Course Syllabus
General Chemistry 1411
Winter 2018

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

This course syllabus is intended as a set of guidelines for Introductory 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: Prof. Christopher McAdams
Email: clmcadams@dcccd.edu
Office Phone: 972-273-3252
Office: C357
Office hours: M-F 4:00 – 4:30 PM

Course Information
Course title: General Chemistry 1411 Section 72201
Credit hours: 4 credit hours
Class meeting time: Lecture MTWR 8:30 AM – 11:20 AM; Lab MTWR 12:15 PM – 3:05 PM
Course description: This course is for science and science-related majors including health sciences and engineering. Fundamental principles of chemistry are presented including measurements, fundamental properties of matter, states of matter, the history of chemistry, chemical reactions, chemical stoichiometry and the mole concept, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. Basic laboratory experiments support the fundamental principles and include the introduction of the scientific method, data collection and analysis and the preparation of laboratory reports.
Course prerequisites: MATH 1314 or equivalent preparation. DREA 0093 or ESOL 0044 or have met the Texas Success Initiative (TSI) standard in Reading. Students should also have had previous chemistry experience.

Required Textbooks and Materials
- Modified MasteringChemistry Access Code
- Lab Experiments (on eCampus)
- Scientific calculator (Examples TI-30-IIIs, TI-36x pro, or TI-83-84 series)

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

Upon successful completion of this course (according to the ACGM from the Texas Higher Education Coordinating Board), students will:

1. Define the fundamental properties of matter. Describe the history; relate basic laws and theories to the behavior of matter.
2. Classify matter, compounds, and chemical reactions. Differentiate between ionic and molecular compounds.
3. Determine the basic nuclear and electronic structure of atoms. 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.
4. Identify trends in chemical and physical properties of the elements using the Periodic Table. Recognize the correlation between electronic structure and the organization of the periodic table.
5. Describe the bonding in and the shape of simple molecules and ions. Write Lewis structures: utilize the VSEPR theory to predict the shapes and polarities of molecules. Describe molecular orbitals using hybridization, distinguish between sigma and pi bonds, and account for properties using the molecular orbital theory.
6. Solve stoichiometric problems including calculations with empirical formulas, molecular formulas, limiting reactants, percent yield and molarity.
7. Write chemical formulas.
8. Write and balance equations.
9. Use the rules of nomenclature to name chemical compounds.
10. Define the types and characteristics of chemical reactions
11. Use the gas laws and basics of the Kinetic Molecular Theory to solve gas problems. Describe the behavior and characteristics of gases.
12. Determine the role of energy in physical changes and chemical reactions. Determine methods of measurement of enthalpy, and perform related calculations. Recognize the environmental issues related to energy.
13. Convert units of measure and demonstrate dimensional analysis skills; include the use of significant figures. Be able to express, interpret, and utilize relationships between variables. Utilize data, including graphs, and interpret results.
14. Use basic apparatus and apply experimental methodologies used in the chemistry laboratory.
15. Demonstrate safe and proper handling of laboratory equipment and chemicals.
16. Conduct basic laboratory experiments with proper laboratory techniques.
17. Make careful and accurate experimental observations.
18. Relate physical observations and measurements to theoretical principles.
19. Interpret laboratory results and experimental data, and reach logical conclusions.
20. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.
21. Design fundamental experiments involving principles of chemistry.
22. Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry

Course Outline

Please see Appendix A attached to this syllabus for a complete and detailed course outline.

Means of Assessment of Course Learning Outcomes

These outcomes will be assessed using methods of testing through departmental exams, in class group work, Mastering Chemistry assignments, and written lab reports.

Evaluation Procedures

Homework problems are assigned and graded. You will be using MasteringChemistry, an online tutorial and homework program. Students are strongly encouraged to complete the assignments in preparation for the tests. Late homework will be worth 50% of the total points so be sure to do the homework on time.

The lab reports will be graded by the following week in lab. You may look over your reports, but they will not be returned.

Exams will be graded and posted on eCampus immediately upon completion.

Exams

The 5 exams will be multiple choice and will be taken on the computer. Each exam (except the final) will be taken at the Testing Center on the stated dates. A green scantron is required for the final. The Testing Center is located in A425. The hours are M-R 8:30am to 8:00pm, F-Sat 8:30am to 3:30pm, and closed Sun. For more information about the Testing Center go to http://www.northlakecollege.edu and click on “Student and Campus Resources” and then “Learning Resources”, then “Testing Center”.

Exams must be taken during the scheduled times! Exams will be cumulative; however, they will focus on more recent material. The final exam will be given during our scheduled time in the classroom. Test scores are usually posted on eCampus after the
completion of a test. **MAKE-UPS**: For a missed exam with an excused absence, a make-up exam must be taken as soon as possible.

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 under the "Course Documents" button.

**Grading Scale**

The grades will be based on the following distribution:

- Five Exams*: 50%
- In-Class Participation: 10%
- Mastering Chemistry (Online HW): 10%
- Lab: 30%

*You can take an optional Final Exam to replace your lowest grade in Exams 1 – 5.

A = 90-100  B = 80-89  C = 70-79  D = 60-69  F = 0-59

**Discipline/ Course/ Department/Policies**

Classroom Policies:
**Arrive on time** to class every day. Arriving late to class is distracting to other students and will lower your weekly participation grade.

**Be Prepared to Participate** in class activities. Print out your in-class assignments and other instructional materials needed prior to coming to class.

Bring a scientific calculator **every day**. Use the calculator that you plan to use during your exam. Other kinds of calculating devices (tablets, laptops, smartphones) can’t be used during the test and so shouldn’t be used during class.

**Study** material before and after class. Read the book chapters before we get to it in class, study your notes from one lecture before you come to the next lecture, and complete your homework assignments on time. Expect to spend 3 hours outside of class (reading, studying notes, and doing homework) for each hour in class.

**Be courteous** to each other and to your instructor.

**Do not bring guests** (including children) to class.

**Do not disrupt class** with extraneous conversations, noisy food packaging, repeated restroom breaks, and non-chemistry distractions. Before you do something, think about how you can make your classmates’ experience less distracting.

**Electronic Device Policy**: All electronic devices (laptops, tablets, smartphones, etc.) must be silenced before class begins. While in class these kinds of devices should only be used for classroom purposes only. Reading and sending text messages, accessing social media, playing games, and anything not related to our chemistry class are distracting to you and your fellow students. If I find that your use of a smartphone is distracting the rest of the class, I will dissolve it in concentrated sulfuric acid.

**Recording of lectures is allowed only with the express permission of your instructor and with the following restrictions.** These lectures are the property of your instructor and are protected by copyright law. This means that classroom materials may not be reproduced, published, distributed, displayed, performed (although I’d like to see you
perform one of my lectures if you attempt to do this), copied, or stored for public or private use without my express written permission. This syllabus grants permission for students enrolled in this class to use these materials for purposes of studying for this class, subsequent classes, and college admissions exams (GRE, MCAT, DMAT, etc.) Follow the Code of Student Conduct. (https://www1.dcccd.edu/catalog/ss/code.cfm) The grade you are assigned at the end of the class is determined from the scores on your tests, quizzes, labs and homework. There is no extra credit, and it is inappropriate to ask for extra points just because you need them to attain a desired grade.

Students are responsible for all materials handed out and all announcements made during their absence regardless of the reason(s) of the absence. Excused absences will only be offered for one of the following reasons: illness, death in family, official college business, or documented emergency. For any excused absence written documentation is required. To obtain an excused absence, email me or call me at 972-273-3252 before the next class period. Documentation should be brought to the next class meeting.

**Science Center**
The Science Center provides student services in the following subjects (majors and non-majors): Biology, Botany, Microbiology, Anatomy and Physiology, Chemistry, Geology, Physics and Ecology.

The center is located in P-333 & P-334 and offers various resources all of which are free to the students. The Science 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. In order to access resources of the Science Center a North Lake College ID Card is required. The subject specific schedule of tutors is updated every semester and is located at the front of the center, just ask a tutor.

When students attend Science Center we ask that they sign in and out. This data helps us keep the center stocked, running, and most of all, free of charge!

**Hours of operation** – M-R 9 to 7, F and Sa 9-3

**Contact information**
Center Phone: 972-273-3273
Coordinators: Amanda Mello

**INSTITUTIONAL POLICIES**
www.northlakecollege.edu/syllabipolicies

**COUNSELING SERVICES (A311)**
Counseling services for personal issues are provided to all students currently enrolled at North Lake College at NO CHARGE. These services are provided by or supervised by licensed professionals who are bound by confidentiality (within ethical parameters). 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 go to A 311.

For additional information go to: http://northlakecollege.edu/services-and-resources/health-and-wellness/counseling-services/Pages/default.aspx

THE ACADEMIC SKILLS CENTER (A332)
The Academic Skills Center (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.

TESTING CENTER (A 425)
Monday-Thursday: 8:30 a.m. – 8:00 p.m.
No tests will be issued after 7:00 p.m. Other cut-off times may be in effect for specific exams by the instructor’s direction. All exams collected at 8:00 p.m.
Friday-Saturday: 8:30 a.m.-3:30 p.m.
No tests will be issued after 2:30 p.m. Other cut-off times may be in effect for specific exams by the instructor’s direction. All exams collected at 3:30 p.m.
Sunday – CLOSED

If you instructor requires you to complete an exam in the Testing Center, be sure to have the following information when you request you test:
1. Instructor’s name
2. Subject, course number, and section number (exp: Speech 1311.7011)
3. Exam number (1st, 2nd, 3rd, etc.)
4. Exam deadline (Get this information from your instructor. The testing staff cannot look up this information on computers).

You should also bring the following supplies:
1. Pencil
2. Scantron answer sheet
3. A Test Request Form must be completed before entering the Testing Center.
5. Government or school issued photo identification is required & enforced.

You may not bring personal items into the Testing Center. This includes bags, cell phones, and pagers.

Please show courteous and cooperative behavior while using the services provided by the Testing Center.

DO NOT bring children to the Testing Center. You must make arrangements for the care of your children prior to your exam date. The police department will be notified of any unattended children.

DO NOT take any testing materials with you when you leave the Testing Center. This includes the test, answers, charts, scratch paper. These items will be attached to your test.

Questions? Please visit the Testing Center (A 425) or call 972-273-3160.

WRITING CENTER (A309)
The Writing Center supports and supplements classroom instruction by providing focused, individualized writing tutoring in response to the specific needs of the student. The tutors are skilled writing specialists who 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” your papers, the Writing Center staff focuses on helping you develop and improve your writing skills. Be sure to schedule an appointment in advance so that a tutor will be available to work with you. Walk-ins are welcome, but you may have to wait or come back at a later time. You can also access the North Lake College Online Writing Lab through eCampus. Once you log into eCampus, click on the Community Tab at the top. Type in “Owl” in the search field to locate. Follow the instructions on the site to enroll in and receive services from the OWL.

The Writing Center is housed in the Academic Skills Center, A-332. Hours are: Monday through Thursday 8:00 a.m. to 8:00 p.m., and Friday 8:00 a.m. to 2:00 p.m. Saturday hours are 9:00 a.m. to 1:00 p.m. during fall and spring semesters. Hours will vary during other sessions. Appointments may be scheduled by visiting the Writing Center, calling 972-273-3089, or emailing nlcwritingcenter@dcccd.edu.

State Outcomes Core Curriculum

As part of the core, this course contributes to the development of 6 basic Program Level Outcomes. These Outcomes are essential to the learning process in any discipline and are defined by the Texas Higher Education Coordinating Board.

This course reinforces Program Level Outcome 1 with written and visual communications, Program Level Outcome 2, 3, and 4.

Program-Level Outcome 1: Communication Skills - to include effective development, interpretation and expression of ideas through written, oral and visual communication

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

2. Oral: Produce effective oral communication adapted to audience, purpose, and time constraints.
3. **Visual**: Effectively interpret visual images or produce effective visual images.

4. **Listening**: Comprehend, and analyze oral information.

**Program-Level Outcome 2: Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

**Program-Level Outcome 3: Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

**Program-Level Outcome 4: Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

**Program-Level Outcome 5: Personal Responsibility** - to include the ability to connect choices, actions and consequences to ethical decision-making

**Program-Level Outcome 6: Social Responsibility** - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities.

**Learning Activities, Outcomes, and Assessment**

The following table shows how the Course Outcomes reflect the State Outcomes and are incorporated and assessed in the course.

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Learning Outcomes</th>
<th>Assessment</th>
<th>Program Level Outcomes/ Specific Course Outcomes</th>
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</thead>
<tbody>
<tr>
<td>1. <strong>Learning Activity</strong>: Students will measure the volume of a metal cylinder using the direct and indirect methods in lab and will write a comparison of those methods in the lab report.</td>
<td>a. Students will write a comparison of two methods of determination of the volume of a solid with 70% proficiency</td>
<td>b. The students will be able to produce effective communication to express their ideas of the two different methods of volume determination in the lab report.</td>
<td>c. <strong>Program Level Outcome 1.1, Specific Course Outcomes 14, 19 and 20.</strong></td>
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<tr>
<td>2. <strong>Learning Activity</strong>:</td>
<td>a. Students will determine the correct number of significant figures in an image of a thermometer with 70% proficiency on departmental exams.</td>
<td>b. Students will discuss their answers in class and in lab. The assessment is a question on the departmental exam.</td>
<td>c. <strong>Program Level Outcome 1.3, Specific Course Outcomes 13 and 17.</strong></td>
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<tr>
<td>3. <strong>Learning Activity</strong>:</td>
<td>a. Students will predict the outcome of a precipitation reaction in aqueous solution at 70% proficiency on exam.</td>
<td>b. Students will discuss their answers in class and the assessment is the question on the departmental exam.</td>
<td>c. <strong>Program Level Outcomes 2 and 3, Specific Course Outcomes 7, 8 and 10.</strong></td>
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### APPENDIX A

<table>
<thead>
<tr>
<th>Lecture</th>
<th>December 4</th>
<th>December 5</th>
<th>December 6</th>
<th>December 7</th>
<th>December 8</th>
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<td>Lab</td>
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<td>Intro</td>
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<td>Chapter 1</td>
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<td>Workshop</td>
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<td>Lecture</td>
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<td>December 12</td>
<td>December 13</td>
<td>December 14</td>
<td>December 15</td>
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<td></td>
<td>Chapter 1/2</td>
<td>Chapter 2</td>
<td>Ch. 3</td>
<td>Ch. 3/4</td>
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<tr>
<td>Lab</td>
<td>Lab Workshop</td>
<td>Safety Training</td>
<td>Safety Quiz</td>
<td>Separation of</td>
<td>Empirical</td>
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<td></td>
<td>Measurements</td>
<td>Lab Workshop</td>
<td>Check in</td>
<td>the Components</td>
<td>Formula</td>
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<td></td>
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<td>Measurements</td>
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<td>of a Mixture</td>
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<tr>
<td>Lecture</td>
<td>December 18</td>
<td>December 19</td>
<td>December 20</td>
<td>December 21</td>
<td>December 22</td>
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<td></td>
<td>Ch. 10</td>
<td>Ch. 5</td>
<td>Ch. 5/6</td>
<td>Ch. 6/7</td>
<td>Ch. 7/8</td>
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<tr>
<td>Lab</td>
<td>Reactions in Aq.</td>
<td>Acid-Base</td>
<td>Gas Law:</td>
<td>Calorimetry</td>
<td>Experimental</td>
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<td>Solutions (and</td>
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<td>December 25</td>
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<td>December 27</td>
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<td>Lecture</td>
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<td>Ch. 8</td>
<td>Ch. 8/9</td>
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<td>Exam (replaces</td>
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<td>Lab</td>
<td>Reactions with</td>
<td>Check out</td>
<td>Molecular</td>
<td>Optional Lab</td>
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<td>Copper</td>
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<td>Models</td>
<td>Final</td>
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**Important dates to remember:**

- **Census Date:** Dec. 12 (last day to drop without a W)
- **Last Drop Day:** Dec. 22
- **Winter Break:** Dec. 23 – Jan. 1
- **Dept Exam 1:** Dec. 13 – 14 (Chapters 1 and 2)
- **Dept Exam 2:** Dec. 18 – 19 (Chapters 3 and 4)
- **Dept Exam 3:** Dec. 20 – 21 (Chapters 10 and 5)
- **Dept Exam 4:** Jan. 2 – 3 (Chapters 6 and 7)
- **Dept Exam 5:** Jan. 4 – 5 (Chapters 8 and 9)
- **Optional Final Exam (replaces lowest exam):** Jan. 5 (8:30 – 10:30 AM) Cumulative
- **Optional Lab Exam (replaces lowest lab):** Jan. 5 (12:15 PM – 1:15 PM) Cumulative