>● HW Assign 31-32</td>
<td>● Exp 7</td>
<td>Drop Date</td>
<td>● HW Assign 33-36</td>
<td>● Exp 11</td>
</tr>
<tr>
<td>Jul 1</td>
<td>Jul 2</td>
<td>Jul 3</td>
<td>Jul 4</td>
<td>Jul 5</td>
<td>Jul 6</td>
<td>Jul 7</td>
</tr>
<tr>
<td>● Working on Chap 9 this week</td>
<td>● Assessment Survey (under the Labs button)</td>
<td>● HW Assign 42-44</td>
<td>● HW Assign 42-44</td>
<td>HOLIDAY</td>
<td>Deadline for Test 6 Optional Comprehensive Final</td>
<td></td>
</tr>
</tbody>
</table>

- Any **late homework** must be completed by 11:30 pm on the last day of the optional final.

- Note that Test 3, Test 4, and Test 5 are very close together so budget your time accordingly.

- Note that the deadline for Test 4 is on a Friday, and testing centers close earlier on that day. Be sure to check the hours of when the testing center will be open.

- You can take any exam anytime between the start of the course and the deadline, but **not** after the deadline.